

Dilated Cardiomyopathy in Dogs & Cats: Complaints Submitted to FDA-CVM

January 1, 2014 – April 30, 2019

This document compiles all reports of dilated cardiomyopathy in dogs and cats that were reported to the FDA between January 1, 2014 and April 30, 2019. Reports are listed in chronological order from oldest to newest.

Unless otherwise noted, each report is displayed as it was reported to the FDA and in the words of the person who submitted the report. In some cases, lengthy report narratives continue into multiple cells of the spreadsheet. In a small number of reports, lengthy case narratives were edited for brevity.

These reports were not originally prepared for public distribution. As such, each instance of personally identifiable information (e.g., names, locations, dates, etc.) has been redacted and replaced with **(b)(6)**, which refers to Exemption 6 of the Freedom of Information Act. This exemption “protects information about individuals in personnel, medical, and similar files when disclosure would constitute a clearly unwarranted invasion of privacy.” To learn more, see [FOI Information](#).

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Hills prescription diet u/d canned food and dry food	Dog	Dalmatian	8	Years	Male	96.4	Pound	<p>Hills Prescription U/D caused developmental cardiac deficiencies in our dog (b)(6). We believe it is unsafe to be used in canines over any length of time. We have extensive medical records for proof of this fact.</p> <p>(b)(6) was diagnosed with urolithiasis in March 2007 and after surgery was prescribed Hill Prescription Diet U/D dry and canned food. This was his only source of nutrition along with baby carrots as treats. On May 15, 2013, he developed an unusual cough which was continuous for the entire afternoon and evening. He woke up coughing at 3:00am as well. The next day I took him to the vet we were seeing at that time. He received an ECG after the vet heard a gallop heartbeat. He was diagnosed with dilated cardiomyopathy and we immediately went to (b)(6) to the cardiology department. At that time, he was diagnosed with congestive heart failure and started on enalapril, LASIX, taurine, L-carnitine , , and fish oil. His diet was changed to Royal Canine, low purine and Hill's L/D at the recommendation of the (b)(6) Nutrition Department. At that time, his cardiologist, Dr (b)(6), suspected that his heart disease was nutrition related. Hill U/D does not have enough of the proper nutrients in it to allow for adequate heart development and function. We knew that several months would have to pass before we knew for certain if this was indeed the case. We took him back to the cardiologist in August and he was showing some mild improvement. We took him again and February and the improvement in his heart function was astonishing. He still has dilated cardiomyopathy but it is improving vastly with his dietary changes. The improvements are not seen with heart medications alone according to his medical records. His long term prognosis is still uncertain but continued improvement is hoped for. It is not common knowledge among general veterinarians that this food is unsafe for long term use.</p> <p>This food should come with a warning label at the very least. I request that it be pulled from the market as it is the catalyst for heart disease and unsafe for canine consumption.</p>
EVO Grainfree Turkey and Chicken Formula Cat and Kitten	Cat	Himalayan	2	Years	Female	6.6	Pound	<p>I breed Persian and Himalayan kittens. My breeders regularly have cardiac ultrasounds to make sure their hearts are normal and remain normal. On (b)(6), (b)(6) had a Cardiac Ultrasound performed at (b)(6) in (b)(6). Her heart was found to be normal. In January, 2015, I switched my whole Cattery over to the EVO Turkey and Chicken Cat and Kitten dry food. At the same time, four of my breeding girls were pregnant. All four mothers had normal babies while on the food. On 6/30/15, I took (b)(6) down for her two year old heart scan at (b)(6) in (b)(6). At the time, she was nursing 6 kittens. During her heart scan, it was found that she had mild Dilated Cardiomyopathy (DCM). This came as a shock since I have never had any of my breeders have this heart disease. Dr. (b)(6) of the (b)(6) put her on Vetri-Science Cardio Supplements once a day and told me to bring her back for another scan in six months. Upon researching DCM, I found that the main cause could be lack of Taurine in the diet. Since I had just started the EVO food in my Cattery in January 2015, I was suspecting the food as the cause of a Taurine Deficiency causing the DCM. I also knew that EVO had a voluntary recall of this exact food in November 2014 for inadequate supplements in the food. So on June 30 2015, I put all kittens and cats in my Cattery on Taurine Supplementation of 250 mg per 1 cup of dry food. I also added in Doc Roy's Absorb More to ensure that nutrients were being absorbed by everyone. I also placed (b)(6) on this additional supplementation. So she would be getting roughly 500 mg of Taurine supplementation as well as the Absorb More. I also took (b)(6) away from the 6 kittens she had been nursing as soon as I found out on June 30, 2015. I was worried that they too might have a Taurine deficiency from her milk. On July 21, 2015, three weeks after putting her on the Taurine supplementation of 500 mg a day, I took her back down to (b)(6) in (b)(6) for another Cardiac Ultrasound to see if there was any improvement in her heart. To my Vet's surprise, she had a "marked improvement" in her DCM. In fact, her heart was almost back to normal. This can be documented on each Scan's report with the measurements. It is my Vet's opinion, as well as my own, that this food, EVO Turkey/Chicken Cat/Kitten dry food is lacking in Taurine, an essential amino acid that is required to be in all cat foods. It is also our opinion that maybe the Taurine gets put in the food but because of the high processing of the food, that the Taurine becomes not viable. Since most cats on EVO do not have regular Cardiac Ultrasounds, there is no way of a pet parent or even breeder to know (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) that their cat might have DCM. Symptoms of DCM are very much similar to HCM. On July 28, 2015, I contacted EVO Customer Service and reported the problem. They did not ask for the Cardiac Ultrasound results. I did state to them that I had kept all information of the bags of EVO purchased since March 13, 2015. I go through lots of bags of EVO dry food at my Cattery and due to all their past recalls thought this was a wise move. I do not have manufacturing codes for bags bought between Jan 1, 2015 and March 13, 2015. But since the kittens were born normal, my gut feeling tells me this problem of Taurine Deficiency occurred after the birthing of the 4 litters ... between April 4, 2015 and forward.</p>
Rachael Ray Nutrish	Cat	Domestic (unspecified)	4	Years	Male	12	Pound	<p>He developed cardiomyopathy and is in critical condition. He has congestive heart failure. Our other two cats are ill as well. (b)(6) is nearly as bad as (b)(6), with both cardiomyopathy and congestive heart failure. Both (b)(6) and (b)(6) had been eating the food for six months. Our third cat, (b)(6), has been eating the food for two months and is beginning to exhibit early signs of heart disease. There is no genetic relation between the cats, they do not have kidney disease, and they have not been exposed to the types of toxic plants that could cause their illness. The only common denominator is the Rachael Ray Nutrish food. The vet suspects a taurine deficiency is the only explanation, which should not happen with commercial pet food.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Merrick Purrrfect Bistro Grain Free Real Chicken Recipe	Cat	Mixed (Cat)	12	Years	Female	5.3	Kilogram	<p>Presented 5/8/2016 for lethargy; on physical exam the patient was dyspneic and pleural effusion identified on cursory ultrasound and DV thoracic x-rays - given lasix and placed in oxygen. Transferred to cardiology service; evaluation including echocardiogram on 5/9/16 revealed dilated cardiomyopathy, moderate left atrial enlargement, pleural effusion and azotemia. Plasma taurine was submitted to University of Wisconsin. Lab results received 5/15/16 - plasma taurine 24nmol/ml (ref range 60-120, critical level <40). Recheck echocardiogram on 5/15/16 revealed same changes as prior and a thrombus in her left ventricle. Medications/supplements included taurine 250mg PO BID, Mirtazepine 15mg tablets (Give 1/4 tablet PO every 3d PRN), Furosemide 12.5 mg tablets (Give 1/4 tablet PO SID), Pimobendan 1.5mg tiny tabs (Give 1 tablet PO BID). Patient presented on (b)(6) for partial aortic thromboembolism and owner's elected euthanasia.</p> <p>Review of patient's diet history revealed that all 5 cats in household had been fed Merrick Purrrfect Bistro Grain Free Real Chicken Recipe feline dry for approximately 3 years. The 4 remaining cats were tested for taurine deficiency and 2/4 had whole blood levels indicating deficiency: 5/21/2016 - Whole Blood Taurine submitted at the University of California Davis (normal 300-600 nmol/ml, no known risk for deficiency >200), results were received on 5/27/2016 -(b)(6): 9yr male neutered domestic long hair: 196 nmol/ml -(b)(6): 8y female spayed domestic short hair: 368 nmol/ml -(b)(6): 9yr male neutered domestic long hair: 124 nmol/ml -(b)(6): 9yr male neutered domestic long hair: 536 nmol/ml</p>
Merrick Purrrfect Bistro Grain Free Real Chicken Recipe	Cat	Mixed (Cat)	9	Years	Male	4.4	Kilogram	<p>Another household cat diagnosed with dilated cardiomyopathy and taurine deficiency - separate report filed (FDA ICSR ID 1053335). Euthanized on (b)(6) due to aortic thromboembolism. Review of the patient's diet history revealed that all 5 cats in household had been fed Merrick Purrrfect Bistro Grain Free Real Chicken Recipe Feline dry for approximately 3 years. Remaining 4 cats in household tested for taurine deficiency - whole blood samples submitted to University of California Davis (normal 300-600 nmol/ml, no known risk for deficiency >200), results received on 5/27/16 - (b)(6) 196nmol/ml - started on taurine supplementation 250mg PO BID for 2-3 weeks. Diet was changed at the time of other cat's diagnosis (5/15/15). Patient also diagnosed with hyperthyroidism on same day as blood submitted for taurine testing - history of weight loss. An echo was not performed on this patient therefore it is unknown if he had evidence of DCM.</p>
Merrick Purrrfect Bistro Grain Free Real Chicken Recipe	Cat	Mixed (Cat)	9	Years	Male	9.5	Kilogram	<p>Another household cat diagnosed with dilated cardiomyopathy and taurine deficiency - separate report filed (FDA ICSR ID 1053335). Euthanized on (b)(6) due to aortic thromboembolism. Review of the patient's diet history revealed that all 5 cats in household had been fed Merrick Purrrfect Bistro Grain Free Real Chicken Recipe Feline dry for approximately 3 years. Remaining 4 cats in household tested for taurine deficiency - whole blood samples submitted to University of California Davis (normal 300-600 nmol/ml, no known risk for deficiency >200), results received on 5/27/16 - (b)(6) 124nmol/ml - started on taurine supplementation 250mg PO BID for 2-3 weeks. Diet was changed at the time of other cat's diagnosis (5/15/15). An echo was not performed on this patient therefore it is unknown if he had evidence of DCM.</p>
Earthborn Holistic Primitive Natural	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	<p>A 3 year old spayed female whippet developed congestive heart failure in September 2015 and was treated with medications for congestive heart failure. She was evaluated by a veterinary cardiologist on 5/18/16 and findings consistent with dilated cardiomyopathy. Her housemate, a 4 year old castrated male whippet, developed congestive heart failure in April 2016 and was also evaluated on 5/18/16, and found to have dilated cardiomyopathy. Both dogs underwent blood testing for a heavy metal screen and were found to have increased total blood iron concentrations. Both dogs underwent MRI evaluation for heart and liver iron and were negative. The male dog died on (b)(6), and his heart was evaluated by a pathologist at the University of Wisconsin School of Veterinary Medicine. The findings were typical of idiopathic dilated cardiomyopathy, and results of special stains for iron were negative.</p> <p>Both dogs had been fed the same dry food (Earthborn Primitive Natural) as their only diet since January, 2015 (9 months prior to the female developing congestive heart failure and 15 months prior to the male developing congestive heart failure. A sample of the food was submitted for analysis for iron content through a commercial laboratory (Eurofins S-F Analytical Laboratories, New Berlin, WI). The sample, taken from a bag of food purchased at a pet food center in (b)(6) in April 2016, showed an iron content of 731 mg/kg, which appears to be high, according to a veterinary nutritionist contacted.</p>
Nature's Variety Instinct Limited Ingredient Diet Lamb Meal & Peas Formula	Dog	Retriever - Golden	8.5	Years	Male	66	Pound	<p>Presented to local veterinarian for gagging cough. Regular veterinarian concerned about new heart murmur and large heart on ultrasound and referred to Emergency and Cardiology services at (b)(6). Cardiac workup showed degenerative valvular disease, but also very depressed cardiac contractility and early congestive heart failure. Taurine level (plasma) was checked to rule out taurine deficiency as cause of depressed cardiac contractility and level was extremely low - 5.3 nmol/mL (normal is 60-120 nmol/mL; critical is < 40 nmol/mL). Concerned that diet may not have sufficient precursors to (b)(6).</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
California Natural Grain Free Limited Ingredient Diet Venison & Green Lentils Recipe Adult, California Natural Grain Free Limited Ingredient Diet Kangaroo & Red Lentils Recipe Adult	Dog	Schnauzer - Miniature	2.5	Years	Male	8.2	Kilogram	<p>Please note: Dr. Jennifer Jones was consulted prior to submission of this report. She would like to be involved in the case review</p> <p>3 week history of cough treated unsuccessfully with doxycycline and prednisone. 3 day history of inappetence and vomiting prior to presentation to (b)(6) emergency service for dyspnea. Radiographs showed severe pulmonary edema and echocardiogram showed severe Dilated Cardiomyopathy. There was an initial response to diuretic therapy however, he declined and was placed on the ventilator for respiratory support and continued CHF treatment. Attempts to wean off the ventilator were unsuccessful and aquaphoresis was performed. He continued to decline despite aggressive therapy and was euthanized. Infectious disease testing was negative and taurine and carnitine analysis showed adequate levels. Necropsy initially did not reveal a cause for DCM and supported alveolar injury (possibly ventilator related). A re-review of the myocardial histopathology by one of our pathologist showed myofiber vacuoles reminiscent of the changes seen in doxorubicin toxicity. Since the dog had not received doxorubicin, the pathologist recommended culturing the food for Streptomyces peucetius - the bacterium which produces doxorubicin. He also recommended testing for Fusarium spp. a fungus which produces Fumonisin B1, a toxin that produces heart failure in pigs.</p> <p>(b)(6) had been fed California Naturals Adult - both kangaroo with lentils and venison with lentils along with Milo's kitchen treats. We have samples of these foods from 6/17 but not the original bags from when he was presented 2/17. These samples were provided at the time his housemate, (b)(6) (unrelated, older miniature schnauzer) also presented with severe DCM and CHF. I will enter this dog as a separate affected patient.</p> <p>Both dogs had extensive infectious disease testing which was negative and nutritional amino acid deficiencies were ruled out. Because of this, their unrelated lineages (although the same breed, they were from different lines), different ages but similar time of presentation (b)(6) had clinical signs at the time (b)(6) was treated, but didn't present with CHF for several months), we are considering common environmental factors which could precipitate DCM, including food contamination or toxin exposure.</p>
California Natural Grain Free Limited Ingredient Diet Venison & Green Lentils Recipe Adult, California Natural Grain Free Limited Ingredient Diet Kangaroo & Red Lentils Recipe Adult	Dog	Schnauzer - Miniature	7	Years	Male	9.6	Kilogram	<p>Please note: Dr. Jennifer Jones was consulted prior to submission of this report. She would like to be involved in the case review (b)(6) housemate, (b)(6) (separate report submitted) was diagnosed with DCM and CHF 2/17 and was euthanized after aggressive treatment of CHF. At that time (b)(6) had 2 syncopal events closely related to each other. His appetite for dog food declined but he would eat it if tempted with treats mixed in. He was presented (b)(6) for more syncopal events and was similarly diagnosed with severe DCM and CHF. He was able to be successfully treated however and is clinically doing well on CHF medications as of 7/10/17.</p> <p>A re-review of the myocardial histopathology for (b)(6) housemate (b)(6) was requested at this time because of the unusual diagnosis of DCM in a small breed dog living in the same house as another dog similarly diagnosed a few months ago. This re-review by one of our pathologists showed myofiber vacuoles reminiscent of the changes seen in doxorubicin toxicity. Since the dog had not received doxorubicin, the pathologist recommended culturing the food for Streptomyces peucetius - the bacterium which produces doxorubicin. He also recommended testing for Fusarium spp. a fungus which produces Fumonisin B1, a toxin that produces heart failure in pigs.</p> <p>Like (b)(6) (unrelated, younger miniature schnauzer), (b)(6) had been fed California Naturals Adult - both kangaroo with lentils and venison with lentils along with Milo's kitchen treats. We have samples of these foods from 6/17 but not the original bags from when he was presented 2/17. These samples were provided at the time (b)(6) also presented with severe DCM and CHF.</p> <p>Like (b)(6), (b)(6) had extensive infectious disease testing which was negative and nutritional amino acid deficiencies were ruled out. Because of this, their unrelated lineages (although the same breed, they were from different lines), different ages but similar time of presentation, we are considering common environmental factors which could precipitate DCM, including food contamination or toxin exposure.</p> <p>We have plasma, serum, urine and myocardial tissue samples (latter only for (b)(6)) stored at -80 Celsius in addition to food and treat samples.</p>
California Natural Grain-Free Kangaroo and Red Lentils Recipe	Dog	Mixed (Dog)	6	Years	Female	25.1	Kilogram	<p>(b)(6) was presented for evaluation of cough, labored breathing, multiple episodes of collapse, cardiomegaly, and suspected congestive heart failure. Congestive heart failure was confirmed with thoracic radiographs and echocardiogram revealed dilated cardiomyopathy.</p>
California Natural Grain-Free Kangaroo and Red Lentils Recipe	Dog	Retriever - Labrador	8	Years	Female	32.1	Kilogram	<p>One week prior to presentation at a local emergency and specialty clinic, owners noted (b)(6) to be tiring more quickly when playing catch. On the day of her initial presentation to the ER clinic, she had been coughing more than usual and sank to the ground when attempting to chase a ball, but recovered quickly. At the ER clinic she was diagnosed with atrial fibrillation and early congestive heart failure. Treatment was initiated there (b)(6), she was transferred to our clinic on January 23, 2017 for further evaluation and care. Her arrhythmia converted back to a normal sinus rhythm on (b)(6) prior to transfer and her congestive heart failure resolved with treatment. She had a second collapse episode prior to referral. Echocardiogram showed evidence of dilated cardiomyopathy with concurrent chronic degenerative valve disease.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
California Natural Grain-Free Kangaroo and Red Lentils Recipe	Dog	Retriever - Labrador	5	Years	Female	25.6	Kilogram	<p>(b)(6) had been diagnosed with a new heart murmur a couple of months earlier, then developed difficulty breathing and cough and was diagnosed with congestive heart failure. Echocardiogram showed evidence of dilated cardiomyopathy and chronic degenerative valve disease.</p> <p>** (b)(6) is the biologic niece of (b)(6) - FDA ICSR ID 2040528</p>
Zignature Kangaroo Limited Ingredient Formula Dry Dog Food	Dog	Spaniel - Cocker American	4	Years	Male	15.5	Kilogram	<p>(b)(6) had been presented to his regular veterinarian for a week long history of cough on August 22, 2017. Radiographs were taken and (b)(6) was initially placed on antibiotics for presumed pneumonia (amoxicillin and doxycycline). Radiographs were reviewed by a radiologist who revised the diagnosis to congestive heart failure and furosemide and enalapril were added. I evaluated (b)(6) on September 5, 2017 and diagnosed him with dilated cardiomyopathy with congestive heart failure.</p>
limited ingredient diet with kangaroo as protein source - manufacturer not specified in written history (we have attempted to contact the owner but they do not return phone calls)	Dog	Shih Tzu	8	Years	Male	6.08	Kilogram	<p>At his scheduled visit to my clinic, thoracic radiographs showed generalized cardiomegaly which had been progressive compared to prior chest radiographs from his regular veterinarian but there was no evidence of cardiogenic edema. Echocardiogram was performed which showed dilated cardiomyopathy. Fundic exam was abnormal with a suspected partial retinal detachment OS. Diet history revealed that (b)(6) was eating a kangaroo based diet. At this time the patient was continued on the Cough-tabs, Lasix was discontinued, and Vetmedin (2.5mg a.m., 1.25mg p.m.), enalapril (1.25mg BID), and taurine (500mg BID) were started. Taurine was discontinued after a normal taurine level was received. Cough persisted despite these changes and a course of doxycycline was prescribed (50mg BID x 10days). The cough improved significantly but did not completely resolve so the doxycycline was continued an additional 14 days. The dog has since been lost to follow-up. I have attempted to contact the owner and am waiting for a response. I did contact the referring veterinarian and to their knowledge the dog is still alive.</p>
Acana Lamb & Apple Singles Formula Dog Food	Dog	Retriever - Golden	10	Years	Male	29.6	Kilogram	<p>Suspected that Acana Lamb and Apple Singles Formula diet provides insufficient levels of taurine, contributing to development of (b)(6) dilated cardiomyopathy.</p> <p>(b)(6) presented to his primary care veterinarian October 21, 2017 for progressive panting at night over the past 3-4 months. Chest radiographs revealed cardiomegaly and congestive heart failure (CHF). We examined (b)(6) on 10/25/17 and was diagnosed with dilated cardiomyopathy (DCM) and CHF. A whole blood taurine level was tested on 10/25/17 and the result was low (184 - reference range 200-350 nmol/ml). This is suspected to be due to dietary deficiency.</p> <p>(b)(6) has been on Acana's limited-ingredient Lamb and Apple grain-free diet for the entirety of his life for the management of otitis. After diagnosis of DCM and CHF, treatment included: Vetmedin, Lasix, Benazepril, and supplementation with taurine and L-carnitine. His diet was also switched from Acana Lamb and Apple diet to a commercial veterinary prescription diet (Hill's i/d). Since starting medications and supplementation with taurine/L-carnitine and changing the diet, he has had remarkable improvement in his cardiac size and function. He is no longer at risk for CHF and is being tapered off the Lasix. His systolic function is near normal. We do not see these improvements with medical therapy alone - only with taurine deficiency.</p> <ul style="list-style-type: none"> - Normal left atrial size - previously severe - Moderate left ventricular enlargement - mildly improved - Mild to moderate right atrial and right ventricular dilation - improved - Low normal, improved decrease in systolic function - previously severe decrease
Zignature Kangaroo Formula	Dog	Retriever - Labrador	13	Years	Female	33.18	Kilogram	<p>At the time of diagnosis (10/31/17), (b)(6) was a 13 year old female spayed Labrador retriever who had been maintained on a Zignature Kangaroo formula. She presented with a history of a progressive cough which, prior to presentation, became productive and she coughed up a small volume of pink foam (possible pulmonary edema). On examination she had a 2/6 left apical systolic heart murmur and on echo diagnosed with advanced dilated cardiomyopathy with severe left ventricular dilation, moderate to severe left ventricular systolic dysfunction, and moderate to severe left atrial dilation. Thoracic radiographs were suspicious for early congestive heart failure. A whole blood taurine level was submitted and was low at 168. She was treated with furosemide, benazepril, pimobendan, spironolactone, taurine and L-carnitine and her diet was changed to Royal Canin Early Cardiac. At her recheck in 2/26/18, (b)(6) heart had improved significantly with now mild dilated cardiomyopathy with normalized left atrial dimensions, mild left ventricular dilation and low normal left ventricular systolic function. The furosemide was able to be discontinued at this time.</p>
Grain Free Easy to Digest Salmon Sweet Potato & Pumpkin Recipe	Dog	Terrier - Bull	8	Years	Male	26.3	Kilogram	<p>(b)(6) is an 8 year old intact male Bull Terrier who was first diagnosed with severe degenerative valve disease with moderate decrease in contractility on 8/21/17. At that time, he was started on Lasix, Vetmedin, and Benazepril. Taurine supplementation was recommended but not started. On (b)(6), he presented to the emergency service for a sudden increase in respiratory rate and effort and was hospitalized for congestive heart failure. Echo findings on (b)(6) included progressive valve disease and severe, progressive decrease in contractility, the latter of which may either be a component of dilated cardiomyopathy vs secondary to (b)(6) grain free diet (Nature's Recipe Salmon and Yam). Clinically, (b)(6) has been tiring more quickly recently. He has had weight loss (3 kg since 8/2017) despite a good appetite. Prior to his (b)(6) presentation, he had a 2-3 week history of collapsing/fainting episodes, in which he would go limp and paddle - no loss of bowels. Health history includes allergies/dermatitis - previously on Apoquel - but otherwise no major illnesses or injuries. I have recommended adjustments to (b)(6) medications as well as taurine supplementation; he will continue the Nature's Recipe Salmon and Yam diet due to significant skin allergies when changing the diet.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Grain Free Easy to Digest Salmon Sweet Potato & Pumpkin Recipe	Dog	Spaniel - Cocker American	13	Years	Female	11.7	Kilogram	A heart murmur was auscultated on a routine exam and patient was diagnosed on 2/26/18 with moderate dilated cardiomyopathy - ruleout idiopathic vs. taurine/amino acid responsive - with moderately decreased left ventricular contractility. Patient is on a grain free diet - Nature's Recipe Salmon and Sweet Potato. It is suspected that some grain free diets provide insufficient levels of taurine, contributing to the development of dilated cardiomyopathy. At presentation, (b)(6) had no cough; normal appetite and attitude; no exercise intolerance. Medication management and taurine supplementation was recommended. She will be rechecked in June 2018.
Taste of the Wild Pacific Stream Canine Formula with Smoked Salmon	Dog	Hound - Afghan	11	Years	Female	32.4	Kilogram	(b)(6) has a history of cough - she was initially treated for kennel cough. Developed ascites and was evaluated by cardiology practice on 3/19/18. Diagnosed with advanced dilated cardiomyopathy, atrial fibrillation with rapid ventricular response rate and right-sided congestive heart failure with ascites. Started on medical therapy and taurine and L-carnitine supplementation - will recheck echo in 4-5 months. Diet is Taste of the Wild Grain Free - rotates through all varieties except for those containing chicken. There is concern that the diet provides insufficient levels of taurine, contributing to the development of (b)(6) dilated cardiomyopathy.
Zignature Kangaroo Formula	Dog	Retriever - Golden	6	Years	Male	40	Kilogram	(b)(6) Patient presented to the cardiology service at (b)(6) for tachypnea. He was diagnosed with dilated cardiomyopathy and left side congestive heart failure. Whole blood taurine level was 119 (ref 200-350, critical level <150). At the time, patient consuming Zignature Kangaroo Formula and was advised to change.
Kirkland Signature Nature's Domain Turkey Meal and Sweet Potato Dog Food	Dog	Retriever - Golden	11	Years	Female	31.1	Kilogram	(b)(6) was diagnosed with dilated cardiomyopathy and left sided congestive heart failure by the cardiology service at (b)(6). Her disease has been stable. Due to reports of DCM related to taurine deficiency on grain free diets, a whole blood taurine level was submitted on 3/2/2018 by the cardiology service. Whole blood taurine was 57 (ref range 200-350, critical <150). owner was advised to stop current diet and start taurine supplementation.
Blue Buffalo Basics salmon and potato dry food - regular and grain-free:	Dog	Doberman Pinscher	7	Years	Male	Not provided	Not provided	Reported as RFR (EON-351747). FDA CVM resubmitting as PFR. 7 year old castrated male Doberman pinscher with DCM. Has been eating Blue Buffalo Basics salmon and potato dry food since 2012 (rotates between regular and grain free version of this diet). Recently, diagnosed with DCM and whole blood taurine was 29 nmol/ml. Started on cardiac medications by RDVM and just started taurine and fish oil (may also start L-carnitine and coenzyme Q10). Unclear if taurine deficiency-related DCM or related to current concerns with "grain free" diets. DCM and taurine deficiency Owner has bag of food that she's keeping until we hear from you. RDVM is (b)(6)
4health Grain-Free Large Breed Formula Adult Dog Food	Dog	Unknown	Not provided	Not provided	Unknown	Not provided	Not provided	possible diet-associated DCM 4health Grain-Free Large Breed Formula Adult Dog Food. Owner was asked to save food. Plasma taurine 57 (ref range 60-120), WB taurine 262 (ref range 200-350) DCM diagnosed by echocardiography
4health Grain Free Beef & Potato Formula	Dog	Retriever - Golden	6.2	Years	Male	34.5	Kilogram	(b)(6) presented at (b)(6) for difficulty breathing/ enlarged heart. (b)(6) was diagnosed on Thursday with an enlarged heart with RDVM. RDVM sent (b)(6) home with instructions to limit activity. (b)(6) collapsed twice this weekend. Once was when (b)(6) was outside walking and saw a squirrel and the other episode was when (b)(6) saw the neighbor and came running to neighbor. (b)(6) has been eating normal, but (b)(6) did have soft stool yesterday. (b)(6) has continued to breathe heavy throughout the weekend and has been experiencing coughing/ barking episodes of discomfort. (b)(6) is up to date on vaccines. (b)(6) littermate was diagnosed with a heart murmur at 1.5 years old.
Zignature Lamb	Dog	Bulldog	9	Years	Male	28.1	Kilogram	Presented as ER case after evaluation at (b)(6) the previous afternoon. Owner report distended and uncomfortable stomach, with a decrease in activity and an increase in vagal collapse episodes, that have been associated with bowel movements. (b)(6) appetite is also decreased and he vomited after one collapse episode. The collapse episodes have been occurring more frequently over the last few days, with at least 1 occurring each day. (b)(6) removed 1500ml of fluid from (b)(6) abdomen and gave him 2mg/kg injection of furosemide.
Zignature Kangaroo and Lentil	Dog	Mixed (Dog)	9	Years	Male	21.3	Kilogram	Developed dry, harsh coughing in late May, which rDVM initially treated with doxycycline. Cough did not resolve and (b)(6) became very lethargic, inappetent, extremely exercise intolerant, and has increased respiratory effort. rDVM radiographs showed cardiomegaly and it was suspected that (b)(6) had developed pneumonia. (b)(6) was presented to (b)(6) on 6/23 for further evaluation, at which time (b)(6) was diagnosed with heart failure and cardiac medications were initiated. (b)(6) responded right away to cardiac medications, with improved appetite, energy levels, and a dramatic decrease in cough. The owner reports that (b)(6) has lost a noticeable amount of weight since the ER visit, a week ago, despite doubling the amount of food offered. Taurine level pending
4Health Grain Free	Dog	Mixed (Dog)	9	Years	Female	29.9	Kilogram	Presented as emergency appointment for evaluation of intermittent, persistent cough, first documented five weeks ago. After cough did not respond to course of doxycycline and "cough tabs," Hycodan was added with no improvement. rDVM thoracic radiographs taken on 6/22/18 showed cardiomegaly. Owner describes cough as dry and harsh, which is worse in the evening and when (b)(6) is in sternal recumbency. (b)(6) is very active, without any exercise intolerance or weakness. She tends to graze throughout the day, though has been slower to finish her meals recently. (b)(6) has lost a noticeable amount of weight in the last four weeks. Diagnosed with DCM and taurine level is pending.
Merrick grain free salmon and sweet potato dry	Dog	Mixed (Dog)	8.52	Years	Female	20.5	Kilogram	Routine echo during treatment for lymphoma. Normal left ventricular wall thickness with reduced contractile function
Earthborn Coastal Catch dry	Dog	Boxer (German Boxer)	7.6	Years	Female	33.2	Kilogram	Diagnosed with LV cavity dilation and reduced contractile function
Halo grain-free dry food (exact variety unknown)	Dog	Great Dane	4.03	Years	Male	64	Kilogram	DCM and CHF Taurine not measured

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste of the Wild grain free lamb dry	Dog	Retriever - Labrador	9.37	Years	Male	50.8	Kilogram	DCM and CHF
Taste of the Wild Prey Angus Beef Limited Ingredient Formula for Dogs (Grain Free)	Dog	Great Dane	2	Years	Female	145	Pound	Products: (1) Taste of the Wild Prey Angus Beef Limited Ingredient Formula for Dogs (Grain-Free) and (2) Taste of the Wild Pacific Stream Canine Recipe with Smoked Salmon Dog Food (Grain-Free): A 2 y/o, female Great Dane, (b)(6), 145 lbs, not spayed, no diagnosed allergies, and no pre-diagnosed conditions, experienced red skin and itchiness throughout her body in mid 12/2017. The reaction subsided within a few days, but reoccurred a couple of weeks later in late 12/2017, and subsided in a few days. No healthcare was sought. In 05/2018, (b)(6) was taken to (b)(6) for pre-op tests to prepare for spaying, and test results, chest x-ray and electrocardiogram were negative for anomalies. On 07/05/2018, follow-up at (b)(6) disclosed low blood platelets and (b)(6) was diagnosed with Mitral Valve Dysplasia. (b)(6) was considered stable, so no medication was prescribed, and a follow-up electrocardiogram was recommended for 12/2018. On (b)(6) at 1:00 am, the Complainant heard the loud cough, monitored the dog and on (b)(6) brought (b)(6) to (b)(6), where (b)(6) administered a chest x-ray and tests confirmed Congestive Heart Failure and on the same day, (b)(6) was admitted to (b)(6) where (b)(6) was diagnosed with Cardiomyopathy due "to taurine deficiency from a grain-free diet". She was treated and released on (b)(6) with Rx Lasix and Vetmedin and is lethargic. She has a follow-up appointment in two weeks with Dr. (b)(6). The Complainant (owner) believes that these two Taste of the Wild Grain-Free dog foods caused (b)(6) conditions. She has fed Taste of the Wild Pacific Stream Canine Recipe with Smoked Salmon Dog Food to (b)(6) since she was born and changed food to the Angus Beef flavor in 01/2018, due to what she believes was an allergic reaction, itchy ears, and red skin, that she began noticing in 12/2017, that she believed was Continued from Complaint Description above: caused by (b)(6) consumption of the Pacific Stream product. She contacted the manufacturer, Schell & Kampeter DBA Diamond Pet Foods, who provided her with a different Lot of the Pacific Stream product. She fed (b)(6) again, and the symptoms reoccurred. The Complainant has another 6 y/o, female, Great Dane, (b)(6), who has been eating the Pacific Stream Smoked Salmon everyday for years and has not experienced any symptoms. The Complainant stated that she fed both dogs 2x a day only the Taste of the Wild dog foods reported. They both are supervised when they go out in the yard and she stated that nothing could have been picked-up there. Complainant does not have any product codes as she used all of the Pacific Stream product and returned the Angus Beef bags to the retail store for reimbursement. INJURY/ILLNESS: lethargy, red skin and itchiness throughout body; 1 loud cough.
Earthborn Holistic grain free bison lamb pacific	Dog	Setter - Gordon	6.5	Years	Male	80	Pound	(b)(6) was diagnosed with Taurine Deficit Dilated Cardiomyopathy after attempts to save in him in the ER and hospital stay of 4 days he went into he went into congestive heart failure and was euthanized. He exhibited symptoms of Taurine deficit however was treated for individual symptoms until he collapsed and he had an echo cardiogram which showed the DCM. His mother and sister started to show Taurine deficit symptoms at the same time. Their dog food was switched immediately and placed on Taurine and L carnitine supplements. They all had been on grain free food their whole lives. In hindsight and knowing now what I've learned all too late for (b)(6) I believe two of my other dogs also suffered from this but it wasn't known at the time the possible cause.
Blue Buffalo Life Protection Formula Chicken and Brown Rice Recipe For both ADULT and SENIOR; Blue Buffalo FREEDOM - Grain Free Chicken Recipe For both ADULT and SENIOR;	Dog	Schnauzer (unspecified)	10	Years	Male	35	Pound	In 2014, (b)(6) was diagnosed with early-onset heart failure caused by dilated cardiomyopathy. Prior to this diagnosis, he was in great health. Were able to minimize the effects of the heart failure with meds and prescription diet. Prior to this, (b)(6) was fed a steady diet of Blue Buffalo - and prior to that, Beneful. Dog's heart became enlarged and ultimately led to his death.
fromm heartland gold adult grain free	Dog	Saluki	2.5	Years	Female	55	Pound	new heart murmur and dilated cardiomyopathy diagnosed via echocardiogram discovered March 2018.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Zignature Venison Formula	Dog	Unknown	4	Years	Male	70	Pound	Due to my dog having allergies, I have been trying to find a suitable grain free food that he can tolerate without itching or redness of his ears. We started feeding Zignature grain free venison formula approximately a year ago and before that fed Pure Vita grain free. In March, my dog started coughing, had lack of energy and lack of appetite. I brought him to the vet thinking he had kennel cough and after an x ray, he was diagnosed with dilated cardiomyopathy and given two months to live. I read an article about taurine deficiency causing DCM and asked her to draw a taurine level but she said only cats have taurine deficiency so she didn't do this. I have since read more articles about dogs being diagnosed with DCM after being on a legume heavy diet and wish I would have insisted on a taurine level. I have since started supplementing taurine and L carnitine to my dog's diet along with the three heart medications he needs to take twice daily and he has survived four months so far. I contacted Zignature and implored them to add taurine to their food and a representative wrote me back and said they are going to start adding this. While it is probably too late to save my dog, it is my hope that many other dogs and owners will not have to go down this terrible road by simply having dog food companies make sure they change up their foods by adding taurine and not adding so many legumes. I am also cooking fresh ground venison to add to my dog's diet and only giving half the amount of kibble. The heart meds are really expensive as well. The Vetmedin alone is about \$3 a pill and he has to take 1 1/2 pills daily. I am asking you to please step in and save future dogs from an untimely death due to pet food. I did so much research trying to find the absolute best food to help my allergic dog and I rue the day I started feeding him Zignature. He is a rescue and we do not know his breed but the vet thinks he is Am Staff/hound and the shelter he came from listed him as a boxer/hound mix, so he might be a combination of all four. Thank you for your time.
California Natural Kangaroo and Red Lentils	Dog	Portuguese Water Dog	8.5	Years	Female	40	Pound	Another dog in the household ((b)(6)) has food allergies. California Naturals, Kangaroo and Lentils was suggested as a hypoallergenic food option. I fed this food to both dogs ((b)(6) and (b)(6)) for approximately 6 years. In September 2016, (b)(6) had an episode where she was in distress, and I took her to an emergency veterinarian. By the time he saw her, she seemed fine to him. I followed up with her regular vet same day, and they ran bloodwork and took an x-ray of her abdomen (not chest). Neither vet thought there was anything wrong with her. The bloodwork did not lead to a diagnosis. On January 27, 2017, my Portuguese Water Dog was having trouble breathing. Her regular vet took an s-ray, saw an enlarged heart and referred her to a cardiologist who performed an echocardiogram. She was diagnosed with Dilated Cardiomyopathy on January 27, 2017. She stayed on the kangaroo/lentil diet until May 2018 when I ran out of the dog food and could no longer purchase it. I transitioned both dogs to Addiction Kangaroo and apples (it has peas). (b)(6) has been taking pimobendin, furosimide, benazapril, and spiranolactone as well as taurine and L-carnitine supplements since her diagnosis (January 2017). I took in my third dog in July 2016. He has also been eating this food.
Kirkland Nature's Domain Turkey and Sweet Potato food	Dog	Greyhound	7	Years	Male	75	Pound	He gradually had more coughing and heavy breathing. At first vet could find no reason but finally found arrhythmia. Took him to specialist and they diagnosed dilated cardiomyopathy. He was fed food from Costco that was grain free and contained sweet potato.
Nature's Recipe Easy to Digest Fish meal and Potato recipe dry dog food.	Dog	Shepherd Dog - Australian	10	Years	Female	40	Pound	My dog died of heart failure as a result of dilated Cardiomyopathy in (b)(6) 2015. She had been diagnosed 6 months earlier. We had fed her Nature's Recipe Easy to Digest Fish and Potato formula for years. I just read a report that diets containing potatoes may lead to dilated cardiomyopathy. She was an Australian Shepherd, a breed that doesn't usually have this disease.
Rachael Ray Nutrish Zero Grain Natural Salmon & Sweet Potato Recipe Grain-Free Dry Dog Food	Dog	Mixed (Dog)	3.5	Years	Male	35	Pound	In mid-December of 2017, my dog started exhibiting signs of breathing difficulty. My family told me it was nothing, and they didn't notice any difference. For the next few months, I was paranoid of his breathing and constantly monitoring him. In early February 2018, my worry reached a peak when he was visibly losing weight and his ribs were beginning to show through significantly. I set up an appointment with my regular vet, and an x-ray was conducted that revealed possible fluid build up in the abdomen. I was referred to a specialist in (b)(6). Many tests were conducted there, and the vets initially thought he had a hernia. He went into surgery and was fully opened only to discover that he did not have a hernia. After further tests and additional vet involvement (a cardiologist was added to the team), it was discovered that (b)(6) has chyle build up in his chest cavity due to his heart working improperly. This led to a diagnosis of Dilated Cardiomyopathy. We had no idea the cause of the disease given his young age, prior good health, and breed type (mixed) until reports of a possibly connection of Grain Free dog food & DCM. (b)(6) had been eating grain free dog food (Rachel Ray Nutrish Zero Grain Beef, Potato, & Bison and Rachel Ray Nutrish Zero Grain Salmon & Sweet Potato) since approximately April 2017. We are currently making regular visits to the vet specialist in (b)(6) for check ups on his condition. I believe that this dog food has a strong connection with the development of this disease in my dog.
Purina one lamb and rice formula	Dog	Mixed (Dog)	8	Years	Female	43	Pound	One day she started coughing/sneezing I let it go thinking it was just a cold but it started getting worse so day 3 I took her to the emergency vet clinic and they did x-rays and found her lungs almost completely filled with fluid and her heart enlarged. So they took her for 2 days and kept her in an oxygen cage to help her breathe. She was diagnosed with dilated cardiomyopathy and was given 5 months from the time of diagnosis to live. She was put on 5 medications to help with the fluid retention and arrhythmia. Since then she has lived well past the prognosis.
ACANA Lamb and Apple singles Formula	Dog	Retriever - Golden	11	Years	Male	85	Pound	Dog developed Dilated Cardiomyopathy and was in congestive heart failure.
Natures Domain Organic Chicken and Pea	Dog	Chinese Crested Dog - Hairless	7	Years	Male	20	Pound	DCM - suffered from congestive heart failure - treated by (b)(6) veterinary specialists. Would not eat. Continued to retain fluid in spite of treatment by a cardiologist. Was euthanized in Early 2017 as he was unable to eat or function with any quality of life.
Earthborn holistics coastal catch	Dog	Poodle - Standard	8	Years	Male	70	Pound	Dog developed cough so I took him to our vet. He was diagnosed with dilated cardiomyopathy. He was prescribed lasix and enalapril. I learned at this time through internet articles, some scientific, that there is a correlation between grain free dog foods that contain legumes and DCM. We first started feeding this food 6 years ago.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Kirkland salmon with sweet potatoes.	Dog	Retriever - Labrador	10	Years	Male	104	Pound	Dog Went into heart failure. Diagnosed with DCM. Was dying
Victor Hi-Pro Plus	Dog	Mixed (Dog)	17	Months	Male	61	Pound	We were feeding (b)(6), our Sheepadoodle (Old English Sheepdog + Poodle Mix), grain-free food from 8 weeks old until time of diagnosis (12 months). He was eating Victor Hi Pro Plus and Victor Salmon + Sweet Potato, both grain-free and high in legumes. At 12 months, (b)(6) was having an irregular heart rhythm during a vet appointment and underwent testing (EKG, echocardiogram). His whole blood taurine levels were 190 (unfasted), which we were told is just below normal range. He was diagnosed with Dilated Cardiomyopathy in the beginning of February 2018 and started on 3000mg of Taurine supplements per day, pimodendin, and mexilitene. We also switched his food to Hill's Science Diet Chicken & Barley. (b)(6) had a repeat echo several weeks ago, 5 months into treatment, and (thankfully) the DCM is improving but not yet normal. We are continuing treatment and very hopeful.
Zignature Kangaroo Formula Dog Food	Dog	Retriever - Golden	5	Years	Female	73	Pound	Sudden onset of DCM (Dilated Cardiomyopathy). (b)(6) was being fed Signature Kangaroo dry kibble for a good part of her life and up to her death. She didn't eat breakfast one day and had been panting on walks, which were shortened due to this panting. The Vet just thought it was the summer humidity, and heat. She had no heart murmur. I took her in to the Vet for observation in the morning, and Vet called late afternoon saying she had an enlarged heart, and recommended we take her to the Emergency Vet Hospital where they had better testing facilities. We did around 4 pm that day, and (b)(6) was gone by the same time next day due to DCM.
4 Health Grain Free Beef & Potato Formula	Dog	Retriever - Golden	4	Years	Male	65	Pound	4 year old Golden Retriever had been eating "4 Health Beef & Potato" dry, grain free dog food since birth (per Breeders recommendation) and suddenly contracted a cough and died 48 hours later from Dilated Cardiomyopathy (enlarged heart). Hospital Vet submitted blood to UCAL Davis and Dog had low taurine blood levels pointing to dog food as reason for heart failure. Also sibling died one month later, also from eating the SAME brand of 4 Health Dog food. No heart murmur was detected at annual checks ups.
Orijen	Dog	Great Dane	Not provided	Not provided	Not provided	Not provided	Not provided	Young dog ended up all of the sudden with life threatening arrhythmia and heart failure due to dilated cardiomyopathy. While Great Danes are known to be prone for DCM it is almost unheard of to affect 3 yo dog. He was exclusively fed grain free food.
Fromm Lamb and Lentil	Dog	Hound - Basset	9	Years	Male	65	Pound	When I got (b)(6) as a puppy, he had sensitivities to foods. It was recommended to me that I feed him grain-free food. He was fed different brands of grain-free food for his entire life. All of the foods contained either lentils, potatoes, peas, or a combination of all of these products. He was diagnosed with dilated cardiomyopathy when he was 9 years old and passed away from heart failure complications 4 months later ((b)(6)). I have another basset hound that is 6 years old and has no genetic connection to (b)(6). He has eaten the same food as (b)(6) for his entire life. He has recently been diagnosed with dilated cardiomyopathy, as well. Although I have fed them multiple brands throughout their lives, the following food brands/formulas were each fed to them for at least 1-2 years, over a total span of 6-9 years: California Naturals Kangaroo and Red Lentils Formula, Zignature Kangaroo Formula (contains peas, chickpeas, red lentils, and green lentils), Pure Vita Venison and Red Lentil Entree, and Fromm Lamb and Lentil. Note the overwhelming trend of lentils. Basset hounds are not genetically prone to heart issues. What are the odds that I have 2 genetically unrelated basset hounds that both ate lentils their entire lives and both ended up dilated cardiomyopathy? I am not able to submit this report unless I name a specific product, so I am naming the brand of food they both ate last before I became aware of the potential dangers of lentils.
Natural Balance L.I.D. Limited Ingredient Diets Sweet Potato & Venison Formula Grain-Free Dry Dog Food 26-lb bag	Dog	Pointing Dog - Hungarian Short-haired (Vizsla)	13	Years	Male	57	Pound	(b)(6) had always been fed a primarily homecooked diet - beef, chicken, salmon - usually mixed with rice and vegetables. When we adopted a puppy in 2014 ((b)(6), an English Pointer) I fed the puppy with the kibble sent home with him from the rescue organization and continued to feed him the same brand of kibble through 2015. To keep things simple, I started feeding (b)(6) the kibble as well beginning in 2014. Both dogs would eat kibble with fresh food added (meat, fruit and vegetables). In January of 2015 (b)(6) was diagnosed with dilated cardiomyopathy and was in congestive heart failure (fairly rapid onset). He immediately started on Vetmedin and Enalapril. In June of 2015, (b)(6) was also diagnosed with DCM, at only 1.5 years of age. We did extensive testing at the time to try to determine what could have caused our second and very young dog to be diagnosed with the same heart condition. He is now also on Vetmedin and Enalapril.
Natural Balance L.I.D. Limited Ingredient Diets Sweet Potato & Venison Formula Grain-Free Dry Dog Food 26-lb bag	Dog	Pointer - English Pointer	4.5	Years	Male	50	Pound	We brought (b)(6) home at 12 weeks of age in January of 2014 He was part of a litter that had been rescued - the rescue organization sent us home with a dry kibble that they had been feeding him. I continued to buy the same product throughout 2014 and in 2015 began having it delivered from an online retailer. (b)(6) was fed this kibble twice a day and to the kibble I would add chicken, beef or salmon as well as fruits and/or vegetables. Our other dog at the time was not quite 9 years old and in excellent health. He had never really had kibble other than as a very young puppy, instead he had always had homecooked food - meats/rice/veg/fruit etc. But I began feeding him the kibble as well to keep things simple. In January of 2015 our older dog was diagnosed with DCM and then 6 months later (b)(6) was as well. He was only 1.5 years old.
Rachel Ray Nutrish Possibly also IAMS prior to 2013	Dog	Shih Tzu	13	Years	Male	15	Pound	DCM, medication, coughing, enlarged heart, unable to pick him up anymore without inducing coughs, lethargy

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Earthborn meadowfeast	Dog	Mixed (Dog)	10	Years	Female	42	Pound	My very young 10-year-old female mixed breed dog collapsed while taking our walk. After rushing her to the vet and getting a sonogram they found out she had DCM. After being diagnosed she collapsed at home and died suddenly the night that I found out that she had DCM. She was an extremely healthy, vibrant, playful and in perfect shape. She had absolutely no signs of DCM or heart issues and did not have a heart murmur. After doing further research on dog food and possible link to Grain free food I was devastated. All of my dogs have been out on a grain free food for years. I am actively taking my other dogs in proactively to get a sonogram of their h grain free food I was devastated. All of my dogs have been on a grain free food for years. I am actively taking my other dogs in proactively to get a sonogram of their heart. To be sure they too don't have this devastating disease. My gut feeling says the dog food and diet definitely has something to do with her sudden death. All of her other blood work came back perfect but I did not know anything about Taurine levels, and possible problems with Earthborn meadowfeast grain free food. I have now switched the rest of the dogs to a different dog food which is not grain free We are now feeding them FROMM CLASSIC.
GO Venison Grain Free Kibble	Dog	Retriever - Golden	13	Years	Female	70	Pound	Enlarged heart and heart failure- on grain free diet Venison kibble- Grain free GO brand - Taurine deficiency possibly suspected due to grain free diet. Previously she was only on Gabapentin.
Halo Salmon Dry Food, Pinnacle Trout and Sweet Potato Dry dog food	Dog	Mixed (Dog)	11	Years	Male	55	Pound	(b)(6) was diagnosed in August 2012 with Dilated Cardiomyopathy and congestive heart failure. I believe, although I can't confirm the exact timing, that I had switched him to a grain-free diet to help with his allergies roughly around that time (not close enough to connect the incidents at the time though). At that time he was eating Halo Salmon dry food. After he was diagnosed I tried several different foods until I found one that satisfied both his low sodium requirements and also didn't exacerbate his allergies; he has eaten Pinnacle Trout and Sweet Potato dry food since then. His Taurine levels were never checked but he was put immediately on a Taurine supplement. He is well controlled on a long list of medications but I work in the veterinary industry and so I have seen the articles suggesting a connection between DCM and grain-free diets and I wanted to provide the information in case it would help. I have also contacted my cardiologist to discuss a possible change in diet. I would be happy to provide more information if it would be helpful!
Zignature Kangaroo	Dog	Bulldog - French	5	Years	Male	33	Pound	(b)(6) was diagnosed with Congestive Heart Failure and Dilated Cardiomyopathy (DCM) and low Taurine. The Cardiologist believes this was caused by his food. He uses Zignature Kangaroo. He is currently stable, but we do not know if he will die from the condition in less than a year or if it will be reversed. We were told that we should know more in September when we go back for a follow up.
Kirkland Signature Nature's Domain	Dog	Sheepdog - Shetland	16	Years	Female	35	Pound	She began with a cough that we thought might be a lung issue so we took her to the vet and got antibiotics. She got better for a bit but then started coughing again. We ended up at the emergency vet where the diagnosis was DCM in August of 20115. We then went to the heart specialist who put her on the combo of Vetmedin, Enalapril and Lasix. In the mean time the Lupus flared back up and we put her back on the low dose or steroids. We ended up adding Taurine supplements to her diet after I did some research and spoke to the heart specialist. Her heart enlargement started to shrink, which at the time we thought was from her exercise regimen. Unfortunately, just before we started step her off the meds, she developed cancer and died in (b)(6) of 2017.
Lotus Oven-Baked Fish Recipe Grain-Free Dry Dog Food , Instinct by Nature's Variety Raw Boost Healthy Weight Grain-Free Chicken Recipe Dry Dog Food	Dog	Mixed (Dog)	4.5	Years	Female	48	Pound	I fed my pure bread Lab grain free dog food for years without incident and considered grain-free dog food the better, healthier choice overall. Now I'm wondering if it might be the cause for my German Shepherd Mix heart disease. She was diagnosed with DCM 03/2018 at just 4.5yrs old when I rushed her to emergency in heart failure. She's been on Grain Free dog-food since I rescued her from a shelter Sept 2016. Instinct by Nature's Variety Raw Boost Healthy Weight Grain-Free Chicken Recipe and Lotus Oven-Baked Fish Recipe Grain-Free Dry Dog Food. She's currently being treated for DCM with the following medications 25mg Spironolactone 1X day, 20mg Lasix 2X day, 10mg Enalapril 2X day, 5mg Pimobendan 2X day and 500mg Taurine 2x Day. Based on the recent FDA announcement about grain free dog food and DCM, I will be switching her diet right away.
Earthborne Holistic Grainfree Meadow Dry Food	Dog	Retriever - Golden	10.5	Years	Female	72	Pound	Sudden onset of difficulty breathing with a harsh bark. Gradually lost bark. Lost about 8pounds in weight over 2 month period. Chest x-ray revealed enlarged heart and found fluid on her lungs. EKG showed trigeminy. Subsequent echocardiogram confirmed dilated cardiac myopathy. All blood work within normal range. Did not do taurine level due to cost. Started her on Vetmedin, Furosemide, Mexilitine, Taurine and LCartinine.
California Natural Grain Free Kangaroo and Red Lentils Recipe	Dog	Bulldog - French	3	Years	Female	30	Pound	(b)(6) started having difficulty breathing, and was not interested in her food, which was not like her. When we took her through the vet we learned she dilated cardiomyopathy. She was started on multiple meds, but we were told this disease was fatal. We didn't know how long she would have. She died 4 months after diagnosis.
4health Grain Free Large Breed Formula	Dog	Great Dane	3	Years	Male	145	Pound	(b)(6) has some allergies to certain grains causing him to have yeast infections in the pads of his feet so per our veterinarian's recommendation we switched him to a Grain Free Diet. At only 3 years of age and in previously excellent health he became suddenly ill and diagnosed with Dialated Cardiomyopathy which lead to atrial fibrillation and congestive heart failure. He is doing well considering his prognosis and the fact they gave him only a couple months to live a relatively normal pain free life on medication (which cost approx. \$235/month). After he was diagnosed I did hours of research trying to find out more about the disease and it led me to two facts: 1. DCM is believe to be passed genetically through some breed, Great Danes being one of those breeds and 2. Recently more and more studies have linked grain free diets to Taurine deficiency and the development of DCM. Unfortunately in his case both things were working against him. While there is really no way of knowing if it was something that was passed to him genetically, a result of his diet, or a combination of the two I feel it needed to be reported.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Merrick Grain free real rabbit and chickpeas, Wellness CORE Grain Free Wild Game Duck Turkey Boar & Rabbit Natural Dry Dog Food 26-Pound Bag	Dog	Bulldog	7	Years	Female	36	Pound	My dog, (b)(6) was prescribed a grain free diet due to allergies in 2012. She remained on this diet even after her allergies became scarce due to moving to a different location. In April of 2018, (b)(6) became lethargic and was taken to the local animal hospital. She was diagnosed with DCM. She passed away in early (b)(6) due to issues surrounding her diagnosis. I recently read an article on the link between grain free diets and DCM and I believe her diet contributed to her diagnosis and untimely death. Squeeks had always been an extremely healthy bulldog, never weighing more than 40 pounds and was extremely active. It was devastating to our family to have her get so sick in such a short period of time and ultimately lose her. We grieve her everyday.
Natural Balance Sweet Potato and Bison	Dog	Doberman Pinscher	3	Years	Male	103	Pound	finicky with his food starting April 1, threw up, saw vets, rushed to emergency in CHF, diagnosed with DCM -could not stabilize, died. only 3 years old- had hiked 3 days before
V-Dog Kinderkibble	Dog	Mixed (Dog)	12	Years	Female	48	Pound	I rescued (b)(6) 9 years ago. My other dog was on a grain-free diet, so (b)(6) was too. (b)(6) was just diagnosed with Congestive Heart Failure. The veterinarian at UF suggested I change her food because the grain-free is showing problematic. This happened this month and now I am seeing the newspaper articles. I also use to give both dogs green beans or peas mixed in with their dry food. I look and their dry food's main ingredient is dried peas.
Taste of the Wild Grain Free Free both turkey and bison	Dog	Shepherd Dog - German	2	Years	Male	78	Pound	Patient experienced an acute onset of left sided congestive heart failure. Patient had been eating Taste of the Wild grain free food, containing approximately 50% lentils, since a puppy. Complete lab work including a CBC, Chem, thyroid and urinalysis were obtained. Patient was negative for heartworm disease. Thoracic rads showed a significantly enlarged cardiac silhouette and perihilar alveolar infiltrate. An echocardiogram was performed and results were interpreted by a boarded cardiologist. M-mode, spectral doppler, B-mode and color Doppler studies were obtained. The patient was diagnosed with trace mitral, aortic, and tricuspid insufficiency, left and right sided
Nutri source- adult	Dog	Great Dane	4	Years	Male	130	Pound	He was lethargic, wouldn't eat well and had a persistent cough for several years and he died of Dilated Cardiomyopathy DCM.
Blue Buffalo Basics Limited Ingredient Grain-Free Formula Salmon & Potato Recipe Adult Dry Dog Food	Dog	Spaniel - Cocker American	10	Years	Male	27	Pound	(b)(6) was recently diagnosed with dilated cardiomyopathy caused by a taurine deficiency. This problem has been linked to grain free dog food.
Kirkland Signature Nature's Domain Organic Chicken & Pea Dog Food 30 lb.	Dog	Retriever - Labrador	8	Years	Male	82	Pound	Rapid on-set of veterinarian diagnosed canine dilated cardiomyopathy. Collapsed in morning and taken to veterinarian for diagnosis.
Natures Domain	Dog	Retriever - Labrador	6	Years	Male	65	Pound	My Black Lab was only six years old and had no history of heart disease. I fed him Natures Domain grain free from Costco for an extended period of time. Last week out of nowhere a dog that was so full of energy and life died of Cardiomyopathy at age 6. I spent thousands of dollars at Doctors and specialists to no avail, to be told he had Congestive heart failure and had 6 months to live. I humanely had him put down and was devastated.
Fromm Surf & Turf	Dog	Terrier - Irish	7	Years	Male	Not provided	Not provided	My dog was fed Fromm's Surf and Turf kibble all his life. He developed distal cardiomyopathy at age 7 and died at age 8 after being treated for 9 months. His kibble was grain-free and contained potatoes, pea flour, sweet potatoes among other main ingredients. I am seeing reports that this type of diet is linked to the heart condition that caused the death of my dog. His breed is not typical at risk for this heart condition. My dog had to be euthanized due to his severe heart condition and difficulty breathing. I have the cardiologist reports and medical file.
Earthborn Holistic Great Plains Feast kibble	Dog	Retriever - Golden	7	Years	Female	70	Pound	(b)(6) developed Congestive Heart Failure and Dilated Cardiomyopathy after eating Earthborn Holistic Great Plains Feast.
Fromm Lamb and Lentil Recipe Dog Food	Dog	Retriever - Golden	7	Years	Male	76	Pound	Complainant is calling regarding the FDA's investigation into the potential association of DCM in dogs and certain pet foods the animals have consumed. Complainant has a 7 year old male Golden Retriever who weighs 76 pounds. Since the dog was 3 complainant fed him a diet of Blue Buffalo Lamb and Brown Rice. In June of 2015 she changed his diet to Fromm's Lamb and Lentil. In July of 2017 she again changed his diet to Farmina Chicken and reports that he has been on a good brand of food since 2017. Per complainant in August 2017, the dog was not producing taurine. He was diagnosed with DCM in August 2017. On Friday, 7/13, her dog had his 3rd echocardiogram and although his taurine level has improved his DCM has not improved. The dog is asymptomatic and he has genetic defects. Complainant did not previously know about the food issue and she hopes to save other dogs from developing DCM. She believes that food companies are replacing meat products with peas and lentils in a cost cutting procedure. Complainant takes her dog for checkups & echocardiograms every 6 months. Complainant is a resident of both (b)(6) and (b)(6). She requested that CCC enter the (b)(6) veterinarian as the primary vet.
blue buffalo lamb and brown rice life protection wilderness chicken and brown rice fish and sweet potato that's all I can remember	Dog	Pinscher - Miniature	11	Years	Male	12.5	Pound	dilated cardio myopathy, treated with canine primocore and Lasix. ate various blue buffalo products for several years.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
California Naturals Grain Free Venison and Sweet Potato Dog Food	Dog	Mixed (Dog)	6	Years	Female	48	Pound	(b)(6) (6 year old Catahoula Leopard mix) had seen the vet end of June 2017 no heart murmur detected. September 15, 2017 rushed to the vet and was diagnosed with Dilated Cardiomyopathy, and end stage heart failure. She passed away (b)(6) . January 25th, 2018 our other dog (b)(6) (7 year old German Shepherd Collie mix) was diagnosed with DCM and mild heart failure. He is still alive at this time. (b)(6) had a food allergy and therefore this was one of the foods that he could tolerate.) The cardiologist and our vet had no explanation how these two dogs not related were diagnosed with the same thing a few months apart. They were convinced it was just 'bad luck'.
Acana Pork and Squash Singles Formula	Dog	Retriever - Golden	7	Years	Male	88	Pound	Decreased energy Lethargy Coughing Difficulty Breathing Diagnosed with cardiomyopathy
Zignature Kangaroo Formula - Limited Ingredient Formula	Dog	Terrier - Irish Soft-coated Wheaten	8	Years	Male	19.9	Kilogram	* Presented to emergency service on 7/8/2018 because owner noted elevated respiratory rate, progressive lethargy, decrease in the appetite at home. Change in bark x 1 month and restlessness but no cough noted. Murmur on exam, cardiomegaly on rads, ECG - sinus rhythm with p mitral, tall and wide QRS, LVE pattern, deep Q waves, normal PR interval, normal MEA. Always a finicky eater. Current diet - Zignature Kangaroo Formula / Limited Ingredient Diet. Echo 7/9/18 - diagnosed severe DCM - suspect dietary mediated. No known family history of heart disease. See attached echocardiogram report w/data. * Plan to treat with medication management and dietary supplementation (taurine, l-carnitine, omega-3 fatty acids) and recheck echocardiogram in 4 months.
California Naturals Salmon	Dog	Poodle - Standard	9	Years	Female	50	Pound	Just read FDA report of 7/12/18 about dog foods containing peas or lentils. Our standard poodle was fed these foods most of her life: California Naturals Venison with green lentils, California Naturals Salmon and peas, and California Naturals Kangaroo and red lentils. She developed DCM at about 8 years of age, then it advanced into CHF. She was under the care of a cardiologist from the first diagnosis of heart murmur, was treated with a variety of drugs, which extended her life for a couple of years. There was no genetic history of heart problems. We believe that the grain-free food we fed her was the proximate cause of her cardiac problems and ultimately her early death.
Earthborn Holistic Meadow Feast with Lamb Meal	Dog	Cattle Dog - Australian (blue heeler, red heeler, Queensland cattedog)	7	Years	Male	47	Pound	My dog has eaten Earthborn Holistic Meadow Feast food for the past 5 years. He was diagnosed with
Grain Free Dog food	Dog	Mixed (Dog)	5	Years	Male	55	Pound	My labradoodle developed dilated cardiomyopathy last year (diagnosed in December 2017 right before he turned 5); we didn't know the cause at the time. They gave him 6 months to 1 year to live. I just saw this article about grain free food, and he's been eating that almost his whole life. Our veterinarian told me to switch his food and report the problem, but I'm sure it's already too late for him for a food change to make a difference. He's doing well on medicine but his heart is still enlarged, and it's probably just a matter of time.
Kirkland Signature Nature's Domain Beef Meal and Sweet Potato Formula for Dogs	Dog	Poodle - Standard	12	Months	Male	44	Pound	(b)(6) was 8-9 months old when he started showing the first signs of dilated cardiomyopathy. He was diagnosed at 9-10 months old. He had always eaten Kirkland Signature Nature's Domain Beef Meal and Sweet Potato Formula for Dogs. He was found to have a low taurine level at presentation. He has responded well to changing to taurine supplemented food and standard medication for heart failure.
WholeHearted Grain Free All Life Stages Lamb and Lentil Formula Dry Dog Food	Dog	Terrier - Boston	7	Years	Male	30	Pound	sudden onset of coughing- new found heart murmur. heart significantly enlarged on chest xrays. echo of heart shows DCM
ZIGNATURE LAMB FORMULA	Dog	Retriever - Golden	4	Years	Male	80	Pound	February 6th, 2018 - Dr. (b)(6) discovered a heart murmur (not heard prior) during routine visit. Referred to Cardiologist. February 12, 2028 - Dr. (b)(6) performed an echocardiogram and Taurine blood test. (b)(6) was diagnosed with Dilated Cardiomyopathy. Taurine level 209.
First Mate Pacific Ocean Fish Meal Weight Control Formula (for Seniors)	Dog	Cattle Dog - Australian (blue heeler, red heeler, Queensland cattedog)	7.5	Years	Female	70	Pound	took her in for annual exam 2/27/18. she was fine, no problems. good bill of health. 3/2/18 was the last day she ate. took her in for exam 3/5/18, vet took x-rays - we thought she might be compacted (happened to a previous heeler of ours). vet found her to have a very enlarged heart that was pushing on her trachea. she passed (b)(6) about 11:15a.m. vet did an autopsy and where her heart lining should have been centimeters thick, it was 3 millimeters thick. we had been feeding her FirstMate Senior Fish Meal which lists 2 different types of potatoes as 1st and 2nd ingredient

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Earthborn Holistic Meadow Feast with Lamb Meal	Dog	Bulldog - French	5	Years	Male	30	Pound	(b)(6) had been eating Earthborn Holistic Meadowbrook Grain Free food for the past 4 years of his life. Prior to that he was on a raw diet but started having some type of allergy reaction so was put on this grain free food. During the week of May 14, 2018, (b)(6) started to develop a cough which we didn't give much thought to at the time. It was also about this time that he started to not eat as he normally did. During the week of (b)(6), my family and I were on vacation in (b)(6) and my parents were watching (b)(6) which they did often so (b)(6) was a comfortable at their home as he was at our's. My mom noticed that (b)(6) did not have any energy and was not eating. She took him to our local vet, (b)(6), where (b)(6) saw Dr. (b)(6). (b)(6) does not like the vet and the first thing she noticed was that he let her touch him. She thought that was strange and listened to his heart at which time she said it did not sound right. They took an x-ray and determined that his heart was enlarged and that there was fluid around his heart and lungs. She referred (b)(6) to the (b)(6) where they were more equipped to handle problems of this nature. The (b)(6) wanted to see (b)(6) immediately. They ran several tests and kept (b)(6) overnight to give him an IV and other meds hoping to get this under control. My parents were advised that (b)(6) was in congestive heart failure and had Dilated Cardio Myopathy. He was sent home the next day with pills in hopes that he would get better. (b)(6) continued to get weaker and when we returned home on Friday, we could not believe it was the same dog as he was weak, had lost weight and literally did not move. He could not get up to greet us as he was too weak and now he had diarrhea. On Saturday morning, (b)(6), I again called our local vet and Dr. (b)(6) advised that we should get some Pepto Bismal and some baby sweet potatoes and get that into him. We did that but he still did not get better. On Monday morning, (b)(6), the decision was made to euthanize him. He was such a good dog and excellent with our 1 year old baby. It is a shame that his dog food caused this.
Acana Singles Duck and Pear, Acana Pork and Squash	Dog	Retriever - Golden	6	Years	Male	44	Kilogram	Presented as an ER consultation due to acute onset of collapse on (b)(6), 2017. Noted cyanosis and tachypnea, radiographs showed heart enlargement and edema, EKG - sinus tachycardia, wide and tall QRS with ST segment slurring, p mitrale, gave 100 mg Lasix prior to sending to the ER. Chronic history of PU PD. At the time was eating a limited ingredient diet Acana (either duck or pork). Whole blood taurine level result was 56 (low). No known familial history of heart disease. Began medical management w/furosemide, enalapril, pimobendan, and L-carnitine and taurine supplementation. Subsequent rechecks showed improvement in overall heart size as well as contractility. Switched from Acana diet to Fromm - variety of flavors. (b)(6) was presented to the (b)(6) early (b)(6) after experiencing an episode of collapse. The owners report that he was looking spacey when he was laying down. He stood up and fainted and then vomited his food and cardiac medications. Prior to this episode there had been no increase in his respiratory rate or effort and there was no noted trigger (i.e. excitement, activity) prior to the episode. No additional episodes have been reported. At this time, the Lasix has been discontinued. Suspect there may be a link between (b)(6) taurine-deficient DCM and Acana limited ingredient diet.
Nutro Grain Free Chicken Lentil and Sweet Potato Adult, Acana Singles Lamb and Apple Formula	Dog	Unknown	1	Years	Female	51.7	Pound	Reported as RFR EON-360093. FDA CVM resubmitting as PFR. This is a case we saw in June of 2018 for a cardiac workup including an echocardiogram. The 1 year old puppy has a heart murmur, and we diagnosed her with Dilated Cardiomyopathy on echocardiogram. She was being fed grain-free dog since she was adopted by her family, and they actually signed a contract with the dog breeder stating that they would feed grain free. Since the FDA has begun investigating grain-free diets as a cause to DCM, we report this is a suspect case for further investigation.
NutriSource Chicken and peas formula	Dog	Retriever - Golden	8	Years	Not provided	Not provided	Not provided	We were informed by her breeder that she had heard of a number of Golden Retrievers that she personally knew that were diagnosed with DCM while eating grain free dog food. We decided to have (b)(6) taurine tested because she was on NutriSource Chicken and Peas, for many years. Taurine came back at 132, which is dangerously low. We then had an echocardiogram done by a board certified cardiologist. We found out she had a severe case of DCM in June of 2017.
Kirkland Signature Heavy Weight Formula	Dog	Retriever - Labrador	12	Years	Female	70	Pound	Switched her diet from Kirkland Adult Dog Food (Chicken Rice & Vegetable) from COSTCO to Kirkland healthy Weight. After approximately about 9 months she developed a cough. Took her to vet & (b)(6) was diagnosed with DCM due to a taurine deficiency. (b)(6) is still being treated and on an assortment of medications. She has also developed thyroid issues since this began.
Zignature Kangaroo Formula Limited Ingredient Formula	Dog	Berger Picard or Sheepdog - Picardy	35	Months	Male	56	Pound	Towards the end March 2018 (b)(6) was taken to the Vet for a check up. The vet noticed that he had a heart murmur. On April 13, 2018 we made a cardiologist appointment for (b)(6). At the appointment he was diagnosed with Dilated Cardiomyopathy via an Echocardiogram. The Dr. Suggested a blood test for Taurine due to that with new found research a deficiency in Taurine can cause DCM. The Dr. also suggested that we switch foods since there was recent research also showing that possible Kangaroo diet, lentils, peas, and "grain free" food where possible causing DCM. (b)(6) was on Zignature Kangaroo Dry food from about 12 weeks old. In the meantime (b)(6) was placed on Benazipril, Vetmedin, Fish Oil, and Taurine Supplement. His food was also switched to Earthbound Ventures Rabbit and Pumpkin because I noticed it did not contain Lentils and had Taurine in it as a supplement. About a week or two later the Taurine result came back normal. We continued with his medications and his food. On July 18th (b)(6) went back to the Cardiologist for a follow up visit. His heart function had actually increased a little bit and his heart walls had thickened a little bit as well. We opted to continue on his program and reassess in about 6 months unless anything changed for the worse before then. I then saw the FDA warning about "grain free" food and DCM. The new food we put (b)(6) on was still "grain free" and I noticed it had peas. I consulted the Cardiologist and we decided to play it safe and change his food again to one that was not "grain free" and did not contain any kind of legumes, lentils and such.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste of the Wild Pine Forrest Venison and Legumes	Dog	Retriever - Golden	3	Years	Female	68.5	Pound	Just before (b)(6) second birthday, her energy level dropped and she developed a dry cough in the mornings. On the advice of a friend, I had her blood tested for taurine because she was on a grain-free food high in legumes. The result was 22 ml by the plasma test (normal level is 60-120 ml). I then took her to cardiologist Dr. (b)(6) at (b)(6). Dr. (b)(6) did an echocardiogram and also found the Mitral Valve Dysplasia, but did not see SAS. He found Mild to Moderate DCM. His report reads: "Moderately dilated left ventricular chamber and LV systolic dysfunction - ddx: taurine responsive DCM vs idiopathic DCM. Lv chamber has significantly increased in the recheck interim (LVIDD 5.13cm today, 4.14cm previous July 2016)." He prescribed increasing the taurine and l-carnitine supplements and return for repeat echo in 3-4 months.
Zignature Whitefish Limited Ingredient Formula Grain-Free Dry Dog Food	Dog	Mixed (Dog)	9	Years	Male	50	Pound	He's been eating grain-free food since 2015 (Orijen and Acana), but I switched him to Zignature brand whitefish limited ingredient diet in June of 2017. In August of 2017, his veterinarian heard a heart murmur, which got progressively worse. He's been lethargic and slow lately, panting often, and restless at night. We didn't connect the murmur and his lethargy to a possible food issue until a month ago, when I read a report about grain-free and boutique diets being linked to dilated cardiomyopathy, so had a consult with a cardiologist on July 24, 2018, and he confirmed that (b)(6) does indeed have mild DCM which he believes to be diet related. He is starting on heart medication, and will also start taurine supplementation once the bloodwork comes back with his taurine levels.
Acana Lamb and apple single formula	Dog	Samoyed	4	Years	Female	42.4	Pound	Present 7/19/18 for labored breathing. Radiographs revealed cardiomegaly with mild pleural effusion and moderate pulmonary edema. Pet has responded to lasix, pimobendan, and enalapril.
ACANA SINGLES DUCK AND PEAR FORMULA	Dog	Sheepdog - Old English	8	Years	Male	36	Kilogram	My dog was found to have Canine Dilated Cardiomyopathy last week. I brought him to see the veterinary because he was coughing. A cardiologist specialist also saw him. I had given him only ACANA no grain food since a puppy. I saw your notice that there might be a link.
Kirkland Natures Domain Salmon Meal and Sweet Potato Formula	Dog	Mixed (Dog)	7	Years	Female	45	Pound	Reporting due to your recent release of grain free dog food and DCM. My dog was diagnosed with DCM in February and it has been a battle for her life of multiple vet visits, medications and we are now trying to find out if she is in full heart failure (4 months later) as she has developed ascites in June. She has eaten grain free dog food her entire life. Kirkland Natures Domain from Costco. I am very concerned about my other dog now, as he too has eaten the same food and worry he too could develop this condition.
Blue Buffalo Wilderness Salmon Recipe Grain-Free Dry Dog Food, Dr. Gary's Best Breed Holistic Grain-Free Salmon with Fruits & Vegetables Dry Dog Food, Abound Grain free Turkey pea berry jerky recipe	Dog	Retriever - Labrador	9	Years	Female	62	Pound	My dog, (b)(6), was 3 years old when we adopted her. Upon adoption, we noticed she had consistently loose stool. With the help of our vet, we determined that grain free food (Blue Wilderness Salmon Grain Free recipe). She was on this food for ~5 years with periods of controlled and mixed stools. In January 2017, when her stool was particularly loose, upon recommendation from our vet we switched to Dr Gary's Grain Free Salmon recipe. In July we were at the vet for lethargy and coughing and by (b)(6), we were in the emergency room to be linked to a cardiologist to learn that (b)(6) had DCM. Thankfully, though L-Carnatine and Vetmedin, she is stable. However, upon reading the FDA report where peas, legumes dog food diets were linked to DCM, I wanted to report our case. I am more than willing to provide whatever vet reports, food records, detailed health records to help link grain free diets to DCM. Please do not hesitate to contact me. Note ---- we have 2 dogs ((b)(6) is 2 years old and to the best of my knowledge healthy and on the same food). Effectively immediately, I have switched to homemade food.
Fromm grain free dog foods	Dog	Shepherd Dog - Belgian Groenendael	4	Years	Male	62	Pound	(b)(6) has been diagnosed with DCM. He's been on grain free dog food all of his life.
Earthborn Lamb Meal	Dog	Terrier - Boston	7	Years	Female	21	Pound	Dog had 3 syncopal episodes. On radiographs, heart very enlarged. Cardiologist diagnosed Dilated Cardiomyopathy. Dog has eaten grain free dog since adopted 2 and a half years ago.
Zignature (various protein formulas fed), Zignature Canned (All protein formulas)	Dog	Retriever - Golden	4	Years	Male	67	Pound	(b)(6) has been fed rotating proteins of Zignature dry and canned food since he was a puppy. He was diagnosed with DCM on June 28 by (b)(6). She informed us that dogs fed solely a grain-free diet where peas and legumes are included have been developing DCM. It was suggested by many parties that a report should be filed with your office.
Earthborn Holistic Meadow Grain Free Great Plains Feast, Natural Balance L.I.T. Sweet Potato & Venison Brown Rice & Lamb and Sweet Potato & Fish, Pedigree Dentistix	Dog	Boxer (German Boxer)	6	Years	Male	44.1	Kilogram	Presented to ER service for collapse episode while on a run with owner. Additional collapse episode while on regular run two weeks ago. Diagnosed with Dilated Cardiomyopathy on echocardiogram (severe left ventricular dilation with severe global decrease in contractility). Began medical therapy with furosemide, benazepril, Vetmedin, spironolactone and taurine supplementation on discharge 7/30/18.
Fromm Large Breed Heartland Gold Grain Free	Dog	Great Dane	2	Years	Female	150	Pound	(b)(6) was fed Fromm Heartland Gold large breed grain free dog food since she was a pup at roughly 12 weeks old. She has always been healthy and was seen by her vet in the spring of 2018, with a clean bill of health. In mid July, 2018, she began to stop eating all of her meals. She began to pant heavily, even at rest and she developed some coughing. We took her to the vet on July 27 where she was examined and placed on Flagyl for a 104 degree fever and slight white cell count. Her heart rate was in the 150s. When she did not improve over the weekend, we returned to the vet July 30 where they did xrays and an echocardiogram. The echo revealed an enlarged heart, fluid build up, heart rate in the 200s. She has been referred to cardiology for further testing. The vet sent to have her Taurine level tested. The vet believes this is induced from her grain free diet. (b)(6) has no history of heart disease in her AKC family bloodline. She has no history of murmur or irregular heart sounds. She will begin Taurine supplements, was taken off grain free food, started lasix 50mg twice daily, placed on antibiotics and will begin additional cardiac meds per cardiology orders.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Earthborn Holistic Meadow Feast Grain Free, Earthborn Holistic Coastal Catch Grain Free	Dog	Retriever - Golden	6.7	Years	Male	75	Pound	<p>(b)(6) collapsed after a walk on (b)(6), 2018 and was rushed immediately to his local vet who took x-rays and then advised that he should be taken immediately to the local animal emergency clinic, (b)(6). After meeting with the admitting vet, he was given a sonogram and the initial diagnosis was dilated cardiomyopathy (DCM). We were asked to bring (b)(6) back the following day to see cardiologist (b)(6) and (b)(6) underwent a number of tests. (b)(6) was diagnosed with dilated cardiomyopathy, right sided. This appears to be caused by low levels of taurine in his blood which the cardiologist suspects resulted from feeding him a holistic grain free diet for the last 6+ years.</p> <p>As of 7/17 (b)(6) taurine level is 213 (micromoles/liter – I think is the reported concentration). They were only 109 in the first analysis on (b)(6). The average range is 200-350, with a target goal of 250. So the cardiologist increased the taurine supplement dosage from 500 mg twice a day to 1,000 mg twice a day. See attached reports for additional information.</p>
Taste of the Wild Grain-Free Lamb Dog Food	Dog	Great Dane	3	Years	Female	Not provided	Not provided	<p>CVM creating PFR from submitted RFR EON-361088. (b)(6), a 3 year old Great Dane, was brought to the (b)(6) Emergency Room on (b)(6)/18 for tachypnea, dyspnea and general malaise for 1 day. She was diagnosed with dilated cardiomyopathy (DCM) and severe congestive heart failure. Due to the severity of her heart disease, she was humanely euthanized. (b)(6) has been fed Taste of the Wild Grain-Free Lamb dog food for most of her life.</p> <p>It has been widely reported that boutique style grain free diets in dogs can cause DCM.</p>
Grain free dry dog food	Dog	Sheepdog - Shetland	11	Years	Male	40	Pound	<p>He was on a grain free dog food diet because I thought that was the healthiest way to go after doing research. He was diagnosed with advanced DCM a couple of months ago and is not doing very well. He's on 2 different types of heart medication that is very expensive. But the worst part of all of this is that I feel I did this to him and it's killing me.</p>
Zignature Kangaroo Limited Ingredient Formula Grain Free Dry Dog Food	Dog	Retriever - Golden	3	Years	Male	63	Pound	<p>Was on a grain free diet from 3 mos. of age to 3 years of age. Had Taurine level checked: 209. Switched to a grain food: Fromm Duck & Sweet Potato @ 2 years of age. Taurine level checked 11 mos. later (7/2018): 172. Food immediately switched (per Vet. advice). Blood test soon thereafter to check proBNP level: result was within range. Recent echocardiogram suggestive but not diagnosed with early onset of Dilated Cardiomyopathy. He is now on Taurine supplements, started 24 hours ago. Continues on new kibble: Royal Canin Adult Golden Retriever with topper (organ and/or muscle meat) to add in additional Taurine to diet.</p>
Dick Van Patten's Natiral Balance Limited Ingredient Diets with Chicken and Sweet Potatoes., Dick Van Patten's Natural Balance Limited Ingredient Diets For Adult Dogs Complete and Balanced For All Breeds Sweet Potato and Fish Formula	Dog	Retriever - Golden	5	Years	Male	36.4	Kilogram	<p>Previously healthy dog. 7/15/2018 - presented to ER for acute, severe, productive coughing; Dx pneumonia vs kennel cough; Rx doxycycline. 7/16/2018 - presented to pcDVM for recheck - persistent coughing, now decreased appetite; Dx CHF; Rx Vetmedin 5 mg at 1.5 tab BID, Salix 50 mg at 1.5 tab TID x3d then BID, enalapril 10 mg at 1.5 tab SID x3d then BID. 7/18/2018 - presented to CVCA, Cardiac Care for Pets for further evaluation of CHF; clinically improved with cardiac Rx; echo diagnosis of dilated cardiomyopathy. Taurine level submitted by pcDVM with a decreased result returned. Patient has been started on taurine and L-carnitine supplementation and diet had been changed to Natural Balance Synergy chicken (a non-grain-free formula). As of our last communication with the owner on 7/23/2018, the dog is clinically doing well at home.</p>
Zignature Kangaroo and Lentil - Dry	Dog	Shepherd Dog - Australian	5	Years	Male	27	Kilogram	<p>(b)(6) was initially presented to the primary care vet 6/22/18 for loose stools and cough - they had prescribed a tapering prednisone dose, which seemed to help at first but then the cough recurred and on 7/3/18 they prescribed Brethine and Clavamox as well as trazadone for anxiety. He presented to our ER and cardiology service on (b)(6) for persistent cough, anxiety, and heavy panting. Thoracic radiographs were performed and showed severe cardiomegaly and diffuse pulmonary changes most consistent with pulmonary edema; he was started on Lasix and supplemental oxygen pending cardiac evaluation. No weakness or collapse had been noted and (b)(6) continued to eat normally.</p> <p>Echocardiogram confirmed dilated cardiomyopathy with severe left atrial and left ventricular enlargement, profound decrease in systolic function, and moderate right atrial and ventricular enlargement. Supportive therapy for heart failure with Lasix, Pimobendan, and Oxygen were continued, but due to progressive decline the owners elected to have (b)(6) euthanized on (b)(6).</p> <p>(b)(6) had been on the Zignature brand Kangaroo and Lentil diet for several years; the owners changed the diet to Wellness Core Whitefish and Potato approximately 1 week prior to presentation.</p>
Zignature (brand) Kangaroo Kibble Limited Ingredient Diet	Dog	Terrier - Yorkshire	6	Years	Male	3.56	Kilogram	<p>Murmur was discovered as part of his annual physical exam and pre-dental procedure. (b)(6) is examined on an annual basis.</p> <p>(b)(6) is acting completely normally at home. He has an excellent appetite, no vomiting, no diarrhea, no coughing, no sneezing, no change in water intake nor urination. He is considered to be playful and active. (b)(6) has not ever been 'winded' or get 'tired' during his activities on or walks.</p> <p>(b)(6) has a history of allergic dermatitis and is managed with a kangaroo diet. Historically periodically treated with Apoquel.</p> <p>One of two dogs in the home.</p>
Zignature Kangaroo Formula	Dog	Mixed (Dog)	4	Years	Male	31.2	Kilogram	<p>Heart enlargement noted on chest x-rays without evidence of heart failure. Echocardiogram on 8/3/18 consistent with a dilated cardiomyopathy phenotype.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
V-Dog Kinder Kibble	Dog	Pit Bull	3	Years	Female	55	Pound	Dog developed a grade 2/6 left apical systolic murmur, which was evaluated by a cardiologist via echocardiogram, which revealed concern for occult dilated cardiomyopathy, possibly taurine deficiency. A taurine level was sent to the lab and her level was 19 (normal is 200-350, critically low is less than 150).
Acana Pork and Squash	Dog	Retriever - Golden	4	Years	Male	67	Pound	This is not an event that suddenly occurred. My dog was diagnosed with dilated cardiomyopathy at 2 years old. I enrolled him in the taurine deficient study done by Dr. Joshua Stern at UC Davis. He was eating Acana Pork & Squash since he was a puppy. His taurine was tested (4-18) and his whole blood is 135 and plasma 28. Since his taurine level is low, I was told to supplement him with taurine and take him off the current dog food. I was told his food could cause taurine deficient dilated cardiomyopathy. He will be re-tested in the upcoming months. It is not know at this time if the dog food contributed to his disease or caused it. The study is still on going.
Merrick ill plates	Dog	Maltese	10	Years	Male	11	Pound	Animal was observed to be coughing and hacking. Took the animal to a veterinarian on August 4, 2018 who identified that the animal had a severe case of dilated cardiomyopathy (DCM). The animal's heart had enlarged to such a point that it was placing pressure on his lungs. The prognosis is poor. Shortly after the diagnosis of DCM, it was identified that the FDA was investigating a potential link between DCM and grain free dog foods. Animal has been fed grain free dog foods for several years, primarily by Blue Buffalo and Merrick ill plates. No confirmed link is known, wanted to share to assist if needed.
CANIDAE Grain-Free PURE Fields with Chicken Small Breed Limited Ingredient Diet Adult Dry Dog Food, Instinct by Nature's Variety Raw Boost Healthy Weight Grain-Free Chicken Recipe Dry Dog Food	Dog	Schnauzer - Miniature	4	Years	Male	20	Pound	In February, 2018 (b)(6) started coughing when he was playing, been excited or was doing excensises, for example, when digging snow. He became lethargic, lost appetite, he started breathing hard. During the walk he was making several stops for rest. We contacted our vet. He made an X-Ray. On X-Ray the left half of the heart been enlarged. Our vet recommended us to see a cardiologist. The cardiologist made the ultrasonic exam of the heart and diagnosed DCM. The cardiologist made blood tests for infections and taurine. Tests didn't show any problems. After all exams cardiologist told that the only guess he has is genetic. He also noticed that miniature schnauzers don't have genetic predisposition to DCM and our case is exceptional. July 13th, 2018 we found an article on the NBC News website called "Dog heart disease linked to food, FDA says". According to this article, FDA reports that dogs fed "grain-free" food based on peas, lentils or potatoes are developing an unusual condition that can cause dilated cardiomyopathy. At this point we remembered that we fed (b)(6) with such a dog food, a grain-free food containing peas, lentils and potatoes, exactly the same, as FDA has been reported.
Pure Balance Wild & Free Grain Free Formula	Dog	Shepherd Dog - Australian	7	Years	Male	59	Pound	After being told by friends and reading on the internet that grain free/Gluten free food was good for dogs, I switched over. After about 6 months, by dog developed a "Hack" (cough) that refused to get better. He also began to gain weight and ballooned up to 75 lbs from about 55 lbs in that same period. By the time I got him to the vet, he could barely walk and had become very bloated. The vet checked him and his heart was extremely enlarged and they pulled 7 liters of fluid out of his abdomen. They did blood tests and they came back that he had very low taurine levels. They said he developed DCM which led to congestive heart failure.
California Natural Grain Free - Limited Ingredient Diet Kangaroo and Red Lentil Recipe	Dog	Lhasa Apso	9	Years	Female	6.3	Kilogram	https://www.fda.gov/NewsEvents/Newsroom/FDAInBrief/ucm613355.htm I am submitting this report in response to a FDA call for further information as described at the link above. I am reporting a case of Lhasa Apso who died from dilated cardiomyopathy. Her primary food source kangaroo and red lentils. I have a detailed records from a veterinary cardiology evaluation including exam, x rays, echocardiogram and labs including taurine.
Diamond Naturals Grain Free	Dog	Great Dane	3	Years	Male	140	Pound	It was thought that (b)(6) was having allergies to his food, he was losing weight, lethargic, and vomiting. We changed to a grain free food. I am not sure of all the details but have medical documentation over the next several years of everything that happened. He ended up w/CDM, congestive heart failure also. We managed it all with medications, vet support, and love from us. When I heard about this new case, I knew I needed to say something. My boy was healthy and 190 lbs, his siblings were healthy, & his parents. If I could go back, I could of saved him but instead we had to put him to sleep (b)(6). I am willing to submit a copy of all his vet records and testing to help. Thanks, (b)(6)
Zignature lamb Zignature Zessential Earthborm Meadowfeast	Dog	Retriever - Golden	Not provided	Not provided	Female	Not provided	Not provided	Critical taurine deficiency plasma level 23 new onset murmur and decreased systolic function on echo

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Zignature Kangaroo Formula Limited Ingredient Formula	Dog	Retriever - Golden	4	Years	Male	86	Pound	<p>Since (b)(6) was a puppy, he's had skin allergies likely related to a poultry allergy. Since he was 9 months old, he's been on Zignature kangaroo dry food in order to give him an exotic protein he and his ancestors had not been exposed to. So (b)(6) has been on Zignature kangaroo for a little over 3 years, he's fed very few other treats (only bully sticks and bits of cheese for medicine), so Zignature kangaroo dry food is his main nutrition source.</p> <p>On Sunday (b)(6), (b)(6) woke up incredibly lethargic, somewhat able to move around but totally exhausted and disinterested in food, which was very unlike him. I took him to the emergency clinic and he was diagnosed with dilated cardiomyopathy either related to a taurine deficiency in conjunction with grain free food or a possible genetic/ideopathic link. The emergency clinic took a blood sample to be sent off for taurine analysis.</p> <p>Yesterday, I saw a veterinary cardiologist who confirmed the dilated cardiomyopathy (DCM) diagnosis, noting that his left chamber was very enlarged but his left atrium was still normal, very in line with DCM. She suspected a link to taurine deficiency but the lab had not yet returned. Last night (8/6/2018), the emergency clinic called and said (b)(6) blood test confirmed his taurine levels are EXTREMELY low and would absolutely be enough to cause taurine deficiency DCM.</p> <p>(b)(6) now needs to take 6000 mg of a taurine supplement per day (2000mg 3x a day). He will also need to be moved to a dog food WITH grain because it's not yet understood if the grain free food itself is taurine deficient or something about the ingredients causes taurine deficiency.</p> <p>As per the FDA press release, I'm writing in to let you know about another case of grain free food and dilated cardiomyopathy in my 4 year old Golden Retriever. Both (b)(6) parents (and their parents) were certified by a veterinary cardiologist prior to being bred and both passed with no signs of genetic DCM. I won't know 100% until I follow-up with the cardiologist in 6 months after he's gotten his taurine supplement, but at this point, it's very likely related to this food.</p>
Canidae (Pet Food made by Pet People) Grain Free PURE Land Limited Ingredient Diet made with Fresh Bison Adult	Dog	Boxer (German Boxer)	9	Years	Female	58	Pound	<p>My boxer has IBD (Irritable Bowel Disease), she's been diagnosed with it several years ago and has been on a variety of foods and due to her IBD I've had to try different kinds of protein (beef, fish, etc.). Beginning of last year 2017 I came across pet food with limited ingredients, the protein being Bison meat. At that time I wasn't really paying attention to any other ingredients (weather it's grain free or not). The bison seemed to sit well with her IBD. However, a few months later, early summer of 2017 she developed exercise intolerance and difficulty breathing. At first I attributed it to her getting older and the hot weather. However, in September 2017 I took her to see a vet and she was diagnosed with DCM and was in heart failure and had to be hospitalized. She was started on Lasix, Pimobendan, Benazapril, and Taurine supplement. She started looking better. On her first recheck a couple months ago, her heart disease was pretty much gone. On her next recheck it was even better. The vet attributed it to the likely Taurine deficiency, since that is the only instance when DCM reverses itself. She asked me if my pet was on grain free food. At that time I didn't really understand how that was related, neither was she, but she advised me that there have been more and more instances across the country. Sure enough, I got home and checked the bag and it is indeed a grain free diet that I've been feeding my dog since the beginning of last year (the one with bison meat). The vet, and myself, now after reading all the research, are pretty certain her heart disease was caused by taurine deficiency which was brought on by feeding grain free diet.</p>
Zignature Kangaroo Limited Ingredient Formula Grain-Free Dry Dog Food, Canned Dog Food	Dog	Terrier - Yorkshire	8	Years	Female	11	Pound	<p>We started feeding Zignature Kangaroo formula to help (b)(6) IBD - it worked great. In June we noticed a little cough, the cough became more frequent. we went to the vet after about a week, our vet suspected collapsing trachea, common in yorkies, we began a course of medication. That medication, Temaril P, did not help, we went back to the vet 7/14/18 for chest x rays to rule out bronchitis. Dr. (b)(6) didn't like the way the x rays looked, sent it to a radiologist, and then called back letting us know her heart was enlarged & she had fluid in her lungs due to the heart enlargement.</p> <p>Dr. (b)(6) put us in touch with a veterinary cardiologist about the early stages of congestive heart failure. We saw the specialist, Dr. (b)(6)7/23/18 who did a cardiac work up, including a Taurine test, we are waiting for the results of this.</p> <p>She was diagnosed with DCM - suspect taurine-deficiency dilated cardiomyopathy.</p> <p>(b)(6) is being treated with medication & we are also in the process of changing her food from the Zignature food to a hydrolyzed protein diet by Royal Canin.</p>
Kirkland Signature Nature's Domain Salmon Meal & Sweet Potato Dog Food	Dog	Shepherd Dog - German	10	Years	Male	108	Pound	<p>(b)(6) a German Shepherd Dog stopped eating and was diagnosed with dilated cardiomyopathy. He did not respond to treatment including taurine supplementation and died 5 weeks later. He was treated by cardiologist Dr. (b)(6). According to Dr. (b)(6) taurine levels were not abnormally low but just at the low end of normal. (b)(6) along with a female GSD about the same age and his son who was 4 years at the time of (b)(6) death were on the same grain free diet for 4 to 5 years. At first various varieties of Merricks then for the last 2 years various varieties of Kirkland Natures Domain (b)(6). Specifically 70% Salmon, 15% Beef and 15% Turkey. The other 2 dogs have not shown any adverse effects.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Earthborn Holistic Meadow Feast with Lamb Meal Grain Free	Dog	Retriever - Golden	6.5	Years	Male	73	Pound	<p>Prior to December 2017, (b)(6) was a healthy 6 year old neutered male golden retriever. He had been fed a grain free diet his entire life. I had changed brands on occasion but I mostly stuck to Earthborn Lamb and Rice formula. (b)(6) lived in a home with another dog, (b)(6), who had DCM. They are not related. I will submit a separate report for (b)(6).</p> <p>(b)(6) was diagnosed with DCM 12/29/17 after I noticed coughing and labored breathing. Radiographs confirmed fluid in lungs and enlarged heart. Echocardiogram confirmed decreased heart function. Medication treatment was started (Furosemide, Enalapril and Vetmedin). Since this was my second dog diagnosed with DCM, which is usually unheard of, I started doing my own research on DCM. I read that DCM might be linked to grain free dog food. This made sense to me since both of my dogs were fed a grain free diet and now both were diagnosed with DCM. I asked my veterinarian if we could check his Taurine level and that was submitted on 4/21/18. His level was 27 (normal range is 60-120), so significantly low. Taurine supplementation was started. Since then, I have also changed his diet to a food that is NOT grain free and have continued all of his medications. He has not had a recheck echo. He is doing well but the DCM has not resolved completely.</p>
Earthborn Holistic Meadow Feast Lamb Blend	Dog	Retriever - Golden	6	Years	Male	80	Pound	<p>Prior to November 2014, (b)(6) was a relatively healthy 6 year old intact male golden retriever. He had been fed a grain free diet his entire life. I had changed brands on occasion but I mostly stuck to Earthborn Lamb and Rice formula. (b)(6) had a history of mild valvular aortic stenosis and a possible prostate infection.</p> <p>(b)(6) was diagnosed with DCM 11/3/14 after I noticed coughing and increased respiratory rate. Radiographs confirmed fluid in lungs and enlarged heart. Echocardiogram confirmed diagnosis of DCM. Medication treatment was started (Furosemide, Enalapril and Vetmedin). (b)(6) was being treated with antibiotics for a potential infection in the prostate at the time of diagnosis. Taurine levels were not tested because at that time, we weren't aware of the possible link to grain free diet.</p> <p>(b)(6) passed away unexpectedly in (b)(6) (due to his DCM). A year and half later, our other dog ((b)(6)) was also diagnosed with DCM. I have submitted a separate report for him. (b)(6) was also fed the same diet that (b)(6) was. Earthborn Holistic Meadow Feast (lamb). Because both of my dogs, both golden retrievers, both being fed the exact same diet, developed DCM (and they are not genetically related), I believe 100% that this disease was caused by the food I was feeding.</p>
Acana Lamb and Apple	Dog	Unknown	Not provided	Not provided	Unknown	Not provided	Not provided	<p>CVM resubmitting PFR reported as RFR EON-361676. No dates or animal signalment provided.</p> <p>Was on grain free diet, Acana grain free, for over a year prior to cardiac evaluation showing dilated cardiomyopathy. Whole blood level for taurine was below critical level.</p> <p>Developed dilated cardiomyopathy while on the diet, and died within 4 weeks of developing congestive heart failure despite medications and taurine.</p>
Whole Earth Farms grain free dog food	Dog	Spaniel - French	8	Years	Female	45	Pound	<p>I am reporting this after reading an article about grain free dog food and dilated cardiomyopathy in otherwise healthy dogs. Our dog, (b)(6), was almost 9 years old and in perfect health. We had to put her down on (b)(6) due to congestive heart failure from what the doggie ICU and our vet told us was dilated cardiomyopathy on xray. She began eating grain free dog food from Petco (Whole Earth Farms) about 18 months before she died. The store had recommended we switch to a grain free food as we had little white moths flying around in the house and they explained that they could be from the grain in her dog food. She had no health problems before she started with a cough and ended up in ICU for days but after spending many \$\$\$ on her care over the course of a couple weeks her lungs continued to fill up and we had to put her down or watch her continue to struggle to breath. It was heart breaking and I just wanted to report her food after I read 2 articles on grain free dog food and dogs dying just incase it can be of any help.</p>
Kirkland Signature Nature's Domain Organic Chicken & Pea Formula Dog Food 30 lb Item 833170 at Costco	Dog	Terrier - Bull - Staffordshire	6	Years	Male	80	Pound	<p>(b)(6) is a 6 year old American Staffordshire Terrier. In (b)(6) of 2017, he was taken to the ER. He was in Congestive Heart Failure. More recently, his cardiologist suggested there may be a link between a grain free diet and his heart problems. He has been on a grain free diet for most of his life.</p>
Zignature Kangaroo Limited Ingredient Formula Grain-Free Dog Food	Dog	Retriever - Golden	35	Months	Female	53	Pound	<p>This dog has been fed a grain-free diet since she was a puppy and has now developed dilated cardiomyopathy.</p>
Nature's domain Organic chicken and Pea purchased at costco	Dog	Retriever - Golden	6	Years	Female	82	Pound	<p>I had 2 golden retrievers and had both dogs on nature's domain from costco, the grain free food. I initially started them on the salmon and sweet potato formula years ago and then discovered they had an organic version and wanted to be the the right thing for my dogs so started to feed them that. 15 months ago poppy was diagnosed with dilated cardio myopathy. she is on a cocktail of medication and now I have discovered that this possibly was caused due to the lack of taurine in the diet. the orange food in particular contains a large amount of pea protein which has been found to be one of the culprits among other things for DCM developing. After changing her food and supplements there has been a small improvement in her cardiac activity. she has seen had another echo so three in all and she has plateaued</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Nature's Domain Puppy Chicken and Pea Formula	Dog	Retriever - Labrador	1	Years	Female	55	Pound	<p>Regarding Nature's Domain Puppy Chicken and Pea Formula dog food.</p> <p>I have been breeding OFA health certified / International Champion Labrador Retrievers for eleven years now. I have been in the veterinary field for 22 years. I am also a certified dog trainer.</p> <p>In November 2016 I started feeding Costco's Nature's Domain Puppy Chicken and Pea Formula dog food to my whelping bitches and their puppies. I only changed to this puppy food after Costco quit carrying another brand I had used for over 20 years without issue. I recommended this Nature's Domain Puppy Chicken and Pea Formula dog food to my puppy's new owners.</p> <p>In (b)(6) a 10 ½ month old client's puppy died from congestive heart failure. In (b)(6) a puppy from the same litter, different owner, also died from congestive heart failure, this one at 14 ½ months old. I own both the sire and dam to this litter. They both have their OFA heart clearances done by a canine cardiac specialist. The dam to this litter has previously produced 28 healthy puppies for me and the sire has produced 88 healthy puppies for me, none with any sort of heart issue. The only thing that had changed for this litter was the puppy food!</p> <p>I also personally kept three young females that were on the Nature's Domain Puppy Chicken and Pea Formula dog food out of three different dams, three different litters, to hopefully add to my future breeding program. All three females that I have kept, one the full sister to the two that died from the aforementioned litter (she is now 15 months old), one that is 19 months old, and the other that is now 21 months old, are all ten pounds under the AKC breed standard size for being an adult Labrador Retriever show dog. Once again the only difference in raising these girls is that they were fed the Nature's Domain Puppy Chicken and Pea Formula dog food!</p> <p>I had suspected the Nature's Domain Puppy Chicken and Pea Formula dog food after reading several articles about dangers of peas in dog food and the fact that peas are high in lectins. Apparently, lectins (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) line the intestine as well as stomach and interfere with the absorption of nutrients. The Nature's Domain Puppy Chicken and Pea Formula dog food's main ingredients are listed in this order: Chicken, chicken meal, peas, garbanzo beans, lentils, fava beans, sweet potatoes. Five of the seven main ingredients high in lectins. I then promptly contacted all of my clients and recommended they change puppy food immediately, attaching articles to validate my concerns. I was able to go back to my original puppy food in April of this year when I discovered that I could order it from Costco online.</p> <p>In May I contacted Costco Customer Service who then contacted (b)(6), DVM, Kirkland Signature Pet Foods Customer Support Team, with no acknowledgment of my concerns.</p> <p>I have spoken to my veterinarian and he agrees with my assessment and the correlation between the Costco's Nature's Domain Puppy Chicken and Pea Formula, the heart issues and deaths of my client's puppies, as well as the three small undersized adult dogs that I now have. I have asked him to write a letter for (b)(6).</p> <p>I was very pleased to see the July 12 statement of the "FDA Investigating Potential Connection Between Diet and Cases of Canine Heart Disease." It brought credibility to my concerns.</p> <p>I have copies of veterinary records for my client's deceased puppies. I currently still have my three young adult females. I also have a client that recently lost their unrelated almost eight year dog from DCM out of a different OFA heart cleared sire, that was fed the grain free Taste of the Wild for the past six years.</p> <p>I'd certainly appreciate continued research into this matter as we are doing a great disservice to the public letting them believe they are loving their beloved pets while they are unknowingly actually killing them with grain free foods.</p>
MERRICK LID (ALL MEAT VARIETES) NATURE'S VARIETY LID (ALL MEAT VARIETIES) TASTE OF THE WILD GRAIN-FREE (ALL MEAT VARIETIES) CANIDAE LID (ALL MEAT VARIETIES)	Dog	Alaskan Malamute	7	Years	Male	95	Pound	<p>PATIENT PRESENTED WITH LETHARGY AND DECREASED APPETENCE- ADR. TOOK TO VET, AND SHE HEARD IRREGULAR HEARTBEAT. PATIENT SUBSEQUENTLY DIAGNOSED AFTER CARDIOLOGIST VISIT WITH DILATED CARDIOMYOPATHY AND SEVERAL ARRHYTHMIAS. PATIENT HAS BEEN EATING LID (AND SUBSEQUENTLY GRAIN-FREE) DIET MOST OF HIS LIFE DUE TO ATOPY ISSUES, AND DOC TRULY BELIEVED THERE WAS SOME CORRELATION BETWEEN CARDIO ISSUES AND DIET. THE BRAND OF FOOD HAS CHANGED, BUT QUALITY OF INGREDIENTS AND GUARANTEED ANALYSIS HAVE REMAINED RELATIVELY CONSISTENT. HIS CASE, HEART CONDITION, AND PRESENTATION WERE ABNORMAL TO HER. AFTER DISCUSSION, AND RESEARCH WITH (b)(6), I DECIDED TO SUBMIT HIS CASE TO YOU SO THAT YOU CAN GATHER ADDITIONAL RESEARCH IF HIS CASE WOULD HELP. I AM A CURRENT DVM STUDENT AT WESTERN U, AND WANT TO HELP RESEARCH THE POTENTIAL CORRELATION BETWEEN GRAIN-FREE DIETS, TAURINE DEFICIENCY, AND DCM.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Natural Balance L.I.D. Limited ingredients diets sweet potato and fish dry dog formula	Dog	Rottweiler	28	Months	Female	80.5	Pound	Very slow heart rate and lethargy getting worse over the course of several months. Her slow heart rate was initially noticed in April of 2018 at a vet visit for a cut on her foot. At the time in the vet's office it was in the mid 70s. It was attributed to her being fit. In July of 2018 we noticed she was very lethargic and tired. Her heart rate at home was in the upper 30s to low 40s. When she went to the vet it was only in the low 60s. An ACTH test was done to look for Addison's. In addition a sonogram of her heart was done. A DCM was suspected and she was sent to a cardiologist. At the same time we began moving her to a dog food with grains in it. The cardiologist said that the one week on the new diet had alleviated the slow heart rate and suggested we report the problem as some dog's were having cardiac events related to grain free diets.
Acana Lamb and Apple Singles Formula	Dog	Pug	5	Years	Male	8.75	Kilogram	**** I spoke with Dr. Jennifer Jones regarding this patient and submitting necropsy tissue samples 8/13/18**** Patient was transferred from rDVM to the emergency service for further care for dyspnea and suspected CHF on 7/13/18. Patient severely dyspneic on presentation and not stable enough for echo until the next day. Patient treated for CHF and improved. Echocardiogram showed findings consistent with dilated cardiomyopathy with severe LV dilation and severe systolic dysfunction. The owner had been feeding Acana lamb and apple diet for years to both of her dogs. Taurine level was submitted and patient was placed on taurine supplementation with recommended diet change. Patient was able to be discharged from the hospital a few days later and had been doing pretty well at home but did present to ER for possible syncopal episodes on 8/3/18; owner declined most diagnostic tests recommended but patient clinically appeared stable and was diagnosed with a corneal ulcer at that time. Patient presented to the emergency service this morning DOA - patient was reportedly dyspneic and died during transport to the hospital.
Kirkland Signature Nature's Domain Organic Chicken & Pea Dog Food 30 lb.	Dog	Coonhound - Bluetick	5	Years	Male	78.4	Pound	We have two bluetick coonhounds, same parents, 3 years apart in age. (b)(6) is 5 (neutered boy) and (b)(6) is 2 (spayed girl). After our vet diagnosed (b)(6) with D.C.M and told us he had a severely enlarged heart, we went to the (b)(6) to confirm diagnosis with a canine cardiologist. Confirmed D.C.M and congestive heart failure with 25% of his heart was working with a year to live on medication. He was put on diuretics (Furosemide) and Pimobendan. We did the blood test for taurine deficiency related D.C.M. with the wildcard hope that it was reversible since (b)(6) was so young, not a breed that is predisposed to D.C.M. and has been an active, happy dog. While we waited for the results, we started Taurine and L-Carnitine supplements twice daily. After 1 week, his heart reduced in size by 15%, our vet sent us the NY Times article about D.C.M. and grain-free food. We switched (b)(6) and (b)(6) from Kirkland Nature's Domain Organic Chicken and Peas dry food to Hill's Science Diet Adult 1-5 years Chicken and Barley. We received (b)(6) plasma taurine results, 23. We immediately tested and x-rayed (b)(6), her plasma taurine level as 42 and her heart was slightly enlarged. We started supplementing her with Taurine upon vet confirmation. We love our dogs and are so sad that the "good" food we bought them potentially caused all this. We have one more week before the next milestone follow-up of x-rays and blood work at 1 month post diagnosis but (b)(6) is up to 91lb from 78lbs.
Zignature Kangaroo Formula, Nature's Variety Instinct Limited Ingredient Diet - Duck, Nature's Variety Instinct Limited Ingredient Diet - Lamb	Dog	Retriever - Golden	10	Years	Female	84	Pound	Diagnosed with dilated cardiomyopathy and congestive heart failure in October 2016
4health Untamed Open Highland Lamb & Lentil	Dog	Mixed (Dog)	4	Years	Female	31	Pound	Pleural effusion diagnosed 8/14/18 Echocardiogram revealed biventricular DCM
Honest Kitchen Grain Free Beef Recipe (Love), Honest Kitchen Grain Free Turkey Recipe (Embark), Honest Kitchen Dehydrated Grain Free Veggie Nut & Seed Base Mix (Kindly), TruDog FEED ME Crunchy Munchy Beef Bonanza	Dog	Pointing Dog - Hungarian Short-haired (Vizsla)	5	Years	Male	Not provided	Kilogram	Diagnosed with mild dilated cardiomyopathy, sinus bradycardia, first degree AV block; found to have taurine deficiency based on analysis of whole blood.
Taste of the Wild venison/bison	Dog	Retriever - Labrador	9	Years	Male	90.9	Pound	Owner noticed coughing and decreased appetite starting March 2018. Radiographs and ECG submitted for cardiology review and showed moderate left sided cardiomegaly. Differentials included dilated cardiomyopathy vs chronic degenerative mitral valvular disease, however, patient did not have a heart murmur. Patient was started on pimobendin, enalapril and furosemide.
Abound Natural Dog Food Salmon & Sweet Potato Recipe	Dog	Dalmatian	7	Years	Female	28.2	Kilogram	Presented to primary care veterinarian in congestive heart failure (8/13/18). Diagnosed today (8/16/18) with dilated cardiomyopathy; fed a diet with no corn, no wheat, no soy (Abound)
Nature's Domain Organic Chicken and Pea Formula	Dog	Retriever (unspecified)	5	Years	Female	60	Pound	Dog had cough. Vet originally diagnosed kennel cough. Dog didn't get worse, but also didn't improve. After 1-2 weeks went by the dog started panting heavily. Took her to emergency vet who diagnosed with dilated cardio myopathy. Cardiac specialist narrowed cause to possible genetic, but taurine level taken showed very low level. Immediately placed dog on taurine supplement, cleared fluid around heart, and put dog on various heart medications. Dog showed very good improvement, but about a month later passed away at home while resting. Food samples were sent off and a necropsy was performed at UC Davis. Since she was a service dog all tests were ordered by (b)(6) and therefore all the results are unknown to me, but should be available from (b)(6).
Wellness CORE Natural Grain Free Reduced Fat Dry Dog Food	Dog	Spitz - German Pomeranian	10	Years	Male	14	Pound	He's been diagnosed with canine dilated cardiomyopathy which lead to congestive heart failure.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste of the Wild High Prairie	Dog	Retriever - Golden	5	Years	Male	71	Pound	(b)(6) ate grain free dog foods containing legumes/peas, etc. He developed DCM. Diagnosed May 17th by echocardiogram.
Wellness Grain-Free Complete Health Large Breed Adult Deboned Chicken & Chicken Meal Recipe Dry Dog Food 24-lb bag, 4health Grain-Free Large Breed Formula Adult Dog Food	Dog	Mastiff	2	Years	Male	167	Pound	My pet (b)(6) was diagnosis (06/2018) with dilated cardiomyopathy.
Taste of the Wild dog food	Dog	Mixed (Dog)	10	Years	Female	100	Pound	(b)(6) (Labradoodle) died on (b)(6) of congestive heart failure & DCM but I feel I need to report her passing as a possible health failure due to her diet of Taste of the Wild dog food. (b)(6) began having episodes of heavy panting, restlessness and unable to sleep at night, fluttering heart beats with no specific rhythm and periods of passing out. She was on a regiment of 3 heart meds, Lasix and Taurine for 6 months before she died. Up until 6 months before her death she seemed to be a very healthy dog. I will also notify our vet as to my thoughts and get his opinion on if it could have been the cause of her death.
ACANA Grain Free Chicken Turkey and Nest Laid Eggs Dry Dog Food	Dog	Doberman Pinscher	5	Years	Male	Not provided	Not provided	Originally reported as RFR EON-362682. CVM resubmitting as PFR: ACANA Dog Foods manufactured by Champion Petfoods USA: Chicken, Turkey and Nest Laid Eggs. NCSU Veterinary School has been following cases of Dilated Cardiomyopathy in dogs on grain free diets. "(b)(6)", 4-5 year old male castrated Doberman Pinscher, was diagnosed and treated for DCM and CHF at NCSU in (b)(6) 2018. It was originally assumed to be breed related, however it was noted that he had been eating ACANA grain free pet food. The owner changed the food to Orijen Regional Red Grain Free diet for 1 month, then changed again to Purina Pro Plan Bright Minds in May 2018. He was seen again August 14, 2018 and a significant improvement has been reported in both his clinical signs and diagnostic imaging. Originally presented to (b)(6) for coughing for a 5 day duration. He was treated for DCM and CHF. He was presented 4/20/18 to the (b)(6) for further workup. (b)(6) was adopted from a rescue group 2 years ago and has been on the ACANA grain free diet since then. Another Doberman in the house, "(b)(6)" also has developed DCM and has improved with the removal of the grain free diet.
Acana Free Run Poultry dry	Dog	Doberman Pinscher	9.72	Years	Male	45	Kilogram	Taken to RDVM for lameness. Dilated cardiomyopathy and CHF diagnosed 8/6/18. Started on meds (furosemide, enalapril, pimobendan). We saw at (b)(6) 8/16/18. Clinically improved but still has significant DCM and CHF plus arrhythmia. We added gabapentin (instead of rimadyl), fish oil, and taurine. WB taurine pending. Another dog in household (also a Doberman) was eating the same food but was echoed today and has no signs of DCM.
Zignature Kangaroo Formula	Dog	Shepherd Dog - German	Not provided	Not provided	Not provided	Not provided	Not provided	Exercise intolerance; diagnosed with DCM by echocardiogram; given 6-8 months survival time due to severity of disease; with medication and diet change, (b)(6) has shown significant improvement in his overall condition 10 months post-diagnosis; a second echocardiogram will be scheduled within the next 2 months
ACANA singles: Pork and Squash Lamb and Apple	Dog	Retriever - Golden	9	Years	Female	31.4	Kilogram	(b)(6) presented to (b)(6) ER for abdominal effusion and increased panting (referred by rDVM). She was diagnosed and treated for DCM and biventricular heart failure. Blood was submitted for taurine analysis and her results came back as 5 nmol/ml (normal is 200-350). She was placed on pimobendan, furosemide, enalapril and taurine. On her 10 day recheck she showed no signs of edema and her heart has decreased in size. She continues to have some arrhythmias.
Zignature Kangaroo Grain Free Formula, Earthborne Naturals Lamb Grain Free	Dog	Mastiff	6	Years	Male	96.4	Kilogram	Presented to (b)(6) ER (b)(6) 2018 for lethargy, coughing and a terminal wretch for 4 days. He was diagnosed and treated for atrial fibrillation, DCM and congestive heart failure. Taurine = 224 nmol/ml. Slowly transitioned from grain free to regular diet. Returned for recheck on 17 Aug 2018 and has shown significant improvement. Still not sure at this point if the DCM is breed or diet related, or both. Owner has another Mastiff which also was on Zignature Kangaroo Grain Free.
Natural Balance Salmon and Chick Pea Natural Balance Chicken and chick pea Both are grain free.	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	(b)(6), a 6yr 8 month old domestic medium hair, M/N cat presented to (b)(6) for his wellness exam on 6/16/18 and was noted to have an arrhythmia. A proBNP was run and was high at 1055 pmol/L (normal level 0-100). He presented for an echocardiogram on 7/20/18 was diagnosed with dilated cardiomyopathy and ventricular arrhythmias on July 20, 2018 by (b)(6) DVM, DACVIM (Cardiology), (b)(6). (b)(6) has been eating Natural balance: Salmon and Chickpea and Chicken and Chickpea: Grain-free for 6 years. Taurine level 52 nmol/L frozen plasma (normal levels are 60-120), run through (b)(6) Labs.
Zignature Kangaroo Formula (Limited Ingredient Formula)	Dog	Spaniel - Cocker American	2	Years	Male	15	Kilogram	The patient was diagnosed with congestive heart failure and dilated cardiomyopathy on 7/20/18. (b)(6) has been eating a kangaroo grain free diet. Taurine levels performed the time of diagnosis of the CHF showed low taurine levels.
Fromm Beef grain free	Dog	Spitz - American Eskimo Dog	12	Years	Female	22	Pound	Started symptoms of an enlarged heart and was seen by a cardiologist
Petcorean Limited Ingredient Salmon Dry, Petcorean Now Fresh	Dog	Boxer (German Boxer)	2	Years	Male	31.5	Kilogram	Previously healthy dog. Eating Petcorean Go Limited ingredient dry primarily. Also, some Petcorean Now Fresh, Stella and Chewy Raw patties, lean treats, Wellness Core treats. Had been on Petcorean Now Fresh lg breed puppy initially. See nutrition consultation for full diet history. Dilated cardiomyopathy diagnosed with low taurine level. DCM reversed after diet change and taurine and carnitine supplementation. Note: maxed out on attachments - will send more by email. Also, I am submitting this report in collaboration with Dr. (b)(6). I will submit a small sample of dog's food when I ship other food samples on 8/27/18

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
NUTRO WHOLESOME ESSENTIALS Senior Farm-Raised Chicken Brown Rice & Sweet Potato Recipe Dog Food	Dog	Retriever - Flat-coated	8.5	Years	Male	65	Pound	1. New 3/6 heart murmur on physical exam, Aug 2018 2. Referred to cardiologist who found DCM by echo and taurine deficiency 3. Other than murmur, dog is asymptomatic
Blue Buffalo Wilderness High Protein grain Free dry dog food salmon flavor	Dog	Samoyed	8	Years	Male	Not provided	Not provided	Submitted as RFR EON-363503. FDA resubmitting as PFR. canine dilated cardiomyopathy with low blood taurine level Patient was a neutered male Samoyed dog 8 years old. Presented with acute collapse and was found to have a cardiac arrhythmia and heart failure caused by dilated cardiomyopathy. Owner reports he has been exclusively fed a premium grain free diet for several years. The diet is Blue Buffalo Wilderness Grain Free with Salmon dry dog food, along with other flavors of the same brand, but all grain-free. He was hospitalized and treated in consultation with a veterinary cardiologist but died two days later. Whole blood taurine levels drawn on admission were subsequently found to be low (168 nmols/l).
California Natural Limited Ingredient Diet Kangaroo and red lentil	Dog	Retriever - Labrador	11	Years	Male	35.4	Kilogram	Diagnosed with congestive heart failure secondary to dilated cardiomyopathy and has been fed California Natural kangaroo and lentil diet. Normal taurine levels in whole blood and plasma
Acana Singles Duck & Bartlett Pear	Dog	Retriever - Labrador	6	Years	Male	74	Pound	(b)(6) has eaten Acana Singles Duck and Bartlett Pear (with an occasional one-bag change to Acana Singles Lamb & Apple or Acana Singles Pork and Squash or Acana Singles Mackerel & Greens) since he was approximately 2 years old. Shortly after turning 5 years old, I noticed he was lagging behind on walks. x-rays showed a severely enlarged heart (twice normal size) and echo showed DCM. (b)(6) has been taking Vetmedin twice a day since diagnosis on March 21, 2017. I then saw the July 2018 reports of Acana being tied to taurine deficiency. I had (b)(6) tested and his taurine levels are critically low (91 whole blood test).
Acana Duck and Pear	Dog	Portuguese Water Dog	15	Months	Female	44	Pound	I own a four year old Portuguese Water Dog who whelped a litter of pups last year. One of those puppies, (b)(6), recently died suddenly from DCM at 15 mo. I alerted the other puppy owners and several have had heart ultrasounds on their dogs. Another puppy has mild DCM and another has a little valve leakage but no DCM. Both my bitch and the sire of this litter, and their sires and dams were tested for JDCM at (b)(6), and all were normal 1-1. (b)(6) was eating Acana Duck and Pear when she died, and the other puppy with mild DCM, (b)(6), was eating Acana dry, but I don't know which kind. Because I notified the other puppy owners (9 others), two owners had echocardiograms, and that was when (b)(6) was diagnosed with mild DCM. The other puppy was not feeding Acana or grain free, and did not have DCM but had a slight valve leak that the vet thought he might grow out of.
4Health Grain-Free Beef and potato	Dog	Basset - Artesian Norman	11	Years	Male	45	Pound	We had been feeding our dogs grain free for the past 7-8 years. In 2017, our Basset Hound (b)(6), developed signs of heart failure. In October of 2017, He was then diagnosed with Advanced DCM.
Zignature Kangaroo and Lentil	Dog	Bulldog - American	4.5	Years	Female	31.6	Kilogram	On Zignature Kangaroo/lentil diet x 3.5 years. Developed severe dilated cardiomyopathy with congestive heart failure
Acana Large Breed Puppy Grain Free	Dog	Retriever - Golden	15	Weeks	Male	37	Kilogram	The dog started experiencing symptoms of exertional dyspnea and panting from around 6mo of age. The dog has been fed an exclusively grain free diet from Acana. The dog was seen by the vet, referred to the cardiologist, and has been diagnose with Dilated Cardiomyopathy (DCM) on ultrasound.
Fromm Pork and Pea	Dog	Shepherd Dog - Australian	6	Years	Female	23.6	Kilogram	Developed congestive heart failure, and she was subsequently diagnosed with dilated cardiomyopathy; she was started on cardiac medications (Pimobendan, benazepril, furosemide, and spironolactone), including Taurine and L-Carnitine supplementation.
Castor and Pollux Grain Free Lamb and Rice	Dog	Retriever - Labrador	11	Years	Female	94	Pound	(b)(6) was eating grain-free lamb and rice food for the last two years. She began collapsing when running hard at the end of May. I took her to the vet and he suspected DCM. Vet said she was not yet in congestive heart failure. I took her to a specialist for an echo cardiogram and chest x-ray and the diagnosis was confirmed. Consulted with a cardiologist and he put her on three heart medications and suggested a taurine level test. That test confirmed very low plasma taurine levels. We added a taurine supplement to her meds. Two weeks later and EKG showed marked improvement. She seems to have recovered her energy. She will have a follow-up echo cardiogram in November to see if the DCM has improved.
Earthborne coastal catch grain free dry dog food	Dog	Coonhound - (b)(6)	2	Years	Female	50	Pound	(b)(6) started coughing and would not sleep. Started throwing up. Took her to vet and they noticed she had an enlarged heart. They put her on a number of medications. Two weeks later she was coughing so bad over night we took her to the emergency vet. That next day we had to put her down. Boston terrier was originally on non-grain free diet for 10 years. We switched her to grain free the last two years. She did not have any issues prior to feeding her grain free food. She began losing weight and her heart was enlarged as well. She began throwing up and coughing. Her and the redbone both had DCM and passed away from that. I have asked my vet if the grain free food could have led to this as there was no history in either of the dogs bloodlines that had history of DCM. The vet said no. This is very scary as consumers are still feeding their animals grain free food and it is not being researched.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Nutro Wholesome Essentials Complete Daily Nutrition Small Bites Adult 1+ Years Pasture-Fed Lamb & Rice Recipe, Nutro Limited Ingredient Diet Grain Free Lamb & Potato Recipe Premium Loaf Adult, Nutro Hearty Stews Meaty Lamb & Rice Stew Chunks in Gravy Adult, Nutro Kitchen Classic Premium Loaf Grass Fed Lamb & Brown Rice Dinner Adult, Nutro Hearty Stews Grandma's Farm Stew with Lamb & Rice Chunks in Gravy Senior	Dog	Terrier - Bull - American Pit	3	Years	Female	53	Pound	I have had my three dogs on the Nutro brand dog food both kibble and canned for 7-12 months. When I took my dogs in for their annual exam it was recommend for two of them to go to a cardiologist because one had an arrhythmia and the second a hear murmur. The dog with an arrhythmia was diagnosed by the cardiologist with dilated cardiomyopathy (DCM), ventricular premature complexes occurring regularly, and a taurine deficiency. The second dog was diagnosed with a heart murmur, a taurine deficiency, and is trending towards DCM. It is thought by the cardiologist that the DCM and taurine deficiency in the first dog and the trending towards DCM and taurine deficiency in the second dog is caused by their diet. And was recommend that my third dog's taurine level be test which is still pending.
Acna Duck and Pear	Dog	Mastiff	3	Years	Female	125	Pound	She went into cardiac arrest and was later diagnosed with severe DCM. The vet tested her for taurine levels due to an enlarged left ventricle and it came back critically low at a level of 30. She had been on Acana Duck and pear for just under a year. But has been on "grain free" diets since she was given to us at 6 weeks.
Acana Pork and Squash Singles Formula	Dog	Retriever - Golden	7.5	Years	Male	85	Pound	heavy panting, clipped/labored breathing, stopped eating, lethargic. And about a year prior, aggressive with other dogs (which is gone now that he's being treated)
NRG Original Free Range Chicken Dehydrated Raw Food	Dog	Mixed (Dog)	8	Years	Female	39.4	Pound	She began coughing about 12 days ago, responded to antibiotics, no heart murmur heard but this past weekend started coughing again and didn't eat and had one syncope episode. She was hospitalized with us for the day on fluids, antibiotics, did some bloodwork and scheduled some more testing for the next day. She had more syncope that evening and went to the ER at (b)(6) of (b)(6) and proceeded to go into full Congestive heart failure and decompensated quickly and owner elected euthanasia. They did a quick ultrasound but were not cardiologists but they said the heart looked dilated and was not contracting at all, showed little to no function at all. The dog never had a murmur and had no heart problems before. She had a dental cleaning just 4 months ago with no problems. This happened quickly and the dog's heart completely decompensated.
Authority Grain Free	Dog	Hound (unspecified)	6	Years	Male	27.6	Kilogram	Dog was eating a grain free diet. The dog rushed to the emergency room after 2 vomiting episodes and lethargy. Dog was in ventricular tachycardia and had to be kept 2 nights and cardiologist performed Echo plus treated for pleural effusion.
Rachel Ray Nutrish real beef and brown rice (barcode 7119000095)	Dog	Mixed (Dog)	6	Years	Female	25.6	Kilogram	Diagnosed with DCM and CHF
Zignature Kangaroo limited ingredient grain free dry	Dog	Mixed (Dog)	5	Years	Male	26.2	Kilogram	Developed DCM and CHF on Zignature Kangaroo limited ingredient grain free dry. Changed to Hill's ideal balance chicken and rice dry at time of diagnosis and has improved significantly on last echo (6/13/18) - fractional shortening and heart size now normal and starting to wean off meds
Honest Kitchen Whole Grain Turkey Beef or CHicken, Ziwi Peak (recently started)	Dog	Retriever - Golden	11.6	Years	Male	31.5	Kilogram	Not true DCM but reduced contractility. 224 taurine (whole blood)
Acana Lamb and Apple Singles Formula with Grass - Fed Kentucky Lamb & Red Delicious Apples	Dog	Retriever - Golden	7	Years	Male	88	Pound	(b)(6) began coughing so went to vet. Was diagnosed with bronchitis but owner was asked if we wanted to do an x-ray to be safe to which we opted to do. Radiologist noticed enlarged heart. Was sent to (b)(6) for Echo and testing. Results confirmed Taurine Deficient DCM with a whole blood Taurine level of 28. (b)(6) has eaten Acana Lamb and Apple for the last 6 years.
Pure Balance Wild and Free Superfood Blend Trout and Lentil Recipe	Dog	Catahoula Leopard Dog	2	Years	Male	27.4	Kilogram	Patient has developed severe dilated cardiomyopathy with evidence of both left and right sided congestive heart failure.
DIAMOND NATURALS GRAIN-FREE WILD-CAUGHT WHITEFISH & SWEET POTATO FORMULA FOR DOGS	Dog	Pit Bull	11	Years	Female	64.5	Pound	(b)(6) was coughing frequently. I took her into her primary vet, (b)(6), on 07/30/2018. He mis-diagnosed her with Kennel Cough. On 08/21/2018, I had to take her into another veterinary establishment. We were out of town visiting family, and I had (b)(6) with me. Her symptoms included: shallow breathing, coughing, loss of appetite, one eye dialated more than the other, and lethargy. The coughing did not go away, and her overall health declined rapidly. I had x-rays and blood work performed at (b)(6), and the results of the x-rays determined she had an enlarged heart, and water build-up in her lungs. During the same day, she was referred to (b)(6) to have an echocardiogram performed. They also performed a Taurine test during this time. The Taurine test shown her to be taurine deficient. They had prescribed her various medications and was diagnosed with Congestive Heart Failure DCM. She is continuing her follow-up visits & tests with her primary vet for DCM, and also has an appointment with (b)(6) 09/20/2018 to visit an optometrist for her eye dialation issue. Her echocardiogram report states the grain free diet is quite suspect, and recommended changing her diet immediately.
Earthborn Holistic Meadow Feast	Dog	Retriever - Labrador	5	Years	Female	37	Kilogram	Presented for exercise intolerance and was diagnosed with moderate pulmonic stenosis, a possible PDA, and possible tricuspid valve dysplasia; she was started on atenolol and referred to (b)(6) for a balloon valvuloplasty. However, prior to the procedure a repeat echocardiogram showed idiopathic dilated cardiomyopathy, and she was started on Taurine supplementation; she did not improve and required being started on Pimobendan.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Natural Balance Lamb and Brown Rice, Merrick Lamb Peas and Ancient Grains, Zignature Fish	Dog	Retriever - Golden	10	Years	Male	35.1	Kilogram	Presented for increased respiratory rate and effort at rest and exercise intolerance; was diagnosed with DCM and ventricular premature complexes of left bundle branch block morphology; was started on Pimobendan, enalapril, furosemide, and Taurine supplementation.
Kirkland signature Natures Domain Sasimon meal and sweet potatoe	Dog	Pit Bull	9	Years	Male	71	Pound	Submitted as RFR EON-364866. FDA resubmitting as PFR. Pit Bull diagnosed with DCM via echocardiogram and has been eating a grain free diet his entire life.
Blue Buffalo wilderness - natures evolutionary diet - with chicken and lifestore bits - 100% grain free	Dog	Shepherd Dog - Australian	9	Years	Female	41	Pound	My dog has been on a grain free diet for 2-3 years and has previously never had any issues. She was first diagnosed with a heart murmur 2 years ago and now after further looking into it in the past several months we have confirmed it is Dilated Cardiomyopathy. Her breed is not prone to this disease, and otherwise she is in perfect health. I have had numerous treatments and diagnostic tests to treat her DCM.
Fromm Heartland Grain Free Large Breed	Dog	Great Dane	8	Years	Male	74.9	Kilogram	Presented for historic Grade II/VI heart murmur and two litter mates with early DCM/Atrial fibrillation and an ASD; he was diagnosed with mitral insufficiency and suspect valvular dysplasia which progressed to emerging cardiomyopathy in September 2018 when he was started on Taurine supplementation. He was also diagnosed with lymphoma in June 2018.
Acana Appalachian Ranch Regionals Formula	Dog	Retriever - Golden	2.5	Years	Male	69	Pound	In trying to find out why the breathing pattern of my Golden Retriever had become more rapid, my research led me to the Taurine Deficiency in Golden Retriever study by Dr. Joshua Stern from UC-Davis. Upon his recommendation, I had my vet draw whole blood sample to test the taurine. His level came back very low at 180. I then scheduled an echocardiogram with (b)(6). They detected an innocent heart murmur and noted that my dog's heart is either at the early stages of DCM or a very athletic heart. I have changed foods and have begun supplementing with taurine. Will recheck levels in 3-4 months to confirm food suspicion.
Zignature Kangaroo	Dog	Terrier - Black Russian	5.5	Years	Male	102	Pound	(b)(6) was recently diagnosed with Dilated Cardiomyopathy. This is not a known problem in this breed and the food he is on is one that has been mentioned frequently in relation to taurine deficiency issues and dogs with DCM.
Nature's Variety Instinct Raw Boost Chicken dry, Rachel Ray Nutrish Chicken and Veggie dry	Dog	Great Dane	6	Years	Male	71	Kilogram	DCM and CHF. Owner was feeding Natures Variety until ~1/8/18 then switched to Rachel Ray. Presented to ER for coughing (b)(6) - DCM and CHF diagnosed (with atrial fibrillation). Taurine not measured and diet not changed. Re-evaluated 9/10/18 and no improvement. Whole blood taurine pending and owner is switching diet. Owner does not have the Nature's Variety but will hold onto the Rachel Ray. She is happy to answer any additional questions
Weruva Caloric Melody Chicken Turkey & Salmon Dinner with Lentils Grain-Free Dry Dog Food, Earthborn Holistic Coastal Grain Free Natural Dog Food	Dog	Retriever - Golden	4.5	Years	Female	65	Pound	(b)(6) had developed Cardiomyopathy due to her Grain-Free Dog Food Diet. She had fluid build up which made it very difficult for to breathe, eventually eat or drink water. Original symptoms were coughing which at first was thought by our Veterinarian she had an irritant in her throat area and was treated. Within a few days of not getting better and medicine administered made her sick, tried another medicine for a few days which did not improve her breathing and then was quickly brought to (b)(6) for further treatment and eventually could not save her. She had been fed Grain-Free Dog Food since 2014.
4health Untamed Open Highland Recipe Lamb and Lentil Formula Dog Food	Dog	Retriever - Golden	3	Years	Male	81.5	Pound	Acute onset cough and respiratory distress. Physical exam and diagnostic work-up revealed dilated cardiomyopathy, with congestive heart failure. Blood work, including taurine levels are pending.
Taste of the Wild Pacific Stream	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	I switched from feeding Eukanuba large breed puppy food to Taste of the Wild Pacific Stream (TOTWPS) exclusively for past several years to all of my 10 Labradors. Two of my labs, (b)(6), both 1 year of age have only been fed TOTWPS. Last month, (b)(6) died suddenly. She got up with the rest of the pack at 3:30 in the morning to poop, trotted back to bed. By 7Am she was dead. She had been completely normal prior to this. Necropsy report showed cupping of mitral and tricuspid valve but no cardiac myopathy. Cause of death was suspected cardiac arrhythmia. Subsequently, I had cardiac echo's done on (b)(6) mom (b)(6) which was normal, and (b)(6) which showed mild DCM. I have a pending taurine level on (b)(6) drawn last week. Currently (b)(6) is symptom free. I am concerned that possibly what I feed my dogs is unsafe.
Horizon Pulsar Pulses & Chicken Formula Grain Free	Dog	Mastiff	7	Years	Male	200	Pound	Was diagnosed with Dilated Cardiomyopathy and subsequently died

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Zignature Kangaroo Formula "limited ingredient formula"	Dog	Retriever - Golden	13	Years	Male	86	Pound	<p>In short: otherwise pretty healthy-for-age, 13-year-old goldendoodle develops moderate-severe DCM with outrageously low taurine levels 5 months after switching to Zignature Kangaroo. UCD results--Plasma: 7 Whole blood: 52.</p> <p>Long version: In March 2018, (b)(6) began eating Zignature Kangaroo to have a novel protein that would manage his IBD. At last checkup in March his heart sounded good, his regular blood work was good, declared basically healthy for age. The ultrasound that dx IBD didn't include a formal echo, but they gave his heart a listen as long as they had the wand out, and didn't see/hear anything out of the ordinary. In August 2018, (b)(6) developed an occasional hacking cough, so on August 29, I took him to the vet, who heard a heart murmur. Same day X-ray found slightly enlarged heart, so we scheduled a cardiac study (echo/EKG) for Sept 6.</p> <p>After Aug 29 appointment, a friend pointed me to info about grain free diets, and I saw a list of foods and associated taurine levels. Zig Kangaroo had almost entirely low taurine levels, so I called my vet on Aug 30 and requested blood draw to send to UC Davis. After reviewing info from Dr. Stern's lab, my vet agreed that it would be worth following up, so on Sept 4 we drew blood and sent to UCD. On Sept 6, the echo/EKG study diagnosed moderate-severe DCM with "impending congestive heart failure." The doctor suspected taurine-deficient DCM because of kangaroo diet and prescribed several supportive meds. Following recommendations from UC Davis, we also began taurine and I-carn supplements, and I began transitioning to Nutro Ultra food.</p> <p>On Sept 10, we received the UCD taurine blood results, which were extremely low. Whole blood taurine: 52 (normal = 200 - 350); plasma 7 (normal = 60-120). I am filing this report Sept 14.</p> <p>The dates in this report are a little artificial due to the built-in restrictions on this form. For example, we started the food in March 2018, and his symptoms began early August 2018, but the most recent bag purchased was in mid-August 2018, so symptoms began before the most recent bag was purchased, but the problem is tied to many bags purchased since early March. I've done my best to complete this with dates the form will accept, but I hope this description will help account for discrepancies, and I'm happy to communicate with someone from FDA to clarify anything.</p>
Taste of the Wild Prey Beef dry (will provide full diet history), 4Health beef stew canned	Dog	Great Dane	2.4	Years	Male	69.5	Kilogram	<p>DCM and CHF - had been having respiratory signs for ~1 month prior to diagnosis at (b)(6)</p> <p>Littermate is (b)(6) (already reported by owner after being diagnosed with DCM and CHF in July 2018)</p> <p>Owner has another Great Dane at home (~1 year of age) eating the same diet that will be screened soon</p> <p>Owner approved submission of this report and talking to FDA</p> <p>Will send rest of medical records by email (sorry - too many to upload)</p>
Wild calling exotic essentials rabbit meal recipe	Dog	Samoyed	8	Years	Female	50	Pound	<p>After being on Wild Calling food for 11 months (b)(6) was experiencing difficulty breathing. Our primary vet could hear a murmur, see her heart was enlarged and had fluid around it. she immediately got us an appt with a cardiologist. It was discovered that (b)(6) had DCM and was in CHF. The cardiologist vet tested her Taurine Levels and they came back extremely low (52) and we looked at the ingredients on the bag to find that Taurine was not in the list of ingredients, (b)(6) started Taurine supplement and was switched to a different food. At her 3 month check up (b)(6) had improved significantly and is no longer in CHF but looks to have possible irreversible damage to the left side of her heart. (b)(6) was then switched to a low sodium grain free food and is supplemented with taurine and at her next 6 month follow up (in Sept 2018), her heart size has slightly increased and this is when the cardiologist asked us if we had heard about the reports about a possible link to grain free foods and DCM. And recommended maybe to stop feeding a grain free food.</p>
Eagle Pack Adult dry Holistic Select Canned	Dog	Spaniel - Springer English	8	Years	Female	32	Pound	<p>Heart disease DCM</p>
Wegmans Nature - Grain Free - Turkey & Pea - Natural Dog Food	Dog	Shepherd Dog - Australian	13	Years	Male	29.5	Kilogram	<p>(b)(6) developed a cough and an increase in respiratory rate. He was evaluated at (b)(6) 2 weeks ago and was treated with doxycycline but no improvement was noted. He was reevaluated at (b)(6) and radiographs were performed which identified cardiomegaly and congestive heart failure. He was referred to the (b)(6) for evaluation and supportive care. CVCA consult identified advanced dilated cardiomyopathy (possibly nutritional due to chronically being on a grain free diet) and nasal oxygen was placed and he was started on furosemide and pimobendan in hospital. Samples were drawn for CVCA/FDA Trial on 9/14/18. Drawn 3 hours after feeding.</p>
Acana Heritage	Dog	Rottweiler	6	Years	Male	103	Pound	<p>Dog was diagnosed with dilated cardiomyopathy on 8-26-2018. Started on medications and abdomen drained. dog improved for a short time but has now declined to the point that euthanasia is necessary.</p>
Taste of the Wild Prey Angus Beef Formula for dogs	Dog	Pit Bull	6	Years	Female	48	Pound	<p>On September 14, 2018, (b)(6) was diagnosed with dilated cardiomyopathy with symptoms of abdominal distention due to ascites, high blood pressure and labored breathing. Given the recent research regarding the association between grain free diets and heart disease, we believe there is a great chance that the food she was eating is linked to her diagnosis. She was immediately started on an aggressive medication regimen of diuretics and blood pressure medications. Prior to this diagnosis, (b)(6) has been a healthy, active dog. Now, her long term prognosis is very poor.</p>
Nutri Source Chicken and Pea Formula	Dog	Retriever - Golden	Not provided	Not provided	Not provided	Not provided	Not provided	Diet Associated Dilated Cardiomyopathy
Acana Singles Limited Ingredient Diet Duck and Pear Formula	Dog	Retriever - Golden	Not provided	Not provided	Female	Not provided	Not provided	Diet Associated Dilated Cardiomyopathy

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Nurtisource Purevita Grain Free Turkey and Sweet Potato	Dog	Retriever - Golden	Not provided	Not provided	Female	Not provided	Not provided	Diet Associated Dilated Cardiomyopathy
Blue Buffalo Basics Limited Ingredient Diet	Dog	Sheepdog - Shetland	Not provided	Not provided	Male	Not provided	Not provided	Diet Associated Dilated Cardiomyopathy
Merrick Beef with Green Pea and Ancient Grains	Dog	Unknown	3	Years	Unknown	Not provided	Not provided	Reported as RFR EON-365667. FDA Resubmitting as PFR. I am a veterinary cardiologist and diagnosed DCM in a dog named (b)(6), who is 3 years old, that has been fed a high legume diet for years. Although the diet is not completely grain free it is high in legumes and potatoes. The breed and age of the dog is not typical for genetic DCM and there is concern it is related to the diet. The dog in question has been fed this diet for years and has developed DCM at a young age. We have collected various samples per FDA study VetLIRNCase800.267 and am ready to submit them
http://www.californianaturalpet.com/products/1121 California Natural Venison & Green Lentils Recipe in 13 lb. bags	Dog	Terrier - Boston	3	Years	Female	15	Pound	(b)(6) got dilated cardiomyopathy. She was diagnosed by cough and exercise intolerance, cardiomegaly and ultrasonographically proven DCM, but was not in full congestive heart failure. She had eaten a monotonous and very limited ingredient diet with novel proteins http://www.californianaturalpet.com/products/1121 (venison, red/green lentils, peas, and flaxseed oil for two and half years before diagnosis. For 8-12 weeks before diagnosis she ate a different novel diet for dogs http://www.forza10usa.com/legend-all-life-small/ I suspect her diet contributed to her disease either through a deficiency, through altered availability of a key nutrient, or due to a toxic effect in combination with her phenotype. I suspect the longer-fed California Natural, but of course both or neither may have contributed. California Natural is no longer available. The owner no longer has samples of the Forza. The taurine level I obtained was right after diagnosis in July, and so reflects the level after eating the Forza for a month or so exclusively. It does not reflect the levels for the prior two and a half years, of course - and, of course, taurine may not be the issue.
Acana Lamb and Apple singles	Dog	Retriever - Golden	4	Days	Male	80	Pound	Our four year old Golden Retriever was diagnosed with severe DCM on (b)(6) at UC Davis. His Taurine levels were critical low(dangerously low) whole blood was 55 and plasma was 8. Blood work and echocardiogram were done at UC Davis by Dr. Joshua Stern. Our Golden had been eating Acana Lamb and Apple singles for 39 months of his life and he is only just turned four in June. My husband and I are just devastated with this news. Our dog means the world to us and now we have an uphill battle with this disease. We have switched him to RC Golden Retriever along with taurine supplements, L-Carnitine, Pimobendan and Benazepril. We go back to UC Davis the third week of November for a follow up appointment with Dr. Stern for more blood work and echocardiogram. Our Golden Retriever showed no symptoms, our vet called and asked what food (b)(6) was eating and we told her The Acana Lamb and Apple singles and she instructed us to get blood work done and have his Taurine levels checked by sending the sample to the UC Davis amino acid lab. Devastated!!!!
Blue Wilderness Senior Dog Food	Dog	Boxer (German Boxer)	9	Years	Male	22.3	Kilogram	Presented as an after hours consultation due to tachypnea and cough, previous diagnosis of prostate enlargement, cough and tachypnea over the past few weeks, eating a grain free diet, had some GI issues as a puppy, seems active and no collapse episodes, no episodes of collapse or weakness, no known family history of heart disease . T fast scan at PCDVM mild pericardial effusion
Taste of the Wild Last 1-2 bags (for 2 dogs) before diagnosis were Southwest Canyon flavor Before that fed 3-4 bags of Pine Forest Before that had been feeding Pacific Stream for several years	Dog	Doberman Pinscher	8.37	Years	Male	34.2	Kilogram	DCM and CHF Probably primary DCM in predisposed breed but given diet history, some possibility of diet-associated DCM Taurine WNL
Instinct the Raw Brand Limited Ingredient Diet Grain-Free Recipe with Real Rabbit	Cat	Domestic Mediumhair	8	Years	Male	12.84	Pound	Owner noticed that (b)(6) breathing pattern was not right. Presented with abdominal breathing. X rays showed enlarged heart and pulmonary edema. Diagnosed by cardiologist with dilated cardiomyopathy. Started on Enalapril, lasix, vetmedin. Also started on taurine supplement. Is improving at this time. Concerned about rabbit based diet leading to taurine deficiency and causing dilated cardiomyopathy.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Fromm's Four Star Grain Free Beef Frittata Veg Dry Dog Food, The Farmer's Dog Beef Recipe	Dog	Retriever - Golden	8.5	Years	Female	79	Pound	(b)(6) has been fed grain free dog food since 2013. I acquired (b)(6) at 9 weeks of age from a reputable breeder. She was fed Purina ProPlan for Puppies from birth - early 2013. In early 2013, (b)(6) was diagnosed with an impacted anal gland that ruptured and the vet recommended she be fed grain-free dog food. At that time, I began feeding Fromm's Beef Frittata Grain Free. In late 2016, (b)(6) began to experience steady diarrhea. After much vet intervention including a 2 night stay at vet hospital on IV, I changed (b)(6) from Fromm's to a short transition time on ground beef w/rice and then to a fresh dog food, The Farmer's Dog Beef with Lentils. Her diarrhea completed cleared and she remained on The Farmer's Dog Beef with Lentils until I begin reading about the issue with Low Taurine in Golden Retrievers. Based on UC Davis and Dr Stern studies, I obtained a blood sample for testing. UC Davis completed the test and her taurine level is low at 207 while the level for a Golden Retriever is 250+. I had an echocardiogram done yesterday, Sept 24, 2018. The canine cardiologist evaluation is as follows: "Mild/early dilated cardiomyopathy-suspect taurine responsive. Trace mitral valve regurgitation. Normal left atrial dimensions. High normal left ventricular dimensions with moderately decreased heart muscle function. Normal right heart size. History of eating a grain-free diet. Low taurine." "No medications are indicated at this time. Begin Taurine 1000 mg twice daily. In two weeks, begin L-carnitine 1850 mg three times daily. In four weeks, begin fish oil supplements (omega-3 fatty acids) at approximately EPA 1500 mg and DHA 925 mg total per day. Change diet from grain free, legume foods. Cardiologist recommends follow up in 6 months.
Fromm Four Star Nutritionals Pork and Applesauce Formula Grain Free dog food	Dog	Retriever - Golden	3.5	Years	Male	77	Pound	Dog has been diagnosed with a moderated dilated cardiomyopathy. Taurine level at 166. Taurine labs completed at UC Davis labs.
Instinct (the raw brand) Limited Ingredient Diet - Grain-free recipe with real lamb	Dog	Retriever - Labrador	3	Years	Male	32.1	Kilogram	2 day history of acute onset lethargy, anorexia and exhaustion - progressive, today - not eating at all; stopped on walk, layed down and would not get up - had to be carried home Arrhythmia detected on exam - referral to cardiology - diagnosed with DCM - suspected due to grain free diet
Natural Balance Limited Ingredient Diet Sweet Potato & Bison Formula	Dog	Retriever - Golden	6	Years	Male	74	Pound	I had (b)(6) taurine level tested by the (b)(6), School of Veterinary Medicine. His taurine level came back as 247 low/under the normal range. The normal range for Golden Retrievers starts at 250. He had an echocardiogram on Sept 25 at (b)(6). His diagnosis was: LV Dysfunction and dialation; suspect taurine-deficiency cardiomyopathy. Trace MR. Mild LA dilation. Hypotension.
Costco Natures	Dog	Beagle	Not provided	Not provided	Unknown	Not provided	Not provided	Submitted as RFR EON-367348. FDA CVM resubmitting as PFR. This beagle has been on a grain free diet for 3 years and has DCM. I would like to put him in the FDA study on this issue as directed by Jennifer Jones. Patient developed congestive heart failure likely secondary to the grain free diet.
Nature's Variety Chicken Formula Patties, Nutro Chicken and Brown Rice, Nature's Variety Chicken and Beef	Dog	Bulldog - American	12	Years	Male	41.9	Kilogram	Spontaneous episode of collapse - diagnosed with mitral and tricuspid insufficiencies and systolic dysfunction consistent with dilated cardiomyopathy, and rapidly coupled ventricular premature contractions; started on Pimobendan, benazepril, furosemide, mexiletine, Taurine, and fish oils. He developed a thrombocytosis and needed to be started on clopidogrel. His furosemide was able to be discontinued, but not his Pimobendan.
GO! Sensitivity and Shine Pollock Recipe	Dog	Retriever - Flat-coated	9.5	Years	Female	45	Pound	(b)(6) was recently diagnosed with a heart murmur. We completed a heart ultrasound with the following results: Left Ventricle There is severe eccentric hypertrophy. LV systolic function is low normal. Diastolic filling appears normal. LV hypokinesis (mild) given the presence/extent of MR in this patient. Left Atrium Left Atrium chamber is mildly to moderately dilated. Mitral Valve There is mild mitral valve prolapse, anterior leaflet. There is mild thickening of mitral valve anterior and posterior leaflets. There is moderate mitral regurgitation. Mildly thickened valve leaflet margins. Tricuspid Valve Tricuspid valve is structurally normal. There is mild tricuspid regurgitation. Pulmonary Valve There is normal pulmonic valve structure and function. There is trivial pulmonic regurgitation. Myxomatous mitral valve degeneration resulting in moderate mitral regurgitation and subsequent moderate to marked dilation of the LV and moderate dilation of the LA. There is mild systolic dysfunction evident given the extent of mitral regurgitation present.
Taste of the Wild High Prairie	Dog	Shepherd Dog - Australian	Not provided	Not provided	Male	Not provided	Not provided	Taste of the Wild High Prairie diet, developed dilated cardiomyopathy.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Blue Buffalo Life Protection Formula Small Breed Adult Chicken and Brown Rice Recipe, Merrick Grain Free Dry Dog Food Real Chicken & Sweet Potato	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	My dog (a beagle/dachshund mutt) has been fed an exclusive grain free diet for the past 8-9 years. Today, at the Vet she was diagnosed with a mild dilated Cardiomyopathy with moderate Mitral regurgitation. Our Veterinary Cardiologist asked us to report it because of concerns about association.
Nutrisource	Dog	Retriever - Golden	Not provided	Not provided	Female	Not provided	Not provided	On Nutrisource core food, developed Dilated Cardiomyopathy.
Blue Buffalo Wilderness- High Protein Grain Free "Natures Evolutionary Diet- with Chicken Life Source bits- Senior	Dog	Dachshund - Miniature	13	Years	Male	14.2	Pound	(b)(6) has developed canine dilated cardiomyopathy suddenly. His health has been excellent even though he's 13. Up to til now, he had lots of life and energy left in him. Literally in a matter of 48 hours he developed CDM. I have fed him the same kibble brand, Blue Buffalo, the majority of his life. I read an article on the FDA site that you're investigating possible links between CDM and CDM. Please let me know if there's any way I can help.
Acana Singles Limited Ingredient Lamb and Apple 25 pound bag	Dog	Spaniel - Cocker American	5	Years	Male	28	Pound	He was fine up until approximately 9/22/18 when he developed a cough. He was taken to the emergency vet and was diagnosed with Kennel Cough, which was a misdiagnosis. On 9/25/18, he was seen by his vet, (b)(6), where they performed Chest X-ray and bloodwork and it was determined that (b)(6) heart was enlarged and he was in Congestive Heart Failure. He was given a shot of Lasix, and placed on 3 medications and I was told he should be seen by a cardiologist. On (b)(6) his symptoms worsened and he was take. Back to the Emergency Vet Hospital and was kept over night. On (b)(6) he saw Dr. (b)(6), Vet Cardiologist, underwent a history and an echocardiogram where he was Diagnosed with Dilated Cardiomyopathy and the vet reported that he believed it was related to the grain free diet. He kept him in the hospital in (b)(6) overnight for treatment and oxygen. He encouraged me to buy Taurine and L-Carnitine and bring up the next day. The next morning, (b)(6), (b)(6) was worse and they recommended transferring to the ICU at (b)(6). On (b)(6), despite all efforts, (b)(6) was euthanized as he was not responding to treatments.
Acana Heritage formula dog food (mostly freshwater fish free run poultry and meats (beef pork and lamb) formulas. Also Meadowlands	Dog	Great Dane	3.6	Years	Female	42.2	Kilogram	Murmur identified by RDVM 7/17/18. Asymptomatic. DCM diagnosed 10/4/18. Has been eating Acana diet. Owner is happy to talk to FDA and to provide more info. Taurine levels pending. Details on diet and treats below: I can tell you, for starters, that (b)(6) was put on a Fromm diet from July of 2015 thru about March of 2016. Since that period, she has been eating only Acana Heritage formula dog food. This contains "0% grain, potato, gluten, meat by-products, and plant protein concentrates" as listed on their label. She has had a variety of flavors from this brand. Primarily, it has been "freshwater fish", "free run poultry", and "meats formula" (beef, pork, and lamb). (b)(6) has also had multiple bags of Acana "meadowland" which is advertised as poultry, fish, and eggs. I have also discovered that all of her treats have been produced by Acana. One is labeled as macarel and greens, another is poultry and monkfish, and the last is lamb, liver, and tripe. I should be able to get some records from our local pet store as they have a rewards program we are part of and all of our purchases from the last three years are on our account.
Taste of the Wild High Forest dry	Dog	Mixed (Dog)	3.18	Years	Female	34.1	Kilogram	Feeding Taste of the Wild High Prairie Grain Free (Pine Forest before that). Diagnosed with DCM and CHF this past winter. Owner willing to provide additional information. Our records do not include echo from Dr. (b)(6) ((b)(6)) from Feb, 2018. They also ran taurine at UCD which was reported to be normal. I am getting those records from (b)(6) and will submit as soon as I have them.
Rawz meal free dry food limited recipe wild salmon dry	Dog	Mixed (Dog)	10	Years	Male	33.2	Kilogram	DCM and atrial fibrillation diagnosed 10/5/18
Taste of the Wild Pacific Stream (dry)	Dog	Doberman Pinscher	9.76	Years	Female	26.8	Kilogram	DCM and CHF diagnosed 2/2/18. Owner did not change diet after diagnosis. Just rechecked echo and no improvement. Taurine levels pending and will echo other dog in household on same diet to screen.
Pro Plan Savory dry - chicken beef or lamb (1 cup TID)	Dog	Retriever - Labrador	7	Years	Male	37.7	Kilogram	Presented to ER on (b)(6) for CHF and DCM (had rads at RDVM for cough). Full echo on 8/28/18. Unlikely to be associated with diet but reporting because he is sometimes fed the lamb formula Pro Plan. Taurine WNL
California Natural Limited Ingredient Diet Salmon Meal and Peas Recipe	Dog	Weimaraner	8	Years	Male	110	Pound	Our almost 8 year old male Weimaraner, (b)(6), was diagnosed with Dilated Cardiomyopathy after being brought into the vet for gurgling noises when he slept at night (he was otherwise perfectly healthy. Our vet almost missed it.). He was already in heart failure when diagnosed and given 4-6 months to live. We made the decision to euthanize him just after his 8th birthday, 4 months later, after he collapsed and had a hard time breathing. (b)(6) had some skin allergies around the age of 2. At that time we switched his food to California Naturals Grain-Free Salmon and Peas food at the advice of our vet. His allergy ended up being unrelated to food but we kept his food the same due to claims that the food was a high quality diet. We fed (b)(6) that diet for the remainder of his life, approximately 6 years. After much research, I believe that the grain free food may possibly have caused our dogs DCM and Heart Failure,
Taste of the Wild Prey Trout limited ingredient dry food	Dog	Retriever - Labrador	3	Years	Female	53	Pound	Episodes of collapse on 8/22 and diagnosed with congestive heart failure. Echo revealed dilated cardiomyopathy
Blue Buffalo Wilderness	Dog	Mixed (Dog)	6	Years	Male	67	Pound	Presented for exercise intolerance, cough, murmur. Echo diagnosis - dilated cardiomyopathy
Dr. Gary Best Choice	Dog	Mastiff	4	Years	Male	162	Pound	Dilated cardiomyopathy, atrial fibrillation, biventricular congestive heart failure

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Victor Performance	Dog	Shepherd Dog - German	5	Months	Male	22.6	Pound	Dilated cardiomyopathy
Origin Fit and Trim	Dog	Ridgeback - Rhodesian	9	Years	Male	126	Pound	Dilated cardiomyopathy, ventricular arrhythmias
Nutrisource Grain-Free Dog Food	Dog	Pointing Dog - German Short-haired	6	Years	Female	53	Pound	Dog was eating grain-free food for approximately 4-5 years. In July a heart murmur was detected and sent for an echocardiogram and was diagnosed with Dilated Cardiomyopathy.
Acana Dog food Duck and Pear flavor, Acana dog food Pork and Squash flavor	Dog	Retriever - Golden	8.5	Years	Female	Not provided	Not provided	Golden Retriever dog 8.5 years old, female spayed diagnosed with dilated cardiomyopathy and found to be taurine deficient based on UC Davis standards for Golden Retrievers. Has been eating one commercial diet for 3 years. Taurine deficiency developed in dog eating it
Zignature Kangaroo Formula	Dog	Shepherd Dog - German	6	Years	Male	35	Kilogram	Has had chronic history of skin issues and some GI upset that seems to have been controlled on either California Naturals diet or Zignature Kagaroo and lentil diet, seems to be slowing down and less tolerance to activity, eating the current diet well, checked Taurine level and found to be low, no cough
Acana Lamb and Apple grain-free	Dog	Retriever - Golden	6	Years	Male	80	Pound	Dog was diagnosed with congestive heart failure secondary to dilated cardiomyopathy. Taurine level was well below "normal" range. I understand that there are investigations of possible dietary factors. Our dog was on Acana Lamb and Apple food (grain-free). If our case would help further the research, please feel free to contact me or our vet's office ((b)(6)) for additional details of the case. Our dog passed away two weeks after diagnosis.
Horizon Pulsars with Chicken (also fed the same brand with Turkey pork and fish)	Dog	Cattle Dog - Australian (blue heeler, red heeler, Queensland cattledog)	8	Years	Male	55	Pound	On Wednesday evening ((b)(6)) ((b)(6)) was breathing heavily with a rapid heartbeat and extended coughing. We scheduled an appointment with our veterinarian Dr. ((b)(6)) DVM, of ((b)(6)) for Saturday ((b)(6)). Dr. ((b)(6)) did x-rays and an EKG to diagnose any issues. ((b)(6)) has fluid on his lungs and an enlarged heart, dilated cardiomyopathy. Based on the prognosis of his condition we elected to go through euthanasia to end his suffering. Care options for the disease are limited on the weekend, and Dr. ((b)(6)) believe that it was possible he may not survive the weekend, and even with proper care he may not live more than 6 months.
Farmina N&D Pumpkin Formula Medium and Maxi, Kirkland Natures Domain Salmon and Sweet Potato, Kirkland Organic Chicken and Pea	Dog	Shepherd Dog - Australian	20	Months	Female	Not provided	Kilogram	Adopted ((b)(6)) at 18 months old. I noticed through the summer that she did not tolerate exercise well. When we adopted her, she was eating Farmina N&D pumpkin for onemeal and raw for the other. We transitioned her to Kirkland Nature's Domain Salmon and Sweet Potato. She was quite itchy on this, so we put her on Kirkland Organic Chicken and Pea. Her exercise intolerance became increasingly apparent. A ECG was run and came back as tall R waves. Radiographs came back with mildly enlarged heart. At this time, I began supplementing with 250mg taurine supplement BID. An echocardiogram was scheduled, the results of which was moderate to marked left ventricular dilation with mild mitral regurgitation and mild right ventricular dilation with no tricuspid regurgitation. No taurine testing was done as she had been receiving taurine supplementation.
Acana - Venison (which was discontinued so we switched to the Wild Atlantic) Acana - Wild Atlantic	Dog	Retriever (unspecified)	5	Years	Female	64	Pound	We took her to the vet for a routine exam and to check a small skin cyst on her shoulder. The vet heard a heart murmur and then had us do an echocardiogram the following week. She was diagnosed with dilated cardiomyopathy, possibly caused by nutrient deficiency.
Taste of the Wild Prey Trout Limited Ingredient Formula, Merrick Chunky Carver's Delight Dinner Grain Free Recipe	Dog	Retriever - Golden	4	Years	Male	38.6	Kilogram	((b)(6)) has been fed a grain free diet since he was a puppy. He has been a happy, healthy dog until recently, when after a trip to CO, he started showing signs of exercise intolerance and cough and a diagnostic workup revealed an enlarged heart on radiographs. He was referred for an echocardiogram. He takes Heartgard monthly, Nexguard if needed.
Acana	Dog	Retriever - Golden	2	Years	Female	30	Kilogram	Taurine deficiency was determined via bloodwork. Was diagnosed with early dilated cardiomyopathy. Has been eating grain-free diet containing legumes for 2 years. Has never been clinical and not showing any signs of heart disease. Owner had heard of the current research in the states at UC Davis, and went ahead with taurine testing and echocardiogram.
Instinct® Limited Ingredient Diet Grain-Free Recipe with Real Lamb	Dog	Pug	11	Years	Male	25	Pound	Pet has been eating a grain free diet for many years (Instinct Lamb and Pea). over the last year pet has developed a hacking, slowly progressive cough which has not responded to treatment. no murmur heard, mild heart enlargement on radiographs. Went for echocardiogram with cardiologist who identified dilated cardiomyopathy - suspected to be diet related, possibly d/t taurine deficiency. Just started pimobendan and enalapril, diet change several weeks ago, taurine levels not available
Taste of the Wild Roasted Lamb-grain free	Dog	Spaniel - Springer English	10	Years	Not provided	40	Pound	cough began, vet recommended cardiologist exam. echo showed dilated cardiomyopathy
Petcarean GO Sensitivity and Shine Limited Ingredient Salmon Recipe	Dog	Poodle - Standard	4	Years	Male	50	Pound	My four year old dog was being fed FROMM dog food, as recommended by the local specialty pet food store. After he developed some severe itching, the store recommended we switch to the GO dog food brand since it's a limited diet. Our dog was on this for about 2.5 years. Mid August 2018 he developed a bad cough. We brought him in to see the vet and they found that he had severe DCM in addition to sever mitral valve disease. He had x rays, ECGs, blood tests, and was prescribed 30 pills per day to try and get it under control. The fluid in his lungs was increasing, he stopped eating, his organs began shutting down, and 10 days later we had to put him down because he was drowning on the inside and all his organs were failing. The vet mentioned it was likely the Taurine deficiency due to the dog food he was being fed. This was very upsetting since the local specialty pet food store had told us to feed him this food. Our dog was only four years old and he suffered tremendously at the end of his short life.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Blue Buffalo Basics Turkey and Potato Recipe Senior Dog Food	Dog	Retriever - Golden	11	Years	Male	85	Pound	Dog ((b)(6)) went into Congestive Heart Failure 10/2017 and diagnosed with DCM at that time. This was prior to the FDA warning about grain-free diets. Both Golden retrievers on grain free Blue Buffalo Turkey and potatoes for most of their lives. ((b)(6)) placed on vetmedin, lasix, enalapril since 10/2017 and stable. After FDA warning Taurine level drawn in 09/2018 and whole blood came back as 206 which is considered marginal by UC Davis Dr Joshua Stern guidelines. Diet changed to grain inclusive and dog will start Taurine and L carnitine supplements with recheck of Taurine and echocardiogram in 3 months.
Kirkland Signature Nature's Domain Salmon Meal & Sweet Potato Dog Food	Dog	Boxer (German Boxer)	7	Years	Female	31	Kilogram	Echocardiographic evidence of dilated cardiomyopathy. Concurrently being fed grain free diet.
Whole Earth Farms Grain Free (mostly Chicken & Turkey) dog food	Dog	Retriever - Labrador	3	Years	Female	20	Kilogram	((b)(6)) has been eating Whole Earth Farms Grain Free (mostly Chicken & Turkey) dog food for over a year. The dog was a rescue and is currently heartworm positive. The dog presented to our ER department with ascites. Echocardiogram performed by me (veterinary cardiologist) was performed and dilated cardiomyopathy was diagnosed. Blood was submitted for Taurine levels to UC Davis (plasma 353, whole blood 482). While waiting for samples Taurine (500 mg PO BID) was started. Per the FDA investigation into DCM and grain free diets, this case is submitted.
Acana Grain Free Pork and Butternut Squash	Dog	Poodle - Standard	4	Years	Male	32.4	Kilogram	((b)(6)) is a 4y neutered male Standard Poodle that was presented for an enlarged heart, inappetence, and coughing on ((b)(6)) through our emergency service. He transferred to our Cardiology department to have additional testing performed the next day. Due to uncommon occurrence of DCM in Poodles and the grain free diet we were concerned about nutritional cardiomyopathy. We performed a taurine analysis and an echocardiogram. he was diagnosed with Dilated Cardiomyopathy by Dr. ((b)(6)) on ((b)(6)), ((b)(6)) was started on Enalapril, Lasix, Vetmedin, and Taurine. ((b)(6)) was not taurine deficient at a level of 264. A recheck echocardiogram was performed 3 months later (10/23/2018). After this visit the taurine supplement was increased and L-Carnitine was added.
4-Health Turkey and Potato, Zignature Kangaroo, 4-Health Trout and Lentil	Dog	Great Dane	2	Years	Male	66.8	Kilogram	On September 16, 2018 began coughing - was initially treated for Kennel cough due to a one-day boarding, but doxycycline was discontinued three days later when he broke with bloody diarrhea. His cough worsened on September 25, 2018, and he was diagnosed with possible pneumonia and started on Clavamox. After 1.5 days, his appetite declined, he became lethargic, he began losing weight, and his cough showed no improvement. On ((b)(6)), he was referred to an ER hospital in congestive heart failure with ascites. He was started on Pimobendan and a furosemide. He then presented to our ER on ((b)(6)) for continued congestive heart failure and ascites; an abdominocentesis was performed, his Pimobendan and furosemide were increased, and he was started on spironolactone and enalapril. A cardiac consultation was performed, and he was diagnosed with dilated cardiomyopathy with concern for Taurine deficiency based on his previous diets; Taurine supplementation was added.
Natural Balance L.I.D. Limited Ingredient Diets® Sweet Potato & Venison Dry Dog Formula, Natural Balance L.I.D. Limited Ingredient Diets® Sweet Potato & Venison Canned Dog Formula, Fruitables Pumpkin Digestive Supplement, Earth Animal No Hide Beef Chews, Stella & Chewy's Carnivore Crunch Beef treats	Dog	Ridgeback - Rhodesian	12	Years	Female	28.9	Kilogram	Congestive heart failure, severe dilated cardiomyopathy, whole blood taurine level deficient (177) - responding to supplementation.
Fromm Four-Star Nutritionals Game Bird Recipe Dog Food	Dog	Retriever - Golden	1	Years	Female	28	Kilogram	((b)(6)) was tested to have whole blood taurine of 179, and was diagnosed with occult dilated cardiomyopathy by echo.
California Natural Grain Free Limited Ingredient Diet Kangaroo and Red Lentils Recipe and Salmon Meal and Peas Recipe	Dog	Retriever - Golden	Not provided	Not provided	Mixed Population of Female and Male	Not provided	Not provided	All five dogs developed dilated cardiomyopathy which resulted in the death of all 5 dogs between ((b)(6)) 2015 and ((b)(6)) 2018. Four died naturally at home and 1 was euthanized. Since they were all littermates, genetics was suspected, but no other dogs in the litter living with other owners developed DCM. At the time of our dogs' diagnosis there was not a correlation yet to the grain free/suspect ingredient foods.
Natural Instinct specialty raw pet food Chicken	Cat	Sphynx	20	Weeks	Not provided	Not provided	Not provided	https://naturalinstincts.ca/contact-us/ is the website. She was on the Chicken based raw food. Not doing well after castration, after investigating had DCM on rads and ultrasound. Was euthanized due to poor prognosis and fractional shortening of the heart was like 5%.
Whole Hearted limited ingredient salmon recipe Simple Grain Free food for dogs	Dog	Mastiff	5	Years	Male	120	Pound	The patient started slowing down on walks and had decreased energy for the past 2-3 months. A few weeks ago the patient developed a progressive cough. His appetite became decreased over the past several days. The morning of presentation he was coughing profusely and had a syncopal episode where he collapsed and was stiff for about 20 seconds, then immediately bounced back up. He remains lethargic with a decreased appetite. No overt respiratory signs other than coughing have been noted. He has been on Whole Hearted brand, Salmon, grain free dog food. Also receives pumpkin grain free treats.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Blue Buffalo - Blue Wilderness Chicken Adult Food	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Healthy 1.75 year old female Golden Retriever died on (b)(6) suddenly due to Dilated Cardiomyopathy due to a grain free diet. There were no signs of heart disease or any medical problems with the Golden Retriever prior to this incident.
Merrick LID Grain Free dry (salmon duck or chicken)	Dog	Retriever - Labrador	9	Years	Male	47	Kilogram	DCM and CHF Euthanized for worsening heart failure and arrhythmia in September
Purina One Lamb and Rice	Dog	Pit Bull	7	Years	Male	36.2	Kilogram	DCM and CHF with ventricular tachycardia Taurine within normal limits Unclear if diet associated but reporting since lamb and rice diet Diet not initially changed but recommending that owner change diet and will recheck
Taste of the Wild High Prairie	Dog	Great Dane	9	Years	Male	74	Kilogram	DCM, CHF, atrial fibrillation WB taurine = 260 Dog's diet previously submitted to FDA Note: this may be a duplicate submission
taste of the wild grain free pacific stream taste of the wild prey trout limited ingredients	Dog	Dogue de Bordeaux	8	Years	Male	Not provided	Not provided	10/20/2018..Has been eating Taste of the wild grain free for about 5 years. 10/24/18 had to be rushed to cardiologist and diagnosed with dcm dilated cardiomyopathy. Have full vet report and findings. He is still not recovered and we are unsure where this is going to end up
Nov 2015-Nov 2017: Nature's Variety Instinct Limited Ingredient Lamb Nov 2017- Aug 2018: Blue Buffalo Basics Grain Free Aug 2018-Oct 2018: American Journey Lamb and Sweet Potato	Dog	Mixed (Dog)	4	Years	Female	15.9	Kilogram	02 Oct 2018 - presented for routine exam. A new grade II/VI murmur was noted. 13 Oct 2018 - presented to a different veterinarian for 2nd opinion for the heart murmur. Chest rads revealed cardiomegaly but no signs of heart failure. A limited cardiac ultrasound revealed dilatation of all 4 heart chambers with poor myocardial contractility. Suspected grain free diet DCM. Changed diet to Purina Pro Plan Lamb and Rice. Rx: L-Carnitine 1 g BID, Taurine 500 mg BID and referred to (b)(6) for further work up. 17 Oct 2018: Grade II/VI left apical systolic murmur ausculted; no arrhythmias. Echocardiogram revealed mildly dilated left and right atria, moderately dilated left ventricle, decreased LV systolic function. Elevated left filling pressures based on doppler. Blood pressure, thyroid panel, platelet count and troponin levels all normal. Blood submitted for taurine level sent to UC Davis; still pending 25 Oct 2018. Diagnosis: Dilated Cardiomyopathy.
NutriSource Seafood Select grain free dog food	Dog	Great Dane	4.5	Years	Male	138	Pound	Without any prior warning signs- our 4 1/2 yr old Great Dane (b)(6) started coughing on Friday (b)(6). On Sunday, (b)(6), just before midnight he developed difficulty breathing. We took him to our local PETS emergency facility and he was diagnosed with dilated cardiomyopathy which was confirmed by X-ray. (b)(6) was given to him by injection at the time of the visit, and we were also prescribed two additional heart medications- he was never able to take them. We consulted with our primary veterinarian on (b)(6), and he was euthanized. I was concerned about the link between grain free diets and DCM and wanted the FDA to be aware. (b)(6) was purchased from a reputable breeder, AKC registered with champion blood lines. He had both seller guarantees against heart disease and hip dysplasia at the time of purchase. I would have expected this condition later in his life, but not at the age of 4 1/2. (b)(6) has been eating NutriSource Seafood Select grain free for approximately 1.5 years.
Pine Forest Canine Recipe with Venison & Legumes - Taste of the Wild Pet Food	Dog	Shepherd Dog - Australian	4.5	Years	Female	53	Pound	My dog was diagnosed with DCM (heart failure), I have been feeding my dog Taste of the Wild - Venicin and Legumes for 3+ years. Aussies do not typically get DCM in their early years, due to her age and size we thin the grain-free diet could be the culprit as discussed with a Cardio Vet.
Hill's Ideal Balance Grain Free Chicken and Potato recipe	Dog	Shepherd Dog - Australian	7.5	Years	Female	48	Pound	I am a veterinarian and this report is for my 7.5 year old F/S Aussie, (b)(6), (b)(6) has been on Hill's Ideal Balance Grain free diet for food allergies since 6 months of age. She just recently developed a cough that led to the diagnosis of Dilated Cardiomyopathy of the left atrium and ventricle. She has had no other cardiac signs or symptoms and is otherwise acting normal. Her VHS is 13 at this point and has been placed on Furosemide, Enalapril, Pimobendan, Taurine and L-carnitine. After the FDA caution about grain free diets and DCM was released in July 2018, she was switched to Hill's Ideal Balance Chicken and Rice.
Taste of the Wild Sierra Mountain Taste of the Wild Pacific Stream	Dog	Setter - Irish Red	6.5	Years	Male	70	Pound	Dog was diagnosed with Dilated Cardiomyopathy during a routine dental visit. No health issues previously.
4health - grain free Chicken and vegetables	Dog	Sheepdog - Shetland	8	Years	Male	17.3	Kilogram	Has been limping for about 1 year, recent progression and radiographs taken and noted lytic lesion over the carpus concern for neoplasia, has been coughing for months with progressive increase in the cough and decrease in the exercise tolerance, has not been eating well over the past few weeks and changed to a canned diet, currently taking Lasix 50 mg BID, Benazepril 10 mg , also taking oral liquid supplements one with Hawthorne and one hemp oil, with meds some initial improvement in the clinical signs, chest rads reported to have severe heart enlargement concern for valve disease Diet: 4 health grain free with Aldi and Blue Buffalo Canned Presented to (b)(6) with advanced dilated cardiomyopathy and bi-ventricular congestive heart failure
4health Untamed Wild River Recipe	Dog	Weimaraner	7	Years	Male	95	Pound	We started feeding 4health Untamed Wild River Recipe early 2018. This past week our dog was lethargic, not eating, breathing heavy and coughing. I took him to the vet and he was diagnosed with dilated cardiomyopathy and congestive heart failure. He was stated on furosemide and vetmedin. We are also supplementing with Taurine. (b)(6) has been very healthy and active prior to this.
Kirkland Signature Nature's Domain Salmon meal and sweet potato - Grain free all life stages	Dog	Bulldog	7	Years	Not provided	60	Pound	I do not have the previous 7 year medical record. The Pet presented to me for a second opinion. The Pet was taking 60 mg Furosemide q 8 hours, Metronidazole 250 mg every 12 hours. The Pet had a grade 3/6 systolic murmur, referring radiographs showed abdominal and plural effusion. The Pet was referred for an echocardiogram that showed the Pet had Dilated Cardiomyopathy. Upon questioning, the Pet has eaten a grain free diet it's entire life- Kirkland signature Nature's Domain Salmon meal and sweet potato- grain free all life stages.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Fromme Grain-Free, Merrick Back Country	Dog	Bullmastiff	9	Years	Male	52.4	Kilogram	(b)(6) presented in December 2015 following multiple episodes of collapse, suspected to be syncope. He was diagnosed with dilated cardiomyopathy, and he was started on Taurine supplementation. A Holter monitor showed an occasional arrhythmia, and he was also started on benazepril. In April 2017, he was diagnosed with hypothyroidism and started on levothyroxine.
Pinnacle Holistic Canine Nutrition Farm Raised Trout & Sweet Potato	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	I read articles on line regarding a correlation of dogs on a grain free diet and Dilated Cardiomyopathy. My (b)(6) white lab was in fact on a grain free diet and did in fact die from Dilated Cardio Myopathy . She was taken from us way too soon and had lots of living to do. She had a horrible start to her life as a mistreated breeder dog that was dumped at a shelter when she was done making babies. We loved her so very much and just wanted to help her make up for lost time.
Pinnacle Trout and Sweet Potato, Nutro Grain Free Food salmon and rice	Dog	Retriever - Labrador	6	Years	Female	72	Pound	Our yellow lab developed Dilated Cardio Myopathy and we have read that there is a link between grain free diet and DCM. She was on a grain free diet due to a very high Pea and Barley allergy
Orijen Regional Red Dry Dog Food Fromm Beef Frittata A La Veg Dry Dog Food From Duck & Sweet Potato Dry Dog Food Purina Fortiflora	Dog	Retriever - Golden	3	Years	Male	80	Pound	This submission is in furtherance of your nutritionally-mediated DCM investigation. My young, energetic and very healthy Golden Retriever male had his second echocardiogram on Thursday, October 25, 2018. His first was approximately one year ago in September 2017. The 2017 echo was normal. The one from last week was not. It showed a subjective increase in sphericity of his heart, as well as mild systolic dysfunction compared with last year. ACK!!! His whole blood taurine level at U.C. Davis was 226 in September 2018. I had scheduled echocardiograms for (b)(6) and my other two Golden retrievers out of an abundance of caution after two (b)(6) and his littermate brother) tested below 250 nmol/ml for taurine in whole blood). I'm glad I did. My veterinary cardiologist is (b)(6), DVM ACVIM (Cardiology) of (b)(6). At last week's echocardiogram, he drew blood for CBC, chemistry, a repeat of the taurine test with paired samples, a full tick-borne disease panel, and thyroid tests. All test results are in except for the repeat taurine test from U.C. Davis. All (b)(6) results were unremarkable or normal, except for a slightly low globulin level. That test will be repeated this week. I never purposely fed a "grain-free" food or an "exotic protein" food. I'm a physicist and I believe in science and common sense. HOWEVER, after FDA's investigation was announced, I noted that some of the commercial food I was feeding (b)(6) (which I thought was perfectly conventional) met the FDA's description of "suspect diets". In addition, I had been giving my three Golden retrievers a probiotic from Purina -- their Fortiflora product -- as a routine part of feeding after a period in which all three dogs had loose stool and diarrhea. I added the Fortiflora to their food for a period of over a year. I think the current thinking on this issue is that it's multifactorial, I wanted to mention first that I had added the Fortiflora and that while I didn't purposely choose a grain-free food (high in legumes), I've also found that the food itself has added "probiotics". I was surprised to see that. Now, I wonder if my accidental food choice for him, plus my "probiotic" supplement, changed something in how his body processed the taurine precursors and dietary taurine. In addition, he's definitely an "easy-keeper", eating nowhere near the amount of food (*continued below)
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	(Continued from previous report) advised on the bag. After his "equivocal" taurine level in mid-September 2018, I stopped feeding Fortiflora to all three Golden retrievers. Their stool is perfectly fine, perhaps even better. I changed (b)(6) diet from Fromm to Purina ProPlan Sport 30/20 at the same time. Please do get in touch if there's any further information you require or that you might provide me. Obviously, I hope this is diet-related and can be reversed.
Blue Buffalo Wilderness High Protein Grain Free Natural Adult Dry Dog Food Chicken	Dog	Retriever - Golden	1	Years	Female	48	Pound	Took (b)(6) in for her follow up ultrasound for her very mild heart murmur and the ultrasound showed DCM. This news is completely devastating and then our cardiologist told us about the link between grain free diets and a taurine deficiency which can cause DCM. We have fed (b)(6) a grain free diet her whole life. It's a type from the blue wilderness line. We are waiting for her blood test to see if she is low in taurine. We are completely devastated, and to think it's something we've been giving her. It's horrifying.
Earthborn grain free weight management dry	Dog	Doberman Pinscher	8.92	Years	Male	45.2	Kilogram	Diagnosed with DCM, CHF, and atrial fibrillation 11/5/18. Currently hospitalized. Taurine submitted to UC Davis. Unclear if related to diet, given breed but eating boutique, grain-free diet. Only prior history is traumatic injury in 2015.
Nutro Ultra adult dry dog food the superfood plate (chicken lamb salmon)	Dog	Setter - Irish Red	11	Years	Male	28.8	Kilogram	DCM and CHF diagnosed 9/17/18. Unclear if this is a diet-associated DCM because this is not boutique company or grain free but some properties of diet could be suspicious (lamb, rice bran, etc). Owner has fed this same food since dog was a puppy. Has since changed to Pro plan adult sensitive skin and stomach dry plus Science beef/barley canned. Plasma taurine 334, WB=469

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Zignature trout and salmon dry	Dog	Retriever - Golden	8	Years	Female	27.7	Kilogram	DCM and CHF. From late-2014 through 09/30/18, (b)(6) ate about 1 cup of Zignature trout & salmon dry food twice per day. Then, from 10/01-10/14/18, she ate Nature's Variety Instinct Raw beef & barley dryg food (1.5c. 2x/day). The primary cookies she ate was Earthborn Holistic Grain-Free, all varieties, and she might have had 3-4 cookies per day. The only other cookies she would have eaten were misc. varieties brought by misc. delivery people (propane, UPS, etc.) and not regularly. If we ever had to give her medication, we always used the Greenies Pill Pockets. Taurine for (b)(6) - 327 whole blood Owners' other(b)(6), is four and was born on (b)(6). He ate Zignature trout & salmon from 09/30/15-10/01/18 (see separate report). We also have a Golden puppy, (b)(6), who was born on (b)(6) and ate the same Zignature from 07/23-10/01/18.
Zignature trout & salmon dry	Dog	Retriever - Labrador	3	Years	Male	25.9	Kilogram	Older housemate diagnosed with DCM and CHF. Screening (b)(6) because he has been eating the same diet. Does not have clearcut DCM on echo but has reduced cardiac contractility. Taurine pending and owner has changed diet and started taurine supplementation
Rachel Ray peak open range recipe (beef venison lamb)	Dog	Boxer (German Boxer)	8.4	Years	Male	34.8	Kilogram	DCM and arrhythmias diagnosed at time of GDV surgery so unclear if sepsis/post-op or true DCM. Had recheck echo 10/31/18 and still has DCM. Taurine pending. Owner has changed diet to Royal Canin Boxer
Pure Balance Salmon and Pea dry, Taste of the Wild High Prairie dry	Dog	Retriever - Golden	6.8	Years	Female	25.5	Kilogram	DCM and CHF diagnosed 10/31/18. On BEG diet. Taurine pending
Zignature Trout & Salmon Meal Limited Ingredient Formula Grain-Free Dry Dog Food	Dog	Retriever - Golden	8	Years	Female	57	Pound	(b)(6) has been eating Zignature Trout & Salmon kibble (1c. 2x/day) for over three years, since approximately August 2014. (b)(6) was diagnosed with a heart murmur in April 2017. Our regular vet said that it was not of concern if (b)(6) was not experiencing concerning symptoms, like being short of breath. In September 2018,(b)(6) started refusing to eat. She was also coughing and vomiting. On (b)(6), she collapsed and was unconscious and not breathing for several minutes. She was resuscitated with CPR. She was brought to a veterinary emergency hospital, where her blood was collected for taurine testing at University of California-Davis, and an echocardiogram diagnosed a severe case of Dilated Cardiomyopathy. She has since been enrolled in a study program for diet-related Dilated Cardiomyopathy in dogs at (b)(6). Our younger dog ,(b)(6), was diagnosed with DCM on 11/07/2018 and I will be making a separate report regarding him.
Earthborn Holistic Weight Control (Grain Free)	Dog	Doberman Pinscher	9	Years	Male	100	Pound	Diagnosed and treated for DCM at (b)(6) Have fed Earthborn Holistic Weight Management Grain Free diet for about 5 years. Read FDA Study Report and decided to report experience. I wrote a comprehensive description of what happened twice and got timed out both times. Call if I can be of further help.
Natural Balance L.I.D. Sweet Potato & Bison Formula (Kibble)	Dog	Shepherd Dog - German	6	Years	Male	32.3	Kilogram	(b)(6) was presented for evaluation of a new heart murmur and bradycardia noted on recent exam (10/2018); he has been seen regularly about q6 months by the pDVM w/no prior murmur or arrhythmia noted. He has a history of 3 episodes over the last few weeks where he suddenly sat down or became very lethargic, though he did not lose consciousness. After he was seen on 10/13/18, enalapril 10 mg BID was started (pDVM records state 20mg BID, but O were not giving it at that dose); the most recent episode of weakness was reported shortly after the enalapril was given. His RR and RE have been wnl; no C/S noted. Apart from the reported episodes his energy level has been normal. His appetite had been decreased over the few days prior to presentation, and gradual weight loss was reported over the last 6 months. No v/d/pu/pd reported. Hx of chronic diarrhea when first adopted - resolved w/grain free diet that he has been on for several years. Has lived in Texas (x 2 years) and Georgia in the past 5 years. UTD on HW and F/T preventatives Echo and ECG showed changes consistent with advanced dilated cardiomyopathy, atrial fibrillation, and 3rd degree AV block with likely junctional escape rhythm and left bundle branch block. He was started on Pimobendan, Spironolactone, and enalapril; Lasix was sent home but not yet started as owner was advised to monitor for signs of heart failure. The owner was instructed not to change diet or start supplementation (taurine, carnitine, fish oils) until samples were pulloed for submission to the FDA.
Earthborn grain-free lamb dry	Dog	Other Canine/dog	11	Years	Male	4	Kilogram	Pomeranian with DCM eating BEG diet. Echo in May showed only mild degenerative mitral valve disease. Echo on (b)(6) showed DCM. Treated for heart failure. Was discharged (b)(6). Euthanized (b)(6) for continued dyspnea (continued dyspnea appeared to be respiratory, rather than cardiac). Have not gotten permission from owners to contact them. Taurine pending While this dog had multiple other diseases, we have concern about the DCM which may be diet-induced. Unclear if any of the other dogs eating this diet are affected
Kirkland Signature Nature's Domain Salmon Meal & Sweet Potato Formula for Dogs	Dog	Retriever - Labrador	6	Years	Female	85	Pound	(b)(6) was diagnosed with dilated cardiomyopathy (DCM). Unfortunately, she was not diagnosed until it was so severe that she could not be treated. Since she was only 6 years old and considered to be a "young pup", heart issues were not suspected. Based on her blood work, she was first treated for liver issues and then upper respiratory infection. It was not until she was not eating, drinking, and could not walk until an ultrasound was done and found she had DCM. We fed (b)(6) Costco Salmon & Sweet Potato food for most of her life. When we heard about the FDA investigation we wanted to report it.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
4health optimal nutrition for optimal health weight management formula for dogs	Dog	Hound - Afghan	6	Years	Female	40.6	Kilogram	Onset of cough 9/20/18, progressed to biventricular congestive heart failure and atrial fibrillation.
Pure Balance Wild & Free Superfood Blend - Trout and Lentil Grain Free Food	Dog	Retriever - Golden	6	Years	Female	30	Kilogram	Presented as an emergency appointment, 2 month history of slowing down and cough, progressive increase in the cough, not eating well over the past few weeks, ate a small amount this morning, no current medications, previously healthy, no known family history of heart disease, on grain free diet due to flaky skin no recent vomiting diarrhea or PU PD. Diagnosed with advanced dilated cardiomyopathy and left sided congestive heart failure.
Fromm Hasen Duckenpfeffer	Dog	Retriever - Golden	7	Years	Male	74	Pound	<p>"(b)(6)" has been on a grain free diet for the past 4.5 years (3.5 years of Earthborn Meadow Feast and Fromm Hasen Duckenpfeffer for the past 1 year leading up to his diagnosis on 9/27/2018. Had this issue not been alerted to by the FDA this Spring on the media I might not have perceived the symptoms of DCM unfolding before my eyes and gone to the vet so quickly.</p> <p>(b)(6) symptoms came on gradually late Spring of 2018 and worsened through the summer to the point of being clearly DCM. These symptoms include exercise intolerance, heat intolerance, heavy breathing and some congestion of the lungs in the hours following exercise and difficulty going up to high elevation.</p> <p>My echo report from the cardiologist states: dilated cardiomyopathy with moderate mitral regurgitation and a mild tricuspid regurgitation. Fractional shortening and ejection fraction are very low. Left atrium is enlarged and left ventricle is enlarged in systole and diastole. EPSS is enlarged. LA-AO ratio is increased. Mitral forward flow is elevated but not to the point that congestive heart failure is present. Mild tricuspid regurgitation.</p>
V-dog	Dog	American Pit Bull Terrier	7	Years	Male	32	Kilogram	Presented to the Emergency Service on (b)(6) for coughing and respiratory distress. The cough was first observed approximately 5 to 7 days prior. The cough became more consistent in the 3 days leading up to presentation. Was taken to the rDVM on (b)(6). Chest x-rays were performed and antibiotics were prescribed for suspected pneumonia. The following day, the radiographs were interpreted by a radiologist and were considered more consistent with heart failure. The owners scheduled a cardiology consultation. However, (b)(6) developed a decreased appetite and respiratory distress, so he was brought to the (b)(6) Service. During hospitalization at (b)(6), congestive heart failure was confirmed on chest x-rays. Echocardiogram showed severe dilated cardiomyopathy (DCM). Taurine levels were normal to increased (626 nMol/mL). The patient was hospitalized until (b)(6), at which time he was discharged.
V-dog kibble	Dog	Mixed (Dog)	7	Years	Male	80	Pound	<p>Two unrelated golden retriever poodle mixed dogs, fed kibble for 4 years with the following main ingredients: Dried Peas, Pea Protein, Brown Rice, Oatmeal, Potato Protein, Sorghum.</p> <p>Both dogs were diagnosed with DCM. Both dogs improved slightly when kibble was changed to a brand without the above ingredients, but most of the heart damage was already permanent. Both dogs have also been on heart meds for the past two years. One recently died of heart failure at the age of 9. The other is stable on current heart meds at the age of 8.</p>
Earthborn Holistic Meadow Feast with Lamb Meal Grain Free	Dog	Basenji	11	Years	Female	17	Pound	<p>I have been feeding my Basenji, (b)(6), Earthborn Dog Food for 4-5 years. On the evening of Tuesday (b)(6) she began exhibiting extremely concerning symptoms such as heavy and labored breathing, mental disorientation, weakness to the point of not being able to stand, and refused all treats/dry food/wet food. After monitor these symptoms for approximately 1 hour I took her to a local emergency vet (as it was 8pm and my regular vet was closed). Upon arrival I was told that my dog was hypothermic and xrays were performed. The vet performed a physical exam and found that my dog had a new heart murmur, this murmur is believed to be new onset as it has never been heard previously and my dog had her yearly check up 5 months ago. Xrays showed an enlarged heart. The vet said that a normal heart can get to 10.7, my dog was at 11.5. The vet also diagnosed her with pulmonary edema and possible pleural effusion. She was placed on 2 heart medications and Lasix. Before I took her home that night they gave her a large shot of Lasix to start getting the fluid off of her. When I went to my regular vet first thing the next morning, they called in a cardiac specialist who performed an ECHO of her heart. As a result of the findings on this test, the vet diagnosed my dog with Dilated Cardiomyopathy. After discussing my dog's health history and diet, the cardiac vet determined that the DCM was caused by the grain free diet I have fed my dogs for 4-5 years. The vet reported that this condition usually only effects large breed dogs and especially is rare for Basenjis. We immediately switched my dog's diet and also pulled a Taurine lab because we are concerned that her levels may be too low due to her diet. The vet also stated that my dog's new heart murmur has been caused by the DCM, so it is also due to the food she has been on.</p> <p>I would love to be contacted if there is any additional information I can provide that would assist in helping inform the public that this dog food can be life threatening. My dog has never had any major health issues in her life and I almost lost her the other day due to a food that was promoted to be healthy. I will submit the cardiology report that confirms my account.</p>
Earthborn Holistic Great Mountain Feast w/Bison Meal	Dog	Shepherd Dog - Belgian Tervueren	3	Years	Female	48	Pound	Attended a health clinic on 11/3/18 and did an echo cardiogram. Per the cardiologist, (b)(6) is equivocal for DCM. She has been on a suspect (grain-free) diet. Taurine level report showed 114 (plasma). Transitioning her off grain-free at the recommendation of the cardiologist and will redo the echo in 4-6 months.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
V-dog kinder kibble vegan adult dry dog food, Halo Holistic Garden of Vegan Adult Dry Dog Food	Dog	Coton de Tuléar	5	Years	Male	6	Kilogram	Was initially referred to (b)(6) on (b)(6) for lethargy and coughing. Was diagnosed with congestive heart failure secondary to severe dilated cardiomyopathy (DCM). Paired plasma and whole blood taurine levels were measured and were severely decreased (results attached). Was hospitalized for heart failure therapy and was discharged on (b)(6) with oral heart failure therapy and taurine supplementation. Returned to the hospital on (b)(6) for lethargy, anorexia, and intermittent increase in respiratory rate and effort. Was diagnosed with recurrent left-sided congestive heart failure and right sided heart failure at that time. In the hospital, was treated aggressively for heart failure therapy but continued to decline. Humane euthanasia was elected. The patient had been fed V-dog commercial diet for approximately 1 year. For the past 2 years or so, has been receiving a combination of Halo vegan commercial diet combined with home cooked peas/lentils.
Zignature Kangaroo Limited Ingredient Formula Grain-Free Dry Dog Food	Dog	Retriever - Chesapeake Bay	7.5	Years	Male	83	Pound	Was diagnosed on Nov. 16, 2018 by veterinary cardiologist with canine DCM believed to be caused by grain free food with kangaroo as protein source and legumes as large portion of the diet.
Natural Balance L.I.D. Limited Ingredient Diets Sweet Potato & Fish Formula Grain-Free Dry Dog Food, Natural Balance L.I.D. Limited Ingredient Diets Sweet Potato & Venison Formula Grain-Free Dry Dog Food, Natural Balance L.I.D. Limited Ingredient Diets Sweet Potato & Bison Formula Grain-Free Dry Dog Food	Dog	Irish Wolfhound	3	Years	Male	175	Pound	The beginning of April, 2018 (b)(6) became visibly lethargic. On April 6, 2018, I brought him to my primary vet, (b)(6) for a check up. The vet examined him and ran a blood test. He said he was anaplasmosis positive and his platelets were very low ((b)(6) had been treated for anaplasmosis the previous year). The vet was concerned about his platelet level and he suggested I bring him immediately to (b)(6). (b)(6) was examined by 2 additional vets at (b)(6) and they thought the platelet levels were due to the anaplasmosis and put him on a course of Doxycyclene and discharged him. Late the night of the 7th he seemed worse and I thought he had blood on his penis. Early on the morning of April 8th, I took him to (b)(6). He was examined and I was asked if anyone had noted a heart issue. I said no and stated 4 other vets had listened to his heart in the previous 2 days. The vet took him for further tests and came back and said she suspected he had DCM. A cardiologist was called in and he diagnosed (b)(6) with DCM, congestive heart failure and atrial fibrillation. He was admitted to the hospital and he was set up with a holter. He was put on many cardiac meds and discharged 2 days later. After 5 days of no appetite even when given anti nausea meds, the doxy was discontinued. A taurine test was requested and came back as 114 plasma. The cardiologist asked which food we had been feeding and I told him Natural Balance Limited Ingredient Grain Free dry food, 3 different flavors...Sweet Potato & Venison, Sweet Potato & Buffalo and Sweet Potato & Fish. I was told to immediately stop the grain free foods and to start supplementing him with 1,000 mg of taurine twice a day. In addition, he takes diltazem, enalapril, vetmedin, digoxin, furosamide and spironolactone. The cardiologist thought we would have 6 months with (b)(6). The congestive heart failure resolved by the next visit I believe 2 weeks later. In July he had a recheck and the doctor was surprised his heart had decreased in size and his contractility had improved. The cardiologist was sure if this was due to the diet change, taurine supplements or the cardiac meds...or a combo of the 3. Yesterday, November 13th, (b)(6) had another checkup with the cardiologist. He has remained consistent with his July echo. We are continuing with the 20 pill per day regiment and a grain inclusive diet.
Zignature Kangaroo Limited Ingredient Formula Dry Dog Food	Dog	Spaniel - Cocker English	Not provided	Not provided	Male	Not provided	Not provided	Presented for evaluation of congestive heart failure. Referring veterinarian saw radiographic changes consistent with CHF, patient was started on Vetmedin, enalapril, furosemide. He has been eating Zignature kangaroo and lentil for 4 years, and prior to that was on another brand grain free food. Echocardiogram performed on 11/16/2018 consistent with dilated cardiomyopathy and ventricular arrhythmias. Taurine levels pending. An abdominal mass was an incidental finding on physical examination 11/16/2018.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Zignature Lamb Limited Ingredient Formula Grain-Free Dry Dog Food By Zignature	Dog	Retriever - Golden	4	Years	Male	33.7	Kilogram	<p>(Edited for brevity) (b)(6) had been fed a grain free diet for 3.5 years (Zignature lamb and rice low ingredient grain free diet). Diagnosed with dilated cardiomyopathy in Feb 2018. Taurine levels measured 209 nmols/ml at that time. He was switched to Hill's ideal balance and started on Pimobenden 10mg BID, Benazapril 15mg SID, Taurine 500mg BID, and L-Carnitine 2000mg TID.</p> <p>His condition, as determined by repeat echocardiography did not improve nor progress over the subsequent 3 months. No change in therapy was recommended, and taurine was rechecked in May 18 (444nmols/ml) and July (380nmols/ml). After 6 months (b)(6), a very slight improvement was detected by echo. The dog never showed signs of congestive heart failure nor any arrhythmias during these evaluations. But on (b)(6) he died suddenly (fell over out of the blue, witnessed by the owners)- presumably due to a fatal ventricular arrhythmia, (ventricular fibrillation). Full post mortem pasted below:</p> <p>Case history 3 year old M intact Golden retriever diagnosed with dilated cardiomyopathy on 2/12/18. Initial taurine levels were low normal at 209 mmol/mL (200-350 is normal). At that time he had been eating a grainfree diet for 3 years. He was started on pimobendan, benazepril, taurine supplementation, and carnitine supplementation. Diet was changed. Taurine level was rechecked on 5/7/18 and measured 444 mmol/ mL. Taurine level was checked again on (b)(6) and measured 380 mmol/mL. Recheck echocardiogram yesterday showed unchanged left ventricular and left atrial enlargement but improved systolic function. Historically asymptomatic. This AM, fell over and died suddenly.</p> <p>Gross Description This is a 36 kg 4-year-old intact male golden retriever dog in good postmortem and nutritional condition. Within the anterior chamber of the left eye is a discrete 0.2 x 0.2 cm diameter black pigmented translucent fluid-filled cyst. There is mild multifocal dental calculus and generalized hyperemia of the alveolar gingiva. The bone marrow is red and floats in water. The heart (345 g, 0.96% of body weight) has a globoid contour and a prominent left auricular appendage that is equivalent in size to the right auricle. The left atrium is focally disrupted by a 2.0 x 2.5 cm firm, pale tan, slightly raised, "Y"-shaped endocardial plaque (jet lesion). The left (1.5 cm mural thickness) and (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) right (0.35 to 0.55 cm) ventricular free walls are subjectively thinned. There is a 0.7 x 0.5 x 0.3 cm red endomyocardial focus rimmed by pallor in one of the left papillary muscles. The atrioventricular valve leaflets are opaque, smooth, and irregularly nodular; the mitral valve is more severe affected (nodular thickenings measure from 0.2 to 0.6 cm diameter on the mitral valve vs. pinpoint to 0.35 cm diameter on the tricuspid valve). Copious white foam fills the tracheal and bronchial lumina. The lungs are diffusely mildly wet, heavy, and airways exude serosanguineous fluid on cut surface; the caudodorsal portion of the pulmonary parenchyma is predominately affected. The visceral pleural has multifocal 0.2 to 0.7 cm diameter areas white-gray discoloration (fibrosis). The liver weighs 990 g (2.75% of body weight) and is grossly normal. The outline of the caudoventral extremity is slightly irregular, with a focal pedunculated portion of parenchyma that is partially covered by a 1.2 x 0.4 x 0.2 cm green-brown capsular plaque. The brain, pituitary gland, and remaining thoracic and abdominal viscera are otherwise unremarkable.</p> <p>Gross Findings LEFT EYE: focal iridial cyst TEETH: mild multifocal dental calculus with generalized gingivitis 18-0284 report status: This report continues... (Final) 1 (b)(6) Diagnostic Lab - Sample ID: 18-0284 - Patient: (b)(6) HEART: mild eccentric left and right ventricular eccentric hypertrophy with left atrial and biventricular chamber dilation SPLEEN: focal siderofibrotic plaque</p> <p>Histopathology HEART (LEFT VENTRICULAR FREE WALL (1, 2); INTERVENTRICULAR SEPTUM (3); RIGHT VENTRICULAR FREE WALL (4)): cardiomyopathy characterized by moderate multifocal to regionally extensive (right atrium) variation in cardiac myofiber size with undulating profiles (consistent with attenuated wavy fibers); mild (diffuse) to severe (left atrium) subendocardial fibrosis with regional mineralization (left atrial jet lesion); rare multifocal lymphohistiocytic myocardial infiltrates ATRIOVENTRICULAR VALVES (1, 4): mild (tricuspid) to severe (mitral) myxomatous valvular (*continued below)</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) degeneration (endocardiosis) ASCENDING AORTA (3): mild focal subintimal fibrosis; mild focal medial arteriopathy with chondroid metaplasia PULMONARY VASCULATURE (5): prominent subpleural arteries; diffuse congestion with minimal multifocal acute alveolar hemorrhage and rare erythrophagocytosis; mild multifocal tunica medial hypertrophy LUNGS (5): moderate diffuse pulmonary edema with alveolar histiocytosis; mild subpleural fibrosis with multifocal chronic lymphohistiocytic pleuritis and mesothelial hypertrophy LIVER (6): mild diffuse centrilobular sinusoidal congestion with multifocal hemosiderin-laden Kupffer cells, acid hematin, and pigment granulomas KIDNEYS (6): bilateral subcortical phlebectasia; bilateral minimal multifocal chronic lymphoplasmacytic tubulointerstitial nephritis; rare papillary tubular mineral Final Diagnosis CARDIOMYOPATHY CHARACTERIZED BY BIVENTRICULAR ECCENTRIC HYPERTROPHY WITH CHAMBER DILATION AND MODERATE REGIONALLY EXTENSIVE (RIGHT ATRIUM) ATTENUATED WAVY CARDIAC MYOFIBERS (FEATURES CONSISTENT WITH DILATED CARDIOMYOPATHY) MILD TO SEVERE VALVULAR ENDOCARDIOSIS WITH LEFT ATRIAL DILATION AND FOCAL JET LESION WITH MINERALIZATION Comments Multiple sections from the heart are histologically examined. Myocardial changes are most profound within the right atrium, which demonstrates separation and occasional isolation of individual myofibers by clear space. There is a generalized tinctorial change and size variation of individual myofibers; myofibers are often thinned and elongate (<6-12 um diameter) with an undulating variably amphophilic profile. The clear space associated with attenuated fibers in the right heart may represent edema. Within the right ventricle, there are few foci of adipocyte deposition, however these areas lack associated myofiber degeneration. The left and right ventricular myocardium is rarely infiltrated by low numbers of lymphocytes and histiocytes. The endocardium is diffusely expanded by some degree of fibrosis; the left (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) atrium most severely affected with spicules of mineral enmeshed in bundles of fibrous collagen. Given the clinical findings and histologic features, the cardiac changes are most compatible with attenuated wavy fiber type dilated cardiomyopathy (DCM). The cause of sudden death in this patient may be attributed to a fatal arrhythmia. Taurine deficiency has linked to DCM in golden retrievers. While the exact etiology is unclear, one study postulated that both genetics and nutrition are contributing factors. [Belanger MC, et al. "Taurinedeficient dilated cardiomyopathy in a family of golden retrievers." J Am Anim Hosp Assoc (2005); 41:284-291.] The significance of the prominent arterial profiles within the visceral pleural/subpleural space is unknown. Photomicrographs have been submitted for consultation with a specialist in veterinary pulmonary pathology at (b)(6). These lesions are unrelated to the DCM and there is some histologic overlap with the condition of intrapulmonary sequestra described in people. Further consultation is pending and if further information becomes available an addendum will follow. Sections from multiple tissues are collected as directed for enrolled research study purposes. Additional formalin-fixed tissue samples and histologic sections are submitted to the FDA- EON 359970 c/o Drs.</p>
Zignature Kangaroo Formula Limited Ingredient Formula	Dog	Sheepdog - Beauce (Beauceron)	9	Years	Male	Not provided	Kilogram	<p>(b)(6) presented to his primary veterinarian for a dry non-productive cough of 4 days duration. A grade 2/6 heart murmur was auscultated at that time. Thoracic radiographs were performed and cardiomegaly was appreciated. Dr. (b)(6) suspected dilated cardiomyopathy (DCM) and she referred (b)(6) here for a cardiology consult. (b)(6) has dilated cardiomyopathy (DCM).</p>
Zignature Trout and Salmon Meal Limited Ingredient Formula Grain-Free Dry Dog Food	Dog	Other Canine/dog	12	Months	Male	53	Pound	<p>my dog seemed to be panting more and drinking more water. I asked vet about this during a checkup. I had heard about taurine related DCM and asked if this was symptomatic since I was feeding a grain-free "boutique" food to my dog. Vet recommended blood work and an echo. Cardiac Echo showed mild DCM and cardiac vet recommended Taurine supplements and change food to a grain-free food by an established dog food manufacturer.</p>
Multiple types of grain free food - brands include taste of the wild Merrick blue and others.	Dog	Pit Bull	4	Years	Female	75	Pound	<p>(b)(6) has been on a diet of premium grain free dog food her whole life. At 4, she suddenly developed a heart murmur and was diagnosed with DCM. She is now on medication to help her heart as she is in congestive heart failure.</p>
Rayne Low Fat Kangaroo Maintenance	Dog	Shepherd Dog - German	7	Years	Female	84	Pound	<p>Died suddenly. Autopsy revealed excellent body condition and death due to DCM. Very few symptoms prior to this other than occasional periods of lethargy.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Earth born holistic	Dog	Shepherd Dog - German	4	Years	Male	78	Pound	(b)(6) died on (b)(6). He was running around the backyard the previous weekend. On Tuesday (b)(6) he became restless and breathed heavily. The following day we took him to his vet. The vet did not find an issue or do a chest X-ray. By Saturday (b)(6) could not sleep, and was Tachycardic, and we visited the ER vet in (b)(6). Xrays revealed dilated Cardiomyopathy. (b)(6) was given a series of medications to reduce the fluid and assist with the heart failure. (b)(6) did not make it through the night as we had to have him put down. He could not breathe and his lungs had filled. (b)(6) ate grain free food from the age of 6 months.
Acana (all flavors except Chicken or Lamb)	Dog	Shepherd Dog - Australian	10	Years	Male	78	Pound	Over the past year of being on Acana canine food(all flavors) there was decrease in energy, lack of interest in normal activities, and coughing episodes that would come and go. He has been on grain free food most of his life and had full body radiographs before switching to Acana brand and his heart and lungs were normal. 3 view chest radiographs were performed and seen was an enlarged heart with fluid build up in the lungs. I assisted with the echocardiogram with the cardiologist, that is used in at several different practices all over the (b)(6), and (b)(6) was diagnosed with moderate dilated cardiomyopathy and mild mitral valve regurgitation. During the echocardiogram I was asked what food (b)(6) was on. I told him he had been on Acana grain free for about a year. He said he has recently seen multiple cases of taurine deficient DCM in not breed or age exclusive, and almost all the cases were on Acana brand food. Once switch to new food and taurine supplements all showed significant, if not complete, improvement. After a few days of being on Purina Proplan and taurine supplements he was showing great improvement. He has now been on it for 2 weeks and has more energy than he has in a long time and acts more like a puppy. The taurine test that was sent to UC Davis came back as being low and an echocardiogram will be repeated in 3-6 months. We notified the pet store where we were purchasing Acana and they said they knew all about issues that were happening but were still continuing to sell it as "the best". The facebook page "Taurine Deficient Dilated Cardiomyopathy" has a chart of all the cases.
Rachael Ray Nutrish real chicken and veggies recipe and Rachael Ray Nutrish real beef pea and brown rice recipe	Dog	Pit Bull	10	Years	Female	55	Pound	(b)(6) had been eating Rachel Ray dog food for many years, perhaps 5-7 years and developed congestive heart failure due to undetected dilated cardiomyopathy. She was a pit bull Labrador mix and these breeds are not genetically predisposed to this condition. The vet mentioned it could be due to food containing peas or legumes as a main ingredient, which Rachael Ray Nutrish food contains. She passed away after one year of fighting this condition.
Acana Pork and Squash	Dog	Retriever - Golden	3	Years	Male	32	Kilogram	Patient was seen by primary vet on 11/2/18 after owners friend's pet was diagnosed with taurine deficient dilated cardiomyopathy and owner believed that (b)(6) had been breathing similarly to the friend's dog for several months. Thoracic radiographs were taken at that time and then a thoracic ultrasound on 11/6/18 showed mediastinal fat, small amount of pleural effusion, and heart enlargement. Patient was then referred to our clinic for an echocardiogram which showed dilated cardiomyopathy and congestive heart failure. Since patient was on a grain free diet it was recommended that he have taurine levels checked so the blood work was sent off to UC Davis Amino Acids Lab. Results came back on 11/16/18 low with a plasma taurine level of 9 and whole blood level of 82. At recheck with the cardiology team the congestive heart failure had resolved but the patient hasn't been on taurine supplementation and new diet long enough to confirm if the DCM is reversing since starting supplementation.
Primal Raw	Dog	Spaniel - King Charles Cavalier	1	Years	Male	8.2	Kilogram	(b)(6) presents to (b)(6) today for an in-house consult through the Neurology service. He is being evaluated by neurology for seizure episodes which consist of stiffening, drooling and on one occasion incontinence. The episodes last between 21-22 minutes with a post ictal period lasting about 30 minutes and (b)(6) being very disoriented. Thoracic radiographs showed mild generalized cardiomegaly without significant left atrial enlargement and no signs of cardiac decompensation. (b)(6) is fed a grain free diet. HR 55-75bpm. Irregular rhythm consistent with a sinus arrhythmia, but relatively bradycardic. Prominent second heart sound, no murmur. Normal femoral pulses and jugular veins. mm pink, normal refill. Inus bradycardia - This is unlikely to cause (b)(6) events, but heart rate responsiveness to atropine prior to anesthetic induction should be determined. Mildly decreased cardiac contractility - (b)(6) heart does not contract as forcefully as expected, though the change is mild. This may be early dilated cardiomyopathy, but he is unlikely to be symptomatic from this mild change. Dilated cardiomyopathy is a disease characterized by weakening of the heart muscle and dilation of the heart chambers. As the disease progresses, it can lead to congestive heart failure (fluid in the lungs causing shortness of breath and cough). Abnormal heart rhythms are common and can result in sudden death. Most commonly this is an inherited disease (this would be very uncommon in a Cavalier), though it can occur secondary to a deficiency in an amino acid called taurine. Recently, a connection between certain diets usually marketed as "grain free" and dilated cardiomyopathy has been established. Since (b)(6) has been fed one of the diets in question, this is a consideration in him.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste of the Wild "PREY" Trout. Grain Free-limited ingredient formula, Taste of the Wild Pacific Stream Grain-Free Dry Dog Food	Dog	Weimaraner	2	Years	Female	63	Pound	On nov 16th 2018, we took (b)(6) into the vet because her breathing rate seemed to be high-even at rest. We had been noticing this for weeks. Vet listened to her heart and lungs and said everything sounds fine and not to worry. Late that same night, (b)(6) started to cough. We called the dr in the am who prescribed Doxycycline. She remained on the meds for almost a week-no improvement so we took her back to the vet on 11-21. Vet said heart & lungs sounded fine and decided to take blood and test for heart worm and valley and tick fever. On friday (b)(6)- vet called and said bloodwork looked good and said HW and valley and tick fever were negative. She told me to watch her breathing and go to ER if gets worse. Later that evening, she seemed restless so I took her into the ER. Dr there said lungs were clear/heart sounded fine but wanted to take an xray. Xray showed congestive heart failure and a very enlarged heart. Dr diagnosed her with D.C.M.
Orijen original	Dog	Weimaraner	10	Years	Female	75	Pound	I'm reporting to help the FDA with their investigation into dogs developing dilated cardiomyopathy after being fed a grain free diet. My dog, (b)(6), has developed the condition after being fed Orijen original dog food. Upon reaching out to the manufacturer, I learned that they had changed their formulation to grain free in 2015. She has since been switched to Royal Canin and is on several heart medications and supplements. On her subsequent check up two weeks after the incident, her heart appeared to have reduced in size and her lungs were clear. I'll report back when we do another EKG/echo in three months. Thank you.
California Natural Grain Free Kangaroo and Red Lentils Formula	Dog	Coonhound - Treeing Walker	13	Years	Male	35.2	Kilogram	Patient presented to Dr. (b)(6) in the Internal Medicine department on 2/6/18 for a hacking, non productive cough that had been going on for about a year. Previous radiographs that were taken on 1/29/18 at primary veterinary clinic showed mild cardiomegaly (right-sided) and pulmonary parenchyma has mild to moderate diffuse bronchointerstitial pattern. Upon examination a grade 3/6 left systolic murmur was discovered so a cardiology consult was recommended. During consult patient was diagnosed with Severe myxomatous mitral valve degeneration - stage B2, advanced, mild myxomatous tricuspid valve degeneration, and moderate to severe systolic dysfunction. At this time patient was started on pimobendan 10mg every 12 hours and Taurine 2000mg every 12 hours due to grain free, exotic protein diet history with recommendation to recheck with cardiology team in 4-6 months. At recheck on 5/1/18 the echocardiogram showed improvement on pimobendan, taurine supplementation, and diet change as well as mild myxomatous mitral valve degeneration that had improved to stage B1. It was recommended to increase Pimobendan and Taurine to every 8 hours and recheck in 6 months. At today's visit the echocardiogram showed normal systolic function - resolution of nutritional cardiomyopathy and trace mitral valve regurgitation so the pimobendan was discontinued and it was recommended that they keep patient on taurine 200mg every 12 hours and fish oil supplement 1000m every 24 hours. Next follow up will be due in 8-12 months.
Acana Lamb and Apple Singles Formula	Dog	Retriever - Golden	9	Years	Male	34.7	Kilogram	On 5/31/17 patient presented to the cardiology service for evaluation of a cough, exercise intolerance, and increased respiratory rate/effort. At this visit the patient was diagnose with dilated cardiomyopathy and congestive heart failure so he was started on heart failure medications as well as taruine 1000mg every 12 hours. At the recheck on 6/14/17 the heart failure was compensated for but the diagnosis of dilated cardiomyopathy remained. At the following recheck on 12/13/17 there was reverse remodeling and significant improvement in cardiac function so furosemide was reduced and taurine supplementation was increased. 4/4/18 the probable nutritional cardiomyopathy had resolved with diet change and taurine supplementation
Acana Heritage Freshwater Fish	Dog	Schnauzer (unspecified)	3.5	Years	Male	39	Pound	I tested for low taurine levels because of the discussions about it. I had switched the dog to grain free diet. Acana Freshwater fish due to sensitive stomach. Test showed low taurine level. Took to Cardiologist for Echo and showed mild DCM. No symptoms from the dog yet. (b)(6) had done genetic testing on dog before I got him and he was cleared of DCM.
Nutrisource	Dog	Retriever - Golden	8.5	Years	Not provided	50	Pound	8 1/2 year old Goldendoodle mix recently diagnosed with Dilated Cardiomyopathy and mitral valve disease. Experiencing symptoms of coughing, bilateral murmur, elevated heartrate, decreased energy, loss of appetite, and change in sleep position.
4Health Grain free dog food beef and potato	Dog	Shih Tzu	12	Years	Female	13	Pound	(b)(6) developed DCM and she had been on a diet of 4Health grain free dog food, ever since tractor supply has carried it. She had beef and potato flavored dog food. Despite being treated for DCM she passed away of heart disease after a 3 year battle.
Zignature Kangaroo Limited Ingredient Formula Grain-Free Dry Dog Food	Dog	Shepherd Dog - German	4	Years	Female	33.8	Kilogram	Initially presented to the Emergency service in May 2018 for evaluation of a several week history of progressive increased respiratory rate and effort, cough, and exercise intolerance. Was diagnosed with congestive heart failure secondary to dilated cardiomyopathy at that time. She had been fed Zignature Kangaroo and Lentil diet for food sensitivity. At the time of discharge, she was switched from Zignature kangaroo diet to Royal Canin HP. She was started on lasix, pimobendan, benazepril and spironolactone (heart failure therapy) at that time. She was also started on taurine supplementation (though her plasma levels were normal). Most recent recheck was in September 2018. Recheck echo showed improving systolic function and left-sided cardiomegaly. Her heart failure was clinically well controlled at that time, so her lasix dose was decreased.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Diamond Naturals Grain Free Sweet Potato and Beef	Dog	Mastiff	6	Years	Male	158	Pound	<p>(b)(6) was being fed Diamond Naturals Grain Free Sweet Potato and Beef for approximately 1 year. He showed symptoms of a wheeze-like unproductive cough upon activity and excitement starting September 2018. We went to the vet twice for this issue. On the second vet visit in Oct 2018, (b)(6) performed chest X-Rays that indicated he had an enlarged heart. Special consultation with a radiologist at MedVet suggested Dilated Cardiomyopathy (DCM).</p> <p>We took (b)(6) to a canine cardiologist, Dr. (b)(6). She performed an echocardiogram and an EKG. His results came back with a murmur, advanced left sided congestive heart failure as a result of DCM. Dr. (b)(6) is proceeding with a treatment regime consistent with Taurine Deficient DCM due to the following:</p> <ul style="list-style-type: none"> - We are aware of (b)(6) bloodlines. He has zero heart disease or DCM in his champion bloodlines. - His age, he has just turned 6. His DOB is (b)(6). - His exposure to Grain Free. - His breed of English Mastiff. He is not one of the breeds well known to be especially disposed to DCM. <p>We have started on the following daily:</p> <ul style="list-style-type: none"> - Taurine supplements 1500mg - Vetmedin 60 mg - Furosemide - Spirolactone - VetriScience Canine Cardio <p>We have changed his food from Diamond Naturals Grain Free Sweet Potato and Beef to Hills Science Diet Mature 7+ Dry and Purina Sensitive Stomach Salmon and Rice Wet. Since switching from Grain Free, his cough has resolved and we had his 2 week followup X-Ray. His heart appeared to have straight lines again and less globe appearance at 2-week Xray.</p> <p>We tested for taurine levels and these came back at 409, however we began supplementing taurine prior to the test.</p>
Iams ProActive Health Sensitive Skin & Stomach Grain Free Recipe	Dog	Retriever - Labrador	12	Years	Female	65	Pound	Dog developed DCM with both chest and abdominal fluid buildup.
Acana Lamb and Apple Singles	Dog	Portuguese Water Dog	8	Years	Male	67	Pound	Noted a cough and took (b)(6) to his general vet on 9/14/18 and vet noted a heart murmur. Chest x-ray revealed enlarged heart. We were referred to a veterinary cardiologist, who performed ECHO and exam on 9/19/18.(b)(6) was diagnosed with Moderately/severely reduced left ventricular function - due to large breed DVD vs. primary heart muscle disease (diet-related). (b)(6) has been on grain free food for the majority of his life with Acana lamb and apple being the most recent and longest term food. Note: This is not genetic as both sire and dam (Portuguese Water Dogs) have been genetically tested and test negative for cardiomyopathy
Zignature kangaroo grain free	Dog	American Pit Bull Terrier	3	Years	Male	67	Pound	(b)(6) has had allergies since he was a puppy. When he was about 8 months old a vet suggested putting him on kanagroo meat because he was reacting to other proteins. I started him on zignature kangaroo meat- a grain free exotic diet. In August 2018 we went in for a routine vet visit. The vet asked me if anyone had ever said he had a heart murmur. It was the first I had heard of it. (He has been going to the vet regularly since he was a puppy) I said no.. she suggested we follow up with a dog cardiologist. In October of 2018 we went to see a dog cardiologist. She did a echocardiogram and determined he had DCM which she believes because of the sudden onset and no family history of cardiac issue.. she determined it was due to eating a exotic grain free diet. I have since changed his food and started a taurine supplement 1000mg 2x daily. He is eating royal canine hydrolyzed protein. The cardiologist suggested we follow up in 6 months.
Nature's Domain Organic Chicken and Pea	Dog	Poodle - Miniature	9	Years	Female	12	Pound	Died of Dilated Cardiomyopathy
Loyall Professional All Life Stages dry	Dog	Pointing Dog - German Short-haired	10.5	Years	Male	26.7	Kilogram	Collapsing episodes began soon before diagnosis DCM and CHF diagnosed. Taurine pending One other dog in household that we will evaluate soon (asymptomatic)
Earthborn Meadow Feast dry	Dog	Mixed (Dog)	8	Years	Female	19.9	Kilogram	DCM and CHF (cough developed earlier but diagnosed 11/29/18) Eating BEG diet Taurine pending Owner changing diet and we will recheck Note: listed as "(b)(6)" in medical record
Pure Vita Holistic Pet Foods Turkey and Sweet Potato Entree	Dog	Retriever - Golden	6	Years	Male	100	Pound	Sudden collapse witnessed in May 2018. Seen by veterinarian same day. Canine cardiologist diagnosed Dilated Cardiac Myopathy. Cardiologist strongly suspected grain free diet. Dog had been on grain free diet since 1 year of age. Prognosis 2 - 6 months.
Wellness Core Natural Grain Free Dry Dog Food Ocean Whitefish Herring & Salmon	Dog	Chihuahua	15	Years	Mixed Population of Female and Male	6	Pound	2 years ago my dog was diagnosed with canine dilated cardiomyopathy. All of my pets had been on wellness grain fee food because the vet said it was good for their skin.
Natural Balance Fat Dogs Dry Food	Dog	Schnauzer - Miniature	13	Years	Male	21	Pound	Diagnosed with dilated cardiomyopathy after fainting spells

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste Of The Wild Grain Free High Protein Dry Dog Food High Prairie Adult - Venison & Bison	Dog	Retriever - Golden	2	Years	Female	50	Pound	Dog diagnosed with dilated cardiomyopathy after eating grain free dog food.
Merrick Grain Free Senior, American Journey Grain Free, Taste of the Wild Grain Free, Blue Buffalo Wilderness Grain Free	Dog	Pointing Dog - German Short-haired	11	Years	Male	80	Pound	Dog began displaying signs of lethargy. Very active dog became less active fairly rapidly. Breathing became labored one evening. The dog was hospitalized for a few days and was diagnosed with DCM by cardiologist. Dog is currently begin treated for environmentally caused DCM. Dog was previously on grain free diet for all 11 years of life.
Zignature Turkey Formula Limited Ingredient Formula	Dog	Mixed (Dog)	6	Years	Male	94	Pound	<p>He had previously been on 4Health Turkey grain free but we switched him to Zignature turkey grain free. He ended up with congestive heart failure before we knew what had happened and we had him put to sleep. He degraded very quickly.</p> <p>He started having a cough. We took him to our vet, who thought it was an upper respiratory infection. This was on 11/23/18. By (b)(6), he was struggling to breathe. We took him to emergency and they told us he likely would not survive the night. We had him put to sleep but it was so astonishing to us that we had a necropsy done.</p> <p>The necropsy showed that he had dilated cardiomyopathy and that he had congestion in his lungs and chronic disease in his liver, secondary to the heart failure. He had been on zignature for about a year.</p> <p>He was only 6 years old. I know many of his relatives and some of his ancestors and there was no known heredity tendency to have the dilated cardiomyopathy.</p> <p>The date I show below is an approximate date when we first noticed coughing.</p> <p>I will provide necropsy results if desired.</p>
Go Salmon, Acana pacifica	Dog	Retriever - Golden	4	Years	Male	70	Pound	Decreased exercise tolerance. Vet heard murmur . X-ray showed enlarged heart. Pro bnp showed heart issue. Echo showed suspect diet induced dilated cardiomyopathy.
California Natural Limited Ingredient Diets Lamb Meal and Rice Adult	Dog	Whippet	12	Years	Female	9.5	Kilogram	Patient was being fed primarily California Naturals Lamb and Rice diet, owner would occasionally alternate to fish or duck diets also from California naturals, and developed nutritional dilated cardiomyopathy. With diet change and taurine supplementation the dilated cardiomyopathy resolved.
Blue Buffalo Freedom Grain Free Senior	Dog	Boxer (German Boxer)	10	Years	Female	65	Pound	My 8 year old dog started to lose her hair on her flanks, so I thought she might have an allergy to something she was eating. I switched her to a Limited Ingredient Diet and her hair improved but she started gaining weight too quickly without changing her activity level. After consulting with my vet we changed her to Blue Buffalo Grain free food for a year without much weight loss. We then changed her to Blue Buffalo Freedom Grain Free Senior dog food. After being on that for 2 years she developed Dilated Cardiomyopathy (DCM) at the age of 10. She is now stable while taking sotalol under a veterinary cardiologists care.
Taste of the Wild	Dog	American Pit Bull Terrier	4	Years	Female	48	Pound	<p>She was diagnosed with DCM after having breathing issues. She has been fed Taste of the Wild for her whole life, and is very active. Her Taurine levels are normal (290), but my vet still said to switch the diet, because of the possibility of nutritional deficiencies. I hope this helps add to the research being done, also, (b)(6) is still alive after being in congestive heart failure.</p> <p>Have a nice day</p>
Taste of the Wild High Prairie	Dog	Retriever - Golden	9	Years	Male	78	Pound	Because of a lack of the amino acid Taurine in the Taste of the Wild dog food "High Prairie" Zeb has developed "Dilated Cardiomyopathy".
Orijen Original Dog Food, Acana Singles Pork and Squash	Dog	American Pit Bull Terrier	9	Years	Female	20	Kilogram	My dog has developed DCM after eating grain free/legume-based diet for most of her life. (Orijens brand and then Acana, later in ilfe).
California Natural Adult Limited Ingredient Grain Free Kangaroo & Red Lentils Recipe Dog Food	Dog	Shepherd (unspecified)	7	Years	Female	60	Pound	We adopted (b)(6) at one year of age with severe mange...The dermatology vet told us to put her on something exotic because of her possible reaction to common ingredients (chicken, lamb, beef, salmon, etc)...We had her on California Naturals Kangaroo Meat Dog Food for 6 1/2 years and she had no averse reaction...In February 2018, California Naturals discontinued the Kangaroo Meat and so we have been buying it from Zignature...On September 26, 2018 we noticed she had severe labored breathing and took her into our vet (b)(6) who took an X-ray and discovered her heart was abnormally enlarged...They sent us over to (b)(6) to have an echo and they said she has about 3 months to live...She was in an oxygenated kennel for over 24 hours and was given Taurine, Furosemide, Enalapril, and Vetmedin...She has continued on that currently...She still plays and barks, but she's on borrowed time...
Taste of the Wild Pine Forest Canine Recipe With Venison and Legumes A Grain Free Diet	Dog	Retriever - Labrador	2	Years	Male	78	Pound	2 year old Labrador has been diagnosed with Dilated Cardiomyopathy after showing signs of illness. Given the unusual nature of this condition in Labs and certainly labs of this age multiple vets including cardiology specialist believe the condition was caused by his food. He has been fed Taste of the Wild grain free since he was ~6mos old.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Acana Singles Squash & Pork, Acana Singles Wild Mackerel, Acana Singles Lamb and Apple	Dog	Sheepdog - Shetland	9	Years	Male	14.5	Kilogram	Progressively increased frequency of cough over last several months. Involving increased respiratory effort x days to a few weeks. Evaluated 11/7/18. CXR consistent with cardiomegaly and pulmonary edema. Started furosemide 20mg BID and benazepril 7.5mg qD. Echocardiogram showed mild to moderate left ventricular dilation, severe left ventricular systolic dysfunction, severe left atrial dilation, moderate mitral valve regurgitation.
BLUE Wilderness with Chicken for Adult Dogs	Dog	American Pit Bull Terrier	6	Years	Male	71	Pound	(b)(6) began acting strange (lathargic, lack of appetite, breathing hard) since around thanksgiving. His primary vet - (b)(6), ran multiple tests and did an xray- 2 visits from (b)(6) left him stumped. We were referred to an internal specialist for an ultrasound who determined there is fluid build up, an enlarged right side of the heart, and low function of the heart. (b)(6) has been in our family since he was a pup and has never had any significant medical issues until this event. He has also exclusively been fed grain free blue buffalo (call of the wild) dog food through out his life. The internal specialist believes (b)(6) has CDM, and that we need to see a cardiologist immediately. (b)(6) has already been taken off his grain free diet and now we anxiously wait to see a cardiologist.
Taste of the Wild Prey	Dog	Terrier - Bull - Staffordshire	2	Years	Male	26	Kilogram	Patient presented on (b)(6) with a 10 day history of reduced appetite and an episode of diarrhea 2 weeks prior. Prior to presentation he was found to be very lethargic with a distended abdomen. Patient was found to have changes consistent with dilated cardiomyopathy were severe pump dysfunction and biventricular congestive heart failure. Had been given a grain free diet for over a year (Tate of the Wild Prey). The abdomen was drained of about 2.6 L for comfort. The patient initially responded favorably but died suddenly the next morning with an acute onset of respiratory difficulty. Contacted Jennifer Jones, DVM who recommended a complaint be submitted and obtained tissue samples from the pet even though a full necropsy was unable to be performed.
Orijen Original dry	Dog	Mixed (Dog)	8.4	Years	Male	30.1	Kilogram	DCM diagnosed 10/2017. We saw July 2018 Originally feeding Orijen original dry since he was a puppy. Started taurine at time of diagnosis (10/2017). Heart improved significantly between echoes. Changed to Purina Proplan Adult 7+ July 2018. Will be rechecking soon.
Homecooked diet - see diet history in medical record	Dog	Doberman Pinscher	10.8	Years	Male	40.9	Kilogram	Arrhythmia identified at primary care vet on 11/15/18. Evaluated at (b)(6) 12/5/18 and diagnosed DCM with VPCs and APCs. Eating unbalanced homecooked diet. WB taurine 419 (plasma not measured because owner had started taurine supplementation). Owner was recommended to change diet and we will recheck in 3 months
NutriSource Super Premium Pet Foods	Dog	Retriever - Golden	11	Years	Male	55	Pound	Dog is a mixed breed: golden retriever and poodle hybrid (goldendoodle). He has developed heart disease (DCM) on the diet. Was told it is most likely related to taurine deficiency. Have put him on heart medication and a taurine supplement. Have already seen marked improvement in his demeanor. EKG to see if taurine supplement has reversed heart disease in 3-6 months.
4Health grain=free beef and potato	Dog	Retriever - Golden	4.5	Years	Male	29.2	Kilogram	Weight loss x 3-4 weeks Coughing and dyspnea developed - too to ER in (b)(6) where they did T-FAST and suspected DCM. Started on furosemide and pimobendan before we saw him Eating BEG diet. Taurine pending. Switched to new food. Will also try to evaluate other dog in their home eating the same diet (15 years old) Owners happy to provide additional info and have saved some of the food they've been feeding (4Health)
Orijen grain free original dry	Dog	Doberman Pinscher	9	Years	Male	32.6	Kilogram	DCM and CHF diagnosed (b)(6) at emergency clinic. Started on furosemide, diltiazem, digoxin, pimobendan Seen by (b)(6) cardiology 12/31/18. Eating Orijen grain free original dry so unclear if just genetically associated DCM or if diet associated.
4Health beef and potato and 4health untamed lamb and Lentil	Dog	Griffon - French Wire-haired Pointing	5	Years	Female	52	Pound	Female spayed dog in excellent health developed DCM and died from it. ((b)(6) 5 years 4 months old)(b)(6) (2 year Old Spayed female) is now showing early signs of enlarged heart and elevated proBNP. Normal range is 0-900 and her level is 1649. We have an appointment with cardiologist at the(b)(6) on Feb 7th, 2019.
1. Blue Wilderness salmon/chicken grain-free. 2. Rachel Ray Nutrish Indoor Complete Chicken with Lentils and Salmon	Cat	Domestic Shorthair	8	Years	Male	5.77	Kilogram	12/31/2018 - presented to our practice for reevaluation of above congestive heart failure. Diagnosed with dilated cardiomyopathy.
Horizon Pulsar Chicken Flavor Dog Kibble	Dog	Mixed (Dog)	8	Years	Male	21	Kilogram	Initially presented to the (b)(6) for a 4 to 5 day history of lethargy, increased RR and ADR. Had been fed a grain-free diet for an extended period of time. Was evaluated by the Cardiology Service and diagnosed with decreased systolic function and secondary heart enlargement. Chest x-rays from the rDVM raised suspicion for congestive heart failure. However, repeat chest x-rays at (b)(6) showed no evidence of CHF. During his hospitalization, (b)(6) experienced a syncopal episode secondary due to a run of ventricular tachycardia. He was started on heart failure therapy (pimobendan, furosemide, spironolcatone, enalapril) as well as taurine supplementation and an anti-arrhythmic (sotalol). He was initially started on L-carnitine as well, but this medication caused GI side effects and was discontinued.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
GO Venison	Dog	Retriever - Golden	5	Years	Female	31.5	Kilogram	(b)(6) has been eating grain free GO Venison since September 2014 up until November 2018 when we switched her to Hills Science Diet large breed chicken and barley. Her Taurine level in November 2017 was 244. She had an echocardiogram on December 27th and has been diagnosed with Taurine deficient dilated cardiomyopathy. It is recommended that she take Taurine and L-carnitine supplements daily and have another Taurine blood test in 3 months and a recheck cardiology examination and echocardiogram in 6 months.
4 Health Untamed	Dog	Shepherd Dog - German	6	Years	Male	79	Pound	Since my dog was about a year or so old, he has been eating the Tractor Supply Co. brand of Dog Food, 4Health grain-free and Untamed. Starting in December 2018, my dog developed a cough, stopped eating, and experienced difficulty breathing. He was seen by a veterinarian December 20th. He had blood work done which was unremarkable, his radiograph of his chest showed an enlarged heart with pulmonary edema. He was then started on cardiac medications, and sent to a cardiologist for an echocardiogram. The echo confirmed the diagnosis of Dilated Cardiomyopathy. This is when the topic of grain-free diet associated DCM came up. My Vet recommended supplementing Taurine into his diet, switching to a mainstream brand of dog food that has participated in nutritional research, and limiting his physical activity. We are hoping for the best but he is in rough shape. We will recheck the echocardiogram in 3 months to see if there have been any improvements. I hope this will help with any research ongoing with this issue. Please let me know if there is any more info I can provide or any additional research that has been done. Thank you. (b)(6)
Fromm Surf & Turf dry dog food	Dog	Pit Bull	8	Years	Female	56	Pound	(b)(6) was slightly lethargic and upon veterinary examination, a new heart murmur was discovered. We scheduled an echocardiogram and she was diagnosed with Dilated Cardiomyopathy and a Mitral Valve Regurgitation. We sent her blood into UC Davis for a taurine test and her taurine levels were normal. It is suspected that her food caused this issue.
CANIDAE Grain-Free PURE Land with Bison Limited Ingredient Diet Adult Dry Dog Food	Dog	Retriever - Golden	4	Years	Male	80	Pound	For 3.5 years, dog was fed Canidae Pure Land Bison dry dog food. Upon release of FDA warning that heart disease was caused in dogs eating Grain Free food, dog was taken off diet as of July 2018 and switched to Royal Canin Prescription Gastrointestinal. However, at routine physical on November 30, 2018, a grade 1-2 heart murmur was discovered in dog. Upon this finding, an echocardiogram was performed by a licensed veterinary internist, Dr.(b)(6), who concluded that dog has early-stage DCM.
CRAVE Dog Food with Protein from Salmon and Ocean White Fish	Dog	Shih Tzu	Not provided	Not provided	Male	13	Pound	(b)(6) was eating Crave Grain Free Salmon & White Fish kibble as his main diet. After presenting to the veterinarian with a heart murmur, he was evaluated by echocardiogram and found to have severe dilated cardiomyopathy.
Now Fresh Grain Free Adult Dog Food Now Fresh Grain Free Puppy Food	Dog	Retriever - Labrador	9.5	Years	Male	72.8	Pound	Patient has been on Now Fresh Grain Free adult dog food/puppy dog food since purchased from breeder at approximately 16 weeks of age. P has developed, and confirmed by echocardiogram by boarded veterinary cardiologist, changes consistent with Nutritional Cardiomyopathy. P is currently on taurine supplementation and food has been changed to non grain-free diet, recheck echo planned for March/April 2019.
ACANA Lamb and Apple Singles Formula	Dog	Pit Bull	11	Years	Female	52	Pound	Fed our dog (b)(6) ACANA lamb and apple. Our dog presented with a hacking cough, eventually very quickly became lethargic and refused to eat. Took her to the ER and she was diagnosed with heart failure, she stayed in the ICU for three days and was diagnosed by her cardiologist there with nutritional cardiomyopathy. She has since been removed from the food, on medications, and supplements and has responded well. She still has severe damage to her heart and it is severely enlarged. Her cardiologist attributes this to the dog food that she was eating and she had no health problems before hand and it was late onset at the age of 11 to be diagnosed with DCM.
Annamaet chicken and rice dry + Honest kitchen beef chicken or turkey	Dog	Doberman Pinscher	5.6	Years	Female	34.6	Kilogram	2 other dogs in household affected previously Eating various BEG diets Early DCM with infrequent ventricular ectopy Have been following - owner agreed to change diet at December 2018 appointment so will follow Taurine normal
Zignature kangaroo dry	Dog	Retriever - Golden	9.7	Years	Female	26.3	Kilogram	Eating BEG diet; developed DCM and CHF 4/11/18 Owner changed diet to Royal Canin Early Cardiac and dog has improved significantly. Will recheck again in 3 months. Have not gotten approval for you to contact owner but sent an email today
Zignature - various flavors (venison goat kangaroo lamb turkey pork)	Dog	Boxer (German Boxer)	12.6	Years	Female	21	Kilogram	2 syncopal episodes in summer got echo in October 2018 and arrhythmia identified Feeding BEG diets all of her life (Zignature) DCM and VPCs identified 1/9/19 Owner changing to Purina EN Fiber and we will recheck in 3 months BNP elevated, troponin and taurine pending
4Health whitefish and potato dry, 4Health salmon and potato adult dog food	Dog	Pit Bull	7.5	Years	Male	33.4	Kilogram	Eating BEG diet Syncopal episodes - identified arrhythmia recently Owner changing diet and will recheck in 3 months Elevated BNP (10,000); taurine and troponin pending 2 other dogs in household eating same diet - they have not been screened yet
Taste of the Wild.	Dog	Retriever - Golden	4	Years	Male	79	Pound	(b)(6) presented on emergency for lethargy, hyporexia, and tachypnea. Diagnostics testing (echocardiogram) revealed Dilated Cardiomyopathy. It was discovered that (b)(6) had been on a grain free diet.
Merrick Good Earth Grain Free Pork Beef and Lamb Kibble	Dog	Shepherd Dog - Australian	2	Years	Male	54	Pound	Diagnosed with dilated cardiomyopathy. Diet: Merrick's Good Earth Grain Free Pork Beef and Lamb kibble

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Merrick Limited Ingredient Diet Grain-Free Real Lamb & Sweet Potatoes Recipe Dry Dog Food 22 l. Nature's Variety Instinct Limited Ingredient Diet Lamb Meal & Peas given ~2014 through 03/15/2016	Dog	Mixed (Dog)	9	Years	Female	40	Pound	(b)(6) had just turned 9 years old and was fine. She still played with toys, had lots of energy, took long daily walks, and was in good health. She was a happy rambunctious dog. Overnight she became ill with an enlarged heart. She was coughing, had trouble breathing, lost her appetite and had no energy. I took her to her vet and was told she needed to be seen by the cardiologist at (b)(6) immediately. She had an enlarged heart, fluid on her lungs, and a leaky valve. Although she was on a heavy regimen of prescription drugs (increased in frequency and strength over time), and had frequent follow up visits with the cardiologists at RBVH, she grew weaker over time and her heart eventually gave out after a 9 month battle with DCM.
Ped	Dog	Shepherd Dog - German	3	Years	Female	50	Pound	My 3 y/o German Shepard, was recently dx with dilated cardiomyopathy (DCM) and Congestive Heart Failure. I feel the dog food I fed her was Pedigree grain free, with main ingredients being, potatoes, peas and Legumes. She ate that food for about 2 years. During that time, she had a minor cough which progressed to a bad hacking cough. I took her to the vet and did a Chest x-ray which revealed an enlarged heart with fluid in her lungs. The first vet I took her to just prescribed an antibiotic and told me to follow up with a specialist in (b)(6). (b)(6) condition worsened to the point where I thought I would have to put her down. I, immediately took her to another vet. She recognized (b)(6) condition, and administered Lasix immediately and observed (b)(6) for 4 hours. (b)(6) improved to the point I could take her home however, she will be on meds for DCM and CHF for the rest of her life. I feel the dog food I fed (b)(6) is responsible for her condition.
Taste of the Wild High Prairie grain-free with roasted bison and roasted venison	Dog	Mixed (Dog)	11	Years	Male	27	Kilogram	Anorexia, lethargy and abdominal distention noted 6 days before presentation to the ER. He was diagnosed with chronic degenerative valve disease, Dilated cardiomyopathy, myocardial dysfunction, congestive heart failure, both left- and right-sided, atrial fibrillation,
Taste of the Wild (Pacific Stream formula)	Dog	Retriever - Golden	6	Years	Male	74	Pound	(b)(6) had been fed two brands of grain-free kibble since I purchased him at 8 weeks of age. In August 2018, I became aware of a possible link between this type of food and a taurine deficiency which could lead to heart disease. A blood test was performed at UC Davis at that time, and his whole blood taurine result of 222 was below the recommended level for a Golden Retriever. An echocardiogram a few weeks later confirmed DCM, moderate dilation of the left ventricle. His diet was changed to a grain inclusive kibble. He was also given daily heart medications and a taurine supplement. Four months later, another echocardiogram showed his heart to be completely normal.
Fromm Four-Star Nutritionals Grain-Free Salmon Tunalini Recipe Dry Dog Food. Fromm Four-Star Nutritionals Grain-Free Surf & Turf Formula Dry Dog Food.	Dog	Shepherd Dog - German	8	Years	Male	80	Pound	Dog became very lethargic and uncharacteristically uninterested in household/car related activities.
Taste of the Wild Sierra Mountain	Dog	Bulldog	10	Years	Male	56	Pound	Diet for entire life consisted of grain free food. Started in July to have labored breathing with an occasional gag. Activity level had decreased. X-rays showed displacement of trachea. Vet treated for pneumonia due to white areas of lung. Finally got an echocardiogram and the diagnosis was Dilated Cardiomyopathy. Tests also showed his liver, spleen, and caudal vena cava were enlarged. The last week of life, he could not lay down but would just stand and pant. When it got so bad, I chose to let him be euthanized.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
BLUE BUFFALO GRAIN FREE LAMB AND POTATO	Dog	Retriever (unspecified)	5	Years	Male	87	Pound	<p>Edited for brevity Examination Date: 1 (b)(6) TIME: Patient: (b)(6) 5 year, male, English Lab Chief Complaint/Clinical History: (b)(6) was referred for a suspected tracheal mass. The owner reports that his appetite has been off for the past week. He is still eating but eating slowly and only wants people food. No vomiting/diarrhea Last night the owner noted increased respiratory noise to his breathing and his cheeks were puffing out. He has been coughing some the past 24hours only. He ate 1 cup of food this morning He is on a limited ingredient, grain free diet(blue buffalo lamb/potato) for the past 2-3 years. Hx of FB surgery at one year of age. meds: none Physical Exam: t=102 hr-I/OO r=panting mm= muddy pink wt= 871b No heart murmur, bilateral fine crackles heard over both lung fields, lungs harsh Abdomen feels full but non painful, femoral pulses seem weak. He has large thyroid cartilages in his larynx but it is bilaterally symmetrical and is nonpainful. No stridor I)diagnostics: RV ran CBC, profile today- all wnl RV sent two upper cervical xrays 3 view chest- marked cardiac enlargement with severe pulmonary infiltrate, no efTusion 2 view abdomen- stomach empty no ascites, no masses, no significant findings FAST SCAN US of thorax- dilated chambers with very poor contractility, no pericardial effusion seen abdomen- no ascites noted Laboratory: Treatment: I called owner and advised that (b)(6) is in CHF and likely has DCM. Discussed treatment for CHF. Owner wants to proceed. Gave owner estimate for 48hrs ceph catheter, lasix 150mg IV, started lasix cri at (.5mg/kg/hr(20mg lasix/hr) with additional IV lasix boluses to be given in addition, vetmedin 10mg po bid, Placed nasal oxygen cannula, oxygen at 3L/min (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) 6:45pm- transfer to Dr. (b)(6) 7pm: Coughed up large amount of blood tinged fluid. Repeated bolus of Lasix 150mg IV. increased O2 flow to 5 L 7:28pm: Dog started to go into respiratory arrest. Intubated immediately and started positive pressure ventilation. HR still 88 BPM with poorly detectable pulses. Large volume of bloody fluid poured out of airway. Used gravitational positioning to remove as much fluid as possible from airway. Began cardiac compressions. HR dropped to 40, 2.9mls of Atropine IV and Epinephrine. . Blood tinged fluid continued to pour from the airway. Dog went into asystole at 7:30. Repeated Atropine and Epinephrine. Continued CPR and advised owner of the situation. Owner elected to stop CPR time of death 7:38pm Diagnosis: Fulminating Congestive heart failure. Suspect DCM</p>
Taste of the Wild, 4 health	Dog	Bulldog - American	3	Years	Male	56	Pound	<p>We have been feeding (b)(6) grain free food his whole life. Around christmas he developed a cough. Since he had stayed at the vet for surgery, they treated him for kennel cough. I brought him to the vet today for a follow up as the cough had progressed. He HATES the vet so on order to get an xray, they wanted to sedate him. As soon as they did they had to use counter medicine to get him out of it Nd admitted iter oxygen. He was on oxygen for an hour as they were mami g calls to emergency veterinarian 1 hour away. They weren't sure he would make it to the other vet. He was diagnosed Congestive heart failure, secondary to dilated cardiomyopathy (DCM) . His heart is so enlarged, its pumping blood into his lungs. He is now being with heart medication, medication to dry out his lungs, and high doses of the vitamins(taurine) that he was starved of with the grain free food. The veterinarian is certain it was caused by lack of these nutrients with the grain free diet.</p>
Crave Premium dog food with proetin from Salmon and ocean fish 22 lbs	Dog	Terrier - Jack Russell	7	Years	Female	30	Pound	<p>Patient eating Crave grain free diet. Developed dilated cardiomyopathy and congestive heart failure. Patient came for recheck evaluation one week later, still in CHF> Patient suffered respiratory arrest, ventricular fibrillation and ultimately died.</p>
v-dog kinder kibble	Dog	Mixed (Dog)	8	Years	Female	50	Pound	<p>Medium-sized hound mix was given boutique, vegan dog food for five years. Brand: v-dog. On (b)(6), labored breathing and swollen abdomen was noticed in dog. Emergency vet diagnosed her with severe dilated cardiomyopathy (DCM), ascites, and pleural effusion. On (b)(6), dog was taken to vet cardiologist and given diagnosis of diet-induced DCM (left ventricular ejection fraction 10%). Treatment plan: switch dog food, take cardiovascular medications, taurine supplementation, l-carnitine supplementation. Follow-up echo will occur in 2-3 weeks.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Zignature Kangaroo Limited Ingredient Formula Grain-Free Dry Dog Food	Dog	Other Canine/dog	6	Years	Male	5	Pound	(b)(6) had an episode in January 2018 (age 5 1/2) where he had chronic coughing, lethargy and lack of interest in food. I took him to my primary vet, who took an x-ray and noticed an enlarged heart and that his oxygen intake was poor. They referred me to the emergency room where it was confirmed that he had congestive heart failure. After staying overnight, the veterinary cardiologist examined him and noted that his heart condition was unusual for his breed (pomeranian) and age and that there were studies about dogs on alternative meat diets developing conditions due to taurine deficiency.(b)(6) was advised to change his food and received prescriptions for furosemide, enalapril, and pimobendan. (b)(6) was also instructed to take a taurine supplement. After six months, (b)(6) echocardiogram showed improvement, and now after one year, his heart has normalized and he is in the process of being weaned off his medications. The veterinarian advised that this was evidence that his heart condition was definitely dietary related.
Zignature Kangaroo Formula Limited Ingredient Formula	Dog	Retriever - Labrador	9	Months	Male	95	Pound	Patient presented for dyspnea and was diagnosed with dilated cardiomyopathy and secondary heart failure. Taurine level from Idexx was reported as 262 nmol/ml (reference range 60-120)
Earthborn Holistic Grain Free	Dog	Retriever - Golden	Not provided	Not provided	Not provided	Not provided	Not provided	Our golden retriever was diagnosed with DCM linked specifically to his diet.
Zignature brand dog food (pork beef turkey salmon and lamb) kibble and canned food	Dog	Great Dane	5	Years	Male	145	Pound	For the past 6-9 months my dog has been losing weight. Over this period of time he has vomited his food and had loose bowel movements. Starting in October of 2018, he developed diarrhea off and on. By November the diarrhea was constant. On (b)(6), we had to rush our dog to the emergency hospital because he became listless, vomiting and continued diarrhea. Once at the hospital the doctor told us our dog had heart disease. We had no idea of this condition. As a matter of fact, during his comprehensive exam in October his heart was fine. Our local emergency hospital could not treat our dog and referred us to the (b)(6). The doctors at (b)(6), told us about DCM which may be linked to grain free foods. We have been feeding our Dog Zignature Grain Free food for over a year now. Prior to feeding him Zignature we fed him Nutro which is another grain free food. Besides having DCM, our dog has irritable bowel and now pneumonia. Over the past week and a half, he has been in the hospital twice totally 7 days and he probably won't come home for another 2-4 days. Our expected medical expenses will be close to \$10,000.
Kirkland Nature's Domain Salmon and Sweet Potato	Dog	Bulldog - American	6	Years	Female	65	Pound	During a routine physical exam, it was discovered that my pet has moderate reduced heart function. We conducted a brief echo at the veterinarian and were referred to a veterinary cardiologist who confirmed the diagnosis and recommended we change her food.
Kirkland Signature Adult Dog chicken rice and vegetable formula	Dog	Mastiff - Neapolitan	5	Years	Female	85	Pound	We moved homes in July of 2017. At that time, we switched all 4 of our dogs to Costco Kirkland Super Premium Adult Chicken and Rice formula and one of our dogs on the Kirkland Natures Domain Turkey and Sweet Potato. All dogs were healthy prior to starting the food. On (b)(6) was rushed to the ER due to not being able to breath. After extensive testing at (b)(6), it was determined she was diagnosed with DCM (dilated cardiomyopathy, left sided congestive heart failure, and ventricular arrhythmia. Keep in mind she had her physical in March of that year and was a perfectly healthy girl. (b)(6) prescribed her Furosemide, Pimobendan, Enalapril, Spironolactone, Mexiletine, and Taurine supplement. Even with all the medicines and medical treatment, she passed away a few short months later on (b)(6). I truly believe after doing my research part of the problem was diet related and I wish I had changed her food right away after she was diagnosed but I did not know. Since that time, I have switched all my other dogs totally of Kirkland brand food as well as grain free food.
Zignature Kangaroo Formula Limited Ingredient Formula	Dog	Akita	9	Years	Male	86	Pound	Dog went into congestive heart failure on (b)(6). X-rays and PROBNP inconclusive. Ultrasound showed DCM. Dog is now being treated. Dog was fed Zignature Kangaroo exclusively for at least a year. Was fed Acana Duck and Pear prior to that. Cardiologist confirmed DCM.
canidae pure land, Kirkland grain free canned dog food	Dog	Retriever - Golden	3.6	Years	Male	75	Pound	3 year old healthy/fit golden retriever collapsed on (b)(6) and suffered sudden death. (b)(6) was fed Canidae brand grain free dry dog food (Pure Land & Pure Sea) and Kirkland brand grain free canned dog food his entire life. The autopsy revealed an enlarged heart, foam in lungs, and a "floppy atrium" consistent with Dilated Cardiomyopathy (DCM). This scenario matches other similar cases of young, otherwise healthy dogs suffering from DCM. (b)(6) presented no signs or symptoms of illness prior to collapsing and sudden death. He was alive one minute and dead the next. It is a stunning and devastating situation.
Castor and Pollux Pristine Lamb and Lentils dog kibble	Dog	Not provided	4	Years	Female	38.25	Kilogram	My dog was diagnosed by a board certified cardiologist veterinarian after a workup that included an echocardiogram, to have dietary mediated dilated cardiomyopathy (DCM). My dog's diet included grain free kibble and treats for the 4 years prior to her diagnosis. The cardiologist diagnosed the dilated cardiomyopathy to have been caused by the grain free food she ate.
Castor & Pollux Organix Grain Free, Primal Freeze Dried Nuggets for dogs	Dog	Terrier - Yorkshire	1	Years	Male	3.51	Kilogram	(b)(6), a 1-year-old intact male Yorkshire terrier mix, was presented to the (b)(6) ER in the early morning hours of (b)(6) and was subsequently transferred to the (b)(6) Cardiology Service for respiratory distress and suspected congestive heart failure. (b)(6) was observed to have labored breathing the morning of (b)(6), although his owner is unsure exactly when it started. He vomited clear frothy foam after coughing multiple times throughout the day and he had a decreased appetite. (b)(6) was taken to (b)(6) that evening for further evaluation. At (b)(6), a CBC showed a marked thrombocytopenia (automated, no smear performed) and thoracic radiographs showed an enlarged heart, a moderate diffuse unstructured interstitial pattern perihilar and caudodorsal lung lobes, and a mildly distended cranial lobar vein. Congestive heart failure was suspected and (b)(6) was given furosemide (7 mg IM @ 10:30pm) and pimobendan (1.25mg PO @ 10:30pm). Juju was subsequently referred to (b)(6) for further cardiac workup. (b)(6) other medical problems include recent vomiting and diarrhea. He vomits every once in a while, most recently a couple of weeks ago after eating houseplants. He also had a bad bout of diarrhea after eating the plants. He was taken to his primary veterinarian who prescribed medications and a probiotic. The vomiting resolved and his feces normalized until about 2 days ago when they became soft again.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
4 Health Grain Free	Dog	Retriever - Golden	8	Years	Female	97	Pound	patient was diagnosed with cardiomyopathy caused by taurine deficiency on 10/09/2018 by cardiologist, patient has been eating 4 Health Grain free
Acana Heritage dog food, Prime nuggets grain free dog treats	Dog	Unknown	3	Years	Not provided	Not provided	Not provided	Submitted as RFR EON-376956. CVM resubmitting as PFR. 3 yo patient presented for weight loss and respiratory problems. Found to have dilated cardiomyopathy. Patient has been eating a grain free diet and treats its entire life. Grain free diets have recently been linked to taurine deficiency leading to DCM in dogs. Diet is called Acana Heritage (multiple flavors) Treats are prime nuggets 1/19/19 Development of dilated cardiomyopathy - respiratory distress, cough, weight loss leading up to date Taurine levels pending
Earthborn Holistic Grain Free (Unknown Protein/Flavor)	Dog	Unknown	Not provided	Not provided	Not provided	Not provided	Not provided	Submitted as RFR EON-378350. CVM resubmitting as PFR. Initial FDA report linking possible cause of DCM linked to certain foods. This canine, (b)(6), was diagnosed with Dilated Cardiomyopathy on 4/25/2018. She was being fed a suspect food high in legume ingredients. 2 week history of increased respiratory effort severe generalized cardiomegaly and suspect congestive heart failure moderate to severe global cardiac dilation and severe left ventricular hypokinesis consistent with DCM Diagnosis: Dilated cardiomyopathy leading to ventricular arrhythmia and historical CHF (pleural effusion)
Zignature Duck Formula	Dog	Mixed (Dog)	8	Years	Male	57	Pound	(b)(6) participated in a 2 mile walk in (b)(6) called the (b)(6). It was a 2 mile walk around downtown(b)(6) for owners and their dogs. (b)(6) had walked 2 miles before without any issues. This particular day was cooler and overcast and slightly rainy. During the walk I noticed (b)(6) was panting easily - I attributed that to the excitement of the day. In the days after the walk I noticed he wasn't his usual self - he wouldn't eat, was very listless and had a persistent cough. I thought he may have contracted kennel cough from being around all of the other dogs during the walk, so I made a vet appointment with our normal vet. At this appointment the vet took XRays and performed an ultrasound where it was indicated (b)(6) had an enlarged heart and he had fluid building in his lungs. We were given a low dose of a diuretic for the fluid in his lungs and were told to make an appointment with a specialist sooner rather than later. The next day we went to a canine cardiologist where it was confirmed he had dilated cardiomyopathy. He was put on a host of medications to help his heart and were told he had 6-12 months to live. It was first suspected it was genetic DCM given he was a Boxer Mix. He was eating Zignature grain free Duck formula at the time of is diagnosis due to his food allergies. He was immediately switched to a raw diet with added fish oil and taurine supplements. The improvements were noticeable right away. He has to have checkups every 3-4 months to monitor his condition - at \$500 a visit, it was putting us into debt quickly. My husband lost his job the day of (b)(6) diagnosis and I lost mine a few months later so keeping up with the cost has been difficult. At his most recent visit on January 25th 2018 our cardiologist noticed a significant reduction in the size of his heart and an increase in the output of his heart - all great news. Given his dietary history and diet change she concluded that more than likely it was his previous grain-free diet that was causing the issues. There is no concern of congestive heart failure currently with (b)(6). Note - on the report there is an error. It states that his previous grain-free diet of Fromm probably caused his DCM. He was indeed on Zignature. MedVet should have that listed in their records
Royal Canin Multi Function Renal Support and Hydrolyzed Protein	Dog	Retriever - Labrador	3	Years	Female	50	Pound	(b)(6) was put on Royal Canin Multifunction Renal Support Hydrolyzed Protein dry food one year ago and I feel it has been helpful in managing her renal disease and her tendency towards loose stools. Her stools have been perfect and her renal values have been stable. I had some concern regarding her being on a vegetarian, nearly vegan, diet, given recent reports of DCM in dogs on vegetarian and vegan diets, as well as grain free and exotic protein diets. The cardiologist I work with agreed that it was worthwhile to do a baseline echo and the echo showed borderline to decreased heart function. A cardiac pro BNP test was elevated, also supporting myocardial disease. Taurine levels are pending at UC Davis. I have reported this to Royal Canin but am concerned that because (b)(6) has pre-existing medical concerns and was receiving other supplements, treats, and medications, they may not pursue this adequately to ensure the diet does not pose risk to other dogs.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Earthborn Holistic Western Feast	Dog	Other Canine/dog	4	Years	Female	26	Kilogram	<p>Our 4Y old dog (b)(6) (Husky mix) started experiencing severe GI upset on Monday 1/21/2019—Mostly watery and mucousy diarrhea with undigested food and some vomiting. She had often had cycles of GI upset over the last year, but we were always told by our vet to feed bland food and were never asked about her food or brand. Everyone seemed to think she had a "sensitive stomach." This time, the GI upset did not resolve and progressed to hemorrhagic diarrhea with frank blood, noticed by her owners on (b)(6). She was taken to the ER at (b)(6) the same day and was found to be severely anemic and her blood was found to be markedly hemolyzed (see attached records). She presented with a fever. She was transferred to (b)(6) emergent and required 2 blood transfusions that night. By the following evening she was starting to decline again, with liver and kidney values rising and extreme lethargy. She also developed very red skin, eyes, and gums were injected which doctors found curious given her severe anemia and previous hemorrhagic state. Ultrasound findings suggestive of hepatitis, nephritis, and GI bloating/distention. COOMBS test came back negative. Her third night in the ICU she developed tachypnea, bradycardia, and severe edema in lungs and abdomen. It was hard for her to breathe and the decision was made to hasten death by euthanasia.</p> <p>With such an aggressive disease process and no diagnosis yet found, doctors at (b)(6) recommended (b)(6) be taken to (b)(6) for a necropsy. Necropsy results found extensive liver and kidney damage and also moderate dilated cardiomyopathy (see report for reference). Case coordinator (b)(6), PhD, DACVP, writes in the necropsy report: "With the marked dilated ventricles of the heart and a history of being on a grain free diet for 3.5 years a dilated cardiomyopathy must be considered." (b)(6) regular dog food was a Earthborn Holistic, a grain-free dog food high in legumes that the owners fed (b)(6) upon recommendation from a local 'natural' pet food store.</p> <p>Because of these startling findings underlying such an aggressive disease process in a young dog, and because of the recent warnings issued by the FDA in summer 2018 about connections between grain-free food and DCM, it was thought that this report would provide helpful data to the government.</p>
Taste of the Wild - PREY Angus Beef	Dog	Other Canine/dog	5	Years	Female	64	Pound	<p>My dogs hair had seemed to stop growing on her face. I took her to vet on the Jan 18th. It was discovered that she had a murmur in addition, hypothyroidism. I took her back Jan 22nd because she was having diarrhea and vomiting. He took xray to see if she had blockage. He also took image of heart. Her heart was enlarged. On the 25th, took her back for another blood test to confirm Hypo. On 2/1 took her to get echo cardiogram. She was diagnosed with Advanced DCM, Afib, muscle wasn't contracting well and it was deemed due to age, grain free food. The dog came from a reputable breeder(double doodle) and there is no known heart disease in the family or with offspring. Parents are still alive.</p> <p>They said my dog has less than a year to live. She is on many medications, can go into congestive heart failure at any time. I have contacted Taste of the Wild because that is the last food I was feeding her for months.</p>
Honest Kitchen grain free Turkey	Dog	Dachshund - Standard Long-haired	14	Years	Female	12	Pound	(b)(6) got DCM out of the blue. Her vet said he'd never seen it advance so quickly in a dog
FROMM Four Star Nutritionals	Dog	Other Canine/dog	2	Years	Female	50	Pound	I have been feeding my dog FROMM Gold Grain Free. When I saw the reports of DCM rising in grain free fed dogs I contacted by vet and scheduled a echo. I had an echo one week later and my dog was diagnosed with Left Ventricular Systolic Dysfunction from grain free diet.
Iams ProActive Health Adult MiniChunks Dry Dog Food	Dog	Mixed (Dog)	7	Years	Female	13.8	Pound	Exclusively fed Iams ProActive Health Adult MiniChunks Dry Dog Food for 4 years. Initially no heart murmur. Normal weight for her size. Diagnosed with heart murmur grade 2 in 2018 . Today diagnosed with grade 3 murmur and severely enlarged heart (dilated cardiomyopathy). Given 2 weeks to 6 months to live. Heart size 13.4 (should not be over 10).
Acana - grain free formulas. We fed both chicken and beef formulas.	Dog	Retriever - Labrador	1.5	Years	Female	70	Pound	<p>Our dog was fed Acana Grain free food for her lifetime. We did a lot of research and thought we were feeding her a good brand. She began to have a coughing spell like she was choking or gagging. After a few days we took her to the veterinarian to find out that her heart was extremely enlarged and she was in congestive heart failure. We immediately took her to a cardiac specialist that day and were told that the outcome was not overly optimistic. We were told this was highly unlikely for a dog her age and her breed as she was diagnosed with Dilated Cardiomyopathy. This was in August 2017. At the time we were told she would probably have about 6-8 months to live and we began giving her many different heart medications. At the time we were still feeding her Acana grain free food. Her repeat visits showed no improvement and actually her heart continued to enlarge. In March 2018 we received a call from our heart specialist regarding some studies they had found with DCM and grain free food and we were told to immediately take her off this food. She continued on her medication regime which includes 4 heart medications as well as taurine and L-carnitine supplements and a drug was added for high blood pressure in her lungs. At her next visit several months after being removed from grain free food, her heart actually showed some improvement and at her visit in January 2019 we received additional great news that her heart has continued to get smaller and her blood pressure issues have resolved in her lungs. In addition, for the first time her heart function has improved! We were told that there is no way that her condition would have improved like this from just medication and there is definitely some correlation from removing her from grain free food. I have thought about this for a long time and have decided that this must be reported. I am confident that the food is a contributing factor to my Dog's heart condition.</p>
sportmix wholesome lamb and rice grain free	Dog	Collie - Rough-haired	5	Years	Female	51	Pound	Owner was concerned because pet had been on a grain free diet for several years brought pet to us for exam and blood work, pet has been diagnosed with early DCM and taurine deficiency

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste of the Wild Grain High Prairie with Roasted Bison and Roasted Venison A Grain Free Diet. Taste of the Wild Pacific Stream A Grain Free Diet. Taste of the Wild Sierra Mountain	Dog	Retriever - Labrador	9	Years	Male	105	Pound	Veterinary exam for lipoma. Veterinarian heard heart murmur so did ProBNP. Lab value extremely elevated 3000+ so referred to veterinary cardiologist. He has been fed grain free Taste of The Wild most of his life. Cardiologist did cardiac ultrasound that showed significant dilated cardiomyopathy. EKG shows ventricular arrhythmia. Given 4 prescription medications and 2 supplements. Multiple Holter monitors to assess arrhythmias. Cardiologist said correlation between grain free food and DCM.
Zigniture Kangaroo Limited Ingredient Grain Free Dry Dog Food	Dog	Pointing Dog - German Short-haired	4	Years	Male	55	Pound	(b)(6) went into Congestive Heart Failure that required emergency interventions over the weekend. 7 days prior to emergency admission he had a sedated tooth extraction which he tolerated well. He had a persistent cough after the surgery (to which I was told was related to the intubation). His cough increased and respiratory distress increased, and so I took him to emergency. There they discovered an enlarged heart/severe tachycardia/fluid on his lungs. He was kept in emergency for 24 hours to stabilize him and then brought home on lasix and pemobeden. He followed up with a veterinary cardiologist 2 days later to confirm diagnosis and move forward. His ECHO confirmed DCM. He has been started on 5 medications, and 2 supplements (taurine and carnitine). Taurine level tests were sent off and expected back in 2 weeks. (b)(6) has exclusively eaten a diet of Zigniture Grain Free Kangaroo Food since he was a puppy. This is the concern I am reporting. It is my understanding that there is concern that grain free/exotic protein dog foods have been linked to DCM in dogs without a genetic predisposition for it. Thank you for following up with me about this report, and the research you are doing in regards to this public health concern.
Canidae Grain-Free Pure Wild Boar Limited Ingredient Adult Dry Dog Food, Canidae Grain Free Pure FoundationsPuppy Formula with Canned Chicken	Dog	Foxhound - American	10	Years	Male	190	Pound	On 3/19/18 after I received his allergy test results, the test and our vet recommended a grain free food. One of the recommendations was Canidae brand food. I ordered the Canidae Grain Free Pure Wild Boar Limited Ingredient Dry Dog food, Canidae Grain Free Pure Foundations Puppy Formula with Chicken Canned Dog Food, as well as Canidae Grain free treats from Chewy on 3/19/18 and would have begun feeding it to him immediately upon arrival a day or so later. He developed a cough mid July, which we treated as kennel cough for 2 rounds of antibiotics. On (b)(6), I brought (b)(6) to the ER vet as I knew in my heart something more was wrong and he was diagnosed with heart failure. I have the chest Xrays as well as follow up echocardiograms that show this. While meds have pulled him back from heart failure, he still has Dilated Cardiomyopathy. Several vets have suggested the Canidae food was the cause.
Zignature Kangaroo Limited Ingredient Formula Dry Dog Food	Dog	Weimaraner	6	Years	Male	65	Pound	Product: Zignature Kangaroo Limited Ingredient Formula Dry Dog Food - A 6 y/o male, "(b)(6)", Weimaraner breed dog, 65 lbs, shots-up-to-date, with last routine check-up in 06/2018, in good health, collapsed and was unresponsive on (b)(6) at 10:00 a.m. (b)(6) was brought to (b)(6), where (b)(6) was given a full blood panel, examination, and although the dog was diagnosed with signs of a urinary tract infection, there was no other diagnosis except that the dog may have been overly excited. The Complainant (owner) called (b)(6), and spoke with (b)(6) regular veterinarian, Dr. (b)(6), who stated that the dog may have a heart problem and referred the case to Dr.(b)(6), a cardiologist. Dr.(b)(6) did a chest ex-ray, chest ultrasound, a whole blood draw, and cardiogram. Dr. (b)(6) diagnosed (b)(6) with Dilated Cardiomyopathy (DCM), and close to sudden death. Taurin level was 250. The dog was treated with 4 medications: Pimobendan, Benazpril, Furosemide, and Spironolactone with instructions that the dog do no exercise and activities in order to recuperate. The Complainant believes that there is something in this food that caused (b)(6) medical condition, which could either be the kangaroo due to its being exotic animal, the pea, or Taurine. She had fed her dog this product, per directions, from estimated 11/14/19 thru 11/28/19. The Complainant contacted Pet Foods Global, Inc, Customer Service, (888) 897-7207, and a representative advised her that the product's ingredients had changed in 05/2018 and they had increased the amount of Taurine in the product, but there was no link between the changed in the dog food and DCM. On 01/30/19 she called the Customer Care Lead, (b)(6), who requested the medical records, which the Complainant did not provide as she was not comfortable with sharing these and has discussed with a lawyer.
Orijen Six Fish	Dog	Bulldog - American	11	Years	Male	95	Pound	Dog started coughing and couldn't walk. Took him to the ER and he was diagnosed with Dilated Cardiomyopathy. Almost 2 years ago, at time of MCT removal, he had X-rays and ultrasound done and his heart was healthy. This is exactly the time I switched his food to grain-free Orijen Six Fish.
Natures Recipe Grain Free Salmon Sweet Potatoe and Pumpkin	Dog	Shepherd (unspecified)	11	Years	Male	67	Pound	For about a week we noticed that our Dog, (b)(6) developed a slight cough that was only noticeable in the morning until the evening of (b)(6) our (b)(6) started having rapid shallow breathing with respirations over 100 per minute at times. We took him to the Vet in the morning where they immediately heard his irregular heartbeat and sent us right over to an emergency vet with a cardiologist on staff. (b)(6) had echocardiogram, X-ray, EKG and blood work and it was determined that he has Dilated Cardiomyopathy. Our (b)(6) now has to take 5 medications twice a day for the rest of his life. Both Vets mentioned that there is a link between the grain free dog food and DCM, you can imagine how heartbroken I am thinking that I have caused this by providing him, what I thought was a healthy choice in dog food. He has been on several types over the years but mostly Natures Recipe grain free Salmon and Pumpkin

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Pro Pac Ultimates Grain Free Dog Food. Overland Red variety.	Dog	Shepherd Dog - German	7	Years	Male	100	Pound	(b)(6) consumed grain free food for 5 years. He started collapsing and was taken to the vet. Vet confirmed DCM. Health deteriorated from diagnosis date and we lost (b)(6) to stage IV heart failure 3 months after diagnosis.
Castor and Pollux Organix Grain Free Chicken and Sweet Potato Recipe Dry Dog Food, Castor and Pollux Pristine Grain Free Grass Fed Lamb and Lentil Dry Dog Food	Dog	Shepherd Dog - German	4	Years	Female	85	Pound	Dog was asymptomatic but had been on a grain free diet for over 3 years. Dog's blood was tested by her local veterinarian and found to have elevated N-proBNP. Referred to cardiologist for workup. Echocardiogram revealed moderate diet mediated dilated cardiomyopathy.
Natures Domain Salmon Meal and Sweet Potato	Dog	Retriever - Golden	13	Years	Female	68	Pound	(b)(6) seemed fine but over the course of about 6 months, she started to seem less active, had bursts of energy and then tired. Cough when she laid down. Her breathing seemed erratic. I took her to the vet in November, 2018, December of 2018 and they didn't think anything was wrong. Then she was giving me a hard time to eat and they thought she might have had stomach ulcers from the meds. She took antacid type meds over the christmas holiday with no change only worse. Beginning of January they did an ultrasound of her stomach and detected fluid in her chest and an enlarged heart. We took her to a veterinary cardiologist on January 8 and he diagnosed DCM and told us to discontinue the Costco Natures Domain Salmon and sweet potato dog food and began her on heart meds. Her condition was too far gone. Her left ventricle was only working at 14% capacity. There was no chance for improvement so we put her down (b)(6).
Taste of the Wild PREY Angus Beef Limited Ingredient Formula for Dogs 4/2018-12/2018 Taste of Wild Pacific Stream Canine Recipe with Smoked Salmon a grain Free Diet 05/2009-4/2018	Dog	Other Canine/dog	9	Years	Male	90	Pound	Taste of the Wild Pacific Stream & Buffalo customer for the past 10 + years, and feeding Prey Angus Beef 8 months (due to digestive problems for about 3 years). Dec 3rd we took our dog to the vet for coughing/hacking. We live in a rural area in (b)(6). His heart was extremely enlarged with Dilated Cardiomyopathy & Congestive Heart failure. Dr. visits plus many heart medications and 2 months later, he finally saw the traveling heart specialist for a full cardio work up. This is not a genetic disposition. With \$3000 in medical, a change of diet since Dec 3rd and heart medication/supplements his heart is beginning to heal and his digestive issues do not exist anymore.
Acana Pork and Squash and Lamb and Apple - both Grain free.	Dog	Retriever - Golden	5.5	Years	Male	65	Pound	(b)(6) had continual vomiting throughout the day on (b)(6). (b)(6) was taken to the veterinarian and had blood work, abdominal and thoracic x-rays, which revealed an enlarged heart. He was taken to an emergency clinic later that evening, where an ultrasound of the heart was performed. No evidence of pericardial effusion was observed. We returned to the veterinarian on (b)(6) for an echo cardiogram and EKG by a board certified cardiologist. A diagnosis of dilated cardiomyopathy was received. (b)(6) was fed grain free Acana pork/squash alternating with grain free Acana lamb/lentil for 3 1/2 years. We then fed Fromm grain free lamb and lentil from March 30, 2018- September 7, 2018 when we changed to Holistic Select chicken. Our cardiologist recommended Purina Pro Plan. On February 10, 2019 we started feeding (b)(6) Purina Pro Plan Focus.
Blue Wilderness	Dog	Unknown	Not provided	Not provided	Female	Not provided	Not provided	Submitted as RFR EON-379142. CVM resubmitting as PFR. Possible cause of Dilated Cardiomyopathy Initial FDA report linking possible cause of DCM linked to certain foods. This canine, (b)(6), was diagnosed with Dilated Cardiomyopathy on 6/12/17. She was being fed a suspect ingredient high in legume ingredients. There is severe global cardiac dilation and severe generalized hypokinesia consistent with dilated cardiomyopathy (r/o idiopathic vs. tachycardia-induced). There is mild mitral valve thickening with low velocity mitral regurgitation. Pulmonary arterial pressures appear marginally elevated. There is moderate to severe abdominal effusion and scant pleural effusion. No pericardial effusion was observed. Diagnosis: Rapid atrial fibrillation Dilated cardiomyopathy - r/o idiopathic vs. tachycardia-induced Congestive heart failure (abdominal and pleural effusion) Reported product Blue Wilderness. Manufacturer reported as Champion Petfoods which manufactures Orijen and Acana.
Blue Wilderness Grain Free (unknown variety)	Dog	Unknown	Not provided	Not provided	Female	Not provided	Not provided	Initial FDA report linking possible cause of DCM linked in certain foods. This canine, (b)(6), was diagnosed with Dilated Cardiomyopathy on 6/12/2017. She was being fed Blue Wilderness (unknown variety) grain free high in legume ingredients. energy level had declined over the past two weeks and had become more lethargic. Rapid atrial fibrillation with average heart rate of 200-220 bpm. There is severe global cardiac dilation and severe generalized hypokinesia consistent with dilated cardiomyopathy. Diagnoses: Rapid atrial fibrillation, Dilated cardiomyopathy, Congestive Heart Failure

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Nutro grain free adult dry dog food farm-raised chicken lentils and sweet potato recipe.	Dog	Retriever - Golden	6	Years	Male	30.6	Kilogram	Due to recent discovery of diet-associated dilated cardiomyopathy (DCM) in dogs, and especially since (b)(6) is a golden retriever (this breed seems to be more predisposed to this), the owner had his whole blood taurine level measured. It was low (204) for a golden retriever (ref. reported to be >250). The patient had no symptoms of DCM. An echocardiogram was performed on 10/10/18 to screen for the presence of DCM. Mild DCM was diagnosed. The patient was switched from Nutro grain-free chicken, lentil, and sweet potato dry food onto Fromm's gold adult dry food. Also, taurine supplementation (1000 mg by mouth every 12 hours) was started. A recheck taurine level in January '19 was normal (331). A recheck echocardiogram on 1/31/19 revealed that the DCM had resolved.
Zignature Kangaroo Limited Ingredient	Dog	Unknown	Not provided	Not provided	Male	Not provided	Not provided	Initially reported as RFR EON-379401. CVM resubmitting as PFR. Initial FDA report linking possible cause of DCM linked to certain foods. This canine, (b)(6), was diagnosed with Dilated Cardiomyopathy on 8/2/2018. He was being fed a suspect food high in legume ingredients. Whole blood taurine levels were run (6/18/18) and were low at 152 nmol/mL (normal range 200-350). Diagnosis: Dilated cardiomyopathy with a recent taurine-deficiency (potentially associated with prior grain-free diet)
Blue Buffalo Life Protection Chicken and Brown Rice Adult Formula	Dog	Unknown	Not provided	Not provided	Male	Not provided	Not provided	Originally submitted as RFR EON-379406. CVM resubmitting as PFR. Initial FDA report linking possible cause of DCM linked to certain foods. This canine, (b)(6), was diagnosed with Dilated Cardiomyopathy on 7/25/2018. He was being fed a suspect food high in legume ingredients. An irregular heart rhythm and gallop were noted on physical exam. history of decreased energy. Sinus tachycardia with a right bundle branch block; occasional polymorphic single ventricular premature complexes - 10 per minute. severe left and right ventricular dilation and severe ventricular hypokinesia. The right atrium appears mildly dilated; the left atrium appears mild to moderately dilated. There is mild low velocity mitral regurgitation and mild tricuspid regurgitation with normal velocities likely attributable to annular dilation. Diagnosis: Dilated cardiomyopathy, Supraventricular tachycardia with occasional ventricular arrhythmia.
Acana (unknown variety)	Dog	Unknown	Not provided	Not provided	Male	Not provided	Not provided	Originally reported as RFR EON-379412. CVM resubmitting as PFR. Initial FDA report linking possible cause of DCM linked to certain foods. This canine, (b)(6), was diagnosed with Dilated Cardiomyopathy on 9/4/2018. He was being fed a suspect food high in legume ingredients. acute weakness and abnormal breathing. Atrial fibrillation with average heart rate of 160-180 bpm; QRS complexes appear wide suggestive of LV enlargement. There is moderate to severe generalized cardiomegaly and severe myocardial failure consistent with dilated cardiomegaly. There is mild low velocity mitral regurgitation and mild tricuspid regurgitation with normal velocities. Regurgitation appears secondary to annular dilation. Diagnosis: Dilated cardiomyopathy, atrial fibrillation, Congestive heart failure, Azotemia
4Health Untamed (Lamb and Lentil)	Dog	Unknown	Not provided	Not provided	Male	Not provided	Not provided	Originally submitted as RFR EON-379413. CVM resubmitting as PFR. Initial FDA report linking possible cause of DCM linked to certain foods. This canine, (b)(6), was diagnosed with Dilated Cardiomyopathy on 10/3/2018. He was being fed a suspect food high in legume ingredients. severe generalized cardiac dilation and left ventricular myocardial failure consistent with dilated cardiomyopathy. There is mild pleural effusion and scant peritoneal effusion. There is mild mitral and tricuspid valve thickening with mild low velocity mitral regurgitation and mild tricuspid regurgitation with mildly increased velocities. Diagnosis: Dilated cardiomyopathy leading to suspect congestive heart failure (bicavitary effusion)
BLUE Wilderness Salmon For Adult Dogs	Dog	Rottweiler	7	Years	Male	98	Pound	I am contacting you because I noticed that the FDA was looking into grain free dog food being a link to DCM. On (b)(6) My wife and I had to put our Rottweiler down. The reason he was put down per the veterinarian was he had DCM / enlarged heart. This is something that came out of nowhere. The day before he was running in the back yard and showed no signs of DCM. The vet stated DCM is hard to fine until it's too late and there was not much we could do. (b)(6) (our Rottweiler) was 7 years old and we took him to the vet every year and he never showed any signs. After (b)(6) died I contacted the breeder where we got him and notified them of what the vet stated. The breeder stated no other dogs from (b)(6) litter had any problems with DCM and the parents of (b)(6) were still alive and doing well. I thought this was odd as DCM can be genetic but out of the 5 Rottweiler from (b)(6) litter and his parents still being alive and showing no signs this brought questions to me. It's been over year now that (b)(6) has been gone and this morning I saw a news article that the FDA was looking into grain free dog food being a link to DCM and I wanted to make contact with you guys and pass on my story and maybe it could help. Information about (b)(6) and what food we provided him is below. Thanks for looking into this and also if you could keep me informed about the FDA findings that would be great. Also if I can be anymore help please contact me. (b)(6)- Rottweiler American / German mix. Have papers from breeder. Dog Food- BLUE Wilderness@SalmonFor Adult Dogs. Started feeding him this in 2015.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
4health Untamed Open Highland Recipe Lamb and Lentil Recipe	Dog	Retriever - Golden	2	Years	Female	25.7	Kilogram	(b)(6) was on a grain free diet from the time we weaned her off of her puppy food. Yesterday, at 1 year and 10 months old, (b)(6) was diagnosed with DCM by a cardiologist at (b)(6) through an echocardiogram. There was no previous forms of heart disease in (b)(6) bloodline. The only cause the cardiologist could assume was grain based diet. The Taurine test is being completed and (b)(6) is now on 4 different medicines to try and reverse the damage. In her hearts current condition, with no medication or changes in her diet, the cardiologist said she would have under a year to live. We thought we were doing our dogs good by putting them on a grain free diet from a reputable, fairly expensive product (4health Untamed Lamb and Lentil). We took her to our vet on Friday (b)(6). They did a chest x-ray and noticed the bigger heart and liquid in her abdomen. From there we took her to an Emergency vet and they did a liquid test. Monday (b)(6) we took her to (b)(6) to be looked at by a cardiologist who performed an echocardiogram.
Acana Grasslands Kibble Stella & Chewy's Raw Kibble Lamb	Dog	Pit Bull	8	Years	Female	65	Pound	(b)(6) started to become finicky about her food, then she started coughing and losing weight, and her stomach became bloated. I took her into the vet and she was experiencing congestive heart failure as a result of Dilated Cardiomyopathy. She ate Acana brand grain-free dog food and sometimes in the last year Stella & Chewy's kibble.
Grain-free Rachel Ray Peak dry and canned food	Dog	Mixed (Dog)	2.5	Years	Female	16	Kilogram	Acute onset of inappetance and tachycardia felt at home. Dilated cardiomyopathy with multiform ventricular tachycardia. Elevated troponin I 17.9 (normal <0.2 ng/mL). Idexx 4Dx negative, lepto panel negative.
Dick Van Patten's Natural Balance Limited Ingredient Diets Grain Free Potato & Duck Formula Single Animal Protein Source	Dog	American Pit Bull Terrier	10	Years	Male	77	Pound	Presented on 12/22/18 for acute onset cough. Was started on doxycycline 100mg, 2 caps po bid for 10 days; cough improved slightly. Dr. (b)(6) was unable to hear his heart that day as he was moaning a lot. Presented for recheck on 1/11/19. Grade III/VI murmur ausculted that day. Chest rads revealed generalized cardiomegaly. Echocardiogram done on 1/16/19 which revealed CHF due to DCM, mitral and tricuspid insufficiency (could be secondary to dilation of annulus/DCM).
Taste of The Wild (unknown variety)	Dog	Cattle Dog - Australian (blue heeler, red heeler, Queensland cattedog)	4	Years	Female	21.4	Kilogram	(b)(6), a 4 Yrs. 7 Mos., Female, Cattle Dog, Australian, owned by (b)(6) was presented on (b)(6) for cardiac evaluation following presentation to our ER service for abdominal distension. She had a c-section 4 weeks ago and had 4 puppies. Owners have noticed progressive abdominal distension, panting, and inappetance. She has been fed Taste of the Wild since puppyhood. There is moderate to severe generalized cardiomegaly and severe left ventricular myocardial failure consistent with dilated cardiomyopathy. There is mild low velocity mitral regurgitation and moderate tricuspid regurgitation with normal velocities. A moderate volume of peritoneal effusion was present on exam. Diagnosis: Dilated cardiomyopathy leading to congestive heart failure
Acana (unknown variety) Grain Free	Dog	Sheepdog - Shetland	6	Years	Male	16.54	Kilogram	(b)(6), a 6 Yrs. 2 Mos., Neutered Male, Sheepdog, Shetland, owned by (b)(6) was presented on 10/26/2018 for a cardiac evaluation. Poor contractility with severely enlarged left ventricular end systolic and end diastolic dimensions, thin left ventricular free wall and intraventricular septal wall; consistent with DCM. Small amount of mitral regurgitation with decreased velocities and a small amount of tricuspid regurgitation with mild to moderately elevated velocities. Moderate biatrial dilation. Diagnosis: Dilated cardiomyopathy with poor contractility and moderate biatrial dilation, R/O Dietary induced vs idiopathic
4 Health Large Breed Grain Free (unknown protein source in food)	Dog	Great Dane	2	Years	Male	62	Kilogram	(b)(6), a 2 Yrs. 6 Mos., Neutered Male, Great Dane, owned by (b)(6) was presented on (b)(6) for cardiac evaluation following presentation to our ER service for evaluation of peritoneal effusion. He was seen by his pDVM today for abdominal distension. A rapid, irregular rhythm was noted on physical exam and an ECG was run showing rapid atrial fibrillation. Owners noted the abdominal distension and a decline in appetite x 2 days. He is fed 4 health large breed grain free diet. ECG: Rapid atrial fibrillation and widened QRS complexes consistent with LV enlargement; average heart rate of 240-260 bpm. There is severe global cardiac dilation and severe left ventricular myocardial failure consistent with dilated cardiomyopathy. There is mild low velocity mitral regurgitation and mild tricuspid regurgitation with mildly elevated velocities. There is severe peritoneal effusion and moderate pleural effusion. Performed abdominocentesis and thoracocentesis after patient was given 12 mg butorphanol IV- 7.3 liters of straw colored abdominal fluid was removed; 1.3 liters of pleural fluid was removed. Diagnosis: Atrial fibrillation, Dilated cardiomyopathy, Congestive heart failure (pleural and peritoneal effusion), Mild pulmonary hypertension
Victor Grain Free Dog Food (unknown variety)	Dog	Retriever - Labrador	5	Years	Male	47	Kilogram	(b)(6), a 5 Yrs. 4 Mos., Male, Retriever, Labrador, owned by (b)(6) was presented on (b)(6) for cardiac evaluation. (b)(6) was presented to Emergency Services on Friday through Dr. (b)(6). (b)(6) was presented for evaluation of congestive heart failure. (b)(6) was noted to have increased respiratory effort at the end of October. He was diagnosed with congestive heart failure. He has recently had a decreased appetite, although he will eat when the owners cook for him. He is currently on enalapril 20 mg once daily and furosemide 75 mg b.i.d. He was presented today due to decreasing appetite and abdominal distention. Dr. (b)(6) evaluated (b)(6) and increased his Furosemide to 80 mg PO BID and started Vetmedin 10 mg PO AM, 15 mg PO PM. (b)(6) had 5400 mL of fluid drained from his abdomen on Friday. His owners have noted a clinical improvement since his medication adjustments and abdominocentesis. (b)(6) was previously fed Victor grain free diet for life, but was recently switched to Purina Proplan. ECG: normal sinus rhythm with frequent ventricular ectopy of RV origin including ventricular couplets and one ventricular triplet average heart rate of 160 bpm. Diagnosis: Dilated cardiomyopathy leading to a ventricular arrhythmia and congestive heart failure

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Blue Buffalo (owner believes was a grain free variety)	Dog	Schnauzer - Giant	5	Years	Male	50	Kilogram	(b)(6) ((b)(6)), a 5 Yrs. 0 Mos., Neutered Male, Schnauzer, Giant, owned by (b)(6) was presented through Emergency Services on (b)(6) for cardiac evaluation. (b)(6) has a history of GI upset. Today he was admitted through Dr. (b)(6) for vomiting, lethargy, soft stools/diarrhea. Scant abdominal effusion was noted on AU. An arrhythmia was noted on exam and an echocardiogram and ECG were recommended. He is fed Blue Buffalo (possibly grain-free). ECG: Atrial fibrillation with average heart rate of 140-160 bpm. There is generalized cardiac chamber enlargement and severe LV hypokinesis consistent with dilated cardiomyopathy. There is mild to moderate low velocity mitral regurgitation. There is mild tricuspid regurgitation with normal velocities. All cardiac valves appear normal. Diagnosis: Dilated cardiomyopathy, Atrial fibrillation
Acana whitefish and sweet potato, Merrick turkey and sweet potato	Dog	Retriever - Labrador	6	Years	Male	70	Pound	My dog collapsed. I rushed to Vet where an echocardiogram was done and dog was diagnosed with DCM.
Orijen Puppy Dry Dog Food	Dog	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Complainant stated that during a snakebite at (b)(6) from (b)(6), the veterinarian observed a significant heart arrhythmia that was unable to be normalized. (b)(6) was transferred to her regular vet clinic and 2 separate EKGs were ran and solatol was prescribed to control the arrhythmia. (b)(6) was dx with (DCM) Dilated Cardiomyopathy after an echocardiogram was also ran by a radiologist. (b)(6) had been on a BEG grain free diet for 7 years, primarily consuming Orijen with some Acana. Champion Pet Food Foods manufacture both of those brands. Per the VET, (b)(6) was transitioned off of the BEG grain diet to one that meets minimum (AAFCO) Association of American Feed Control Officials standards. (b)(6) was prescribed Vetmedin 10mg every 12 hours, Solatol 40 mg every 12 hours, Taurine 1000 every 12 hours. (b)(6) was also seen subsequently seen on December 10, 2018 by the Veteran Cardiologist at (b)(6) performed another echocardiogram which still showed decrease heart function consistent DCM.
Orijen Puppy Dry Dog Food	Dog	Retriever - Labrador	9.5	Years	Female	57	Pound	This is the second DCM complaint from Complainant: Complainant stated that due to, (b)(6), being diagnosed with suspected nutritionally-mediated dilated cardiomyopathy (DCM), she scheduled an echocardiogram for (b)(6). Complainant stated that it is encouraged to have echocardiogram, performed on dogs in the same household who have been fed the same suspect diet. (b)(6) was seen by the same Veterinary Cardiologist, Dr. (b)(6), on February 21, 2019 and the results were DCM. (b)(6) showed that her left ventricular wall thickness is decreased and her function is decreased, heart chambers still normal in size, Echo was normal and no sign for any arrhythmias during the exam. (b)(6) was transitioned to the same food around the same time (b)(6) was, November 2018. There was no blood drawn for taurine testing, since food transition would have affected those levels. (b)(6) is a 9 1/2 years old, Labrador retriever, spayed, 57 lbs. (b)(6) appeared to be in an excellent health with no signs or SX of disease or impairment; i.e no coughing, lethargy, syncope or difficulty performing rigorous activity as a working retriever. (b)(6) when consuming the attached food ate a cup two times day, prior to transition. (b)(6) has spayed incontinence which is controlled with Proin 50 mg 1 times a day. (b)(6) is an inside dog and does not spend any time outside unsupervised.
Acana Heritage Freshwater Fish Formula Grain Free Dry Dog Food	Dog	Retriever - Golden	4	Years	Male	84	Pound	Dog was diagnosed with mild dilated cardiomyopathy by echocardiogram on January 28, 2019. In his lifetime he's been fed: Taste of the Wild High Prairie (about 15 months) Blue Buffalo of unknown type (about 3 months) Wellness Core (original and Ocean) (about 18 year) Acana Single (mackerel or pork) mixed with either the wellness core or Orijen six fish). He is currently being treated under care of a cardiologist with taurine and L-carnitine supplementation.
Purina Grain Free Chicken and Egg dry food	Cat	Not provided	14	Years	Female	4.185	Kilogram	Describe Event, Problem, or Product Use Error: Dilated cardiomyopathy Cat on a grain free diet Purina Beyond chicken and egg dry diet for 2 years.
Wellness	Dog	Retriever - Labrador	12	Years	Female	66	Pound	(b)(6) started with a ventricular arrhythmia (2016) which progressed to dilated cardiomyopathy (2018).
ZiwiPeak Air Dried Lamb	Dog	Spaniel - Cocker American	10	Years	Male	26	Pound	Patient was diagnosed with dilated cardiomyopathy (DCM) and congestive heart failure (CHF) by myself (veterinary cardiologist) in May 2017. Whole blood taurine levels were submitted to UC Davis and were normal. Owner was feeding a grain free diet, but did not recall the brand. Owners changed diet to a different grain-free diet on their own. This patient's heart disease resolved after the diet was changed. I am submitting this case because DCM does not resolve and I suspect it was related to diet. Unfortunately, we don't know what diet it was. The current diet (and the diet he has been on since November 2017) is called ZiwiPeak Air dried lamb dog food.
Honest Kitchen Grain Free Turkey Recipe, Halo Natural Dry Dog Food	Dog	Collie - Border	3	Years	Male	15.9	Kilogram	Pet presented asymptomatic for an echocardiogram for Cardiac OFA certification. Grade 1 murmur noted on auscultation. Mild systolic dysfunction and mild left ventricle enlargement. rule out early DCM
Earthborn Holistic Coastal Catch Grain-Free Natural Dry Dog Food from 10/2014-5/2018. Natural Balance L.I.D. Limited Ingredient Diets Sweet Potato & Fish Formula Grain-Free Dry Dog Food.	Dog	Retriever - Golden	5	Years	Male	82	Pound	My dog had an echocardiogram was diagnosed with diet related dilated cardiomyopathy in October of 2018. Prior to the diagnosis I noticed some indication of exercise intolerance. I sent some bloodwork to UC Davis and it reported a taurine level of 243. A second echocardiogram was performed in January 2019 and it concurred with the first diagnosis and showed minimal improvement, the left ventricular size is high normal to mildly enlarged in diastole and there is moderate global hypokinesis of LV contractility.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Zignature Grain Free (unknown variety)	Dog	Bulldog	7	Years	Female	36.54	Kilogram	(b)(6) , a 7 Yrs. 3 Mos., Spayed Female, Bulldog, English, owned by (b)(6) was presented on (b)(6) for cardiac evaluation following presentation on an ER basis for further work up of bicavitary effusion (pericardial and peritoneal). Her owner has noticed lethargy and abdominal distension over the past couple days. She had some loose stool last night. Decreased appetite. CXR and AXR- suspect pericardial and visible peritoneal effusion A pericardiocentesis was performed prior to presentation with 230 mL of non-clotting serous fluid removed. CBC/Chem - ALT 434 There is mild residual pericardial effusion with minimal diastolic right atrial collapse. A mixed echogenic heart base mass was visualized on exam measuring 6.4 x 6.2 cm. Mild peritoneal effusion was present on exam near the liver and urinary bladder. Diagnosis: Heart base mass - suspect chemodectoma, Dilated cardiomyopathy, Bicavitary effusion (pleural and peritoneal effusion)
Zignature Salmon Limited Ingredient Formula Grain-Free Dry Dog Food	Dog	Mixed (Dog)	12	Years	Female	40.2	Kilogram	(b)(6), a 12 Yrs. 0 Mos., Spayed Female, Retriever, Golden Mix, owned by (b)(6) was presented on (b)(6) for cardiac evaluation. She presented to our ER service on (b)(6) for suspect syncopal episodes. About 3 weeks prior, (b)(6) had an event where she became stiff and collapsed but would become more aware after a min or so. She had another event about a week ago and then once last night which took her longer to recover from. The owner stated that the events happen on a walk or going upstairs or after excitement or exercise. Left ventricle: Chamber size: moderately to severely increased end-diastolic dimensions; severely increased end-systolic dimensions. Diagnosis: Dilated cardiomyopathy leading to congestive heart failure - r/o diet-related DCM vs. idiopathic, Episodes of collapse-suspect syncope Diagnosis: Dilated cardiomyopathy leading to congestive heart failure - r/o diet-related DCM vs. idiopathic, Episodes of collapse-suspect syncope
ACANA Light & Fit	Dog	Mixed (Dog)	10	Years	Male	19.5	Kilogram	Due to overweight and then weight maintenance, the dog (a now lean, 43lbs pointer-type, intact male mixed breed) was consuming Acana Light & Fit (grain-free, high legumes-content kibble) on a daily basis since December 2017, and has now (Feb. 2019) been diagnosed with DCM (detected by chance in a thorax x-ray made for a suspected bronchitis; DCM without evident clinical symptoms yet). Although we are not in the US, this information adds a case to the current investigation in the link between DCM and grain-free diet.
4Health Grain Free Beef and Potato	Dog	Great Dane	7	Years	Male	200	Pound	Reporting a confirmed DCM diagnosis when (b)(6) was 6.5 years old. He is currently 7.5 years old. Previous routine echos showed no DCM. Fed a single grain free diet of 4Health beef and potato for at least 4-5 years. Second routine echocardiogram diagnosed DCM in August 2016. We have taurine tested at UC Davis. We continue to treat the DCM. I do realize that there is probably a genetic component to my danes DCM. I am reporting for a couple reasons. I've been doing a cardiac workup and echocardiogram every 4 months since diagnosis. We taurine tested but did not see a taurine deficiency, so we did not change his diet or supplement with taurine. With the new study that recently came out that showed that even dogs with normal taurine, their DCM improved with changing from a grain free diet and supplementing with taurine. We've done 6 echocardiograms and 24 hour holter on our dog, 5 of them since diagnosis. I'm going to change his food and add a supplement and in June, I'm going to do another echocardiogram. While I think it's pretty good to assume it's probably genetic based because he is a great dane, we will soon see if the changes from grain free will improve his condition. Due to the expense, I doubt there are a lot of DCM dogs on grain free diets, have had as much testing and extensive workups. I'm happy to provide all medical records from diagnosis, and into the future.
Acana Prairie (also fed Acana Ranchlands and Acana Grasslands all from the Regionals line)	Dog	Retriever - Golden	6	Years	Male	86	Pound	(b)(6) was breathing heavy and coughing. He was diagnosed with Dilated Cardiomyopathy and Congestive Heart Failure. He tested low in taurine. He was taken off the grain free food and given numerous medications, include taurine supplements
4Health Untamed Open Highland Recipe Lamb & Lentil Formula	Dog	Shepherd Dog - German	1	Years	Female	66	Pound	Presented for sudden onset of lethargy, exercise intolerance, not eating well. Performed bloodwork, x-rays, ultrasound, ECG and report from Cardiologist. Was diagnosed with Dilated Cardiomyopathy by Cardiologist. Has been fed a grain free dog food her entire life and with new research developing about these diets being linked to DCM it was recommended to stop the food and run a Taurine blood level. Heart medications were started. Did not respond well to treatment and was humanely euthanized 2 weeks later.
Acana Singles Mackerel	Dog	Terrier - Tibetan	9	Years	Male	31.7	Pound	On Feb. 8th (b)(6) collapsed, rushed him to the vet, it was determined that he had DCM, was immediately put on Vetmedin, Lasix and an ace-inhibitor. On Feb. 11th, we saw a cardiologist at (b)(6) vet school, they did an echo and repeated x-rays and labs. All his labs were perfect. they increased the doses. He died on (b)(6) while napping in my bedroom.
Orijen Puppy, Acana Lamb and Apple	Dog	Spaniel - Springer English	2	Years	Female	40	Pound	Dog was showing exercise intolerance and having some breathing issues. We brought her to the vet, and they diagnosed her with DCM after having a cardio ultrasound with a cardiologist. She was on grain free dog food most of her life, she was ok Orijen Puppy food, and then Acana lamb and apple and meadowlands. We immediately switched her to dog food with grain in it, we chose Fromm Adult. After around 4 months we retested her and all issues were 100% gone.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste of the wild grain free	Dog	Doberman Pinscher	9	Years	Male	70	Pound	(b)(6) has skin allergies that never went away (pimples in his belly area). I switched to grain free food for his last 4 years. He developed a cough. After 3 days I took him to the ER. They discovered he had DCM and went into cardiac arrest at the hospital. I am now learning about the connection with grain free food and DCM. My other Doberman also does spontaneously at 8 from the same thing. They lived like happy young pups with no symptoms. They both had the same diet.
Purina One Smart Blend Lamb and Rice dry	Dog	Doberman Pinscher	9.7	Years	Male	29.9	Kilogram	DCM and CHF diagnosed Aug 2018 We saw 1/11/19 - CHF still not well controlled Eating Purina Lamb and Rice - unlikely to be associated with DCM but reporting just in case Owner is now changing to different diet and will recheck in 3 months 2 other dogs eating same diet - we have not screened them yet. BNP = 10,000, troponin 0.557, but taurine normal (123 plasma, 452 whole blood)
Acana Natural Balance Petcurean (see diet history for additional details)	Dog	Terrier - Bull - American Pit	4.9	Years	Female	18	Kilogram	DCM and CHF diagnosed 2/16/19. Eating multiple BEG diets Taurine and troponin pending Dog changed to Purina HA vegetarian dry while in hospital and owner has continued this. Will try switching to Pro Plan Sensitive Skin and Stomach Salmon when bag of HA runs out. If she tolerates that, will stay on it. If not, will switch back to HA since she's done well on that.
Fromm Large Breed Adult dry	Dog	Poodle - Standard	16	Years	Male	24	Kilogram	Murmur and arrhythmia ausculted by RDVM. Echoed by another cardiologist who referred to us for study. Eating Fromm Lg Breed Adult (not grain free) so unclear if diet related. Screened other 2 standard poodles in household eating same diet and their hearts were fine. Owners have changed diet for all 3 dogs to Iams MiniChunks and we will recheck in 3 months
Earthborn Coastal Catch dry	Dog	Retriever - Golden	9.3	Years	Male	36.3	Kilogram	Annual RDVM visit identified murmur. Echo done by mobile ultrasonographer showed DCM. We evaluated as part of study 2/1/19 - has DCM Eating BEG diet Changed to Pro Plan Weight management dry and we will recheck in 3 months
Zignature Kangaroo dog food	Dog	Sheepdog - Old English	11	Years	Male	90	Pound	There were no symptoms.. (b)(6) had a tumor that I was debating if we should remove as it was small and his age.. I wanted to see other options and decided to see a holistic vet. After she examined (b)(6) regarding the small tumor she told me that he had a heart problem and that I should see a cardiologist asap. We went to (b)(6) (where my other dog was diagnosed with CHF back in Sept. of 2017) (b)(6) had an echo-cardiogram was diagnosed with DCM on November 1, 2018 just (b)(6) months after we lost our (b)(6) our old english sheepdog (not from the same litter) to congested heart failure.
Wellness Core grain-free ocean fish dry Wellness core grain free turkey chicken liver & turkey liver canned Wellness Hearty Cuts grain-free in gravy chicken and turkey recipe	Dog	Bulldog	8.5	Years	Female	19.8	Kilogram	DCM and CHF diagnosed 1/15/19 Eating BEG diet. 6 dogs being fed this diet - so far, 3 have been diagnosed with DCM/ARVC. One other had a normal NT-proBNP and 2 others will be tested Diet has been changed to Royal Canin Early Cardiac and we will recheck in 3 months. I have sample of dry and canned food
Wellness CORE Grain-Free Ocean Whitefish dry Wellness Core grain free turkey chicken liver and turkey liver formula canned Wellness Core Hearty Cuts grain-free in gravy chicken and turkey recipe	Dog	Bulldog	8	Years	Male	22.1	Kilogram	(b)(6) (half sister; (b)(6) - (ICSR) of 2063133) diagnosed with DCM and CHF so screened by RDVM for BNP which was elevated. Evaluated at (b)(6) 2/1/19. ARVC/diet-induced DCM with ventricular arrhythmia. Diet changed to Royal Canin Early Cardiac and will re-evaluate in 3 months I have diet sample. 3 other dogs in household (1 had normal BNP, other 2 not yet evaluated)
Wellness CORE Grain-Free Ocean Whitefish dry Wellness Core grain free turkey chicken liver and turkey liver formula canned Wellness Core Hearty Cuts grain-free in gravy chicken and turkey recipe	Dog	Bulldog	8.7	Years	Female	24.2	Kilogram	Eating BEG diet - 2 other dogs in household diagnosed with DCM ((b)(6) - already reported) RDVM screened this dog with NT-proBNP which was elevated so we evaluated at (b)(6) 2/20/19 Probable ARVC/diet-associated DCM but no arrhythmia detected (enlarged right ventricle, reduced contractility) Changing diet to Royal Canin Early Cardiac and will re-evaluate in 3 months. Taurine and troponin pending
Acana lamb and apple dry	Dog	Spaniel - Cocker English	5	Years	Male	15.8	Kilogram	At ortho recheck 1/22/19, new murmur was noted to cardio consult performed. DCM identified. Dog eating BEG diet. Recommended diet change but owner has major concerns about dietary components triggering seizures. Enrolled in our DCM study and dog completed baseline measurements but then owner elected to withdraw from study. Unclear what she will do in terms of diet change. I have not provided owner contact information. If you wish to contact owner, please let me know and I can ask if ok to do so.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste of The Wild PREY (unknown formula)	Dog	Great Dane	3	Years	Male	61.7	Kilogram	<p>Edited for brevity</p> <p>HISTORY: (b)(6), a 3 Yrs. 11 Mos., Neutered Male, Great Dane, was presented on (b)(6) for cardiac evaluation. (b)(6) was noted to have labored breathing and coughing about 3 weeks ago. He was seen at the rDVM and had radiographs completed at that time. The owner also has noted a rapid heart rate at home. He was started on Lasix and Benazepril. The owner states that he was evaluated in October for heart disease and had an echo at the rDVM which was normal. The rDVM records indicate an ECG was done at that time that was normal.</p> <p>They have restricted (b)(6) exercise since he was diagnosed, however he is still interested in play. She is aware of the concerns of grain free diets, however is feeding Prey Grain Free due to GI issues. He has been on a grain free diet his entire life. (b)(6) is eating/drinking normally. No vomiting or diarrhea is noted. He is current on vaccines.</p> <p>Current Medications: Furosemide 50 mg tab: 2 tabs PO BID; Benazepril 10 mg tab: 3 tabs PO SID</p> <p>Previous Diagnostics: rDVM Radiographs: 1/16/19 - VHS 14.0; pulmonary venous dilation; generalized cardiomegaly (severe); evidence of pulmonary edema. _</p> <p>Physical Exam</p> <p>HR: 150; RR: 30</p> <p>Weight: 135.8 lb/61.72 kg</p> <p>Pertinent PE Findings:</p> <p>mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, grade III/VI left apical systolic murmur, rapid regular rhythm; lungs clear, pulses moderate. Nervous system normal. Skin normal. Musculoskeletal system normal. Normal peripheral lymph nodes</p> <p>Diagnostics</p> <p>Doppler Blood Pressure: 118 mm Hg; # 5 cuff LR</p> <p>ECG: Sinus tachycardia with tall QRS complexes and widened p waves consistent with LV and LA enlargement; average heart rate of 160 bpm _</p> <p>Echocardiogram: _</p> <p>Diagnosis: (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) Dilated cardiomyopathy leading to recent onset congestive heart failure</p> <p>Treatment/Medications</p> <ul style="list-style-type: none"> - We would like to recheck (b)(6) in 3 months to recheck his echocardiogram. - Recheck blood work (kidney values/electrolytes) with primary veterinarian in 1-2 weeks. - Recommended transitioning (b)(6) off his current grain free diet to a Royal Canin, Science Diet or Purina diet. <p>Medications:</p> <p>Vetmedin 15 mg compounded tablets: give 1-1/4 tablets by mouth every 12 hours (until you receive this in the mail from (b)(6) you can use Vetmedin 10 mg tablets- give 1-1/2 tablets by mouth every 12 hours).</p> <p>Spironolactone 100 mg tablets: give 1 tablet by mouth every 12 hours.</p> <p>Taurine - give 1 gram by mouth every 12 hours.</p> <p>L-carnitine- give 3 grams by mouth every 8 hours with food.</p> <p>Furosemide 50 mg tablets: continue 2 tablets by mouth every 12 hours.</p> <p>Benazepril 10 mg tablets: continue 3 tablets by mouth every 24 hours.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste of The Wild - Salmon grain free	Dog	Retriever - Labrador	7	Years	Male	32.9	Kilogram	<p>Edited for brevity. HISTORY: (b)(6), a 7 Yrs. 0 Mos., Neutered Male, Retriever, Labrador, was presented on (b)(6) for cardiac evaluation after transferring from our (b)(6) location for further work up of a ventricular arrhythmia. He presented to our ER service there last night for shaking, lethargy, labored breathing and an episodes of disorientation yesterday evening. O reports he was normal when they left at 2:45p today and appeared abnormal when they returned home. (b)(6) was short of breath and collapsed and appeared disoriented after walking outside. He has no known toxin exposure and has otherwise been healthy. _ He has been fed Taste of the Wild (Salmon) and grain-free treats for life.</p> <p>Diagnostics: Thoracic radiographs- mild to moderate generalized cardiomegaly; no overt pulmonary edema tFAST- minimal cardiac contractility noted with arrhythmia ECG- accelerated sinus rhythm with no VPCs noted (HR 160-220) CBC/Chem 17- BUN (35 mg/dL); Creatinine 2.8 mg/dL; Lipase (2745 U/L); Phosphorus (8.0); Potassium (3.4)</p> <p>Treatment: Sotalol was started at 40 mg PO BID An IVC was placed and he was administered 500 mL of Normosol over one hour. A continuous ECG was placed at presentation here with a NSR and no ventricular ectopy observed. BP was 140 mm Hg. Current Medications:_Sotalol 40 mg PO BID _</p> <p>Physical Exam T: 100.5 F; HR: 140; RR: pant Weight: 72.4 lb/32.9 kg Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, no murmur, gallop; no arrhythmias, lungs clear, pulses moderate. Nervous system normal. Skin normal. Musculoskeletal system normal. Normal peripheral lymph nodes</p> <p>Diagnostics Doppler Blood Pressure: 95 mm Hg ECG:_normal sinus rhythm with no ventricular ectopy observed; average heart rate of 120 bpm _ (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) ECG: _normal sinus rhythm with no ventricular ectopy observed; average heart rate of 120 bpm _ . Echocardiogram: __ Diagnosis: Dilated cardiomyopathy- r/o diet -related vs. idiopathic Ventricular arrhythmia- improved with Sotalol therapy</p> <p>Treatment/Medications Recommended that owner transition off grain-free diet over the next couple weeks to Royal Canin, Science diet or Purina.</p> <p>Medications/supplements: Sotalol 80 mg tablets: continue 1/2 tablet by mouth every 12 hours. Vetmedin (Pimobendan) 10 mg tablets: give 1 tab PO BID (ordered from (b)(6) as a compounded tablet due to current manufacturer's backorder). Taurine - start 1 gram by mouth every 12 hours (see handout for brand recommendations) L-carnitine - start 1,750 grams by mouth every 8 hours with food (see handout for brand recommendations) Discussed sending out whole blood/plasma Taurine levels to UC Davis- owner declined. A Holter monitor is recommended in 2-3 weeks. Recheck echocardiogram in 3 months to reassess response to therapy.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Hill's Science Diet Adult Grain Free	Dog	Mixed (Dog)	6	Years	Female	40.3	Kilogram	<p>Edited for brevity. HISTORY: (b)(6), a 6 Yrs. 0 Mos., Spayed Female, Dalmatian Mix was presented on (b)(6) for cardiac evaluation following presentation to our ER service today for abdominal distension, coughing and labored breathing.</p> <p>An abdominal ultrasound was performed showing peritoneal effusion and hepatomegaly concerning for right-sided heart failure. Thoracic radiographs were taken showing generalized cardiomegaly and mild interstitial pattern concerning for pulmonary edema. VHS 11.2.</p> <p>No unusual sneezing, vomiting or diarrhea. No polyuria/polydypsia. Appetite and activity level normal. Owner feeds Science Diet grain free diet.</p> <p>Physical Exam Weight: 88.6 lb (40.3 kg) HR- 200; RR- 36; Temp-102.3 F</p> <p>Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, no murmur on auscultation, rapid regular rhythm, lungs- fine crackles bilateral cranial thorax with mildly increased respiratory effort, pulses fair. Skin - shaved abdomen. Abdominal distension with mild fluid wave. Normal peripheral lymph nodes</p> <p>Diagnostics ECG: Sinus tachycardia with average heart rate of 215 beats/minute. _ Echocardiogram: __ Diagnosis: Dilated cardiomyopathy - r/o idiopathic DCM vs. tachycardia-induced vs. taurine deficiency Suspect congestive heart failure (peritoneal effusion, pulmonary edema) Mild pulmonary hypertension Sinus tachycardia (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report)</p> <p>Treatment/Medications Place IV catheter and draw blood for whole blood Taurine levels. Monitor heart rates overnight via continuous ECG. If heart rate remains persistently elevated consider Diltaizem therapy. Start the following medications: Furosemide 80 mg IV prn, Benazepril 20 mg PO daily, Pimobendan 10 mg PO BID, Spironolactone 50 mg PO BID, Taurine 1.5 grams PO BID.</p> <p>Tentatively plan to discharge tomorrow and recheck in 1-2 weeks to assess thoracic radiographs, blood work and HR/rhythm. A repeat echocardiogram is recommended in 6 months.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Instinct Original Grain Free Recipe (unkown protein source)	Dog	Terrier - Irish Soft-coated Wheaten	9	Years	Female	Not provided	Kilogram	<p>Edited for brevity. HISTORY: (b)(6), a 9 Yrs. 1 Mos., Spayed Female, Terrier, Soft-Coated Wheaten, was presented on (b)(6) for cardiac evaluation.</p> <p>(b)(6) had a slow heart rate noted on physical exam and heart enlargement was noted on radiographs. (b)(6) has had heavy breathing/panting and always seems sluggish. No collapse is noted. No unusual coughing, sneezing, vomiting or diarrhea. No polyuria/polydypsia. Appetite and activity level normal.</p> <p>(b)(6) was evaluated by Dr. (b)(6).</p> <p>(b)(6) has had a previous enucleation OS and has Glaucoma OD. She has a history of allergies. She is not on heartworm prevention and is due for vaccines. (b)(6) is fed Instinct Grain Free Raw diet and has been on a grain free diet for life.</p> <p>Current Medications: _Furosemide PO BID; Proin; Prednisone; Eye Drops_</p> <p>Physical Exam HR: 80; RR: 24 Weight: 29.5 lb/13.4 kg</p> <p>Pertinent PE Findings: enucleated OS; mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, no murmur, no arrhythmias, lungs clear, pulses good.</p> <p>Diagnostics Doppler Blood Pressure: 134 mm Hg; # 4 cuff RF ECG: _Sinus arrhythmia with average heart rate of 80 bpm_ Echocardiogram: __</p> <p>Diagnosis: Dilated cardiomyopathy - rule out diet-related vs. idiopathic (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report)</p> <p>Treatment/Medications Discussed whole blood/plasma Taurine testing- owner declined at this time. Recommended transitioning off the grain-free diet to Royal Canin, Science diet, Purina or Iams. Owner is concerned that transitioning off the grain-free diet may cause problems as (b)(6) has allergies. Gave owner a sample of Science Diet d/d (grain-free but has not been implicated in any cases to date of diet-associated DCM).</p> <p>Furosemide may be safely discontinued at this time. Start Vetmedin 5 mg tabs- 1 tab PO am, 1/2 tab PO pm Start Taurine 500 mg PO BID and L-carnitine 750 mg PO TID with food</p> <p>A repeat echocardiogram is recommended in 3 months or earlier if clinically indicated.</p>
Homemade raw diet	Dog	Schnauzer (unspecified)	Not provided	Not provided	Female	16	Kilogram	<p>(b)(6) was a standard schnauzer that was diagnosed originally with dilated cardiomyopathy and with ventricular arrhythmias, was managed with anti-arrhythmics and cardioprotective drugs and the heart function continued to worsen. The dogs passed away suddenly while running outside. She was a carrier for the gene mutation associated with DCM in this breed, but carriers should not develop disease as it is an autosomal recessive trait in this breed</p>
Wellness Complete Health Fish and Sweet Potato dry	Dog	Boxer (German Boxer)	10.5	Years	Male	23.3	Kilogram	<p>Arrhythmia dx at RDVM July 2018 (had been "wheezing") Started wheezing again 1 week before admission. Diagnosed with DCM, CHF, and ventricular tachycardia 2/22/19 Was fed Wellness diet until 6/2018 then changed to Royal Canin Boxer (current diet). Taurine and troponin pending. Owner has another Boxer eating same diets - has not been screened Enrolled in DCM study. Changing to different diet (although Boxer diet is probably fine) and will recheck in 7 days and 3 months.</p>
Wellness CORE Grain Free Wild Game Duck Turkey Boar & Rabbit Recipe Dry Dog Food 26-lb bag	Dog	Weimaraner	4.5	Years	Male	98	Pound	<p>First notable health issue occurred Aug 2018. Seizure event displayed rigid limbs, excessive drool, panting and labored breathing, and collapse. The symptoms worsened with violent head thrashing, foaming, and rolled eyes. Canine was rushed to vet hospital and upon arrival (approx. 15mins later) all symptoms had ceased. Canine was given a full evaluation and no further testing was requested by owner. In Feb 2019 coughing returned and persisted. Canine was seen by regular vet. No fluid in lungs so it was thought to be bronchitis and prescribed cough syrup and doxy. Coughing did not improve after 1 week and returned to vet. Chest film showed fluid surrounding heart and it was recommended to see a cardio specialist. 4 days after canine was in severe labored breathing, distress, and displaying worsened signs of weakness. Canine was taken to vet ER hospital and admitted for cardiac and respiratory failure condition. Treatment of oxygen, meds, and preliminary EKG indicated condition worsened to fluid around heart and in lungs. Drainage of 1 liter of fluid. Full evaluation include echocardiogram and lab analysis. Officially diagnosed with DCM. Discussed with owner and determined likely cause was grain free diet recommended from breeder and the only diet for canine since birth.</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Zignature Trout and Salmon Meal	Dog	Great Dane	5	Years	Male	145	Pound	In April 2016 (easter weekend) he started coughing periodically. At first I thought he had kennel cough. by Sunday night he could barely breathe. we brought him to the ER where he was diagnosed with late stage DCM. Being Great Danes are predisposed to DCM our regular vet suggested we speak with our breeder. In our breeders 20+ years of breeding she has never lost a Dane to DCM. In fact all of (b)(6) brothers and sisters are still alive at 8 years old. The vet had mentioned this could be Diet related and suggested we see a Cardiologist. Unfortunately (b)(6) passed away in our arms on (b)(6); before he was able to see a cardiologist. He was on Vetmedin and Enapril for medications during the last 6 weeks of his life.
Earthborn Holistic Grain Free Meadow Feast with Lamb Meal	Dog	Terrier - Welsh	7.5	Years	Male	22.4	Pound	We had an X ray done on (b)(6) on 9-10-2018 due to a mild cough that had started within weeks of the appointment, no issues with his lungs but his heart was enlarged. An echocardiogram done by a veterinary cardiologist the next day (9-11-2018) confirmed that he had severe dilated cardiomyopathy. He had been eating Earthborn Meadow Feast Grain Free dry kibble for the past 6 years, since he was transitioned off of puppy food at around 1 year old. They noted severe damage to his heart, aside from medication, he was given a diet change to Royal Canin Early Cardiac and a taurine test was done. Taurine levels from UC Davis came back within normal range. He was also given taurine supplements and L-carnitine along with Vetmedin and enalapril. We were told the prognosis was very poor. We had a follow-up echocardiogram 3 months after the diet change on 12-11-2018. (b)(6) showed very minor improvement in the overall chamber size and wall thickness and the ability of his heart to constrict. They determined that this is dietary DCM due to the minor improvement at the 3 month echocardiogram after being taken off the grain free Earthborn Meadow Feast kibble. He is still extremely sick and we have been told that he has at the very most 6 to 18 (with a miracle) months from the time of diagnosis in September 2018.
Grain-Free Salmon	Dog	Shepherd Dog - German	11	Years	Male	30.1	Kilogram	Patient presented for an eight-day history of shallow breathing and an occasional cough. On presentation to pcDVM, was tachycardic with an irregular rhythm and was referred for further diagnostics. Echocardiogram revealed dilated cardiomyopathy with concern for grain-free diet. Was started on Pimobendan, enalapril, and furosemide.
Taste of the Wild Whole Prey, Orijen	Dog	Great Dane	3	Years	Female	53.6	Kilogram	On January 14, 2019, (b)(6) presented to her pcDVM for a two-week history of lethargy and an intermittent cough since Christmas; they thought she might have ingested some pillow foam due to her distended abdomen. On presentation, she was tachycardia at 190-200bpm with a new Grade I-II/VI heart murmur with a distended abdomen with a fluid wave present. Thoracic radiographs showed a large, globoid hear with mild pulmonary edema, and abdominal radiographs showed loss serosal detail. She was referred to the COVE where an echocardiogram was performed that showed DCM, and it was noted at that time that she was being fed a grain-free diet. An ECG confirmed atrial fibrillation. She was started on Pimobendan, furosemide, and diltiazem and hospitalized overnight before being discharged on Pimobendan, benazepril, furosemide, spironolactone, diltiazem, and Taurine.
CANIDAE® ALL LIFE STAGES CHICKEN MEAL & RICE FORMULA DRY DOG FOOD	Dog	Doberman Pinscher	3.79	Years	Male	60	Kilogram	DCM and CHF diagnosed 2/25/19. Eating BEG diet. 2 other dogs in household will be screened. Will change diet on (b)(6) and reassess in 3 months. Just being discharged today. Taurine and troponin pending
Nutro Max Limited Ingredient Diet Adult Large Breed Dry Dog Food (unknown protein source variety)	Dog	Retriever - Labrador	4	Years	Male	39.9	Kilogram	Edited for brevity. HISTORY: (b)(6), a 4 Yrs. 5 Mos., Neutered Male, Retriever, Labrador, owned by (b)(6) was presented on (b)(6) for cardiac evaluation. (b)(6) was initially seen at the rDVM for a change in his bark and increased panting. He has been less interested in playing with her other dog. He had radiographs taken at the rDVM showing cardiomegaly and an echocardiogram was recommended. He was previously fed Nutro Max large breed chicken formula (no corn, wheat, soy) since puppyhood which owner has abruptly changed to Hill's sensitive skin and stomach. Current Medications: _Pimobendan 10 mg tabs- 1 tab PO BID_ Previous Diagnostics: _rDVM Radiographs 2/9/2019: mild cardiomegaly; normal pulmonary vasculature; normal pulmonary parenchyma _ Physical Exam HR: 90 RR: 24 Weight: 87.7 lb/39.9 kg Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, no murmur, no arrhythmias, lungs clear, pulses moderate and synchronous. Skin normal. Musculoskeletal system normal. Normal peripheral lymph nodes Diagnostics Doppler Blood Pressure: 112 mm Hg #5 left rear ECG: _Sinus arrhythmia with average heart rate of 80 bpm. _ Echocardiogram: __ Diagnosis: Mild systolic dysfunction and mild left-sided cardiomegaly- rule out early dilated cardiomyopathy - (* continued below)

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	(Continued from previous report) potentially diet-related vs. idiopathic Treatment/Medications Continue Pimobendan as previously prescribed (owner requests compounding d/t cost). Start Taurine 1 gm PO BID and L-carnitine 2 gm PO TID with food. Recheck echocardiogram in 3-6 months.
Zignature Kangaroo	Dog	American Pit Bull Terrier	2.5	Years	Male	56	Pound	food related Diagnosed with DCM after being fed Zignature Kangaroo for 2 years. Had xray. Treating with cardi. Have seen 2 times. Next apt in 2 weeks.
Zignature Kangaroo Limited Ingredient Formula Grain-Free Dry Dog Food	Dog	Retriever - Golden	6	Years	Female	30.6	Kilogram	Edited for brevity. HISTORY: (b)(6), a 6 Yrs. 1 Mos., Spayed Female, Retriever, Golden, was presented on (b)(6) for cardiac evaluation. (b)(6) started coughing last summer and the dog trainer noted that she acted like an old dog. She stopped playing with the housemate and appetite was decreased. She was seen at the rDVM in January and radiographs showed cardiomegaly. (b)(6) will usually cough/gag after eating. The owner does note a change in breathing sounds. (b)(6) was fed Kangaroo diet for past 2-3 years and was on Zignature duck or lamb prior to that for life. In December the owner switched her to Fromm Veggie & Duck formula. She has been supplementing with Taurine and L-Carnitine since December. (b)(6) is eating/drinking normally. No vomiting or diarrhea is noted. She is current on vaccines and heartworm prevention. (b)(6) has a some muscle atrophy in her hips and skin issues. Current Medications: _Taurine Powder: 3 scoops PO SID; L-Carnitine PO SID_ Previous Diagnostics: _rDVM Radiographs - 1/8/2019: severe left-sided/generalized cardiomegaly; normal pulmonary parenchyna; normal pulmonary vasculature 1/8/2019: CBC - NSF; Serum Chemistry - Total Protein 5.3 g/dL (low); Globulin 2.2 g/dL (low); Total T4 1.4 ug/dL (wnl) Physical Exam HR: 120; RR: Pant Weight: 67.4 lb/30.6 kg Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, no murmur; muffled heart sounds, no arrhythmias, lungs clear, pulses good. Skin normal. Musculoskeletal system normal. Normal peripheral lymph nodes (*continued below)
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	(Continued from previous report) Diagnostics Doppler Blood Pressure: 122 mm Hg; # 5 cuff LF ECG: _normal sinus rhythm on lead II ECG during echocardiogram _ Echocardiogram: __ Diagnosis: Dilated cardiomyopathy - rule out diet-related vs. idiopathic (Cont. from previous report) Treatment/Medications Start the following medications/supplements: - Pimobendan 10 mg tablet: 1 tab PO BID, compounded through (b)(6) - Benazepril 10 mg tablet: 1-1/2 tab PO SID - Spironolactone 50 mg tablet: 1 tab PO BID - Taurine 1 gram PO BID - L-Carnitine 1,500 mg PO TID with food We would like to recheck (b)(6) in 3 months to repeat her echocardiogram. Please follow up with your primary veterinarian to have (b)(6) blood work (kidney values/electrolytes) rechecked in 1-2 weeks. I would recommend transitioning (b)(6) off Fromm to Royal Canin, Science diet, Purina or Iams.
Blue Buffalo Life Protection Formula Adult Chicken & Brown Rice Recipe Dry Dog Food	Dog	Collie - Rough-haired	6	Years	Male	56	Pound	(b)(6) was a normal, happy, healthy dog, but then at age 6 1/2, he seemed to tire easily and constantly coughing. Then he had a fainting spell so we took him to emergency vet and they said he was in heart failure and had an enlarged heart. She referred us to a specialist who diagnosed him with DCM and they put him on medication. But a couple of weeks later, he collapsed, howling in pain, so rushed to ER again, and they said he was suffering from massive heart failure, so we had him euthanized. We never knew why a dog so young suffered major heart problems until someone recently showed me the article about the FDA Investigating Potential Connection Between Diet and Cases of Canine Heart Disease. We fed (b)(6) Blue Buffalo Grain Free from the time he was about two years old until his death at age 6 1/2. Everyone made the whole grain free idea sound like it was really better for dogs, and I never made the connection until reading the FDA article. It's too late for our dog, but I hope his story can help to find out the truth.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Taste of The Wild (unknown protein source variety)	Dog	Great Dane	8	Years	Female	61.8	Kilogram	<p>(Edited for brevity) HISTORY: (b)(6), a 8 Yrs. 1 Mos., Spayed Female, Great Dane, was presented on (b)(6) for cardiac evaluation. Cardiomegaly was noted on recent CXR with our ER service and a cardiac consultation was recommended. A rare cough has been noted. She has been panting more frequently. Her appetite has waned. No unusual sneezing, vomiting or diarrhea. No polyuria/polydypsia.</p> <p>Current Medications: _none_</p> <p>Physical Exam Weight: 136 lb. HR- 180; RR- pant</p> <p>Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, no murmur, no arrhythmias; rapid regular rhythm, lungs clear, pulses fair. No overt abdominal distension.</p> <p>Diagnostics ECG: _Sinus tachycardia with left bundle branch block morphology QRS complexes; average heart rate of 180 bpm. _ Echocardiogram: __</p> <p>Diagnosis: Dilated cardiomyopathy, Peritoneal effusion - suspect congestive heart failure Mild pulmonary hypertension</p> <p>Treatment/Medications Medications: (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) Start the following medications: - Pimobendan (Vetmedin) 147315 mg quad tabs- give 1 tablet by mouth every 12 hours. - Pimobendan (Vetmedin) 5 mg quad tabs: give 1 tablet by mouth every 12 hours. (both sizes ordered from (b)(6)) - Benazepril 20 mg tablets: give 1-1/2 tablets by mouth every 24 hours. - Furosemide 80 mg tablets: give 1 tablet by mouth every 12 hours. - Spironolactone 50 mg tablets: give 1-1/2 tablets by mouth every 12 hours.</p> <p>Recheck a focused echocardiograms, bloodwork (renal/electrolytes) and ECG in 2 weeks. Recheck earlier with any concerns.</p>
Taste of The Wild (rotated different varieties)	Dog	Doberman Pinscher	9	Years	Male	42.8	Kilogram	<p>(Edited for brevity) HISTORY : (b)(6), a 9 Yrs. 0 Mos., Neutered Male, Pinscher, Doberman, owned by (b)(6) was presented on (b)(6) for cardiac evaluation after an intermittent arrhythmia was noted following presentation to his pDVM for lameness. (b)(6) has a history of bilateral achilles tendon repairs and dental disease. No clinical signs or symptoms of cardiac disease have been noted by the owner. No unusual coughing, sneezing, vomiting or diarrhea. No polyuria/polydypsia. Appetite and activity level normal. (b)(6) is fed Taste of the Wild grain-free diet.</p> <p>Current Medications: _Rimadyl 75 mg PO daily/pm; Fish oil_</p> <p>Physical Exam Weight: 94.2 lb (42.8 kg) HR- 110; RR- 22</p> <p>Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, grade I/VI left apical systolic murmur, mostly regular rhythm with occasional dropped beat; lungs clear, pulses good with occasional deficits.</p> <p>Diagnostics ECG: _normal sinus rhythm with occasional single monomorphic vpc's of LV origin; average heart rate of 100 bpm. _ Doppler blood pressure: _152 mm Hg #5 cuff RF_ Echocardiogram: __</p> <p>Diagnosis: Occult Dilated cardiomyopathy leading to severe left ventricular dilation; no current left atrial or right-sided dilation Occasional Ventricular arrhythmia - 24 hour Holter monitor placed prior to discharge (*continued below)</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	(Continued from previous report) Treatment/Medications Start the following: - Pimobendan 10 mg tabs- 1-1/4 tabs PO BID - Benazepril 20 mg tabs- 1 tab PO daily - Spironolactone 50 mg tabs- 1 tab PO BID Recheck renal values/lytes in 1-2 weeks with pDVM. Discussed transitioning off a grain free diet given recent development of DCM noted with some patients that are fed grain free diets. Discussed adding in Taurine and L-Carnitine supplementation (give 2 grams of each PO BID). Mexiletine therapy would be recommended if ventricular ectopy appears hemodynamically significant on 24 hour Holter exam (results should be back next week). A repeat echocardiogram and 24 hour Holter monitor are tentatively recommended every 6 months indefinitely.
Blue Buffalo Grain Free (unknown protein source)	Dog	Great Dane	4	Years	Male	67	Kilogram	(Edited for brevity) HISTORY: (b)(6), a 4 Yrs. 9 Mos., Male, Great Dane was presented on (b)(6) for cardiac evaluation. He presented to Dr. (b)(6) on (b)(6) for progressive coughing, labored breathing and inappetance for 2 weeks. He would intermittently groan when laying down. A tachyarrhythmia was noted on exam. Chest radiographs were consistent with cardiomegaly and pulmonary edema. Blood work was unremarkable. (b)(6) was started on Pimobendan and Lasix pending cardiac consultation. His owners report that his clinical signs have improved to nearly resolved. Current Medications:_Furosemide 80 mg tabs- 1-3/4 tab PO TID; Pimobendan 5 mg tabs- 3 tabs PO BID_ Physical Exam Weight: 148 lb (67 kg) HR- 180; RR- 30; Temp- 102.6 F Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, grade II/VI left apical systolic murmur, irregular rhythm, lungs clear, pulses variable. Skin normal. Musculoskeletal system normal. Normal peripheral lymph nodes Diagnostics ECG:_Atrial fibrillation with average heart rate of 180 bpm. _ Doppler blood pressure:_110 mm Hg #8 cuff LR_ Echocardiogram:___ Diagnosis: Atrial fibrillation Dilated cardiomyopathy - r/o idiopathic vs. tachycardia-induced Congestive heart failure (pulmonary edema) - clinically improved/resolved (*continued below)
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	(Continued from previous report) Treatment/Medications - Lasix 80 mg tabs- lower to 1-1/2 tabs PO BID - Pimobendan 5 mg tabs- continue 3 tabs PO BID until finished, then transition to Pimobendan 15 mg compounded capsules (from (b)(6))- give 1 cap PO BID - Benazepril 20 mg tabs- give 1-1/2 tabs PO daily - Diltiazem 60 mg tabs- give 1 tab PO TID - recheck in 2 weeks to assess HR/rhythm, renal panel/lytes +/- thoracic radiographs - repeat echocardiogram and ECG in 3 to 6 months or earlier if necessary.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Acana	Dog	Papillon - Spaniel - Continental Toy (with erect ears or with dropped ears (Phaléne))	7	Years	Male	6.45	Kilogram	<p>(Edited for brevity) HISTORY: (b)(6), a 7 Yrs. 2 Mos., Neutered Male, Papillon was presented on (b)(6) for cardiac evaluation. He presented to our NL IM service 2 days ago for abdominal ultrasound. (b)(6) has a ~2 year history of presumed inflammatory bowel disease. He had been doing fairly well on EOD Prednisone therapy and a novel protein:carbohydrate diet. Approximately 1 week ago (b)(6) seemed to be getting worse and the owner increased the Prednisone to once daily therapy; owner has since decreased to EOD again. (b)(6) continued to deteriorate. Hyporexia has progressed to anorexia. He is lethargic and not interactive with the other dogs. One episode of emesis noted. No history of dietary indiscretion. Labored breathing was noted 2 nights ago.</p> <p>CBC/Chemistry 8/7/17 showed mildly decreased Hct- 36.2%; Eosinophils 0.04; ALT166; BUN-33; Creatinine-0.4; Lipase- 3664; Chloride-108</p> <p>Diagnostics with Dr. (b)(6): Abdominal Ultrasound: Hepatomegaly with hyperechoic parenchyma and fine/course echogenicity. Very prominent pancreas with hyperechoic peripancreatic mesentery. Peritoneal/retroperitoneal effusion near the right kidney and pancreas. Diffusely hyperechoic mesentery. The remainder of the abdominal ultrasound was relatively unremarkable.</p> <p>Directed thoracic ultrasound revealed cardiomegaly with right/left heart enlargement. Poor cardiac contractility. Left atrial enlargement. Smoke.</p> <p>Thoracic radiographs: Cardiomegaly with right/left heart enlargement. Left atrial enlargement (buldge). Scalloping of lung lobes on the lateral projection suggestive pleural effusion or chronic pulmonary parenchymal changes. Cardiac silhouette takes up more that 50% of the chest cavity on the VD projection. Increased interstitial infiltrates to the caudal lung lobes.</p> <p>Medications: Prednisone 5 mg PO EOD; Polyflex, Buprenex and Cerenia</p> <p>Diet: Acana - lamb and apple</p> <p>Physical Exam Weight: 14.19 lb (6.45 kg) HR- 150; RR- 80 (*continued below)</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>Continued from previous report</p> <p>Pertinent PE Findings: Lethargic; mm pale pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, no murmur; muffled heart and lung sounds; mildly increased respiratory effort, no arrhythmias, pulses poor. Abdominal distension; no overt fluid wave. Skin- patchy alopecia ventrally. BCS 3/9. . Normal peripheral lymph nodes</p> <p>Diagnostics ECG:normal sinus rhythm on lead II ECG during echocardiogram with average heart rate of 150 bpm Doppler blood pressure: 140 mm Hg #2 cuff LF__ Echocardiogram:___</p> <p>Diagnosis: Dilated cardiomyopathy Suspect right-sided heart failure (peritoneal, pleural, pericardial effusion) Possible pancreatitis Presumed IBD</p> <p>Treatment/Medications Start the following: Lasix 20 mg tabs- 1/2 tab PO daily Benazepril 5 mg tabs- 1/2 tab PO daily Pimobendan 1.25 mg tabs- 1-1/2 tabs PO BID Spironolactone 25 mg tabs- 1/4 tab PO BID Taurine- 500 mg PO BID L-Carnitine 1 gm PO BID</p> <p>- continue prednisone as previously prescribed - add Mirtazapine if appetite does not improve in the next couple days. - recheck blood work (renal values/lytes) and effusion volume in 1-2 weeks. - a repeat echocardiogram is recommended in 3 months or earlier if clinically indicated.</p>
Blue Wilderness (unknown variety)	Dog	Doberman Pinscher	8	Years	Male	42.27	Kilogram	<p>Edited for brevity. HISTORY: (b)(6), a 8 Yrs. 0 Mos., Male, Pinscher, Doberman, was presented on (b)(6) for cardiac evaluation. The owner notes that looking back (b)(6) had a nuisance cough prior to October of this year. In October, he was seen at the rDVM for coughing and changes in respirations. He was diagnosed with CHF and started on Lasix and Enalapril at the rDVM. Initially he was taking Lasix 40 mg tab - 3 tabs PO BID, they have decreased and increased with his Lasix based on coughing. (b)(6) is current on vaccines and heartworm prevention. No unusual sneezing, vomiting or diarrhea. Appetite and activity level normal. He is fed Wellness Core food. The owner notes that he has had GI issues on chicken diets. The owner notes no prior health issues.</p> <p>Current Medications:_Lasix 40 mg tab: 1 tab PO AM; 2 tab PO PM, Enalapril 5 mg tab: 4 tabs PO BID_</p> <p>Previous Diagnostics:_rDVM Radiographs: generalized cardiomegaly; pulmonary edema; pulmonary venous distension _</p> <p>Physical Exam HR: 130; RR: Pant Weight: 93.0 lb/42.27 kg</p> <p>Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, grade III/VI left apical systolic murmur, no arrhythmias, lungs clear, pulses good. Skin normal. Musculoskeletal system normal. Normal peripheral lymph nodes. Intact.</p> <p>Diagnostics Doppler Blood Pressure: 103 mm Hg; # 5 cuff RF ECG:_normal sinus rhythm with two single ventricular premature complexes of LV origin; average heart rate of 130 bpm. _(*continued below)</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) Echocardiogram: __</p> <p>Diagnosis: Dilated cardiomyopathy History of congestive heart failure</p> <p>Treatment/Medications</p> <p>1) Furosemide 40 mg tablets: increase to 2 tablets by mouth every 12 hours until finished, then transition to Furosemide 80 mg tablets: give 1 tablet by mouth every 12 hours.</p> <p>2) Enalapril 5 mg tablets: continue 4 tablets by mouth every 12 hours until finished, then transition to Enalapril 20 mg tablets: give 1 tablet by mouth every 12 hours.</p> <p>3) Vetmedin (Pimobendan) 10 mg tablets: give 1-1/4 tablets by mouth every 12 hours. - currently on manufacturer's backorder (previously available at Costco, Walmart, HyVee) - \$54 for 40 days (when compounded at (b)(6)) vs. \$180 for 40 days.</p> <p>4) Spironolactone 50 mg tablets: give 1 tablet by mouth every 12 hours.</p> <p>5) Taurine give 1 gram by mouth every 12 hours</p> <p>6) L-carnitine give 2 grams by mouth every 8 hours with food</p> <p>Recommended 24 hour Holter monitor- owner declined at this time. Discussed unlikely potential for a taurine deficiency secondary to grain-free diet and taurine testing (whole blood/plasma)- owner declined at this time. Recommended rechecking renal values/lytes with pDVM in 1-2 weeks. A repeat echocardiogram is recommended in 3-6 months.</p>
Nutro Ultra small breed (unknown protein source)	Dog	Terrier - Jack Russell	9	Years	Male	10.18	Kilogram	<p>Edited for brevity. HISTORY: (b)(6), a 9 Yrs. 0 Mos., Neutered Male, Terrier, Jack Russell, owned by (b)(6) was presented on (b)(6) for cardiac evaluation.</p> <p>(b)(6) had an event under anesthesia during a dental cleaning in October 2018. He went in to cardiac arrest and was revived. The rDVM records indicate that (b)(6) recovered uneventfully after that.</p> <p>The owner notes that in January (b)(6) had a slip and fall on the ice. He was seen at the rDVM and radiographs looking for back or neck injury. A heart murmur was noted at that time and cardiomegaly was seen on radiographs taken 1/28/19. The owner notes that (b)(6) was subsequently diagnosed with diabetes and started on insulin.</p> <p>(b)(6) has been doing well since then. The owner notes no other concerns.</p> <p>No unusual coughing, sneezing, vomiting or diarrhea. No polyuria/polydypsia. Appetite and activity level normal.</p> <p>(b)(6) is fed Nutro Ultra Small Breed. He has never been a good eater, but his appetite has dramatically improved since starting insulin. He was previously mostly eating peanut butter treats and chicken chews mixed with a small amount of Nutro. He would previously go up to 3 days at a time without eating. He is now consistently eating Nutro small breed wellwith salmon jerky from trader joe's and carrots as snacks.</p> <p>He is current on vaccines and heartworm prevention.</p> <p>Current Medications:_Novalin N Insulin: 5 units SQ BID_</p> <p>Physical Exam HR: 120; RR: 28 Weight: 22.4 lb/10.18 kg</p> <p>Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, grade II/VI left apical systolic murmur, no arrhythmias, lungs clear, pulses good. Skin normal. Musculoskeletal system normal. Normal peripheral lymph nodes (*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report)</p> <p>Diagnostics ECG:_normal sinus rhythm on lead II ECG during echocardiogram _ Doppler Blood Pressure:_136 mm Hg; # 3 cuff LF_ Echocardiogram: __</p> <p>Diagnosis: Mild systolic dysfunction and mild left ventricular enlargement - rule out early dilated cardiomyopathy (potentially diet-associated vs. idiopathic)</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Nutro Grain Free Senior Dry Dog Food Farm-Raised Chicken Lentils and Sweet Potato Recipe	Dog	Pit Bull	12	Years	Male	33.5	Kilogram	<p>Edited for brevity. HISTORY: (b)(6), a 12 Yrs. 1 Mos., Neutered Male, Pitbull, was presented on (b)(6) for cardiac evaluation. The owner's adopted (b)(6) about 4 months ago from KCPP. The owners note that he was there for about 2 years prior to adoption. He was heartworm positive in the past and was treated. The owner notes that the coughing started shortly after adoption. (b)(6) will cough intermittently with play/excitement. There are times where he seems to be winded sometimes after exercise, however there are other times where he plays extensively and seems fine. The owner reports that an arrhythmia was noted on exam. No unusual sneezing, vomiting or diarrhea. No polyuria/polydypsia. Appetite and activity level normal. (b)(6) is fed Nutro Senior formula (grain-free).</p> <p>Current Medications: _Gabapentin 200 mg PO BID; Glucosamine PO SID; Fish Oil PO SID_</p> <p>Physical Exam HR: 140; RR: Pant Weight: 79.3 lb/33.5 kg</p> <p>Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, no murmur, regular rhythm with fairly frequent single extrasystolic beats, lungs clear, pulses good with occasional deficits. Skin- multiple dermal masses. Normal peripheral lymph nodes</p> <p>Diagnostics Doppler Blood Pressure: 114 mm Hg; # 5 cuff LF ECG: _normal sinus rhythm with fairly frequent single monomorphic ventricular premature complexes of RV origin (-30 VPC's/minute); average heart rate of 100 bpm. _ Echocardiogram: __(*continued below)</p>
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report)</p> <p>Discussed 24 hour Holter monitor placement vs. starting Sotalol therapy and rechecking an ECG +/- Holter monitor in 1-2 weeks. Owner elected to hold on Holter monitor placement and would like to start Sotalol therapy. Discussed whole blood and plasma Taurine levels at UC Davis- owner declined at this time.</p> <p>Plan to start Sotalol 80 mg tabs- 1/2 tab PO BID. Recommended transitioning off the grain-free diet to either Royal Canin, Science Diet, Purina or Iams Start Taurine - 1,000 mg PO BID Start L-carnitine- 1,500 mg PO TID with food. continue fish oil supplementation.</p> <p>Recheck ECG in 1-2 weeks +/- place a 24 hour Holter monitor. Recheck echocardiogram and ECG in 3-6 months.</p>
ACANA SINGLES LIMITED INGREDIENT DIET LAMB AND APPLE FORMULA GRAIN FREE DRY DOG FOOD	Dog	Pit Bull	5	Years	Male	Not provided	Pound	<p>We noticed he started to have labored breathing and a bad cough. Vet thought it could be kennel cough. After more diagnostic tests they found him to have Dilated cardiomyopathy (DCM). It was suggested we take him off of his grain free food, Acana Lamb and Apple, and move him to a grain inclusive food. We transitioned him to Fromm's Gold Large Breed and started him on medications prescribed by a local veterinary cardiologist. After 6 months of new food and medications his heart significantly improved. The vet believes that the new diet along with meds shows this disease was caused from a grain free diet.</p>
Nature's Domain	Dog	Mixed (Dog)	7	Years	Female	52	Pound	<p>Complainant stated that her dog, (b)(6), was DX with Dilated Cardiomyopathy (DCM) on December 21, 2019. The complainant stated that (b)(6) did not have any SX other than a cough.</p> <p>Pet Information: (b)(6) is a 7-yr. old Labrador Mix with Doberman, 52 lbs. and spayed. Previous health status, (b)(6) has a low thyroid but has been taking medicine for two years other than that her health was fine. Originally, (b)(6) was original seen for the cough, but the Veterinarian detected a heart murmur which eventually led to the Echocardiogram. (b)(6) also had an X-Ray but no blood test was conducted to check her Blood Taurine Level. (b)(6) switched to Purina Pro Plan 3 weeks ago and important to note is that her cough has decreased. Per (b)(6), coughing could also be a SX of DCM ((b)(6)). (b)(6) consumed Nature's Domain for 5 months and Canidae All Life Stages for years before Nature's Domain. The complainant would give her the above brands 2 times a day (1 cup). The complainant does not have any of the packaging of the product left. Currently, (b)(6) is being seen by the (b)(6). Currently, she is under compounded pimobendane, benazepril and cough suppressant. Complainant stated that she has changed (b)(6) food, her cough has subsided some. (b)(6) does not spend anytime unsupervised outdoors and there are two dogs in the house that have not been tested, (b)(6) (shepherd) and (b)(6) (yellow lab golden).</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Earthborn Holistic Meadow Feast Grain Free	Dog	Setter - Gordon	7	Years	Male	63.8	Pound	(b)(6) was brought into our clinic on an emergency basis on (b)(6), his breathing was labored and was very lethargic. During exam, a grade 4/6 heart murmur was noted. On radio-graphs lateral and VD of thorax, heart appears enlarged with left atrial enlargement and round appearance. Appearance on VD radio graph, lungs have increased in opacity, suggestive of edema. (b)(6) was given LRS 100cc SQ, 2cc Furosemide SQ, Lasix (50mg)-1 tab PO BID x30, 60ct, Enalapril (10mg)-1 tab PO BID x30, 60ct, Vetmedin (5mg)- 1 tab PO BID x30, 60ct. (b)(6) had a follow up appointment on 2-4-19, murmur was stable from previous descriptions, lungs clear, Chronic Heart Failure was stable at this time. Continue on same medications as first appointment. On 2-11-19 (b)(6) was seen from vomiting and diarrhea. NSF, was given LRS 100cc SQ, 2.7cc of Cerenia and Famotidine SQ and Metronidazole (500mg) 1 tab PO BID x10, 20 ct.(b)(6) was also placed on a GI diet and continued current medications. On 2-22-19 (b)(6) had an echocardiogram with a specialist. The echocardiogram report noted no masses or effusions. Severe dilation of the left ventricle causing mitral valve insufficiency, which are consistent with dilate cardiomyopathy. On 3-5-19 echocardiogram findings were discussed with the owner,
Nulo grain free (pea based protein)	Dog	Retriever - Labrador	6	Years	Male	64.5	Kilogram	Presented to primary veterinarian 2/27/19 for drinking more water, inappetence, pcDVM auscultated an arrhythmia and performed ECG which revealed atrial fibrillation and referred for cardiology consultation. Repeat ECG on 3/12/19 confirmed AFIB and echocardiogram revealed mild to moderate dilated cardiomyopathy (mild mitral valve regurgitation, mildly dilated left atrium, mildly dilated left ventricular dimensions with mild to moderately decreased systolic function, mild to moderate right heart enlargement). Patient has ~3 year history of grain free diet (Nulo grain free). At this time we suspect that the DCM may be due to grain free diet, however idiopathic DCM cannot be ruled out. Since visit on 2/27 has been slowly transitioning to a chicken based purina proplan diet. Pet was discharged on 3/12 with instructions to continue transitioning to new diet containing grains, start taurine 1500 mg twice daily, start L-carnitine 2500 mg twice daily, and recheck echo in 3-4 months - plan to start ACEI / pimobendan if no improvement or worsening of condition.
Kirkland Nature's Domain Salmon and Sweet Potato	Dog	Bulldog - American	7	Years	Male	82	Pound	Dilated cardiomyopathy diagnosed (b)(6). Congestive heart failure. Euthanized (b)(6) for V-tach and VPC while in intensive care at (b)(6). Board certified Cardiologist, Dr. (b)(6) report stated:"Echocardiogram: The LV is dilated secondary to poor systolic function. There is marked left atrial enlargement. FS=18% Color Flow: No evidence of valvular insufficiency. (b)(6) heart was radiographically normal August 17, 2017. Owner feeding grain free food (Kirkland Nature's Domain Salmon Meal and Sweet Potato) since June 2018. Previous diet: Royal Canin Pure Elite Lamb.
Zignature Turkey Formula Limited Ingredient (Grain-Free Turkey and Chickpea)	Dog	Shepherd Dog - German	11.5	Years	Female	26	Kilogram	With physical exam (b)(6) found to have a heart murmur and x-rays noted heart enlargement. Echocardiogram results indicated dilated cardiomyopathy. The cardiologist reported the cardiomyopathy was probably diet-related due to (b)(6) diet history. X-rays from July 2018 note heart normal size.
Halo Grain Free Senior Dog Holistic Turkey Turkey Liver & Duck	Dog	Mixed (Dog)	10	Years	Female	12	Pound	My dog has been eating Halo brand Senior Dog kibble for the last two years. She was healthy when I started giving her the food. She has since developed canine dilated cardiomyopathy (DCM) and her heart was nearly twice as large as it should be. After being diagnosed last Thursday 3/7/19, she was prescribed three different heart medications. I was doing some research and saw that the FDA issued an alert for grain-free pet food with top ingredients of lentils, potatoes and peas causing DCM and saw that the ingredients you listed were in my dog's food which I have been purchasing from Whole Foods and Chewy. Here are the main ingredients as taken from their website: Turkey dried chickpeas dried lentil dried peas dried egg product turkey liver dried sweet potato duck pea fiber.... The reason I brought my dog to the vet was to have her teeth cleaned but then this was discovered and I thought I should let you know.
Hills Science Diet sensitive stomach and skin adult dog food.	Dog	Dachshund - Standard Long-haired	9	Years	Male	25	Pound	My dog had a recent issue of pulmonary edema (cough began after christmas, pulm edema dx was made 6 weeks later after abx tx and 2 xrays) which led to an echocardiogram that indicated dilated cardiomyopathy this past week.. His heart valves are not affected. He is now on lasix and vetmedin. We had changed our long haired dachshund's diet to grain free about 1 year prior to this dx to grain free Science diet for a concern of skin allergies (which did improve on the grain free diet). I became aware of the concerns of grain free diets and dilated cardiomyopathy in dogs and felt I should report our case. We are crushed to think the two may be related. Our vet recommended a kidney diet to preserve his kidney with his CHF. We have and are wondering if we need to supplement him with taurine as well and if perhaps we can hope for some improvement in his condition?
Don't remember names of food but always boutique grain-free food	Dog	Retriever - Labrador	8	Years	Female	75	Pound	Our dog was a healthy almost 8 year lab with never any health problems who went into congestive heart failure. Took her to ER and diagnosed her with diated cardiomyopathy. She is on lots of medications now and very sick. Up until her diagnosis we have only fed her a grain-free diet.
4health Grain Free Whitefish and Potato 4health Grain Free Chicken and Vegetable	Dog	American Pit Bull Terrier	11	Years	Female	45	Pound	(b)(6) passed out twice back in the spring (May/June 2018) and after taking her to the vet and determining she had an enlarged heart, they referred us to a vet specialist (cardiologist). She had an echocardiogram and ultrasound done and was diagnosed with nutritional DCM. She now takes 9 pills a day (20mg Enalapril, 10mg Vetmedin and 1500mg Taurine) to help her heart function and move blood a little better. The Dr said it was very unusual for her breed/size to have this issue, so when I saw the warning on the news, I called them and they said to immediately switch her back to regular food. I did switch her back, but she broke out in hives/rash all over. She was on grain-free food for a reason- she is highly allergic to "normal" dog food. She has been and still does, eat the 4Health brand from Tractor Supply (chicken and vegetable). My (b)(6) is a director for TSC at their corporate office and verified with the VP or marketing/merchandising that the formula was changed in order to account for the taurine deficiency, but it still doesn't meet WSAVA guidelines.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Merrick Grain Free Dry Dog Food, Real Chicken and Sweet Potato Recipe.	Dog	Terrier - Airedale	5	Years	Female	68.4	Pound	(b)(6) was diagnosed with DCM via cardiac ultrasound after a heart murmur was discovered that wasn't present at her previous check up 6 months ago. (b)(6) has been fed Merrick grain free food exclusively for about 3 years. For the last year, she has almost exclusively been on Merrick's grain free chicken and sweet potato. before that, I would rotate between the beef, duck, salmon and chicken with sweet potato. My veterinarian thinks that this case of DCM is associated with her diet because she is not of a breed typically prone to DCM, and she has been fed a grain free diet for most of her life.
Redford Limited Ingredient Grain-Free Lamb and Sweet Potato	Dog	Weimaraner	8	Years	Male	37.4	Kilogram	Diagnosed upon echocardiogram 3/18/19 with dilated cardiomyopathy
Fromm's Four Star Grain Free Salmon and Tunalini	Dog	Mixed (Dog)	3	Years	Male	40	Pound	(b)(6) was seemingly healthy and given an echocardiogram to collect "normal" values for training purposes. Echo results were not normal, but revealed he had early stages of Dilated Cardiomyopathy. He was adopted in March 2016 at age 12 weeks and was started on Fromm Gold Puppy Dry kibble until age 1, when he was transitioned to Fromm Four Star Grain Free Salmon and Tunalini kibble diet. He ate that food until July 2018 when FDA warning was released. He was then transitioned to Purina ProPlan Sensitive Skin and Stomach Salmon and Rice.
Natural Balance LID High Protein Grain-free Lamb or Beef flavors	Dog	Mixed (Dog)	9	Years	Female	28.5	Kilogram	DCM and CHF diagnosed 3/17/19 Eating BEG diet Owners have given permission to report and are willing to answer questions Changing to new diet and will recheck in 3 months Taurine and troponin pending
Nutrisource Large breed puppy Grain free, Nutro Large breed puppy Farm raised chicken, Taste of the Wild Pacific Stream Puppy	Dog	Retriever - Golden	7	Months	Male	24	Kilogram	On (b)(6) my dog had an ECG in pre-op for his neutering surgery. This was done because he has a heart murmur. There was an abnormality found and we were sent to a cardiologist. On (b)(6) my dog was diagnosed with early stages of nutritionally mediated DCM at a board certified veterinary cardiologist. The breeder had my dog on Nutrisource food after weaning until we got him at 9 weeks. We then put him on Nutro large breed puppy chicken formula. He was on this food until January where we switched him to Taste of the Wild Pacific Stream Puppy.
Taste of the Wild Grain Free	Dog	Pointing Dog - German Short-haired	5	Years	Female	27	Kilogram	(b)(6) was diagnosed with a new heart murmur on 12/4/18 when she was seen for routine vaccines. At that time she was being fed Taste of the Wild Grain free Salmon diet. (b)(6) regular veterinarian recommended switching diets and she was switched to Purina Proplan Sport. She was seen today and diagnosed with Dilated cardiomyopathy.
Acana Puppy and Junior, Horizon Pulsar Pulses & Chicken formula Grain free, Fromm Adult Gold	Dog	Shepherd Dog - Belgian Tervueren	46	Months	Female	47.2	Pound	Have fed Acana puppy for a few weeks, Horizon Pulsar, a grain free diet, for 3.5 years. Fromm adult gold for 3 months. Veterinarian detected a heart murmur, we elected to have dog under go an echocardiogram. Cardiologist diagnosed "Given her dietary history, it's certainly possible that (b)(6) suffers from a diet-associated dilated cardiomyopathy". She is now on 3 medications, a new grain based diet and restricted activity for 6-12 months. Hopefully this will correct the problem.
American Journey Grain-free Salmon & Sweet Potato Recipe	Dog	Great Dane	17	Months	Male	117	Pound	Labored breathing, coughing, lack of appetite.
Kirkland Signature Nature's Domain Cat Food, Wellness CORE Grain-Free Original Formula Dry Cat Food, BLUE Basics Limited-Ingredient Diet Turkey & Potato Formula as well as Duck & Potato Formula	Cat	Domestic Shorthair	7.5	Years	Male	10	Pound	(b)(6) suddenly went into congestive heart failure on the evening of (b)(6), at ~7.5 years old, having shown no prior symptoms of cardiac or respiratory problems. He spent the weekend at a 24-hour veterinary clinic and was diagnosed with dilated cardiomyopathy through cardiac ultrasound. Following his 3-day emergency stay, he had repeated incidents of respiratory distress until the day I elected to euthanize him ((b)(6)) because I did not want to him to a painful death drowning in his own lungs. Upon doing research about DCM, I requested a taurine blood test, but his regular vet declined because he was on a commercial diet, and most commercial diets were supplemented with taurine, thus the vet deemed it unlikely to be due to diet simply for that reason. Two weeks following (b)(6) diagnosis, I brought his brother (b)(6) (~15 lbs, neutered male) into the vet clinic for a check up to get him on pet insurance (because I couldn't afford another \$3400 financial hit from another surprise vet bill).(b)(6) was determined to be relatively health (no audible heart murmur), but then (b)(6) went into congestive heart failure within an hour of leaving the veterinary clinic. The stress of the vet visit had brought on the heart failure and brought to light that he also was suffering from cardiomyopathy. We elected not to do an ultrasound to get a confirmed diagnosis because the stress of being at the clinic is what had caused the heart failure. We strongly assumed it to be DCM, given his brother's diagnosis just two weeks prior. We started him on the same medicine regime. (b)(6) generally fared better and kept responding to increased doses of furosemide, but eventually his disease progressed to the point where he was no longer responding to a very high furosemide dose. He took a turn for the worse, and when I suspected he threw a blood clot and he was struggling to breath despite medicine, I had him euthanized on (b)(6) to prevent further suffering. I had both(b)(6) and his brother (b)(6) since they were 5 week old kittens (from a feral mother). I had fed them both a grain-free dry kibble diet their entire lives, primarily Blue Buffalo Limited Ingredient cat diets, Kirkland's Nature's Domain cat food, and Wellness Core cat food. They were strictly indoor cats (and as such their diet was not supplemented by birds/reptiles/rodents/etc). I added a taurine supplement to their diets about 3 weeks after(b)(6) diagnosis, but could not find information on how many mg's to add for DCM cats, and later realized I had only given them half the amount of taurine of that cats were supplemented with daily in the original taurine-DCM feline studies. In light of the recent research with DCM dogs on grain free diets, (*continued below)

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	<p>(Continued from previous report) and given what happened to my cats, I strongly suspect that similar diets in cats may be linked to DCM in cats, and that DCM cases are likely underreported in cats because:</p> <ol style="list-style-type: none"> 1) cats are on the prey menu and hide their ailments, so they are more likely to show cardiac problems only when severe and often when it's too late--many probably die before the specific cause of cardiac failure is assessed and necropsies are often not elected because it doesn't change the outcome and is cost-prohibitive; 2) many pet cats are indoor/outdoor cats and kill wildlife which supplements their diets with natural, absorbable taurine; 3) outdoor cats are likely to hide before dying (again, due to being on the prey menu) and may just never return home, so cause of death (and even the outcome of death) may remain unknown to cat owners; 4) veterinary clinics are generally a more stressful place for cats than dogs, stress exacerbates heart conditions and a cat is more likely to die while being treated for acute heart failure before the specific form of cardiomyopathy is determined, or the owner is less likely to bring them to the vet to begin with because of the stress associated with the veterinary clinic; and 5) vets may be dismissive that diet could play a role given the addition of taurine to commercial cat foods and the apparent resolution of the problem when taurine was added back in the 80's/90's (despite that this was prior to grain free diets becoming popular and regularly available; and despite the fact that other ingredients in the food could potentially inhibit the absorption of the added taurine). <p>I strongly urge the USDA to look into cat cases of DCM that may be associated with grain free diets. I am happy to provide additional case details regarding my cats if requested.</p>
FROMM Salmon Tunalini	Dog	Sheepdog - Shetland	6	Years	Female	8.86	Kilogram	<p>Edited for brevity. HISTORY: (b)(6), a 6 Yrs. 7 Mos., Spayed Female, Sheepdog, Shetland, was presented on (b)(6) for cardiac evaluation.</p> <p>The owner reports that (b)(6) was diagnosed with a small paramembranous VSD in 2013- no cardiac chamber enlargement was noted at that time. The owner adopted her from the breeder 2 years ago and has not had an echocardiogram rechecked. No coughing, no syncope, and no other clinical signs are noted. The owner reports that (b)(6) is in need of anesthesia and dental cleaning.</p> <p>No unusual coughing, sneezing, vomiting or diarrhea. No polyuria/polydypsia. Appetite and activity level normal. (b)(6) is fed Fromm salmon diet. She is current on vaccines and heartworm prevention. She has a history of DJD in her hip and a prior left coxofemoral joint injury that Dr. (b)(6) had previously evaluated and recommended medical management.</p> <p>Current Medications: _Synovi G3 joint supplement; Cranberry supplement._</p> <p>Previous Diagnostics: _1/23/2013 - Echocardiogram: Small indistinctly marginated approximately 2.7 mm defect in the upper portion of the interventricular septum, just below the mitral & tricuspid valves. Small jet of turbulent blood flow from left ventricle to right ventricle at site of defect. Velocity of turbulent jet measured 4.82 m/s, corresponding to a pressure gradient of 93.1 mm Hg. FS at that time was wnl at 31%. No cardiac chamber enlargement was noted. A grade 3/6 heart murmur was also noted on exam.</p> <p>Physical Exam HR: 130; RR: 24 Weight: 19.5 lb/8.86 kg</p> <p>Pertinent PE Findings: mm pink, CRT < 2 seconds, no jugular venous distention or abnormal jugular pulses, no murmur, no arrhythmias, lungs clear, pulses good. Skin normal. Musculoskeletal system normal. Normal peripheral lymph nodes (*continued below)</p>

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	*Continued	(Continued from previous report) Diagnostics ECG: _normal sinus rhythm on lead II ECG during echocardiogram _ Doppler Blood Pressure: _144 mm Hg; # 3 cuff LF_ Echocardiogram:___ Diagnosis: Dilated cardiomyopathy - r/o diet-associated vs. idiopathic History of small paramembranous VSD- no flow noted across this defect on exam today Treatment/Medications We discussed performing a bubble study today, which the owner elected not to pursue at this time. We would like to recheck (b)(6) in 3 months to recheck her echocardiogram. I would recommend transitioning (b)(6) off of her current diet to either Royal Canin, Science Diet or Purina. Please start the following: Supplements (see handout for brand recommendations) Taurine 500 mg tablets: give 1 tablet by mouth every 12 hours. L-carnitine 500 mg tablets: give 1 tablet by mouth every 8 hours with food.
Horizons pulsar grain free diet	Dog	Mixed (Dog)	4	Years	Male	27.7	Kilogram	(b)(6) is presented as a consultation through (b)(6) on 3/18/19 for evaluation of a coughing and marked cardiomegaly with concern for DCM. (b)(6) initially presented to the pDVM on 3/11 for a few day hx of coughing and was started on cough tabs. His symptoms progressed w/coughing noted mostly at night, decreased energy level and appetite, and he presented to the (b)(6) . CXR showed severe heart enlargement and possible early CHF. He was given a dose of Lasix (with significant improvement in C and appetite per O) and started on Enalapril 15 mg BID with recommendation for referral. He has been on a grain free diet for the last ~4 years (since he was a puppy) and so DCM was discussed and a diet change recommended. The O's switched (b)(6) to Purina 3/17/19 and he has had no adverse effects. They also submitted a taurine level (unsure if whole blood vs. plasma) to UC Davis. UTD on HW and F/T preventatives; has also been on salmon oils. PE: HR 180 bpm; grade III/VI holosystolic plateau quality heart murmur - PMI equal over MV and TV; regular tachycardia with s/s femoral pulses; mildly increased RE, RR 40-50 bpm, harsh lung sounds in all fields but no discreet crackles or wheezes. Echo diagnosis: Advanced dilated cardiomyopathy - suspect secondary to nutritional deficiency Moderate to severe mitral valve regurgitation Severely dilated left atrial dimensions Severely dilated left ventricular dimensions with severely decreased heart muscle function Moderate to severe right heart enlargement Left-sided congestive heart failure
Freshpet select roasted meals chicken flavor	Dog	Shih Tzu	10	Years	Male	20	Pound	My dog was diagnosed with congestive heart failure and cardiomyopathy. He eats freshpet dog food. I don't know if that's why he got it but I've read some dog foods can cause this, especially grain free. This has oats so I don't know if that's considered grain free or not but in case it is helpful I am sharing.
Pine Forest Canine Recipe with Venison & Legumes - Taste of the Wild Pet Food	Dog	Shepherd Dog - Australian	4.5	Years	Female	53	Pound	My dog was diagnosed with DCM (heart failure), I have been feeding my dog Taste of the Wild - Venicn and Legumes for 3+ years. Aussies do not typically get DCM in their early years, due to her age and size we thin the grain-free diet could be the culprit as discussed with a Cardio Vet.
Blue Wilderness Grain Free Chicken with life source bits both regular and healthy weight .Adult large breed 4024320409 and 5961000570	Dog	Retriever - Golden	7	Years	Male	100	Pound	been acting lethargic for 2 months. was diagnosed with low thyroid. on (b)(6) (b)(6) was having labored breathing. we took him to the ER. They admitted him to ICU with fluid in his lungs. Monday am, they diagnosed him with enlarged heart, DCM, Heart Failure. He died on Tuesday night (b)(6) . our family is devastated and disgusted. feel free to call or e mail.
Six Fish Orijen	Dog	Brittany	8	Years	Female	39	Pound	We've been feeding (b)(6) Six-fish Orijen (purchased at our local vet clinic, (b)(6)) since puppy-hood. Recently our vet detected heart noise which led to a cardiac ultrasound and a diagnoses of DCM (in a breed that is not genetically disposed to DCM). Difficult to pick a "Date problem started", this has clearly been a developing issue over months so I picked a date somewhat at random. We are in the process of further bloodwork and testing, change of diet (to Royal Canin cardiac diet) and meds and supplementation as recommended by the vet cardiologist. March 24 update: (b)(6) blood taurine levels are normal.
Holistic Select Adult Health Lamb Meal Recipe, Four Health	Dog	Mixed (Dog)	7	Years	Female	47.4	Pound	Patient presented to another animal hospital ~2 weeks ago with acute onset of coughing. Pet was treated for "kennel cough", cough resolved, then reoccurred. She presented to our hospital for assessment on (b)(6) .
Zignature Turkey Blend Grain Free	Dog	Mixed (Dog)	10	Years	Male	Not provided	Not provided	Zignature - Turkey Blend Grain Free Consumer was feeding her 10-year-old male Lab/Weimer mix when he developed a hacking cough. Upon visit to the family vet they noted that he had a heart murmur and the dog was referred to a Vet Cardiologist. An Echo Cardio Gram was performed, and the vet diagnosed him with Dilated Cardio Myopathy and the owner was instructed to take the dog off this food and start on a dog food with grain product in it. There had been no other medical issues with the animal other than allergies.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Iams Proactive Health - Chicken Senior Plus Dry Dog Food	Dog	Retriever - Labrador	13.18	Years	Female	29.7	Kilogram	Presented to (b)(6) for further evaluation of her increased respiration rate and worsening cough. Patient was diagnosed with pulmonary edema secondary to DCM and DMVD. Patient's diet consisted of Iams senior (most recent x 1 year) and previously alternated between Iams chunks and mature adult large breed, 5+ years
Rachel Ray's Chicken and Veggies	Dog	Retriever - Labrador	2	Years	Female	25.2	Kilogram	On 11/14/2018, presented to pCDVM for on/off limping with unknown trauma and cardiomegaly was identified on the subsequent radiographs, as well as muffled heart sounds on auscultation; a cardiac consultation was recommended. At consult, a Grade V/VI heart murmur was auscultated with significantly muffled heart sounds on the left. She was diagnosed with severe tricuspid valve dysplasia, severe tricuspid insufficiency, severe right heart volume load, severe enlargement of the caudal vena cava and hepatic veins, and dilated, thin-walled, hypocontractile left ventricle consistent with left-sided DCM. An ECG showed sinus rhythm conducted with first-degree AV block, and a Holter monitor was performed (normal). She was started on Pimobendan, benazepril, and Taurine (following a Taurine level being drawn).
Acana Singles Duck and Pear Formula Dry dog food, Wet Noses Grain Free pea and carrot dog treats Wet Noses Grain Free berry Blast dog treats, Now Fresh Grain Free Large Breed Adult Recipe Dry Dog food	Dog	Retriever - Labrador	8	Years	Female	71	Pound	Both my dogs ((b)(6)8 years Labrador, and (b)(6) 5 year Labrador) lived on grain free food and treats for years. Lots of peas and legumes. Brands like Acana Lamb and Pear, Wet Noses grain free peas and carrots treats and later on NOWV grain free large breed adult food. I thought (b)(6) was doing great. She looked so healthy, but she developed enlarged heart and died at only 8 years old.. My sweet girl is now gone. About 6 months ago?, I learned of the FDA warning and added in grain inclusive food along with her grain free as well as cooked meat, thinking this would help. So she was still on grain free 2/3rds with 1/3rd grain inclusive and cooked meat like chicken/beef. But at the emergency room, her heart enzymes were at 6000 (should be under 900) and her diagnosis was Dilated Cardiomyopathy. (b)(6) dog (Labrador), age 5, was then tested as he ate the same food and shows high enzymes test for heart issues (1230), so I know this was not a genetic defect for my other dog. No Vet detected any murmur when listening to her heart, and she loved to run. Those were all of my reasoning I did not fully believe the warning. This disease can stay hidden. Her heart compensated right up until the weekend of her death, when she did have tachycardia the weekend of her death. So terrible that this food is still on the market. I have now heard that Labrador and Golden Retrievers may be more at risk with this food. (b)(6) vet was Dr.(b)(6). Her Emergency Vet was (b)(6).
Taste of the Wild High Prairie Puppy	Dog	Beagle	9	Months	Male	14	Pound	Echocardiogram done by cardiologist 3/18/19 because of an enlarged heart found on x-rays done at our regular vet's office. Diagnosis by the cardiologist "early occult dilated cardiomyopathy, likely diet-related". His "contractility is just below normal range and his left ventricle measures mildly dilated. His left atrium is normal in size, therefore there is no concern for imminent heart failure. However, we recommend supplementing Taurine, switching to a non grain free diet and medicating with Vetmedin for the next 3 months. In 3 months time, some improvement in (b)(6) cardiac dimensions should be noted; it may take up to 6 months for full return to normal cardiac structure and function if (b)(6) shows improvement in 3 months, his overall prognosis will be good."
Hill's prescription diet grain free d/d	Dog	Mixed (Dog)	10	Years	Male	13	Pound	Grain free limited ingredient diet (Hills) and onset of DCM in otherwise healthy dog. Dog is still alive, blood tests normal, however X-ray and cough and vet determine DCM.
4health Open Highland Recipe Lamb & Lentil	Dog	Mixed (Dog)	1	Years	Female	54	Pound	Pet presented for decreased appetite 3/29/19. A new heart murmur was noted on examination. Subsequent radiographs and echocardiogram revealed dilated cardiomyopathy.
Blue Buffalo Basics Limited Ingredient Grain-Free Formula Adult Salmon & Potato Recipe, dry dog food	Dog	Retriever - Labrador	7	Years	Female	70	Pound	Product: Blue Buffalo Basics Limited Ingredient Grain-Free Formula Adult Salmon & Potato Recipe, dry dog food - A 7 y/o female, English Black Labrador Retriever, "(b)(6)", 70lbs, all shots up-to-date, and in previously good health, experienced "kennel cough" at the end of 06/2018. The dog was seen by Dr. (b)(6), DVM, (b)(6), who treated her with antibiotics. The cough got worse and (b)(6) suddenly collapsed and passed away on (b)(6). There was a post-mortem done and everything came back as normal except canine dilated cardiomyopathy (DCM). The Complainant stated that Dr.(b)(6) believes that this grain-free dog food caused (b)(6) death. The dog had been fed this product since 07/2017 and fed 2x daily: 1/2 cup at 7:00 am and 1/2 cup at 5:00 pm. Eleven months later, the dog began experiencing the cough and passed away approximately (b)(6) year later. She is very concerned due to her other dog, an English Black Labrador, sister to (b)(6), was recently diagnosed with canine mild dilated early cardiomyopathy of the heart (DCM), but all tests returned to normal in 02/2019.(b)(6) sibling's name is (b)(6), and was asymptomatic. (b)(6) was consuming another brand of grain-free dog food (see CC 156945).
Annamaet Dog Food Grain Free Aqualuk Cold Water Formula - Salmon Meal, Field Peas, and Herring Meal, All Life Stages,	Dog	Retriever - Labrador	6	Years	Male	114	Pound	Product: Annamaet Dog Food Grain Free Aqualuk Cold Water Formula - Salmon Meal, Field Peas, and Herring Meal, All Life Stages, dry - A 6 y/o, male, English Black Labrador Retriever, "(b)(6)", 114 lbs, shots up-to-date, previously very healthy, is a certified therapy dog.. When (b)(6) went to see Dr.(b)(6), DVM, (b)(6), in 08/2018, Dr.(b)(6) had a concern that (b)(6) sister, (b)(6), had passed away of Pulmonary Edema from canine dilated cardiomyopathy (DCM) on (b)(6) and (b)(6) had been on a grain-free diet (different brand) (see CC 156942) Dr. (b)(6) did an ultrasound and advised the owner that the heart muscle didn't look right. (b)(6) was referred to Dr. (b)(6), cardiologist, (b)(6) who did blood pressure, an electrocardiogram, a Doppler, with full examination and diagnosed (b)(6) with mild dilated dilated cardiomyopathy (DCM), canine. He did a Taurine test, which came back as normal. Dr. (b)(6) advised the owner to get the dog off of the grain-free diet and recommended another type of food. (b)(6) was also treated with Taurine pills, 2x per day. On 02/20/19, the BP was normal and the heart went back to normal. She stated that the veterinarians believed that the grain-free food was causing the DCM. (b)(6) was asymptomatic.
Acana Pacifica Regional	Dog	Retriever - Golden	11	Years	Male	55	Pound	Had noticed some coughing few months and then one night observed him having very labored breathing. He was rushed to (b)(6) where he was diagnosed with congestive heart failure and suspected DCM. He had been on Acana grain free Salmon and then Acana Wild Atlantic Regional for most of his life.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
ACANA Heritage Freshwater Fish Formula	Dog	American Pit Bull Terrier	3.5	Years	Male	72	Pound	We rescued our dog 3 years ago and started him on Orijin's Puppy Formula and then after about three months started him on ACANA Heritage Freshwater Fish Food. I've alternated between the Fish and their Lamb and Apple Formula for three years now. Recently in the past three months he's lost 13 lbs, became increasing more fatigued, started coughing, and had little interest in food or any activity. I took him to our vet thinking maybe it could be the change in the season and possibly seasonal allergies. They ran routine blood work and chest x-rays to find that his heart is significantly larger than what it is supposed to be and diagnosed him with dilated cardiomyopathy. Our vet instructed us to take him off of his grain free diet because there has been so many people having the same issues as us.
ACANA Singles Limited Ingredient Diet Grain Free Lamb & Apple Dog Food	Dog	Retriever - Golden	8	Years	Male	30.4	Kilogram	Hx of suspected food allergies characterized by moist dermatitis. In 2013 owner switched to a grain-free diet. Dermatitis resolved. Multiple hospitalizations for non-obstructive GI foreign bodies - none requiring surgery.
ACANA - Heritage Red Meat Formula Dog Food (Grain-free)	Dog	Shepherd Dog - German	11.5	Years	Female	25.9	Kilogram	3/15/2019 - Acute onset of difficulty breathing on walk, increased resp rate, wheezing and short of breath. Diagnosed with DCM and CHF
Midwestern ProPac Bayside Select Grain Free	Dog	Collie - Border	1.5	Years	Female	29	Pound	(b)(6) was showing signs of labored breathing 1x in the evening for about 5 days, but was otherwise acting/playing normally. I made an appointment with our primary vet on 2/22/19, where she discovered that she had a heart murmur. Our vet did an xray and EKG, where she discovered that (b)(6) was in congestive heart failure, had fluid on her lungs, and an arrhythmia. She did a taurine test that evening, gave her a diuretic and recommended to follow-up with a cardiologist. We saw a cardiologist on (b)(6) at (b)(6) , where many tests were done, including an echocardiogram. They said that she was in pretty severe congestive heart failure and had a ventricular arrhythmia. (b)(6) was given medicine for the conditions, put on activity modifications, and we were changing her diet to a heart healthy, grain filled diet. She seemed to be responding well to her medicine with no adverse effects and normal energy levels. 7 days later, she had a very elevated heart rate in the evening and died in her sleep overnight (b)(6) We have been feeding both of our dogs ProPac Ultimates Bayside Select (grain free), and this is the only food that we gave (b)(6) since we adopted her on 4/29/18
Acana Lamb	Dog	Pointing Dog - German Short-haired	3	Years	Female	55	Pound	(b)(6) was taken to the Vet for a shoulder issue. The vet heard a heart murmur. Then when reading the xray of (b)(6) shoulder the vet noticed an enlarged heart. The Vet referred (b)(6) to a Cardiologist. Upon completing the echocardiogram (b)(6) was diagnosed with dilated Cardiomyopathy. (b)(6) heart murmur was grade 4, her heart was enlarged and one of her valves was leaking. The Vet advised that her case was severe and that we could expect her to become symptomatic within 1 to 2 years. The cardiologist asked what food we were feeding (b)(6) . We advised Acana Lamb. She then advised us of the research being done into the connection between a grain free diet and DCM. She advised that it would be beneficial to switch (b)(6) to a food that did not contain potatoes, lentils, chick peas, peas or legumes in the first 5 ingredients. (b)(6) was tested for her taurine levels. The tests came back that she was on the low end of normal. It was suggested that (b)(6) be given a taurine supplement. (b)(6) was also put on two different heart medications to be given twice a day. We switched (b)(6) to Purina Pro Plan Sport, gave her a taurine powder supplement meant for cats, gave her herring oil and glucosamine. We restricted her exercise as well. 5 months later we took (b)(6) back to the cardiologist and the echocardiogram was done again and the cardiologist advised that her heart is back to normal size. The valve is no longer leaking and that the heart murmur is down to a grade 2 murmur. (b)(6) has been taken off the heart meds and we continue with the same food and supplements. The cardiologist advised that this is the first dog that she has seen that has made almost a full recovery with a change in diet. We will be going back again in 6 months to have the echocardiogram done again to check on her status.
Wellness Core grain free large breed puppy kibble	Dog	Retriever - Golden	11	Months	Male	28	Kilogram	(b)(6) was eating Wellness Core large breed grain free puppy kibble from 4 months old to 9 months old. At 8 months old (b)(6) was out playing with his friends and suddenly collapsed, we rushed him to the vets done several tests and referred to a cardiologist who diagnosed (b)(6) via echocardiogram with nutritional Dilated cardiomyopathy (DCM). We had his Taurine level tested and came back as 225, he is being supplemented with Taurine, L-Carnitine and medicated with Vetmedin(Pimobendan) and Frusemide. We have a 3 month check up echocardiogram on april 19th to see if his change in diet to Purin Pro Plan Sensitive Skin salmon, medication and supplements will improve his condition!
Hills Science Diet Grain-free Chicken and potato	Dog	Retriever - Golden	6	Years	Male	75	Pound	Feeding him grain-free dog food was recommended for his dermatology issues and it helped with that but, due to the FDA study he was recently tested and found to be in the early stages of dilated cardiomyopathy.
Redford Naturals Duck and Sweet Potato	Dog	Boxer (German Boxer)	4	Years	Female	Not provided	Not provided	Patient developed DCM and CHF on a grain free diet. Taurine levels were measured and were normal. However, the patient was changed to a non grain free diet and rechecks have shown continued improvement. She is no longer in heart failure 6 months later and her heart is nearly normal

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Redford Naturals Duck and Sweet Potato	Dog	Boxer (German Boxer)	2	Years	Male	Not provided	Not provided	(b)(6) was eating a grain free diet when a new heart murmur was detected on a routine exam. Echo showed DCM. He was started on pimobendan and diet was changed. A housemate was diagnosed with DCM and CHF a few weeks earlier and was eating the same diet. Both dogs have shown significant improvement since changing to a non grain free diet.
Fromms Gold Coast Weight Management	Dog	Hound - Norwegian (Elk Hound)	11	Years	Male	155	Pound	After approximately 1-2 years on grain-free diet (Fromm's Gold Coast weight management), dog was discovered to have dilated cardiomyopathy. After three months of intensive medication and change of diet, cardiomyopathy has been mostly reversed. Was only discovered because of need for surgery to remove foreign object from intestines. Otherwise, probably would not have been discovered and would likely have been a fatal condition for dog.
Just 6 Limited Ingredient Recipe Lamb Meal and Brown Rice - Rachel Ray Nutrish	Dog	Great Pyrenees	2	Years	Female	35.4	Kilogram	(b)(6) was presented with pleural and peritoneal effusion on 4/2/19. She was diagnosed with dilated cardiomyopathy by echocardiogram and atrial fibrillation by ECG on 4/3/19 and treated for congestive heart failure.
Natural Balance Limited Ingredient Diet	Dog	Retriever - Labrador	8	Years	Male	123	Pound	He has been eating grain free diet, diagnosed with CHF DCM last week.
Taste of the Wild PREY Trout formula	Dog	Retriever - Golden	3	Years	Female	61	Pound	March 19th presented for gradual onset of lethargy/panting/decreased exercise tolerance. Exam: weak pulses, tachycardia. Labwork, thorax rads, ecg consistent with dilated cardiomyopathy. Submitted taurine levels to UCD, normal levels. Discontinued Taste of Wild diet and started oral taurine pending results/cardiologist consult. Scheduled exam with UCD cardiologist/echocardiogram, no rx started since not in CHF. Presented to an emergency center 3/24/19, dx with DCM via echo/cardiologist review and CHF. Started on oral furosemide and pimobendan, clinically no improvement. UCD vist 4/8/19 and concurred with dx, DCM/CHF, concerning for related to diet (Taste of the Wild High Praire (Bison/Venison) for number of years but past 9-12months has only been on the Taste of the Wild PREY Trout formula). Owner elected euthanasia and consented to necropsy/tissue sampling to aid in diagnosis.
Acana Lamb and Apple	Dog	Retriever - Golden	8	Years	Female	80	Pound	(b)(6) was just diagnosed with Dilated cardiomyopathy (DCM). She has been on a grain free dry pet food for years Acana Lamb & Apple. We have been unaware now of the link between DCM and grain free diets especially with large breed dogs or Golden Retrievers.
Fromm Four-Star Nutritionals Beef Frittata Veg	Dog	Retriever - Golden	5	Years	Male	78	Pound	I have been feeding my dog a Fromm grain-free food for three years. Last week he spit up bile a couple of mornings over a weeklong period so I took him to the vet as a precaution. The vet was savvy enough to perform an echocardiogram which showed he has dilated cardiomyopathy. My dog is now on a series of medication and supplements and has lab work sent out to (b)(6). Several recent studies out of University of California - Davis have shown that DCM is diet related.
Zignature kangaroo and lentil	Dog	Corso Dog	5	Years	Male	61.4	Kilogram	Reevaluation of: Atrial fibrillation, Historical right heart failure, Dilated cardiomyopathy, Decrease in appetite, Weight decreased (b)(6) is doing great at home. He has a healthy appetite and good energy level. The owner did report one day last week where (b)(6) vomited quite a few times but was fine the next day without any intervention. He is receiving fish oil supplements twice daily. (b)(6) was first seen 3/2018 for newly diagnosed atrial fibrillation with right heart failure. Echo revealed dilated cardiomyopathy. He had been fed a lamb and rice diet for years but had been switched to Zignature kangaroo diet around January 2018.
Health Extension Grain Free Buffalo and Whitefish Recipe	Dog	Terrier (unspecified)	2	Years	Female	29	Pound	(b)(6) started eating grain free Health Extension Buffalo and Whitefish Recipe in the fall of 2017. I started noticing she was losing weight and becoming very lethargic. I took her to the vet numerous times. After being blown off I started vet shopping. The new vet noticed (b)(6) has an enlarged heart and a heart murmur. Yesterday I took her for an echocardiogram and they diagnosed her with Nutritional Dilated Cardiomyopathy.
Nature's Domain - Salmon and Sweet Potato Nature's Domain - Turkey ad Sweet Potato Nature's Domain - Beef and Sweet Potato Nature's Domain - Canned Grain free Dog Food	Dog	Retriever - Labrador	10	Years	Mixed Population of Female and Male	65	Pound	A heart function blood test was run on (b)(6) as part of their senior examination. (b)(6) numbers came back at around 1300 (top of normal range 900). While not formally diagnosed, DCM is suspected. (b)(6) numbers came back at 4000. An ultrasound was run on (b)(6) and she has been diagnosed with DCM; sever dilation of left ventricle with mild thickening of the mitral valve. (b)(6) is deemed to be at moderate risk for CHF. Both dogs are being given Taurine supplements and traditional dog food. (b)(6) is currently taking a beta blocker and Vetmedin. Both dogs were fed Nature's Domain (Costco or Kirkland brand of Grain Free Dog Food). They each rotated through the Salmon and Sweet Potato, Turkey and Sweet Potato, and Beef and Sweet Potato formulas throughout their lives. The grain free food was recommended for a third Labrador Retriever with severe allergies. This third dog was never diagnosed with DCM and was euthanized in (b)(6) at 15+ years due to severe arthritis.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Performatrin Ultra® Grain-Free Foothills Recipe Dog Food	Dog	Mixed (Dog)	10	Hours	Female	48	Pound	(b)(6), my dog is a 10 year old coc-a-poo weighing about 50 lbs. She has always been update with all vaccines, wellness visits, and is well taken care of. Last year (early spring 2018) at her physical she was examined and nothing was noted about her heart. I live near a Petvalu and that had been where I was buying my food. At that time, she was eating Performatrin Ultra Lamb and Brown Rice and had been doing so for a while. (Performatrin Ultra is their "house" food) A few months later, (Spring/Summer 2018) she developed an infection in her anal gland. At that time, she was reevaluated by the Vet and still no signs of anything about her heart. I went to Petvalu and explained to them the situation. They recommended I use their Limited Ingredient Grain Free Sweet Potato and Venison formula. I used this for a few months until there was a problem with "distribution" and they could no longer get the food. At that time, it was advised to me by the store that since my dog has been doing well with it and not showing signs of a gland problems, I should stick with the Performatrin Line and it could be a good idea to use the Performatrin Ultra Grain Free Foothills Recipe Food since it had Venison in it. I specifically asked the employees on several occasions about the DCM crisis with grain free foods and dogs. I was re-assured by the staff that their house brands are safe to use. This past March (2019) when (b)(6) had her routine physical, the vet got very worried while using the stethoscope and told me he could hear a significant heart murmur. He requested all the techs to hold (b)(6) down because he wanted to re do his stethoscope listening. He was clearly concerned and referred me to a dog cardiologist. On April 1st, I went to the Cardiologist at the (b)(6). She went through an Echo cardiogram and some other routine exams and was diagnosed with Dilated Cardiomyopathy, degenerative valve disease, mitral valve regurgitation, left atrial enlargement, and ventricular enlargement with mildly decreased heart muscle function. I was given several medications to fill and supplements to buy. I contacted Petvalu to complain and told them i wanted them to pay for (b)(6) medical bills. They had someone reach out to me and ask me for her to get a Taurine blood test done and they would be willing to pay for it. I did that on April 5th and began her medications Sunday April 7th 2019. I will notify PetValu when i get the results of the Taurine Test. I have yet to receive any money from Petvalu.
September 2017-October 2017 :Carna4 Dog Food Chicken, October 2017-July 2018 rotating types of this brand: TruDog Feed Me Freeze Dried raw Superfood Beef chicken and rosemary dehydrated raw lamb and cranberry dehydrated raw beef and carrots dehydrated, August 2018-October 2018: Just food for dogs: beef and russet potato turkey and whole wheat macaroni venison and squash chicken and white rice, December 2018 Grandma Lucy's Macanna Pre Mix Freeze Dried Grain Free Food, We Feed Raw (owner cooks at home) lamb leg meat and pork varieties, Purina Proplan hydrolyzed HA Vegetarian	Dog	Whippet	3	Years	Female	27	Pound	Patient was exhibiting decreased recovery after exercise and owner heard about grain free concerns and had cardiac workup performed. Cardiac workup concerning for Dilate Cardiomyopathy and cardiologist concerned this was dietary in origin as patient breed (whippet) is normally a protective breed for this disease. Blood taurine levels are normal in this patient. Patient has been on prescription diet for 5 months now but prior to this was on a number of grain free diets listed below: September 2017-october 2017 :Carna4 Dog Food Chicken October 2017-July 2018 rotating types of this brand: TruDog Feed Me Freeze Dried raw Superfood Beef, chicken and rosemary dehydrated raw, lamb and cranberry dehydrated raw, beef and carrots dehydrated raw August 2018-October 2018: Just food for dogs: beef and russet potato, turkey and whole wheat macaroni, venison and squash, chicken and white rice December 2018 Grandma Lucy's Macana Pre Mix Freeze Dried Grain Free Food January to now: Purina Proplan hydrolyzed HA Vegetarian with We Feed Raw (owner cooks at home) lamb and pork varieties
Acana Wild Prairie	Dog	Retriever - Golden	7	Years	Male	90	Pound	Our previously healthy, purebred golden retriever (b)(6) started to lose his appetite over a period over several months over the summer. He had been on a diet of 'Acana Wild Prairie' grain-free dog food for most of his adult life. https://acana.com/our-foods/dog-foods/regionals/wild-prairie/ In September, his health rapidly deteriorated as he became weak and his breathing laboured. We took him to the vet, who was unable to find anything obviously wrong initially. We returned to the vet several days later as (b)(6) was showing signs of abdominal effusion/ascites. We took him to an emergency specialist who imaged his organs with both ultrasound and an x-ray and discovered that his heart was very enlarged and weakened. The vet diagnosed he had advanced Dilated Cardiomyopathy (DCM). He was kept for two days on an intensive drip of diuretics, recovering slightly and then sent home with oral medications. (b)(6) died suddenly a week later from cardiac arrest while being brought back to the vet for a follow up exam. After speaking to the veterinary specialist, the dog breeder and researching peer-reviewed literature, the best explanation we can find to what happened was that (b)(6) died of taurine deficient DCM, which has been linked to grain-free diets. We want to flag this issue as very real and worth further investigation. For more information on the suspected cause please see: https://www.fda.gov/AnimalVeterinary/NewsEvents/CVMUpdates/ucm613305.htm and https://www.vetmed.ucdavis.edu/news/uc-davis-investigates-link-between-dog-diets-and-deadly-heart-disease

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
4Health Grain Free Beef and Potato	Dog	Retriever - Golden	6.5	Years	Female	55.4	Pound	DCM diagnosed via Echocardiogram 4/11/2019 Owner has fed 4Health Beef and Potato entire life
Blue Buffalo Wilderness Salmon Recipe Grain Free Dry Dog Food	Dog	Terrier - Bull	9	Months	Male	38	Pound	(b)(6) has been eating the same brand and flavor of food (grain free dog food) since approximately October 2018. Diarrhea started approximately 3/1/19. Then developed decreased appetite and labored breathing. Examined by me on 3/15/19 and then by veterinary cardiologist. Diagnosed with congestive heart failure, abdominal effusion and dilated cardiomyopathy. Since there is no genetic DCM in this breed, the cardiologist felt that the grain free diet the patient was eating was a possible and likely cause.
V-Dog Kinder Kibble Vegan Adult Dry Dog Food Grain free diet: long term use for 3 years Then switched to Merrick Grain Free Salmon and Sweet Potato dry dog kibble Used for 2-3 years	Dog	Mixed (Dog)	8	Years	Female	41	Pound	(b)(6) presented in congestive heart failure (left sided) with a malignant ventricular arrhythmia. Her echocardiogram is consistent with advanced dilated cardiomyopathy (DCM) Given her history, nutritional DCM and secondary CHF was diagnosed.
Zignature Kangaroo Formula Limited Ingredient Formula	Dog	Portuguese Water Dog	8	Years	Female	55	Pound	On a routine vet exam in March (b)(6) was found to have a heart murmur. This murmur was new and did not have several months before. My vet alerted me to the possible food linkage and I switched food that day to a grain based food We followed up with a cardiologist and had a echocardiogram and found to have severe Dilated Cardiomyopathy. I had been feeding my dogs for over a year Zignature Kangaroo. We also had a Taurine level drawn which was normal and after speaking with the cardiologist they felt the food had definitely caused her heart problem. Now she is on several heart medications and I had to retire her from the activities that she loved.
Taste of the Wild Prey Trout Formula for Dogs, Grain-Free, Dry Dog Food	Dog	Mixed (Dog)	7	Years	Female	Not provided	Not provided	Product(s): (1) Taste of the Wild Prey Trout Formula for Dogs, Grain-Free, dry and (2) Taste of the Wild Prey Turkey Formula for Dogs, Grain-Free, dry. A 7 y/o, female, Pointer-mix, all shots up-to-date, was diagnosed with asymptomatic Dilated Cardiomyopathy (DCP) on 04/12/2019. The Complainant (owner) had brought the dog for a routine check-up in 2018. Veterinarian, Dr. (b)(6), listened to her heart, and told the owner that the dog had a slight heart murmur. On 01/11/2019, the dog was brought in for another routine check-up on 01/11/2019 and Dr. (b)(6) listened to the dog's heart and stated that the murmur had become a more significant heart murmur and she recommended an Echocardiogram. The summary of findings disclosed DCP and significant concern that her food may have predisposed her to this problem because of the recent link between grain-free dog foods and DCP. Dr. (b)(6) recommended further lab work, including a thyroid profile, a taurine level and that patient be placed on cardio-type and grain-free diet be stopped immediately. The dog was also treated with Pimobendan and Enalapril. The doctor would monitor the dog's renal values in 7-10 days and 3 to 4 month assessment. The Complainant stated that he has been feeding his dog the Trout Formula, consecutive bags, for approximately last 2 years and has approximately 5.5 pounds left of this last bag. He fed his dog the Turkey Formula on 1 occasion about 6 months ago, and discarded the bag and has no product codes available. The Complainant fed his dog 2x per day at approximately 6:00 am and 5:00 pm. He also fed him fresh carrots and cucumbers, and 1 or 2 dog biscuits per day (for 4 to 5 years).
Zignature Kangaroo Limited Ingredient Formula	Dog	Chihuahua	4	Years	Male	2	Kilogram	(b)(6) began to cough and was having trouble breathing. I rushed him to the emergency vet, where he was diagnosed with Advanced dilated cardiomyopathy (Moderate mitral valve regurgitation; Severely dilated left atrial dimensions; Moderately dilated left ventricular dimensions with severely decreased heart muscle function; Moderate right heart enlargement) and Left-sided congestive heart failure - suspected
Rachael Ray Nutrish Super Premium Food For Dogs Real Chicken and Veggies Recipe	Dog	Dalmatian	11.5	Years	Female	55	Pound	(b)(6) was a healthy 11 year old female/spayed Dalmatian. She had a few common medical issues over the years (seasonal allergies in the summer treated with Apoquel or steroids, a benign cutaneous mass removed in October 2018). Her owners report that she had a progressively worsening cough over the past 2 months. She was seen by another veterinarian at our practice on 3/11/2019 who auscultated a new heart murmur and recommended/scheduled an echocardiogram in a few weeks. Beyond the cough and heart murmur, (b)(6) physical exam at that time was normal. On (b)(6) the client contacted our the office to say that (b)(6) cough was worse, she was restless and having trouble breathing. She was brought in right away, found to be in serious respiratory distress, and immediately transferred to (b)(6) (our local referral practice). She was found to have ascites, pleural effusion and dilated cardiomyopathy (ultrasound/echocardiogram performed by board certified radiologist) and due to her poor prognosis owners elected euthanasia. (b)(6) diet consisted of the Rachael Ray Nutrish Chicken and Veggies dry food noted above, which she had been eating for about one year. She was also fed canned food, either Alpo or Pedigree alternating, as a topper, as well as occasional table food. She also received some treats, Beggin' Strips, Canine Carryouts or Meaty Bites.
Diamond Professional Plus grain free Chicken/Lentil formula Adult large breed	Dog	Mastiff	3	Years	Female	120	Pound	History of tachycardia since 2/18/2019, 4/9/2019 presented for cough/gag, panting, labored breathing, and lethargy. Physical exam: Tachycardia, atrial fib, pulse rate 80, weak pulses, EKG=arrhythmia, brief cardiac ultrasound= dilated cardiomyopathy with pleural effusion. Referral offered, owner opted for euthanasia.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Petco brand Whole Hearted Grain-Free food Whole Earth Farms Grain-Free food - typically some sort of Chicken & Potato recipe	Dog	Mixed (Dog)	6	Years	Female	60	Pound	(b)(6) began showings signs of extreme lethargy, abdominal swelling and trouble breathing around the end of March 2019. She had been to our family vet in mid-February 2019 to have a split nail removed while under light sedation and there were no issues with her heart or breathing or abdomen at that time. She weighed 60 lbs then. She typically weighs around 65. She had a slight cough during the weeks following that visit but it wasn't enough to cause concern. The weekend of March 24-25 she had an episode at the dog park where she appeared to get dizzy and/or winded after running around. We left the park and I monitored her the next couple days. She appeared to get weaker and more tired as the days went by and her abdomen became swollen. She saw our family vet again on April 5. The vet found via X-ray that she had a large amount of fluid buildup in her abdomen and possibly her chest and her heart appeared to be extremely enlarged, taking over more than 60% of her chest cavity. The vet drew blood and fluid for testing, and also performed an Abdominocentesis to remove some of the fluid and help her breathe easier. She was prescribed Furosemide and Elanapril and given a referral to a canine cardiologist. On Wednesday (b)(6) I took (b)(6) to the emergency vet, (b)(6), because she was struggling to breathe so much. She was kept under oxygen over night and was taken to see the canine cardiologist in the morning. The cardiologist diagnosed her with Stage C Dilated Cardiomyopathy, caused by either a grain-free diet or hypothyroidism. The thyroid test ruled out the latter.
Earthborn Holistic Meadow Feast	Dog	Pointing Dog - German Short-haired	5.5	Years	Male	63	Pound	My GSP was fed Earthborn Holistic grain free Meadow Feast his entire life. He exhibited no symptoms and 3 weeks ago started wheezing and had a slight cough. Upon further examination, it was finally diagnosed as dilated cardiomyopathy. While at the vet for a cardiology exam, he collapsed and his heart stopped multiple times. They were finally able to successfully perform CPR and administer pimobendan, but 22 hours later he collapsed again and was not responding to CPR. We chose to euthanize to end the suffering. Upon final examination, the vet said he has been the worst case of DCM she has ever seen and positively linked it to his grain free diet due to his age and otherwise clean bill of health.
4Health large breed dry food	Dog	Great Dane	2	Years	Unknown	Not provided	Not provided	Reported as RFR EON-354199. 2 year old Great Dane with DCM and CHF. Has eaten 4Health dog food (large breed dry) since 6/2016. Taurine levels pending. Owner has switched to another food and has saved the 4Health food
Zignature Kangaroo and Lentil	Dog	Maltese	12	Years	Female	4.9	Kilogram	Presented 6/18/18 for heart murmur evaluation, which was first documented 3 years ago. Murmur is now progressive and (b)(6) has also developed a cough in March. Diagnosed with tracheal collapse at that time due to radiographs. (b)(6) has good energy levels and the owner is restricting her activity since March. (b)(6) has a history of food allergies and was placed on Zignature Kangaroo and Lentil diet about 2 years ago.
Kirkland Signature Nature's Domain Salmon Meal & Sweet Potato Dog Food (Grain Free)	Dog	Saluki	12	Years	Male	60	Pound	In CY 2012, my (b)(6) was part of a targeted cardiac study conducted at (b)(6). As part of the study, (b)(6) wore a Holter vest and received an echocardiogram. The results of his screening indicated no heart issues/defects - his heart was healthy. On February 12, 2018 (b)(6) was diagnosed by both my vet and a veterinary cardiologist as having congestive heart failure, severely advanced dilated cardiomyopathy, heart arrhythmia and a grossly enlarged left heart ventricle (left ventricle was nearly 2x it's normal size while the right ventricle was normal sized). He was placed on a host of cardiac medications that helped improve his quality of life for several weeks, but the disease had progressed too far. On (b)(6) we made the decision to euthanize him. Prior to his diagnosis in February 2018, (b)(6) was aging gracefully and was an overall healthy, active dog. He developed a cough one morning and upon vet check we received the shocking diagnosis. For several years we had been feeding (b)(6) Kirkland Signature Nature's Domain Salmon Meal & Sweet Potato Grain-Free dog food. Occasionally we alternated between this food and the chicken based grain free dog food (same brand). Purchased in large 35 lb bags at Costco. Neither the cardiologist who diagnosed (b)(6), nor the team at (b)(6) were able to explain to me why it was that he developed such serious, severe heart disease at age 11/12 after being cardiac cleared in CY 2012. (b)(6) did have two litter-mates who died very young from arrhythmia (they died under the age of four); but the rest of the dogs in the litter were heart healthy as was (b)(6). I read the FDA report issued today, July 12, 2018 (FDA Investigating Potential Connection Between Diet and Cases of Canine Heart Disease) with great shock and sadness. Based upon what I have read and my own experience with my dog, I am extremely concerned that the Kirkland brand grain-free dog food I have used for years (containing peas, potatoes and potato starch as high-content ingredients), may have led to to my dog's severe heart disease, suffering and eventual death. Until he awoke with a cough that morning in February 2018, we had no indication whatsoever that he was so sick with advanced heart disease. The FDA report encouraged pet owners to report cases of DCM in dogs suspected of having a link to diet - this is why I am reaching out to you today regarding my experience. If (b)(6) records regarding his heart disease from my vet, (b)(6) or the cardiologist will be helpful in your research to identify/confirm that these grain-free diets are a contributing factor or are the root cause of DCM in these dogs, please let me know. Thank you.
Zignature Turkey Formula Limited Ingredient Formula	Dog	Other Canine/dog	2.5	Years	Male	64	Pound	(b)(6) ate Blue Buffalo Puppy Grain Free for a year and then Zignature Turkey Grain Free for the last 1.5 years. Due to the recent FDA alert concerning DCM and grain food diet, I decided to have (b)(6) Taurine level tested as well as schedule an ECHO. On 3/27 his first taurine level came back at 244. His second came back at 238. His echo on 4/10/19 performed by Dr. (b)(6), DVM, Cardiologist found early DCM. Report states the following: Left Ventricle: Overall left ventricular systolic function is mildly impaired with a FS% between 20-23%. IVS motion is moderately decreased while the LVFW motion is mildly decreased. The left ventricle is mildly dilated. LVIDd normalized for body weight or nLVIDd=2.01(normal is 1.35-1.73). Left ventricular free wall thickness is normal. Normal thickness of the interventricular septum.

Product Name	Species	Breed	Age	Age UOM	Gender	Weight	Weight UOM	Description
Acana Light & Fit (with free-run chicken wild flounder & Fraser Valley greens), Acana Adult Small Breed (with free-run chicken wild flounder & Fraser Valley greens)	Dog	Terrier - Yorkshire	9	Years	Female	3.6	Kilogram	Have been feeding Acana dog foods, primarily Light & Fit or Small Breed, which are grain free for four years. My previously active dog (requiring 3hrs of walks per day) suddenly slowed down drastically in September 2018. I noticed decreased exercise tolerance (only able to walk 1hr per day), slower walking, increased fatigue, increased panting. I took her to see a Cardiologist in Jan 2019 and she was diagnosed with mitral valve prolapse/dilated cardiomyopathy by exam/Echocardiogram. We went to see a second Cardiologist in April 2019 who confirmed the diagnosis of mitral valve prolapse/dilated cardiomyopathy; the second Cardiologist asked us to check if (b)(6) was eating grain free Acana kibble. I checked the packages and confirmed that her kibble is grain free. We have stopped feeding Acana as of today and are switching to a raw diet and consulting with our vet re next steps.
Earthborn grain free	Dog	Shepherd Dog - Australian	6	Years	Female	14.1	Kilogram	Dog developed dilated cardiomyopathy. Was euthanized due to congestive heart failure.
PureVita Venison & Red Lentils Grain-Free Dry Dog Food, NutriSource Adult Chicken and Rice formula	Dog	American Pit Bull Terrier	2.6	Years	Male	32	Kilogram	Patient presented to rDVM in March of 2019 for acute onset of a non-productive cough, exercise intolerance and decreased appetite. Patient was diagnosed in CHF secondary to DCM - suspect diet-related. Patient was placed on lasix, pimobendan and taurine. Taurine levels prior to supplementation was WNL.
4health Untamed Open Highland Recipe lamb and lentil formula	Dog	Shepherd Dog - German	2	Years	Female	30	Kilogram	Severe dilated cardiomyopathy with secondary biventricular congestive heart failure. Unusual breed/age for primary dilated cardiomyopathy. Nutritional cardiomyopathy related to boutique brand, grain-free diet is suspected based on cardiologist investigation (I am cardiology resident and performed the echo/evaluation). Has received 4Health Untamed Open Highland (lamb and lentil formula) nearly lifelong (at least 2 years).
ACANA Senior	Dog	Retriever - Labrador	10	Years	Male	92	Pound	Took dog for annual vaccinations. Mentioned that he seemed less in activity (which I figured was due to him getting older) and that he was coughing a number times a day. Vet listened to his heart and heard a murmur. A cardiac ultrasound was performed and a diagnosis of advanced dilated cardiomyopathy was confirmed
Pure balance chicken and rice grain free	Dog	Rottweiler	4	Years	Male	110	Pound	I started my dog on a diet of grain-free food. The name of the food was Pure Balance. And within six months he ended up with DCM and passed a month after dx