

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

FOOD AND DRUG ADMINISTRATION (FDA)

CENTER FOR DRUG EVALUATION AND RESEARCH (CDER)

Electronic Submission of Adverse Event Reports to FDA
Adverse Event Reporting System (FAERS) using
International Council for Harmonization (ICH) E2B(R3)
Standards

Docket No. FDA-2018-N-4002

Moderated by Suranjan De, MS, MBA

Tuesday, April 4, 2023

09:00 a.m.

Location Remote Meeting

Baltimore, MD 21201

Reported by: Richard Livengood

JOB NO.: 5672964

A P P E A R A N C E S

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

List of Attendees:

Suranjan De, MS, MBA, Deputy Director Regulatory
Science Staff (RSS), Office of Surveillance &
Epidemiology (OSE), CDER, U.S FDA

Y. Veronica Pei, MD, M.Ed., MPH, Lieutenant Commander,
U.S Public Health Service, Associate Director of
Biomedical Informatics, Office of New Drugs (OND),
CDER, U.S FDA

Jung Lee, R.Ph., MPH, Safety Officer, Division of
Clinical Safety and Surveillance, Office of Safety and
Clinical Evaluation, Office of Generic Drugs (OGD),
CDER, U.S. FDA

Kelley Simms, PharmD, MS, BCPS, Regulatory Policy
Analyst Regulatory Affairs Staff (RAS), OSE, CDER,
U.S. FDA

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

C O N T E N T S

PAGE

Suranjan De	4-105, 126-174, 178-188
Dr. Y. Veronica Pei	105-113, 174-175
Jung Lee	114-126, 175-178

1 P R O C E E D I N G S

2 THE REPORTER: This is Tuesday, April
3 4, 2023, at 9:00 a.m.

4 MR. DE: All right. It's nine o'clock.

5 All right. Good morning everyone and
6 welcome to the first ECOM meeting in 2023.

7 So we are excited to discuss reporting
8 pre-market and post-market safety reports to FDA using
9 ICH E2B(R3) standards. My name is Suranjan De, and I
10 am the Deputy Director of Regulatory Science and
11 Office of Surveillance and Epidemiology in CDER, FDA.
12 So welcome, everyone.

13 If you don't have the link to the site,
14 you can go to the FDA meeting page and you will see
15 the Zoom link there to be able to connect, so.

16 Okay. So we can go to the next slide.
17 This is the disclosure as well as the second overview.

18 So what I'm going to be able to talk
19 today, certain review requirements for submitting
20 safety reports for IND-exempt BA/BE studies and
21 approve drug and eligible biologic products, excluding

1 vaccine, we're not going to be talking about vaccine,
2 using the ICH E2B(R3) format and submission records
3 and the -- and we will highlight the regional
4 extensions and talk a little bit about the
5 implementation plan.

6 Today's objective is to recognize that
7 FDA will require the working of IND and post-market
8 safety reports to be submitted and ICH E2B(R3) format.
9 We can let you know when that all will happen in the
10 implementation and that via FAERS, the Gateway or
11 through the safety reporting portal and understand the
12 detailed regional data elements that are key for post-
13 market IND and IND-exempt BA/BE safety reporting.
14 Okay.

15 So before we go, I go into introducing
16 the speakers, I want to communicate some housekeeping
17 items. This meeting is for about six hours from 9 to
18 3 p.m. We going to have two short breaks and one
19 lunch break. And you can submit your questions in the
20 chat or through the Q&A throughout the meeting and we
21 will address them during the Q&A time at the end. So

1 we have got some time at the end to talk about
2 questions and answer or response to your questions.

3 All right. So who are today's
4 speakers? So first, I am Suranjan De. I will be
5 talking about mostly on the regional requirements and
6 specifically the post-market safety reports. I will
7 also be talking about the reporting mechanisms, some
8 implementation plans. So I am the Deputy Director of
9 Regulatory Science Staff in Office of Surveillance &
10 Epidemiology in CDER.

11 And later in the afternoon after lunch,
12 we are going to have two more speakers. One will be
13 Veronica. She is going to be talking about the IND
14 Safety Reports and how they're to be reported using
15 ICH E2B(R3) standards. She's the Associate Director
16 of Biomedical Informatics in office of New Drug in
17 CDER.

18 And the third speaker is going to be
19 Jung Lee. She'll be talking about the IND-exempt
20 BA/BE Safety Reports and how they're to be reported
21 using ICH E2B(R3) standards. So and Jung Lee is a

1 Safety Officer in the Division of Clinical Safety and
2 Surveillance, Office of Safety and Clinical Evaluation
3 in the Office of Generic Drugs in CDER.

4 Okay. So here is the outline for
5 today's meeting. So we have a packed agenda. We are
6 going to be talking about some of the regional
7 implementation of E2B(R3). And then, also talking
8 about submission methods and mechanisms. After which
9 we will take a 15-minute break, so around 10:15. Then
10 we go into talking about the E2B(R3) implementation
11 package. So this is the regional implementation
12 package that FDA has published on the page of the
13 FAERS Electronic Submission webpage, and we will talk
14 about this package and will start basically sections
15 such that, you know, one will be relevant for pre-
16 market, one will be relevant for post-market and so
17 on.

18 Then we will talk about the common
19 regional extensions, so again, the regional extensions
20 will be the regional changes and we'll go into all the
21 different types of report is what we will talk just

1 before the lunch break. There will be a lunch break
2 from about 11:45 to 12:30.

3 And then talk about the post-market
4 safety reporting. So here we will go deep dive into
5 the specific elements, the regional elements for post-
6 market safety reporting. Then we will have our
7 speakers for IND Safety Reporting and our speakers for
8 BA/BE studies safety reporting for generic drugs.

9 Next, we will talk about the validation
10 and implementation which will also include things
11 like, you know, what are the plans of implementation
12 where we are right now and what are we doing. And
13 also talking about some of the rejection and warning
14 rules we will talk about here with that
15 implementation. Then we go into a small break, 15-
16 minutes.

17 And then, the last two areas we will be
18 more talking about, you know, the OIDs and how FDA has
19 defined OIDs for the regional data elements and what
20 are these OIDs and how these OIDs are defined. Then
21 we go into talking about the regional forward

1 compatibility. Now this is more applicable to post-
2 market because pre-market, you know, it's all comes
3 through ECTB today. So Post-market is the only thing,
4 which is in R2, and how can you move to R3. And
5 finally, I will summarize everything and then go into
6 our Q&A. So that's the agenda for today and with
7 that, let's dive into the first slide under
8 background.

9 So to give you a little bit of
10 background in where we are, where we were and where we
11 are going towards, that is this was about a few years
12 back, about three, four years back, we had started
13 doing some work with E2B(R2) and for pre-market. We
14 already had post-market. We were planning to do with
15 pre-market, then we came into the implementation of
16 FAERS and during the implementation what we realized
17 was, you know, if you do R2 with pre-market first and
18 then go to R3, it's a lot of burden.

19 So our initial plan, as the slide says,
20 that we had initially planned to implement E2B(R2) for
21 pre-market and CSR reporting and then move to the R3.

1 The initial plan changed and now FDA will implement
2 E2B(R3) for both pre-market and post-market safety
3 reports at the same time. Okay.

4 Now, this change was decided based on
5 the complexity to migrate from R2 to R3. Now, of
6 course, we have got some submissions from industry
7 where they all thought that it's better to all move to
8 R3 for both pre-market and post-market.

9 So this change pushed the timelines as
10 there were dependencies like update and clearance of
11 the final guidance, which is a 745A. Also, we had to
12 update the technical specification, so to make sure
13 that all the regional elements that we have for the
14 pre-market safety reports were all defined and set up
15 and published.

16 Of course, we were dependent on vendor
17 timelines to make sure that the regional requirements
18 are in the tool. As we all know, everybody uses
19 vendor tools today to do their safety reporting and
20 manage their safety database, so we are all dependent
21 on our vendors. So yes, we did have the dependence on

1 the vendor timelines. And so with that, we had to
2 come with a new date.

3 We are still in the process of
4 implementation, so a new date for quality reporting
5 will be communicated soon on the Electronic Submission
6 webpage. Unfortunately today, I cannot give you a
7 date, but as we are working through the
8 implementation, we will provide you a date as we come
9 closer with our implementation.

10 But remember that, any kind of
11 implementation, such implementation, once the Agency
12 FDA implements and our sponsors had over two years to
13 implement from their side, so you will have ample time
14 to do the implementation, so. So once we have a date
15 -- a fixed date, we will definitely communicate that
16 date.

17 All right. So next, let's talk about
18 the regional implementation. There are some important
19 items that we need to discuss in the regional
20 implementation. And so the first item is a standard
21 status supporter. So standard status support, the E2B

1 standards that everyone supports is E2B(R3) for pre-
2 market, both (R2) and (R3) for post-market.

3 At some point, when people were
4 gathering the submission of post-market reports in
5 (R2) format and this data's yet to be decided. And
6 this will be, this data will be decided based on how
7 soon companies move over from (R2) to (R3). So based
8 on that, we will decide a date and communicate that
9 date. Okay.

10 Additionally, the information about
11 E2B(R3) testing and implementation will be made
12 available on the FAERS Product Submission page. We're
13 going to talk about the standard implementation. What
14 we're talking about is how do you prepare with
15 E2B(R3). You will want to test with the Agency. And
16 so the information about that testing will be made
17 available.

18 This testing would typically be done
19 using the Gateway, okay. And this Gateway you will
20 have, most of the companies, I think, sponsors do have
21 a pre-production, or a test account and the same test

1 account can be used to do the testing, except that the
2 login ID would have some change, especially for pre-
3 market, and I will talk about what those login IDs are
4 or the AS2 headers are. But that is what will be
5 posted. Some of the information has already been
6 posted on the technical documentation, which you can
7 always look at.

8 One definition is we call as a regional
9 extension. So every time you will see in every
10 technical specification document, this word, "regional
11 extensions" are mentioned. What does it mean? It
12 refers to FDA's data elements and terminologies
13 submitted in the ICSR file in addition to the ICH
14 E2B(R3) data elements.

15 So many times, you may hear me talking
16 about four ICH elements, so these are the elements
17 that were defined by ICH and regional extension, or
18 regional requirements are the specific requirements
19 that FDA has.

20 Next is, as we move through the
21 implementation, there is a recommendation we want to

1 review. And the recommendation is that whenever you
2 create an XML file, there is, you know, a data
3 element. There is a value called display name. We
4 recommend that to facility human and computer system
5 identification and understanding, if you can put the
6 display name with the name of the field will really
7 help us in understanding, you know, if there was any
8 issue with XML and understanding the XML. So a small
9 example is given at the bottom in the left corner
10 where we display the ethnic group, so the display name
11 is ethnic group basically displays the name of the
12 field. Okay.

13 And lastly, this is one very important
14 thing to remember, things appear, are the -- are, you
15 know, the SUR what would be you submit to FDA. This
16 is the scripted portion of the safety analysis. The
17 scripted portion must be submitted using eCTD. Okay.
18 The scripted portion cannot be submitted through
19 FAERS. I have had many questions asking about the
20 FAERS, you know, will that change? And the answer is
21 no. That is not going to change. You will continue

1 to submit the scripted portion to eCTD. But E2B (R3)
2 ICSRs will come to FAERS, so please know, remember
3 that. And this is very important and just making sure
4 that we all understand. And please do not submit the
5 E2B (R3) ICSR, which are those XML files to the eCTD.
6 You may get the MDN first, but you will not get the
7 second acknowledgement and that will be something
8 that, you know, that can go nowhere.

9 Okay. All right. So moving ahead,
10 acknowledgements. So acknowledgement of -- the two
11 acknowledgements that you will get, the first
12 acknowledgement is the FDA's message, delivery
13 notification, which we in shop call this as an MDN,
14 which comes from the Gateway. And the second
15 acknowledgement will be the acknowledgement that you
16 will get after FAERS has processed the data of XML
17 file, has passed and processed, and the second
18 acknowledgement come after that. We hope to -- we
19 have send the second acknowledgement within 24 hours
20 of your submission. You know, you could get
21 acknowledgement sooner, but it all depends upon the

1 size of the file, as we all know it to be (R3) XMLS
2 have now increased in size as part of embedded
3 attachments and, of course, how many ICSRs are you
4 sending in a batch. Based upon that, we're saying
5 that within 24 hours you should get an
6 acknowledgement, but you could get it sooner.

7 There was one change in the
8 acknowledgement message that we have updated as a
9 regional need or a regional extension. That's the
10 data element ACK.B.r.7, which is for error or warning
11 message or comment. So the maximum length, I think,
12 was 250 characters. We have extended that to 2000
13 characters so that we can accommodate, you know, more
14 messages if there were issues with the files. And
15 also that we have errors and warnings, and we will go
16 over what those errors and warnings in one of the
17 slides, but they're basically that errors means, you
18 know, the file will be rejected, and warnings means,
19 you know, we will give a warning, but we will still
20 accept the file. Hoping that sponsors will correct
21 the data in the next follow up. Okay?

1 And for information on ICH and regional
2 extensions, please refer to the E2B (R3) for regional
3 data elements and positions. Now, I will basically
4 pause the slides here and kind of go into -- go into
5 explaining you a little more about what the E2B (R4)
6 regional and data elements in business rules are.

7 So here, this is an Excel spreadsheet.
8 And this Excel spreadsheet, and all of this document
9 is available on the FAERS on the Product Submission
10 page on FDA.gov. This is an Excel spreadsheet listing
11 all data elements, their attributes, their
12 conformance, the business rules, the rejection and
13 warnings and the x-facts. This document is the key
14 document for implementation. This document, also you
15 will see that the ICH data elements has a source --
16 sorry. The data elements has a source that will say
17 either ICH or FDA.

18 If it says ICH, the piece is set-up up
19 for ICH data elements. If it says FDA, that means
20 it's a regional data element. Every -- has an element
21 number and an element description. The element number

1 that starts with a prefix of FDA has other FDA
2 regional extensions. But also there are some data
3 element which are the core ICH data element in
4 conformance with they after due to regional extensions
5 or regional needs, and they are usually -- yeah. And
6 they are usually noted in this particular spreadsheet.

7 Also, this data elements spreadsheet
8 also list down all the observation codes for the
9 regional elements. It will also list the rules, which
10 are the warning rules, rejection rules, and it'll tell
11 you what the message for these -- if these rules are
12 not complied with, what kind of message will you get.
13 And exactly that the message that will come in that
14 data feed, ACK.B.r.7. And it will tell you the
15 different messages for each of the rules. And then
16 there are some standard messages that you will also
17 see, which talks about, you know, if a data feed was
18 required but was not submitted, if a data feed did not
19 comply to a list of observation codes, or a data feed
20 went when the value was created and what's in the
21 specification. So those are some general rules that

1 you will see in this document. And also, rules that
2 this document is the key document for this
3 implementation, because everything about the data in
4 this document is there. And also our recommendation
5 would be also that as you are doing an implementation,
6 if you find anything that is -- that the grid will not
7 be -- proper -- may not be set-up right or maybe the
8 message is not very clear, please let us know and we
9 will work through this with you to, you know, update
10 this because we are in the process of making sure that
11 as we go through we correct things, we have to correct
12 things, and then do it right. So this is a very
13 important document for everyone to use.

14 All right. The FDA data element
15 conformance, as I said already, and one most important
16 thing is that we have got many questions asking that
17 when we will accept the country code of EU. And as
18 things are going -- getting -- looks like difficult
19 with the EU where they do not want to disclose some of
20 the data elements, the country code UE is acceptable
21 to FDA. We have to have spot of our codeless value

1 and for different data points where country code is
2 used, yes, EU is acceptable. Okay.

3 We also have got messages from, as we
4 talk about the country code, EU, we also have got
5 messages that EU coming up with all these rules. How
6 would -- how will that impact FDA. As we go through
7 this, we also working with the -- and this all started
8 with vaccine reporting, but we are working with the EU
9 to come up with some kind of resolution for these
10 types of -- for these types of rules where things have
11 to be adapted to send to other regulators, including
12 us. So we are working with them and hopefully we'll
13 come with some solutions very soon. So until then,
14 you know, whatever you have, keep submitting that to
15 us.

16 All right. The controlled
17 terminologies. So controlled terminologies. So these
18 are kind of dictionaries and -- and kind of are also,
19 you know, data -- data that we use in our ICSRs. And
20 we also look at, you know, some of the, you know,
21 attributes and like codeless observation codes for

1 which we use controlled terminologies. So these are
2 the list of controlled terminologies that FDA's using,
3 so we have it in CIA Enterprise Vocabulary Service --
4 Vocabulary Services.

5 Now this is used, particularly for many
6 of our regional elements that we have and that's where
7 we point at the relevant two. And as we all know that
8 controlled terminologies are used because we as ICH or
9 FDA, to not want to keep controlled terminologies
10 because if there's any change, we have to worry about
11 that change, versus if we have standard organizations
12 who manage these terminologies we respond to them, and
13 they have the responsibility to manage those
14 terminologies. So in set-up, EVS as a set-up is
15 mostly for our regional elements that we have used.
16 Each of the terminology, actually datapoint, data
17 element, you know, they will have you see a C code to
18 start with the alphabet capital C and then a number.
19 So every reference on the technical specs of the
20 spreadsheet, if you see that C code, that means it has
21 been taken from NCA EVS.

1 We all know by drug, which we use for
2 coding our events, our tests, results, pre-existing
3 conditions and so on and so forth. You have UCUM
4 codes in the measures. So that is, again, we use the
5 UCUM codes. EDQM for a lot of our administration and
6 dosage form. Then we have device for our code, the
7 ProCodes that we use. Then we have device common
8 codes, that is also we are using, so we have the IND
9 and the FDA codes so any of those codes can be used.

10 Then we have the Global Substance
11 Registration System, which is the GSRS, so we using
12 the unique codes from there for the substance ids.
13 And then, of course, we use a Structured Product
14 Labeling, so this is something that is used for mostly
15 the post-market reports so this is also, we will go
16 into this Structured Product Labeling, so I will also
17 recommend that, you know, this will have a Structured
18 Product Labeling as your submitting because based on
19 the name that you submit with the SPL, that's the
20 naming you use to populate our dictionaries and the
21 make sure that when the reports come in, ICSRs, we

1 call to that product and many times we do see that the
2 name in the Structured Product Labeling does not match
3 with the name that has been submitted with the ICSR.
4 So this is a request to the sponsors that please have
5 them check and that and make sure that the ICSRs that
6 you submit and the product names that are in the ICSRs
7 match with the names that are in the SPL that are
8 submitted.

9 So I scheduled in a few views of the
10 controlled knowledges are noted and defined in the
11 relevant section of the technical specification.

12 Okay?

13 All right. Go to the next slide.

14 Okay. Here we will talk about submission methods and
15 mechanisms. So with submission methods and mechanisms
16 and this is a very important topic here, because as we
17 go into implementing E2B (R3) for pre-market, you
18 know, we have to have come up with new, you know,
19 mechanisms of solution. So we actually have three
20 methods. So here's the first method option A, which
21 is via database-to-database transmission. So we call

1 this a database-to-database transmission is nothing
2 but you submitting through the Gateway. Okay. So you
3 would have a sponsor, the sponsor would submit and
4 XML, and E2B XML, which would come to the Gateway.
5 And the Gateway will send the first ACK, which is the
6 center of the picture that you see, ACK 1, which is
7 the MDN, which will be sent back to the sponsors.

8 This XML file is sent to FAERS and the
9 FAERS database will process that and send an
10 acknowledgement number 2. This acknowledgement 2 is
11 then, it can be sent to the Gateway by to -- from
12 FAERS and then the sponsors would be able to get that
13 acknowledgement 2 and the loop is closed. So this is
14 the first submission mechanism that we will have.
15 Now, this mechanism is already available today with
16 post-market safety reporting. We will use the same
17 mechanism for pre-market safety reporting, so we don't
18 have to learn anything new, except that we have to
19 have the right routing lead so that we know that pre-
20 market goes to certain, post-market goes to a certain
21 location and pre-market will go to a different

1 location. So that they can pick it up and recognize
2 that it's a pre-market report or post-market report.

3 All right. Now, companies or sponsors
4 do not have, you know, do not have the process of
5 connecting database-to-database through the Gateway.
6 The can use option B, which is via the Safety
7 Reporting Portal. Okay. So Safety Reporting Portal
8 is where some submitters enter the ICSR manually into
9 a web-based form. Okay. And submit. In such case as
10 soon as you hit on the submit button, ICSR basically,
11 in general in the back end, that means that you do
12 this in the back end in XML and then send to the
13 Gateway and the same process happens, but in such case
14 the acknowledgement is basically an email that you
15 will get from the Safety Reporting Portal to say that
16 the report was submitted successfully, here's the
17 report information and that's very good that you can
18 keep for all that that you have submitted the report.

19 Now, Safety Reporting Portal. The only
20 problem -- difference between Option A and Option B is
21 that you can only submit one report at a time in the

1 Safety Reporting Portal because that's a web-based
2 form. Okay. Now, the in Safety Reporting Portal, you
3 can also upload attachments, so that's not a problem,
4 and also requires some kind of registration. So
5 unless you have registered and received the
6 credentials, you cannot submit to the Safety Reporting
7 Portal. For database-to-database also, you have to
8 send the certificates and all that that you have to
9 do.

10 One thing in which I may want to point
11 with Option B is, you know, Option A has the web-
12 trainer which you can use for testing and especially I
13 would want to mention this for typically the tool
14 vendors. Many of the tool vendors who have asked FDA
15 that, "Hey, can we test E2B (R3) when FDA's
16 implementing this?" And we always have challenge
17 that, you know, we never give, you know, traditional
18 account to vendors. Always traditional accounts was
19 given to, you know, the sponsors. So I have verified,
20 and vendors can request for the traditional account.
21 So there is a process of requesting, which is

1 available on fda.gov and users can actually request
2 for a traditional account and can submit E2B (R3)
3 standard XMLs, which we can then test in FAERS.
4 Please note, that web-form account you can submit one
5 XML at a time but please note that you can only get an
6 account for testing purposes only. You will not get
7 an account for production. Only for testing purposes.
8 I think the advantage here what we saw was if one
9 vendor, you know -- vendors can test the vendors tools
10 are used by sponsors so indirectly, we are also able
11 to test, you know, from different sponsors, so.

12 So going to the next slide, submission
13 with XML. I added Option A and Option B as listed.
14 Submissions -- submitters, listed as database-to-
15 database transmission capability, may directly submit
16 ICSRs in XML format via the Electronic Submission
17 page. And Option B you will require registration,
18 you will have to receive the credentials and typically
19 when you do registration, you will fill up a
20 registration form which will ask you for your
21 organization information, who the users are going to

1 be, who will be submitting data. It will also ask you
2 for on which products you will be reporting and then
3 eventually, we will make sure that those products are
4 in our dictionary, and then you will get a login
5 credentials.

6 It normally takes about five to seven
7 business days to get the login credentials. So if you
8 are planning to submit to Safety Reporting Portal
9 please plan ahead so that you can -- you can get the
10 credentials on time. You request for this credential,
11 I think I have an email address, which I'm going to
12 show that to you in the later slide.

13 Submitters enter the ICSR information
14 manually into a web-based form and submit. So you
15 will see a screen, you will see, you know, what type
16 of reporting you're filling in, if it's a post-market
17 or a pre-market and then we go to a form to enter the
18 details of what the report, the patient, the suspect
19 products and so on and so forth. The events and so on
20 and so forth.

21 You can upload an attachment. Again,

1 the very important thing is please do not upload E2B
2 (R3) XML or XML attachment through Safety Reporting
3 Portal. It will -- that will not get processed. So
4 please do not upload right there. And also, as I
5 said, please do not send the XMLs to the eCTD as a
6 document. Okay?

7 Submitters ISCR uploaded into FAERS
8 database, so which means once you submit, that data
9 goes into FAERS and gets loaded into the FAERS
10 database.

11 All right. Very important, highlighted
12 here in yellow. Okay. Do not submit ICSRs via both
13 options. Always stick to one option and here why is
14 why I said, sometimes how sponsors have a situation
15 where their database may be down or the Gateway may be
16 down and they will then send to us information saying
17 that, "Hey, our Gateway, we are not able to send, our
18 database is up, but we're not able to send a file so
19 for which can we get an account to Safety Reporting
20 Portal and be able to participate through the Safety
21 Reporting Portal?" Now, that creates a problem

1 because once you submit to the Safety Reporting Portal
2 that report will go in FAERS, and then the next follow
3 up you will try to run through the database from
4 database, when the connection is up and running, you
5 will submit to that. Now, that creates multiple
6 versions in our database. So we say that please do
7 not use both methods, unless -- unless there is a dire
8 situation where your database in your organization --
9 a database in your organization is down due to attack
10 and that -- and that you are not able to operate your
11 database. In such case, we may give you, it's not
12 guaranteed, but we may give you the option to use the
13 Safety Reporting Portal to submit, you know, and
14 process your reports.

15 If you have a situation where your
16 gateway isn't up and running but your safety database
17 is up and running, in such case an electronic safety
18 reporting rule mentions that you can use physical
19 media, which means you can take your XMLs, load it on
20 a CD and, you know, mail it to us and we will process
21 those XMLs. Same thing would happen once we go to E2B

1 (R3), if you have that same situation. Okay. But
2 please, please do not use both methods or both options
3 to submit your reports. Always stick to one option.

4 Okay. So some other areas about on the
5 Safety Reporting Portal. So companies who would want
6 to use Safety Reporting Portal, and especially, you
7 know, we have seen CROs using Safety Reporting Portal,
8 we have seen some sponsors who have low volume reports
9 who don't want to invest on the Gateway -- Gateway and
10 use Safety Reporting Portal. So advantage here is
11 Safety Reporting Portal are intended for sponsors and
12 CROs without infrastructure for direct -- do not have
13 infrastructure, for direct database submission. So
14 and individual reports only, so you will basically
15 submit individual reports one at a time. You cannot
16 do a batch.

17 It can be used for both commercial and
18 research findings safety reportings or as we go into
19 post/pre-market safety reporting. It can be used for
20 both commercial and research. This is not available
21 for vaccine reporting. So it is not intended for

1 vaccine reporting. Please keep that in mind.

2 If you are a CO, you will need to have
3 separate accounts for each sponsor or license holders,
4 all right, so that you can separately submit their
5 safety reports. Now, one nice part about SRP is once
6 you have submitted a report, let's say you submitted
7 an initial report, now, you have follow up report.
8 You can continue working initial report and say, "Hey,
9 I will now create a follow up." So all the
10 information from the initial report is copied over to
11 the follow up report and now the follow information
12 that you have, the new information, you just update
13 and submit. So you don't have to re-enter the report
14 from scratch, and it also keeps track of how many
15 reports were submitted for a case, that means for an
16 individual patient, and all the tracking is kept on
17 the Safety Reporting Portal.

18 So Safety Reporting Portal are there
19 for post and pre-market. Of course, we are still
20 working on the pre-market screens. So they are
21 maintained separately. So when you go into Safety

1 Reporting Portal, you will be asked that -- asked that
2 up front, you will be asked if you are submitting a
3 report for -- for post-market or pre-market. And then
4 it will take you to the right path to submit a pre-
5 market or a post-market report.

6 What you do next, you complete an
7 online form. Right? And as I mentioned, do not
8 upload into E2B (R3) XML file in SRP. Okay. And you
9 have heard me mentioning this so many, many, many
10 times, because we do see happening. And so we do not
11 want that you will submit an E2B (R3) XML to the
12 Safety Reporting Portal and nothing happened and
13 tomorrow you may -- you may be under -- under an
14 inspection and the inspectors may ask about those
15 specific reports. We have not processed them, so
16 please make sure that you do not upload E2B (R3) XML
17 through SRP.

18 You can take down my email and keep
19 that for records because SRP, your submission is as
20 soon as you hit the submit button is your submission
21 done. So you, after that, it's not -- it's not your

1 problem, it's FDA's process to -- to, you know, pass
2 the report and making sure it's put into FAERS. So as
3 you submit you will create email account with same
4 ACK, saying here is the report that you submit.

5 All right. Next slide. All right. So
6 we are doing some changes for SRP. So SRP as we know
7 is based on MedWatch 3500A. There are some changes
8 that has come to the specific 3500A based on the last
9 reauthorization. So some of those changes to get
10 included in the 3500A. So we performed some update to
11 include pre-market questionnaires. So everything in
12 SRP, we call it as a questionnaire or we call it as,
13 in short, we call it as rational questionnaire for RQ.
14 And when the time post-market questionnaire updates on
15 what we are doing is to accommodate the E2B (R3)
16 structure. Because, as you know, that the current SRP
17 for postmark a questionnaire that we have has
18 datapoints that fit into the (R2) but doesn't fit into
19 the (R3). So there are some changes we have to do to
20 the questionnaire to make sure it follows direct into
21 the (R3) structure so that we can get the data into

1 FAERS.

2 And of course, pre-market
3 questionnaires are being developed right now. And
4 then once this is ready, as I said, the availability
5 for SRP and E2B (R3) via the Gateway for pre-market
6 submissions will be available at the same time. So
7 when we are ready with E2B (R3) at the same time, we
8 will also be launching the ESRP post/pre-market
9 questionnaires so that companies can actually use
10 that.

11 As always, SRP is free. There's no
12 adverse cost to use. And to request for an account
13 for SRP you will submit an email to the
14 FAERSESUB@fda.hhs.gov. So this is one email address
15 pretty much everybody knows because we do get a lot of
16 questions here. So this is the email address you will
17 use for request for SRP account.

18 Now, there was a question that came if
19 SRP comes in, you know, will that have any action to
20 be required by existing SRP users? No. For existing
21 SRP users who were using -- are users who are using

1 SRP for post-market reporting, there is no change for
2 you. Now, you as a user also want to report on pre-
3 market, well, you will have access to report on pre-
4 market, you know, same data points. That means you
5 will get a pre-market questionnaire. If you don't
6 have any -- any INDS to be reported and you're only
7 reporting on post-market, you just continue the way
8 you continue today and there's no action or change
9 required from your side.

10 All right. So let's go into the
11 Gateway submission. And so we all know that for
12 Gateway submission we submit the post-market safety
13 reporting. You have the AE2 header and the routing
14 IDs. We do not need any change to those values. We
15 are keeping those values as is, we don't want to
16 destruct anything, and we want to keep as is.

17 Now, we going to have pre-market safety
18 reporting. And when we have pre-market safety
19 reporting, we have pre-market safety reporting for
20 both CDER and CBER. All right. So because it's for
21 CDER and CBER, we have to separate that out for CDER

1 and for CBER. Now post-marketing, we do have, you
2 know, we do have therapeutic binarities and all that,
3 we really don't want to disrupt anything, we want to
4 just keep it as is. Of course, vaccine reporting is
5 now here and we're not talking about that here. They
6 are separate reporting for to theirs.

7 Pre-market, you have a CDER, you have
8 CDER and CBER. Now, what we are not saying here is
9 for pre-market CDER we have now we have two new data
10 attributes and log-in IDs for pre-market safety
11 reports. And the pathway, it's two pathways, that
12 allow separation for pre-market and post-market.
13 Within pre-market the A and B have two separate
14 pathways, one for CDER, one for CBER. And also we --
15 we understand that for CDER and CBER we had to do it
16 separately because we also realized that some, mainly
17 numbers, are the same for CDER and CBER, and so we
18 want to make sure that they are separated out. So as
19 a sponsor, you would know that it is a CDER ID or a
20 CBER ID, and accordingly you will set-up the AS2
21 header to right drop in ID and submit.

1 Now, very important, rejection. Will
2 occur if pre-market reports incorrectly submitted to
3 post-market pathway. And post-market reports
4 incorrectly submitted to the pre-market pathway. Now,
5 this login ensures doing this rejection is that we
6 then do not publish a pre-market report publicly.
7 It's the only way to making right. Okay. Then pre-
8 market report will not be published publicly, and we
9 want to do that. We do not want pre-market reports to
10 be published publicly. So please keep a note that,
11 yes, we will reject if we submit a pre-market report
12 incorrectly to the post-market and post-market report
13 to the pre-market pathway.

14 Some of the login IDs, all the
15 informations are here in the ESG Appendix J, AS2 login
16 IDs and I have the link there. And you should be able
17 to see those values for XML files and for login IDs
18 and those values are available in that link.

19 So this is a very important slide and
20 as I go through the different post-market and pre-
21 market, these values that you see for post-marketing

1 and for pre-marketing CDER and CBER, and initially for
2 IND-exempt BA/BE will show up, you know, regularly in
3 these different slides just to make sure that you all
4 understand the relationship here and how this to be
5 submitted.

6 Okay. Next. So the approach of how we
7 triage things here, so you have a pre-market and then
8 your pre-market ICRS submission responses submit that.
9 ICRs sponsor submission, if you look at it you have
10 the AS2 header which says, this is just an example.
11 So you have the AS2 header which has the destination
12 which says CDER, and the XML file is the pre-market.
13 CDER will be login ID, if you use it, the that's the
14 login ID. When that file comes and it goes to FAERS,
15 we look throughout and make sure that within is the
16 FAERS datapoint N.1.4 as the value ZZFDA_PREMKT, and
17 N.2.r.3 says it's a CDER_IND. And, of course, the
18 other two fields are basically some examples of IND
19 number and so and so. But that is very important that
20 when you submit through the Gateway that those
21 headers, we are expecting that the XML file has N.1.4

1 AND N.2.r.3, those values there. Okay?

2 Now, the next one is if it was a CBER
3 one, then you see there the destination says CBER, the
4 XML file says pre-market CBER, and the login IDs would
5 say FDAS pre-market CBER. So what we expecting is the
6 XML file would have and run for as ZZLP_PREMKT, so
7 that tells me it's a pre-market and within pre-market,
8 N.2.r.3, tells me CBER ID, that means I know what this
9 is for, CBER. And similarly for post-market and you
10 will have destination as CDER and when it comes to
11 filling in the XML file, expect ZZFDA and CDER. So
12 for post-market ICSR destination is same for CBER.
13 CBER we are not in any kind of differentiation there.

14 And this type of submission, this way
15 of submission is important so that we can submit out
16 the pre-market and post-market report and I believe,
17 eventually, I will be define what the IND number is
18 because our review as medical officers get these
19 reports based on the IND number. So here is what we
20 have for the post-market side. So it is very
21 important that this relationship is maintained all the

1 way from the sponsor submission to the XML file and so
2 that we do not have to reject it.

3 Okay. All right. So now, this is a
4 very important table. See if we can get one down. So
5 we will be talking about the section N.1, which is a
6 ICH ISCR transmission identification. Two important
7 fields here. N.1.4, the previous slide we talked
8 about N.1.4. What is N.1.4, it's a batch receiver
9 identifier and we talk to N.2.R.3, and that is a
10 message receiver identifier. So this table is a very
11 important table. So let me go over this table and try
12 to explain this table -- what this table tells you.

13 So this table explains the attribute
14 values that must be used in submitting the CDER IND
15 ICSRs, so INDs that are for CDER. CBER IND ICSRs,
16 INDs that are for CBER and the CBER IND-exempt
17 bioavailability and bioequivalent ICSRs, strictly
18 post-market ICSRs. So there are four rows here, but
19 the top three rows are for pre-market and the last row
20 is for post-market.

21 So this is not showing the entire

1 relationship between the AS2 header and the E2B data
2 field. The code to data value field that we have. So
3 the AS2 header on the routing ID defines the ESG
4 folder where the XML files will be routed to. So as
5 soon as you say the AS2 header or routing ID, the --
6 our Gateway exactly knows where to drop the XML file,
7 which folder to drop the XML file. Once the XML files
8 are dropped in the folder, that's when FAERS will go
9 and pick it up from those folders and process them,
10 general acknowledgement and sent it back to the
11 Gateway.

12 So when things imports the XML file
13 from the folder. Okay. Where CDER ID or ID-exempt
14 are stored. Right? FAERS will verify that the value
15 for, anyone for an N.2.r.3 are ask for the values in
16 the table. So what does that mean? That means that
17 let's say a sponsor is submitting a CDER ID ICSR
18 through AS2 header. So yes, that's the header that's
19 like a part of the envelope, and in the front of the
20 envelope it says that this destination is CDER, and
21 the XML files is PRMKT_8 and this for PREMKT_CDER.

1 Okay. Great. And within that envelope, there is a
2 letter. The letter is the XML file, and that XML file
3 has got the values in there N.1.4 and N.2.r.3. Now,
4 if N.1.4 says ZZFDA_PREMKT AND N.2.r.3 says CDER_IND,
5 everything looks good. Okay? There will be no
6 rejections. But let's say the AS2 header was for CDER
7 ID ISCR and now, N.1.4 says ZZFDA_PREMKT but N.2.r.3
8 says CBER_IND, then you will get a rejection because
9 you plan to submit an IND -- CDER IND. So the
10 envelope it says CDER IND, but inside the envelope,
11 the letter says it's a CBER ID, so you will get a
12 rejection.

13 Same if you try to take the CBER AS2
14 header or login ID, let's say you have a routing ID
15 that says FDAS PREMKT CBER, N.1.4 is standard for all
16 the three types of pre-market that say ZZFDA_PRMKT.
17 But if you say CDER IND or login ID which is FDAS
18 PREMKT CBER, you will get a rejection because you're
19 trying to submit a CBER IND datapoint, which is in the
20 envelope, which is all the envelope, but inside the
21 envelope, the letter says CBER IND and so it does not

1 match, it's unknown, it will rejection. And same for
2 how it happen for post-market versus pre-market. You
3 could submit through AS2 header data which says AS
4 PREMKT CDER, then we will be submitting N.1.4 as ZZFDA
5 and N.2.r.3 as CDER, you're going to get a rejection.

6 Now, all these type of rejections and,
7 you know, exceptions have been set-up up, but keeping
8 in mind that by no means in no way pre-market reports
9 are published publicly because we all know post-market
10 reports are published publicly as we water, and we do
11 not want this to happen with pre-market report. Now,
12 and also responsibility lies on the sponsor to
13 maintain this because we can do so much with our check
14 at the FDA but if sponsors or the manufacturers who
15 are submitting the reports do not take care of this,
16 you know, something may fall through the crack because
17 as much as test and as much as rules you apply, you
18 know, that still could be some reports that can fall
19 to the crack and mess up potential on to both sides,
20 you know? Well towards maintaining these rules and
21 set-up this and combine to these rules.

1 So I have some rules here which I want
2 to mention here that is, please note that if message
3 receiver identifier, which is the data element
4 N.2.r.3, is CDER. Okay. So N.2.r.3 is CDER then the
5 batch receiver identifier data element, N.1.4, must be
6 ZZFDA. So there is also a rule, a rule looking at the
7 AS2 headers where it has come to which folder versus
8 N.1.4 and N.2.r.3, but also there are rules between
9 the ICH data element N.1.4 and N.2.r.3. But these
10 values also note are not the mixed values or
11 observation codes, these are values which we are
12 imposing on me asking as a regional extension to use
13 in N.1.4 and N.2.r.2, because we all know N.1.4 and
14 N.2.r.3 are like free text data fields. So please
15 make sure that these values are appropriately in there
16 because if you have a -- have a mistake with the
17 alphabets or a typo, you know, that can create a
18 rejection. So please make sure that those values are
19 appropriately set up.

20 So as I said that there are checks
21 between the data elements, which is N.1.4 and the

1 N.2.r.3. If you have CDER, make sure it's ZZFDA. If
2 it is ZZFDA, then make sure that N.2.r.3 is CDER.
3 Okay. This is very important.

4 Submitting the message receiver
5 identifier N.2.r.3, if it is CDER IND or CBER IND or
6 CDER IND-exempt BA/BE, then the batch receiver
7 identifier data element, N.1.4, must be ZZFDA_PREMKT.
8 These are some new values that we have come up with
9 and vice versa, that if you have ZZFDA as N.1.4, the
10 N.2.r.3 must be one of the values of CDER and this
11 IND, CBER and this IND and CDER IND-exempt BA/BE. It
12 cannot be CDER. Okay?

13 Again, as I said that this business
14 rules has been defined to make sure that the different
15 way that you assure that the pre-market and post-
16 market reports are clearly delineated within the pre-
17 market reports and not published publicly. A few
18 reports that I'll make on the slides, this is a very
19 important slide and, you know, this whole set-up has
20 to be -- has to be put in a way so that if you don't
21 go in a main theme, this set-up, you will start

1 getting -- you will get rejections. Now, let's say
2 you have a batch of ICSRs and in that batch, you know,
3 please make sure that you have -- try to make
4 different batches for post-market and different
5 batches when you have pre-market for CDER, pre-market
6 for CBER ad pre-market for -- pre-market for IND-
7 exempt.

8 You can submit all together, but I
9 think we would -- we would prefer that you submit them
10 in different batches, don't mix the CDER with the CBER
11 or the CDER with the CDER IND-exempt BA/BE. And
12 definitely do not mix pre-market with post-market.
13 Having the different batches also helps us and -- and
14 then that all the batches that you have here, that you
15 submit in batch, you know, try to keep the batch size
16 small because the bigger the batch sizes, it's going
17 to take more time so that means your acknowledgements
18 will come probably later. It won't come sooner, so if
19 you can, let's say you have, you know, 300, 400, 500
20 files to send, send batches of let's say, a hundred,
21 you know max of 200 and send them as like three or

1 four batches so you will get acknowledgements sooner
2 and faster and so on.

3 Also that with this particular rule
4 here, as I said, these AS2 header and login ids will
5 be available on the Appendix J, but there will be one
6 for testing and there will be one for production. I
7 think the ones that are for testing will say something
8 of TST or TST something like that, but those will be
9 used for testing and we will want to make sure that as
10 you submit through the testing site or to the testing
11 web trader or we want to test this scenarios with you
12 all, so we will during the testing period, we want to
13 test that some putting in using a login id of CDER IND
14 or some reading as CBER in the XML files gets you
15 rejection. So you want to test that. And also we
16 want to test the positive side that you submitted with
17 the right routing ID, with the right N.1.4 and
18 N.2.r.3. You are getting a positive acknowledgement.
19 Same thing we will want to do for the post-market, you
20 want to interchange those values and make sure you get
21 the right rejections and also get the right values so

1 that you get the right acceptance, so.

2 And with that, I think I am probably
3 four minutes before time for a break. So I guess we
4 take the break, but we come back at 10:30. Well, it
5 was not that bad. Four minutes, I guess it's okay.
6 So we will resume at 10:30, so anyone has any
7 questions, please start putting the questions in the
8 Q&A so that we will start looking at those questions
9 and answer them at the end. All right? Thank you and
10 see you at 10:30.

11 (Off the record.)

12 MR. DE: All right. So we're back from
13 a break. Hope everybody can hear and see.

14 So before the break, we talked about a
15 bit of the background, we talked about some regional
16 implementation guidelines. We went over the
17 submission methods and mechanisms, and we did talk
18 about, you know, specifically the table that I spent a
19 lot of time on, very important table. And then, you
20 know, certain things about -- we talked about there
21 are two options, Option A, Option B, for tests and for

1 basically, for testing we will only use Option A for
2 database-to-database, which is the Gateway for
3 testing. Option B, is basically a website, and online
4 form. That will be posted, and we are not doing any
5 testing with the companies there. That will be
6 directly posted.

7 Now, after this break until lunch, we
8 will talk about the E2B (R3) implementation package.
9 The implementation package, this is where I will try
10 to coordinate to the spreadsheet and if we have some
11 Q&As on the spreadsheet, so I'll try to go into the
12 spreadsheet and try to show you how the spreadsheet
13 looks like and help you navigate through that
14 spreadsheet. Okay.

15 So the E2B (R3) implementation package
16 actually has four documents. One is the FDA Regional
17 Implementation Guide. This is a PDF document. The
18 purpose of the technical specification document is to
19 assist submitters transmitting the electronic
20 submission with attachments, so it gives you some
21 details about what terminologies have we used and what

1 some kind of, you know, rules that we will have. So
2 you can talk about the Gateway set-up, ESG set-up.

3 We talked a little bit about
4 attachments, what are we accepting, what are we not
5 accepting, you know. It talks about something on a
6 combination product. So it gives you an overview
7 about the transmission and it need to be (R3). So it
8 describes the technical approach for submitting ICSRs
9 and for in completing the regionally controlled
10 technology and for implementing regional extensions
11 that are not in the ICH Implementation Guide. So that
12 is what the -- the first document is. Okay. So this
13 documents, as you see, these are all links because you
14 see that in blue. These links, if you click on it,
15 actually then takes you to -- it opens the document
16 for you, basically. And these documents are also
17 available on the FAERS Electronic Submission webpage.

18 The second document, which I have
19 talked about this document previously, which is a very
20 important document, which is the FDA E2B (R3) Core and
21 Regional Data Elements and Business Rules. So this

1 whole document provides, of course, version 1.3, just
2 because we had some updates. Soon we will have
3 version 1.4 -- soon we will have version 1.4 and the
4 purpose of -- the reason why we will have 1.4 is there
5 are some changes that we had identified during an
6 implementation, and it will be encountered in that.
7 There was a few new ones here and there that we have
8 identified that we are needed in the document. It
9 should be posting very soon in a week's time.

10 So this document provides list of all
11 ICH and FDA Regional Data Elements, data element
12 attributes, conformance, business rules, X files and
13 acknowledgement attributes. And some of the regional
14 data elements in this documents that detail, sponsor
15 detail in the FDA Regional Implementation Technical
16 Specification, planning to be out soon, which is the
17 first document at the top.

18 So let's try to open the Excel file,
19 which is the second document. And to open the second
20 document, we should have to do an R-Tab and the Excel
21 file will be opened. It's R and Tab. So R-Tab and

1 you go to the Excel. And is the Excel being shared?

2 UNKNOWN: Yes, it's being shared.

3 MR. DE: Okay. So thank you. I need
4 to see that, sorry, excuse me. I need to see -- it's
5 not coming up here.

6 All right. So right now we have the
7 Excel spreadsheet that is shared. If we look at the
8 Excel spreadsheet, there are certain columns here
9 called field identification. And just if somebody in
10 the Q&A can say that they are able to see the
11 spreadsheet, I would really appreciate that because we
12 will go a little bit into the spreadsheet. Great.

13 So in the spreadsheet, first few
14 columns are field identification. So it will tell you
15 the source and it will say if that source is a source
16 for FDA or that source is a source from ICH. It gives
17 you the field identification, the field data element
18 number, so if you see the element that starts with
19 FDA, that means it's a regional data element. Then it
20 gives you the data element name, and then, if you
21 scroll to the left, on the bottom there, the scroll

1 bar, yes. That it gives you the data field type.
2 Field type will tell you what is the maximum length,
3 what is the data type, which is A for Alpha and N for
4 numeric. The values that are allowed and then it goes
5 into if that was an FDA specific data element then you
6 would probably not see anything under Column H, which
7 is conformance and Column I, which is ICH business
8 rule because those are ICH conformance and ICH
9 business rules.

10 You will also see column J where under
11 post-market, this data field is required, and it give
12 you some post-market business rules for that
13 particular data field. And the next columns, which is
14 L and M are for pre-market business rules. And for
15 pre-market is the conformance is required or not
16 required, and where the conformance is for the data
17 element, which is a regional extension and then it
18 lists rules for that. And then when you go to column
19 S and P. S says it's FDA regional data element.

20 Then the next few columns are
21 nullflavor applicable, so it tells you if nullflavors

1 are applicable or not. And if it is so, which ones
2 are applicable. It gives you the OID for that
3 particular data field, which is the object identifier
4 and that's pretty much about it. And then it tells
5 you which HL7 data element it actually uses in Column
6 AE.

7 So that's what this particular Excel
8 spreadsheet will talk about. Similarly, it will show
9 you, you know, other the data elements in there. And
10 let's go into the Read Me Tab that in this
11 spreadsheet. At the bottom you see Read Me on the
12 left-hand side of the tab. The first tab. Yes.

13 So what this says that this spreadsheet
14 provides the comprehensive view of the ICH elements,
15 so every time it will tell you what it is, so this
16 tab, which is number one, which is revision history.
17 In this spreadsheet, the revision history will tell
18 you about the changes to this document. Okay. And so
19 this information includes the document version number,
20 date and version description. So let's go into the
21 revision history tab at the bottom where you have Read

1 Me, beside that. And so this is how the revision
2 history tab looks like. So we have a revision number,
3 we have a revision date, and the revision description.
4 So right now, version 1.3 we posted in January of
5 2023. We going to have one probably posted this
6 month, in next couple of weeks' time, and it will list
7 all the changes that we have had since the previous
8 version.

9 So let's go back into Read Me Tab
10 again. So the next tab after version history is the
11 ICSR data and data element. This is where this tab
12 lists all ICSR data elements and their attributes.
13 And for the comments ICH is further divided to
14 provide, you know, conformance and, you know, data
15 type, data length. We have a difference choosing
16 between post-market and pre-market because sometimes
17 the rules are different. And also further divided the
18 conformance and the business rules. So one thing to
19 note here, the absence of required data element will
20 result in a negative acknowledgement, as we have said
21 -- I've said before, and be rejected.

1 The nullflavors are used to explain the
2 reason for the lack of the data on the required data
3 element and must be used for specific required data
4 elements as defined, if the data element value is
5 blank.

6 In case of additional required data
7 element, if the condition is true, then the absence of
8 conditional required data element will result in later
9 acknowledgement and be rejected, unless appropriate
10 nullflavor is used. So as you saw that there is some
11 nullflavors, like not applicable, no information,
12 asked but unknown. So sometimes you will have data
13 fields where you may not have a value. It's a
14 required field, but do not have a value. In such
15 case, the data element will tell you that use
16 nullflavors and that nullflavor is applicable and
17 certain data element must be used. Okay?

18 Okay. Going down this, you will have
19 -- I have a legend I have put for that particular tab,
20 which is ICSR data element for source. So this column
21 defines a source of the data element. Okay. For

1 regional extensions, it's marked as FDA. Then you
2 have the data element number. This column defines a
3 unique identifier for the data element and these
4 numbers, wherever you see the prefix with FDA, these
5 are the general extensions again. Data element name,
6 they give a name for the data element. Right?
7 Standard names for ICH are already there. One is the
8 max length, so it tells you -- it defines the length
9 of the data element, the data values -- the values
10 that are allowed for the data element and the
11 conformance. So conformance is -- conformance can be
12 required, conditional requirement optional. So the
13 conditional required -- the conditional required data
14 elements are required if condition mentioned in the
15 business rule is satisfied. Right? So that's how we
16 have to be used.

17 Business rules that these columns
18 define the business rule for the regional data element
19 or any deviation for the full ICH to E2B (R3) business
20 rule. Then Q&A is, these are the columns that define
21 any question and answer associated with the data

1 element. We are going to have some question and
2 answer so we kept that column so that in future, if we
3 have questions and answers on specific data elements
4 other than updating the spreadsheet, we can have it in
5 the Q&A and wanted to put the question and answer to
6 the Q&A question.

7 Nullflavor applicable, as I said, these
8 are nullflavors. And field OIDs are basically the OID
9 value for the data elements that are some regional
10 OIDs and then some, you know, ICH OIDs.

11 So we see the ICSR Data Element Tab.
12 So next tab is actually, the Rejection and Warning
13 Tab. So before we go to the Rejection and Warning
14 Tab, let's read through the Read Me what that tab is
15 about.

16 So this tab lists business rules for
17 the regional data element and for any deviation from
18 the ICH or E2B (R3) business rules. The checkmark
19 under the column rejection, if not met, indicates that
20 the ICSR will be rejected if the business rule is not
21 met with the header message in the acknowledgement.

1 The checkmark under the column warning if not met,
2 indicates that the ICSR will be accepted even though
3 the business rule is not met, with a warning message
4 in the acknowledgement.

5 Then we have two columns for header ID
6 and header description columns and that describes the
7 error code and descriptions of the error and if
8 rejection error starts that with a R and warning error
9 ID starts with a W. So let's go to the Rejection and
10 Warnings Rule Tab. So if we look here and we should
11 go all the way to the top, you will see that here's
12 the columns. So there are certain things here where
13 there are some common things that says if the thing
14 was required. Then you have a standard list that says
15 this standard number is required but not provided. If
16 you have a few letter observation value is incurred
17 and so this line number contains an invalid value. If
18 you have exceeded the max length, it will say that
19 that number contains value that exceeds the max
20 length.

21 So similarly, now you have some data

1 elements, other data elements are listed here and if
2 you see the columns that the business rule is
3 mentioned. If you have a check mark where it says
4 rejection if not met, so which means that for that
5 particular data element, which is N.1.4, if that is
6 not met, then there is an error message that you are
7 going to get. And that error message will be listed
8 in that, you know, ACK.B.4.r.B.8 or B.4 something,
9 which I talked about when you change from 250
10 characters to 2000 characters. So these are the
11 rules. So as we scroll down, actually, you will see
12 that there is some where the check mark is under the
13 column E, which is warning. So let's go down and we
14 should find some, yes. So there is one which is a
15 warning here. So in this case, we may not reject the
16 file, but we still give you a message hoping that the
17 next time you will correct that and not get that
18 warning message anymore. So this will list all this
19 and all the error descriptions that you see, that is
20 the information that you will see in the
21 acknowledgement file. Okay. We are not sending the

1 error code; we are sending the error description in
2 acknowledgement file. So it will be easy for you to
3 read through. Okay?

4 Now let's go back into the Read Me Tab.
5 Next we have the X files. So these are the tabs that
6 list the X files based on the HL7 model for both the
7 ICH and the regional E2B element. X files are also
8 defined for data elements where nullflavor is
9 applicable. So let's go to the X Files Tab. So if
10 you see all these, these are basically the X files.
11 So that X file specifically we will verify to make
12 sure that the data elements falls in the right
13 location, the right data element is used, and these
14 are the X files that we will be using. Wherever you
15 see the source as FDA, those ones is the X files that
16 we have defined based on the HL7 model and those X
17 files needs to be used appropriately for accessible
18 submission. So that's the X files.

19 So finally, the Read Me Tab is the
20 Acknowledgement Tab. So this tab lists the element
21 for acknowledgement. So going into the

1 acknowledgement tab, this is the acknowledgement tab
2 and if you scroll down, it takes you back to the
3 bottom, we will see that the data element was changed
4 from 250 to 2000 characters. Further, the last column
5 row states 2000 in red. So that was previously 250
6 and we have changed to 2000 characters, as I mentioned
7 previously. So in here, nothing else has changed.
8 The message will still be the same message that was
9 coming to you. And we will be ACK.B.r.7 which has
10 changed to 2000 characters, so. So this is how that
11 spreadsheet needs to be read. If you find any kind
12 of, you know, ambiguity in the spreadsheet, please
13 inform us at faersesub@fda.hhs.gov and anything that
14 you find, we will really highly appreciate if we catch
15 any issues, right now than later. Okay?

16 So with that, we will go back into the
17 slides, and can we confirm that the slides -- folks
18 can see the slides and the slides are shared. Okay.

19 So we talked about this particular
20 document, the second document which is the heart of
21 this whole implementation. The third document is

1 forward compatible rules. I will go over this in
2 another set-up of slides. This spreadsheet -- I have
3 taken the spreadsheet and I made those columns -- the
4 spreadsheet columns and I put some slides at the end
5 of this presentation just to -- for -- I think we
6 talked about that in the opening, that there will be a
7 section that we found (R2) to (R3) forward compatible
8 and that's what we'll talk about this spreadsheet. I
9 will review the spreadsheet, but I have the tables
10 already in the slides, so well will talk about that
11 then there. Then next is IND ICSR in similar
12 instance. So one of the instance, these is the list
13 of scenarios provided. As XML instructs us and
14 acknowledgement examples based on FDA (R3) Technical
15 Specification document. So this will add all the
16 regional elements also. It's a .zip file and the .zip
17 file has a Read Me.txt file describing the different
18 scenarios. So there are seven or eight scenarios, I
19 believe, and the Read Me and .txt file will tell you
20 about each and every scenario. There will be a
21 scenario relating to combination services, there will

1 be a scenario relating to IND Safety Reporting. There
2 will be a scenario relating to IND-Except BA/BE.
3 There will be a scenario between column is like a
4 metal file, which means it has got, pretty much, all
5 the elements in there. So likewise, we have all the
6 scenarios that can be used and looked at by testing
7 and so on. So we have provided some instance files,
8 which again, those instance files are different from
9 those instance files filed from ICH because this
10 instance files actually has the regional elements in
11 there. So -- so keeping that in mind, these instances
12 are documented and posted. Okay.

13 So with that, now we will go into some
14 common regional extensions. When I say common
15 regional extensions, these are common regional
16 extensions applicable to our Excel reports. So -- so
17 let's get into each and every section of this common
18 regional extensions. Okay.

19 All right. Section C1, this is
20 identification of a case safety report. Now, in the
21 document on regional extension, just know that there

1 will be some elements that are new elements that are
2 being as defined. There are some elements where some
3 business rules have changed and there are some
4 elements where we may have changed the conformance.
5 So going into Section C1, identification of the Case
6 Safety Report, the change here is the business rule.
7 So you have to send the case safety report with just
8 C.1.1. This is a standard ICH data element. The
9 business rule is that use the same sender safety
10 report unique identifier for all previously submitted
11 reports. We will always use the same identifier for
12 data elements. And for data element C.1.1, that was a
13 sign to the initial ICSR when submitting follow up and
14 post follow up throughout the lifecycle of the case.
15 The reason we have put this business rule is because
16 this the value of this particular data field makes the
17 initial and follow up reports in our database. Okay.
18 So having the same number makes a new follow up and
19 the next follow up and the next follow up. So that is
20 why this particular data point is important. More
21 details about this is provided in the previous

1 document of the technical specification. And
2 reasoning also has been given there.

3 The next data element is C.1.3, that
4 stands for type of report. Type of report then is a
5 rule here, as we say that if the batch receiver
6 identifier, just N.1.4. We talked about this field so
7 many times now, is easier here in this pre-market,
8 then the type of report C.1.3 must be two reports from
9 starting. Okay. Makes sense, right? Because it's a
10 pre-market report and two is, value two is report from
11 -- it's also provides another level of security from
12 not publishing this report. Okay? So now you see the
13 two, three levels of security that we are putting in
14 so that we cannot publish this report publicly.

15 Now, again, you can have everything
16 this, but the content in the report is all -- let's
17 say you submit; the people are reading a post-market
18 report. Our sponsors know it's a post-market
19 report -- pre-market. That's something which we
20 cannot know, make sure that and catch that and not
21 publish it. Because data point with discreet data

1 values -- and say that it's pre-market or post-market
2 report, but the content of the data -- and the content
3 of the data in like the product name and all that is
4 all about pre-market, then, you know, that is
5 something which would be very difficult to track and
6 not publish. But from the perspective of making sure
7 that pre-market report will not get published, we
8 talked about the login IDs. That's why we have
9 separate from post-market and pre-market.

10 We talked about converting (R4) into
11 (R3) in relationship with between the login IDs. SO
12 that is another level of check that we are doing. And
13 finally, this is like the third level of check that we
14 are doing to make sure that this is not published yet.
15 Okay?

16 All right. Next is the local criteria
17 report type. So in the local criteria report type,
18 this is a new data element because with FDA we need to
19 know if it's a 15-day report or it's a not expected
20 report. And then we have five day and 30-day report
21 for combination process and then we have a seven-day

1 report for IND. And IND has both seven day and 15-
2 day. So we define a new data element and previously
3 we had a local criteria report in (R2), but that was a
4 value data field that I can add more values, but that
5 field know has become a, what do you call it. A
6 Boolean, true or false, and experiment report. We
7 used to use a value for the experiment report and
8 that's become a Boolean, so now, we had to have a new
9 data element, which is called a local 30-day report,
10 FDA C.1.7.1. The length is one, the data type is
11 numeric, the conformance it is required, and the
12 observation code values, which is C.5.4.5A. Again,
13 the C, I talked about it, it's NCI EVS values. So one
14 will be for 15 day to non-expedited, or 5 day, 5 to 30
15 day and 6, 7 day. So you may wonder why there's not
16 value 3. Because we used the value 3 basically for
17 our direct reports that we get directly from consumers
18 and health care professionals. So we reserve that for
19 that.

20 Any kind of rules are available in that
21 spreadsheet, which we showed you, which is E2B (R3) --

1 that link is there that will open that spreadsheet,
2 but we already showed that, I'm not going to go into
3 that. I have extracted out some of the rules from the
4 spreadsheet and if we arrow down, here are the rules.
5 So let's take a look at them. So in this particular
6 data elements let's go over some of the rules. Many
7 of the rules apply because of combination products.
8 Because combination products are for post-marketing.
9 We don't have anything for pre-market. If combination
10 product report indicator. So there is a data field,
11 which is a regional data field, called combination
12 product report indicator which immediately saves these
13 reports on the combination portal.

14 If that was true, then that's the case
15 fulfil, the local criteria for an expedited report.
16 That means if it will fill like area for expected
17 reporting. And that is also true, then observation
18 code value must be 1 or 4. That means we're saying,
19 it's a combination product, it used for experiment
20 criteria. So value of 1 and 4 is what? 1 it could be
21 a three-day, and 4 is a five-day. Right? So when you

1 have 1 and 4 will be allowed.

2 The combination product report in the
3 value is 2 that means that it's a combination product
4 report and it did not fulfil experiment criteria, so
5 it just falls on no information and then we would use
6 2 out of 5, which means, 2 means its non-expedited and
7 5 means it's a 30-day report. Okay?

8 If combination product indicator is
9 false, that means not a combination product report,
10 and doesn't fulfil expedited criteria and then for
11 post-market, the value must be 1 which is for 10-day
12 report. And of course, if you have the combination
13 product indicator is false, that means it's not a
14 combination product report and it does not fulfil
15 expedited criteria, then the value alone is 2, which
16 is non-expedited report. These rules apply to make
17 sure that it was about right and set-up right for us.

18 On the pre-market side, the 15 day and
19 seven-day experiment report, if the field, which is
20 false, and the expedited criteria is true then the
21 report type -- type of report is report for study and

1 observation value allowed is 1 or 6. 1 being 15-day
2 or 6 means seven-day report. All right.

3 So the next data element, if that's the
4 case fulfil local criteria from an expected report.
5 C.1.7, this is already existing field. You know,
6 there is more guidance now than a rule. Specified
7 data -- so this field actually says you are specifying
8 one of the case from this, the regional specification
9 on expected reporting. If this, if the local criteria
10 report file is seven-day or 15-day or five-day,
11 they're considered expedited reports then C.1.7 must
12 be true. Another rule is if local criteria report
13 type is not expedited or a 30-day, they are considered
14 non-expedited, the C.1.7 must be false. In fact,
15 things that could reject it, initial submission with
16 nullflavor and 9 will be rejected. So you cannot
17 submit a report, an initial report with the value of
18 no information for the data field. That's the case
19 for the expected criteria from expected report then
20 the report will get rejected. Okay, so.

21 All right. The next data element. The

1 next data element will be a FDA C.1.12, so we'll show
2 the next slide. So the combination product report
3 type indicator, I just mentioned about this field. So
4 this is a regional data element, FDA C.1.12. This
5 data element is a Boolean element, so which means, it
6 doesn't have a max length. The data that is Boolean.
7 But it look true or false. No information in NI. The
8 conformance is required of this. Right? So which
9 means you either have to say in combination report
10 have to say false or NI. NI was given because
11 sometimes you don't know if it was truly a combination
12 product or not.

13 So NI is given whether or not you know
14 it's a combination product and you say false. If
15 it's a combination product you say true. The
16 observation code as a C code, if you see that. When I
17 say C code, it has starts with alphabet C. The code
18 number, and that means it has been taken from NCI EVS.
19 And the business rules for this is how to decide it's
20 a combination product or not. So to decide it's a
21 combination product or not, you will have to look at

1 the rules as defined in the post-market -- post-market
2 safety reporting for combination products guidance for
3 industry and FDA Guidance.

4 So this is posted. This link if you
5 click will take you to the guidance and this is an FDA
6 Guidance that was posted and based on this guidance
7 you will decide should it be a true, should it be a
8 false, should it be a no information ACK. It will be
9 a decision that you will make based on this guidance.
10 Okay? So this is what the combination product import
11 indicator is.

12 So going into the next thing is a
13 reporter statement. So this is again a new data
14 element that was added in FDA C.2.r.2.8 and the max
15 length is hundred. The data type is alpha numeric.
16 The conformance is required, and the values allowed
17 again, is taken from NCI -- sorry. This needs to be
18 -- this is 5 point here. The value -- there's no
19 values allowed here. This should be -- this shouldn't
20 be related. Please do not take that values alone in
21 consideration. The max length is hundred, data type

1 is alpha numeric, and conformance is required, and the
2 value alone must be only nullflavor, which is not
3 asked, NASK. So the values allowed will be only
4 nullflavor, NASK. And I'm going to update the slides
5 before we post it. And the reason being that it's an
6 email address, so if the email address was not asked
7 then -- then you just say, you know, not asked. And
8 if you don't have the -- you would just say not asked.

9 So one important note of all this
10 particular data element is that when submitting the
11 nullflavor response, also include the telecom prefix
12 with the value attribute. Currently reference the
13 latest telecom type as shown in the example. If you
14 see telecom type, you know, you have the value, it
15 says mail to: and the email address up in the corner.
16 If you don't have it, you say nullflavor, NASK, and
17 the value is basically says mail to, because you don't
18 have, and you've not asked anything. So that is an
19 example, so that is how you need to report that data.
20 This is the same type of process that we have also for
21 base reporting. That has email address and if you do

1 not have an email, then this is what -- how you would
2 report. Okay?

3 Next is Section C.3.3. So information
4 on sender. You have these data elements were optional
5 and FDA has made the state elements required. So this
6 is the sender of the report, so who is sending the
7 report to FDA. We want to know that because based on
8 this sender information and our compliance works, that
9 was who was send in the report, who's the responsible
10 party for sending the report, so we want to know this
11 information so that we know who is actually sending
12 this report. So that's why this information -- the
13 conformance was changed from optional to required.
14 Okay? And these are all the elements of the sender.

15 Next, let's get into patient
16 characteristics. Okay. Patient characteristics.
17 Patient name, by any method you want. Data elements
18 stays the same, but there are some business rules that
19 we have put down. If no patient is involved,
20 especially like on a compounding product report,
21 medication report, then you can use a nullflavor NA

1 for patient name. For non-patient products report
2 having malfunction with no adverse event, you can use
3 the nullflavor NA for the patient. We all know that
4 reporting you need at least minimal for data elements,
5 patient being one. From a technology perspective, we
6 are checking this so just having a nullflavor actually
7 makes it easier for us to do the check. So and it
8 also satisfies that the patient is not applicable in
9 such situations.

10 For combination product we can rename a
11 function on a batch of combination products with no
12 name. So there was a batch of combination products
13 and there was a malfunction. So in such case the
14 batch could be used in multiple patients and in that
15 ask for you to submit one report and the patient name
16 or initials be, and you mention the values summary
17 there. And then it would go into IND Safety Report
18 when we talk more about IND Safety Report after lunch,
19 there's a concept of aggregate reports and in such
20 case when there's an aggregate report for aggregate
21 report, use the value aggregate in the patient

1 initial.

2 And lastly, the rule is if the type of
3 report is true, which means, especially for aggregate
4 reports, so it means 2, report from starting, the IND
5 number, adverse event occurred is provided and what's
6 the IND number for adverse event provided? You will
7 hear that regional elements in IND when IND Safety
8 Reports are being discussed.

9 And Identification number of the
10 report, which is linked to the safety report. But
11 this is an aggregate reporting, you have -- you have
12 the aggregation of all the other IND individual safety
13 reports. That's again, you will hear that, you know,
14 how, especially aggregate reports are to be reported
15 in the IND section. And also important just because
16 of the patient name and initial, if those three fields
17 are populated with those values or populated with
18 specific values, then B1 must have the value
19 aggregate. So it's like the cross-check business
20 rules that we are -- we are having here. Okay?

21 Next we go into race code. And before

1 we go into race code. Okay. So race code. So this is
2 a new data element, patient race code, which is alpha
3 numeric 10. Conformance is required and values allow
4 again a C code, which means, it's taken from NCI EVS.
5 These are the values here. They also have C codes.
6 It does -- race code is used in many other types of
7 forms that we have in the United States, and the
8 business rule is must be provided as a nullflavor NA,
9 when patient is like a summary or aggregate. And of
10 course, if you don't have the value of the race for
11 the patient, then you can use unknown mask or other --
12 if you're masking something or if you don't know, just
13 -- you know, you have unknown. So that's what you
14 will be using for the race code. And we have that as
15 NSA code, which is FDA.C.1.12. So in such case you
16 have maximum 10, alpha numeric, it's required. It
17 again, has a C code, which means it's taken from NCI
18 EVS. It has nullflavor like unknown, NASK, no
19 information, NA. How can you use NA when you submit
20 the report as is about combination product with
21 multiple patient and aggregate and so you can use NFR.

1 Those types. Okay.

2 All right. Then we have GK, which is
3 drug information. Now that a drug can be repeated,
4 right? So the categorization of drug rules. This is
5 an important field, G.k.1. So there was some business
6 rules with this particular drug role data point. And
7 the business rules are for post-market, for pre-market
8 and so on. These two.

9 But first, CSRs. The first product
10 under section G could have the data element answered
11 as 1 or 3. Unless, the report has at least one device
12 in the report where malfunction is true. In which
13 case, the observation rule value would be 1, 3 or 4.
14 Okay. 1, 3, or 4. 1 stands for suspect, 3 for
15 interacting and 4 for drug administered. Right?

16 So what we are saying here is we would
17 want to that the first product, we always the suspect
18 product, the interacting product on the drug in case
19 of combination products. And then you have number 2,
20 which is concomitant, that could be the product that
21 can come later in the XML. So basically, your

1 information, kind of, if you're reporting, becomes the
2 first product in the list. So if you look at these
3 group here, if you have a combination products and
4 combination products has a malfunction, okay. But the
5 malfunction, there was no adverse event, there was
6 just a malfunction, then in first will be on a similar
7 device, then you could use the value 4 which is drug
8 administer. That's you have 1 or 3. You must have at
9 least one product, at least one product must be
10 reported with an observation core value of 1 or 3 or
11 4, which is suspect, interacting or drug administer.
12 And as I said for, yeah, 1,3 or 4. For pre-market
13 ICSRs. Okay.

14 For IND ICSRs, we only have the
15 observation core value of 1, 2 or 3. So 1 means
16 suspect, 2 means concomitant and 3 means interactive.
17 At least one report must be reported with observation
18 code value of 1 or 3. It's very important to do that.
19 The other serious piece, which one of your companies
20 work as the first in the list. Okay?

21 For IND-exempt you can use the value 1,

1 2, 3 or 4 and you will still have a combined products
2 and at least one product must be reported without the
3 core value of 1, 3, or 4. Because when you have IND-
4 exempt you need, you could have the test drug, you
5 could have the reference drug and so on. So the value
6 of 4 is also used.

7 So we have a new field on the other
8 characterization of drug code. Why was this field
9 used? Because it's a concept of similar device. So
10 this is a concept of similar device, you know.
11 Anything to an existing observation code value, like
12 for example we have the characterization of the drug.
13 We really cannot in IC need to be up on 3. You can
14 just go ahead and enter the observation core value.
15 You can just go ahead and enter observation code value
16 if you had existing list of observation code values.
17 And the reason is I could add a value of, let's say I
18 characterization of the drug role and it had four
19 values, and I added a fifth one. The fifth one I got
20 at a similar device. You know somebody else; some
21 other region may call the value 5 as something else.

1 Some other region may call the value 5 something else.
2 So it's not concomitant to add a value to an existing
3 list unless the standard organization has, you know,
4 endorsed that and has included that into the core
5 values on the observation code.

6 So a bit of advice, this is
7 specifically for -- specifically for combination
8 products, actually. Its maximum length is one, it's
9 numeric and conformation is conditionally required.
10 And when it is required it's because similar device,
11 observation code value 1 must be provided in
12 combination concomitant code indicator is 2,
13 malfunction is 2 and characterization of drug is 4.
14 That is drug was not administered. So that means
15 you're talking about a combination product because as
16 I'm talking with a similar device. So you have a
17 divide and you're talking about a similar device, that
18 means that the device would have been administered so
19 add value of 4 to all these three "criterias" have to
20 match up and have to be true. So to say that it's a
21 similar device. So that's the conditionally required

1 code in this particular field. All right?

2 Next, so we have common regional
3 extension for drugs, GK. So these are some important
4 areas that I would say let's focus on right now
5 because of the data that we typically get, and we have
6 to go back to sponsors to get things correct. So the
7 data element G.K.2.1.1b, medicinal product identifier,
8 MPID, you would want to start using this data element.
9 In (R2) we never had this, but now if you want to
10 start using this, if available. So which means, MPID
11 you use the FDA NDC code, not your drug code, and
12 should be used as a regional MPID. Okay? Use either
13 only the first two segments of the NDC or the full NDC
14 as the regional MPID in the ICSR. And we take care of
15 if you only send the first two segments of the full
16 thing.

17 But if you stop sending, again, this is
18 an optional data element. But we would request that
19 we would recommend to start using this because when it
20 comes to, you know, IND and all that, you know, we
21 might start using the MPID as the NDC code as the

1 MPID. So and also it gives FDA facts to pinpoint to
2 the exact product that we are looking for once we know
3 the NDC code, so when known, please supply the NDC
4 code in the data element Medicinal Product Identifier.

5 Next, data element is GK.2.2, which is
6 medicinal product name as reported by the primary
7 source. Okay. So this the first report name. So FDA
8 validates the medicinal product name as market in the
9 United States negates the the available structure,
10 product, everything. So I mention that previously
11 during the local technologies and vocabularies that
12 we're using. Structured properly it really is very
13 important because that's the name we use to validate
14 the medicinal product name. And many, many, many
15 times we see sponsors have one name that we have
16 submitted the structure product labeling, but then
17 when the actual ICSRs come the name has some
18 variations. Also, in the name it's a name. So don't
19 try to use a trend into the name, you know, and those
20 kind of values into the name. When your name got
21 approved by the Agency and what you submitted at

1 structured product labeling, use that name in the
2 ICSR.

3 If the medicinal product name is not
4 provided but the active substance name is known, then
5 provide the active substance name as it appears in the
6 FDA's Global Substance Registration System. So how
7 the substance was approved, that name you must use and
8 that's what you will provide, you will get in the
9 FDA's GSRS which is available publicly for you to use.
10 If you have foreign product trade names, let's go
11 write that foreign product trade name in this
12 particular field, G.k.2.2.

13 Then we have the G.k.2.3.r.2b, which is
14 a substance and specified substance termID. Now, the
15 termID that you have, we are recommending to use the
16 FDA's GSRS unique code, 'cause then it also helps us
17 to directly pinpoint that substance that was
18 registered. Right?. And the name, of course, is the
19 name of the substance then. So that should always be
20 populated, we expect the termID, that should always be
21 populated, but if you have the termID and it is

1 available, then use the FDR GSRS. Okay.

2 But what happens if it's a foreign
3 product? So if it's a foreign product then go ahead
4 with that substance name as it appears on the FDA's
5 GSRS. Okay.

6 The FDA's unique rules are updated
7 monthly and can be obtained from FDS GSRS in your
8 list. These type of rules, you know, and suggestions
9 and recommendations that we are giving, it only helps
10 us in validating the product because, you know, we as
11 the Agency, we have to look at product across the
12 United States and what is marketed in the United
13 States. Right? And manufacturers are looking only at
14 their portfolio of their products that they market.
15 But we are looking at every product that is marketed
16 in the United States. So it becomes very important
17 for us to make sure that we're also validated because
18 eventually we have to do a search on those products to
19 make sure we're getting the right, you know, cases
20 from the products, we are receiving the right
21 identification, so again, we do have close to 2.3

1 million reports that we receive every year. And of
2 that come close to 2.5 to 3 percent report do fail
3 because name did not match on the SPL, or the active
4 ingredient did not match the GSRS name and the
5 products fall out which means now we have to take
6 manual steps to validate those products and then
7 process them to maybe make available to the viewers.
8 So it's additional effort, additional cost, additional
9 steps and also additional time. So if industry can
10 focus through making sure that the names are validated
11 by them to SPL, making sure that that's the name they
12 were using or the name that they're using are from
13 GSRS, it will really help us.

14 Next, here is we have the drug
15 information again from GK. This is where you have the
16 authorization and the application number, GK3.1. So
17 there are some rules here. Some of these rules are
18 specifically applied for post-marketing, but also can
19 be used to be pre-market, especially if you're using a
20 post-market study drug. Because many of you mention
21 what the MPID or NDA number probably is. So in this

1 we have, if you have a human drug or a biologic
2 product, the application type could be IND, NDA,
3 BA/BN, is used by CBER and in the recommended format
4 is this, NDA with a number. IND with a number. BA
5 with a number and BN with a number. If a biologic
6 product which is BLA, then you have a BLA with a
7 number.

8 Prescription drug product marketed
9 without an approved application, no application then
10 you submit that as 000000, six zeros. And non-
11 prescription drug product marketed without an approved
12 application, so is not ARES, no application then it
13 will submit them as six nines. Okay. And if you're
14 compounded product marketed then you have the word
15 comp 99. Some of these things actually help us to
16 help see this report both ways. Wo we have a
17 compounding rule. So if you send comp 99 then we have
18 appropriately notices about the compounding product
19 and the needs to go there because the compounded
20 product is not really approved, you're mixing things.
21 So and then you can add a dictionary of products, so

1 sending these values appropriately actually helps us.

2 Now, the question comes where do you

3 submit the IND number? So if you see down here it

4 says for IND and IND-exempt BA/BE Safety Reports.

5 That reporting on marketed drug product on biological

6 products being evaluated under an IND or IND-exempt

7 BA/BE. Do not list the IND with the pre-ANDA number

8 in this field. Okay?

9 Use data element FDA C.5.5a and this is

10 a regional element and FDA C.5.5b, which is again a

11 regional element for IDN and IND-exempt BA/BE,

12 respectively. These two attributes of these data

13 elements bring with respect to bring the IND and the

14 IND-exempt BA/BE talk. That will happen after lunch.

15 But these two data elements are regional elements that

16 has been set-up because these two data elements

17 actually defines where the report is going to go,

18 report review.

19 Next we have the data element

20 Pharmaceutical Dosage Form TermID. Right? So we are

21 asking to use the observation code C54456. If you go

1 into NCI EVS, you will be able to search for C54456.
2 If not available, then use EVP Report. Okay. For
3 those in this field, we actually have that
4 pharmaceutical dosage form. If you don't have it,
5 then use the EVP report. Make sure that you're
6 submitting either one, all right?

7 Same with route of administration. You
8 first look at C54456 as the observation code, the C
9 code in NCAEVS. The value there, the list of values
10 are there but the values that you are intending to use
11 in this report is not available there, then you can
12 use the EVP report. And if none of them are available
13 then, and I think there's a free text field also
14 available for you to submit in that free text field.
15 Okay?

16 All right. So the next data element
17 under drugs, GK, is every additional information on
18 drug would repeat as necessary. So this is the
19 regional element that we have inter-used. Used to
20 provide characteristics associated with a product.
21 The maximum length is 2, that the data is alpha

1 numeric, and the conformance is condition required and
2 the allowed values are 1 for test, 2 for reference, 3
3 for bulk ingredients, 4 for bulk ingredient with human
4 prescription compounding and 5 for approved drug from
5 a manufacturer exclusively for private label
6 distribution and we have a nullflavor. But this
7 typically could be used that if you had a, you know, a
8 compounding, as we mentioned it, this is going to be
9 also set-up to 4 as we mentioned, with observation as
10 com 99. This can be also set-up to 4. But this field
11 is mostly the, I mean, for the IND-exempt BA/BE study.
12 You will see that in later presentation, but I'll just
13 mention the rule here and the rule here is if pre and
14 the number, where it works, even that part, which is a
15 regional data element. If this is present, that means
16 I know this is for IND-exempt. Then the observation
17 code value 1 or 2 must be used to describe the drugs
18 in the IND-exempt BA/BE study. And the drug rule is
19 either test drug or a reference drug. And then you
20 can use nullflavor element for all of the drugs or if
21 information is not available. So this is a important

1 thing. Now, that reminds me of another rule that if
2 you have N.1.4 or N.1.3, and 1.4, which we talked
3 about which has, you know, ZZFDA_PREMKT and N.2.r.3,
4 which is IND-exempt BA/BE, if you have that then the
5 rule is the pre-ANDA number, the date occurred, must
6 be present. Right? Because you're telling me that
7 you are reporting about an IND and BA/BE, so that must
8 be present. Or if this pre-ANDA number the day after
9 is present, then we will try to check to see that --
10 that N.1.3 or N.1.4 has the ZZFDA_PREMKT and the
11 N.2.r.3 says IND-exempt CBER and this IND-exempt
12 BA/BE. So that rule will also apply to make sure that
13 we don't fall through the cracks and publish this
14 report publicly. Okay?

15 All right. Then we have another,
16 bigger field called FDA Specialized Product Category.
17 This is mostly for combination drugs. This is used to
18 provide characteristics associated with a combination
19 product, so FDA.G.k.13.r. The data length is 10. The
20 data max length is 10. The data type is alpha
21 numeric, conformance is optional, and we are using the

1 C codes. So this also helps, really helps us to
2 define this as a combination product between a drug or
3 a biologic, which is a type 6 or is it, you know, pre-
4 filled drug delivery device system, like a syringe,
5 example patch, et cetera, which is a type 2 on a
6 convenience scale, which is a type 1.

7 Giving these values actually really
8 helps our team here of the reviewers here to can
9 report it into, you know, what type of product that
10 is. You know, you just say the product, but then
11 these extra attributes actually help us to, you know,
12 to the right investigation that we need to do. So the
13 C codes again, there are C codes that way you have
14 NCIEVS, it's taken from there. And these are all the
15 values that we had used for this particular field, FDA
16 Specialized Product Category. Okay.

17 And next, submission rules. So we did
18 talk about some, I showed you the spreadsheet, but
19 this is a section in the technical specification about
20 submission rules, so I wanted to, you know, talk about
21 a few of the submission rules, what they are and what,

1 you know, how they need to be issued and complied to
2 that so that we can prove the quality of the data. So
3 submission rules is defined conditions resulting in a
4 data acknowledgement and not accepted by FAERS if not
5 met. We also have the E2B (R3) code and regional data
6 elements -- oh, before I go over the second bullet,
7 the first bullet, Conditions Resulting in Negative
8 Acknowledgement and it's not accepted, so you could
9 also have got a safety acknowledgement, God forbid,
10 and then error messages. And FDA accepted. Right?
11 Because they are warnings. So it's still a rule, but
12 that rule will be taken as a warning so that we would
13 like -- we would expect that next time, you know, the
14 submitter saw, fixes the data and submits it. Okay.

15 The E2B code and regional data element
16 and business rule. So this is mainly the same
17 documents, you will see multiple times the same
18 documents is with us for two. In this case, I have
19 not put a link here, but put a link in many other
20 places. This is a spreadsheet that I went over with
21 you. And that defines the conformance and the rules

1 for each data element. Right? If there is different
2 data elements, you know, some data does not have any
3 rules but the rules that are there are all defined in
4 the spreadsheet, and we saw that. And where will we
5 see them in that spreadsheet? The tabs that says
6 Rejection and Warning Rules. That list, the rejection
7 rules, that will result in a negative acknowledgement
8 and warning rules that will notify a warning, but
9 result in a positive acknowledgement. So when you
10 hear warning and a positive acknowledgement, you know,
11 you want to say it's positive, so I did. You know,
12 but the main core data in good quantities so that we
13 can do better review, and you know, we would request
14 that the warning rules are also looked at the by the
15 submitter and corrected in the subsequent submissions.
16 Okay.

17 And finally we have the forward
18 compatibility. I have a whole different set-up of
19 slides which will come at the end which will talk
20 about the forward compatibility. But know that
21 forward compatibility is something where if you had

1 something you would move to a forward compatibility,
2 so which means we have today post-market, which is
3 submit in an (R2) format, yes. We follow that to
4 (R3). So pre-market, we don't have (R2) format.
5 Okay. So there is nothing to follow up there for
6 forward compatibility because we go to (R3). Because
7 as we said, we are directly jumping into (R3). So
8 with that, you will find those forward compatibility
9 rules are not applicable to pre-market safety reports.
10 If we ever use (R2) first that we had ultimately
11 planned, yes. We will have had forward compatibility
12 for pre-market safety report, but now we are not. So
13 we are straight jumping to (R3) so there is nothing to
14 talk about forward with the pre-market, only the post-
15 market.

16 So the forward compatibility rules list
17 the data elements and the rules to be applied, so if
18 you have X and now, that field is now Y and one of the
19 rules from (R2) to (R3), in (R2) it X and (R3) it was
20 Y. Right?

21 And of course, please do not forget

1 about that Appendix B, the ICH Guide, about forward
2 and backward compatibility, should be there for the
3 data elements and sources for ICH. So you still have
4 to look at that. The one forward compatibility that
5 we are talking about are for regional elements only.
6 Okay. So we will go over some of those elements in
7 later slides.

8 So with that, I think we are almost
9 time at 11:44, so we will now go into a lunch break
10 and come back at 12:30 and go over the next few
11 topics. So I think I am probably doing good at
12 timing.

13 So if you have any questions, please do
14 submit your questions through Q&A. We have somebody
15 here monitoring those questions. And with that, we
16 will take a break, 11:45 and we will be back at 12:30.
17 Thank you.

18 (Off the record.)

19 MR. DE: All right. Welcome back. We
20 are 12:31 and so we're back from our break. And with
21 the outline we now have completed talked about

1 background from key items on the regional
2 implementation of (R3). We talked about submission
3 methods and mechanisms. Then right before this lunch
4 break, we did talk about the implementation package
5 and as I said, there was some questions that we had on
6 the spreadsheet and I opened the spreadsheet for you
7 all to see what the spreadsheet looks like, what the
8 contents of the spreadsheet and the tabs that we have
9 on the spreadsheet, which is the core regional and
10 core and regional data elements.

11 We talked about some of the common
12 regional extensions, which some were pre and post and
13 some were for post market. And then now, we will talk
14 about some of the very specific post-market safety
15 reporting extensions, what they are, and we will first
16 start with the transmission identification identifier
17 -- identification.

18 So again, you have seen this table
19 previously. We have talked about in 1.4 and N.2.r.3
20 and I am going over this again and again, reason
21 being, this particular, you know, this particular

1 sections on this particular data elements have to be
2 in line with the AS2 headers, because without that,
3 the files will get rejected. And so in this
4 particular table I have highlighted all post-market,
5 because we are talking about the post-market facts and
6 business rules, and here you have the AS2 header as
7 CDER and then you have the XML files, which is FAERS,
8 and for the login ID, you have FDAFAERS and 1.4 will
9 be ZZFDA and into (R3) will be CDER. So again, very
10 important to note this down.

11 All right. So going into some of the
12 specific elements we have for the post marketing, we
13 have a data element which we added as a regional
14 extension. This element is under the reaction and
15 event. That's it, so reaction and event as reporter,
16 and the theming is called required intervention. So
17 it's FDA.E.i.3.h.2. Most of this type of data, this
18 data element value is used for medication errors,
19 because there was some required intervention, and this
20 is a Boolean data type. It does look and feel very
21 similar to the Boolean fields that we have for the

1 seriousness "criterias", like death, life threatening,
2 hospitalized and so on. So you will have the
3 conformance as required for this element. The values
4 are alone are either true or no information, NI. So
5 if you don't have any information for that case, for
6 the required intervention, you can submit as NI. And
7 for pre-market safety reports, this element will
8 almost always be submitted as NI. You have other data
9 elements to talk about the seriousness. So, this is
10 the required intervention data element. Okay.

11 Next, we have device information. So
12 that alone we have device information. And this could
13 be repeated as necessary. This section start with
14 FDA.G.k.12.r and you have other elements. So the
15 first element is identifying if there was a
16 malfunction or not. If it was a combination product,
17 that element is way ahead of which we have talked
18 about. But now you say it's a combination product,
19 now you're talking about the device information to say
20 first is it a malfunction or not. So the observation
21 code value is a C code. It's a true or a false and it

1 is conditional required. Why is it conditional
2 required? If you have the local criteria report type
3 as 5, which is a 30-day, and malfunction is -- then
4 malfunction must be true for at least one suspect
5 product. So that is a rule conditional requirement
6 for this.

7 So next is a follow up, make a follow
8 up for this. So we have this data element,
9 observation code again is a C code, taken from ENCEVS.
10 This is an optional data field. This is to audit that
11 we have used data. That's not a business rule, it's
12 just an optional field. There's no true business
13 rules here. Just listed the right there.

14 All right. Device problem code. This
15 is an important field. The observation code is
16 C54451, and there's a link there. This link takes
17 actually takes you to all the device problem codes
18 that you can mention, and this could be IND RF code or
19 the FDA code, so you can submit any of those codes and
20 we will take it. And this is required if malfunction
21 is true. Okay. This is a business rule. And we will

1 only validate the format, one or more codes can be
2 provided. But it's free text field, so you can have
3 one or more codes.

4 Then we have the device by name. It's
5 a free text. If you don't have it, give a nullflavor,
6 NI. It's conditional required. Again, it is set-up
7 because if combination product report indicator is
8 true, that means you're saying it's a combination
9 product report. Then enter the device brand name and
10 the common device name. It will -- can be null;
11 however, if both are null a value of device product
12 code is required. Okay.

13 Common Device Name. Again, free text
14 field, alpha numeric, and if we don't have this you
15 can submit an NI. Again, this is a conditional
16 required field. The business rule the same as the
17 device brand name where we say that if the combination
18 product report indicator is true, that means this is a
19 report about a combination product, then you need to
20 provide the device brand name and the common device
21 name. If either is not available, then you would

1 provide the device product code.

2 Okay. Next slide. The Device Product
3 Code. To begin, that is available it is a 10-alpha
4 numeric, it's available on that link, all the device
5 product codes. Again, conditional required. If put
6 device brand name, the common device name are blank
7 for now. Okay. NI. Then the value for the device
8 code is required. You have a listing of the devices.
9 So, you have three fields basically to identify what
10 the device is. Then every time it's all about the
11 manufacturer of the device, next two fields, so the
12 device manufacturer name, the device manufacturer
13 address, city, state, country. And so these are all
14 actually optional fields, country of use, ISO alpha
15 numeric. You can also use EU, to put there. So as I
16 said, if you read the country field, you can use EU.

17 Device Usage, okay, this is an
18 observation code of C54595 and EVS and ENCEVS scored
19 the value of 1 to 1.3. It's an optional data element.
20 Device lot number, txt, that's an optional element.
21 And with that, those are all specific data elements

1 that we have for post-market safety report.

2 So with that, I would like to invite
3 Veronica, who is going to come and talk about IND
4 Safety Report. I guess the October is waiting to hear
5 back.

6 DR. PEI: Thank you, Suranjan.

7 So good afternoon everybody. So we're
8 going to spend the next few minutes talking about the
9 reporting of IND Safety Reports to the FDA using the
10 E2B (R3) standards. And we're going to go through
11 some case scenarios. So next slides.

12 So this is a brief overview, sort of
13 compares the current process the new process. And
14 what you can see here is that in the existing process,
15 sponsors of clinical trials are required to submit IND
16 Safety Reports as per 21 CFR. And in the current
17 process, the sponsor would submit these in PDF format
18 in the eCTD, which results in inefficient and labor-
19 intensive reviews. It doesn't really allow the use of
20 tools for data visualization and analytic tools for
21 review. And there's really also no universal tracking

1 system.

2 However, in the new process, the
3 sponsor will now submit safety reports following the
4 ICH E2B format to FAERS. And this will allow the use
5 of visualization and analytic tools for review and
6 tracking because the data will be structured and
7 actionable. FDA will also leverage existing processes
8 in use for use in post-market safety reporting, such
9 as the ICH E2B data standards and FDA Gateway. So
10 implementation of this new process will comply with
11 existing federal regulations as outlined in the 21 CFR
12 312.32.

13 So in order to implement the Electronic
14 IND Safety Reporting process, change in format is
15 required under 745a. Sponsors of commercial INDs must
16 now submit specified IND Safety Reports to FAERS by
17 one of the two listed methods. As you can see here,
18 the first method is through the Electronic Submission
19 Gateway. The second method is through the Safety
20 Reporting Portal. This change will be effective 24
21 months after publication of the final guidance, and

1 after the effective date, FDA will only accept IND
2 Safety Reports in the electronic format.

3 So the tentative goal is to begin
4 voluntary submission by the end of this June. FDA
5 will publish the date on FAERS Electronic Submission
6 webpage 30-days prior to the start of the voluntary
7 submission.

8 So this is a snapshot of the FAERS
9 webpage and in preparation for the electronic
10 submission of the electronic safety reports in the ICH
11 E2B (R3) format, FDA has posted a number of relevant
12 documents on this website. And the link is provided
13 on the bottom of the slide, as you can see here. And
14 there's a number of resources listed. Additionally,
15 FDA will conduct remote meetings, such as the one that
16 you're attending today, and share communication with
17 stakeholders, such as DIA, to discuss technical
18 specification, implementation and testing plans.

19 Next slide, please. So as, I'm sure
20 you're familiar with the slide, because Suranjan
21 presented this earlier, this is just a reminder, this

1 table highlights the attribute values that must be
2 used when submitting CDER and CBER IND ICSRs. So the
3 AS2 header and the routing IDs define the Gateway
4 folder where the XML files will be routed to. And
5 when FAERS imports the XML files from the Gateway
6 folder, it will identify and verify the values of
7 N.1.4 and N.2.r.3, as per the values shown in this
8 table. And if those values do not align, your
9 submission will not be accepted, and you will receive
10 a negative acknowledgement. So in that case, a
11 resubmission with the corrected AS2 header or routing
12 ID will be required.

13 So not all IND Safety Reports will go
14 to FAERS, and you can see from this table, it outlines
15 where to submit different types of IND Safety Reports.
16 The top three rows shows the three types of IND Safety
17 Reports that must be submitted through FAERS. And
18 these are typically the ones that include the
19 individual ICSRs with narrative reports. The bottom
20 three includes findings from other studies, findings
21 from animals or invitro testing, as well as reports of

1 increased rate of occurrence of SAEs. Those should
2 continue to be submitted in the eCTD format.

3 So how would this new process benefit
4 the sponsors? There are some huge potential time
5 savings for the sponsors, and we've tried to list them
6 here. So first, you will no longer need to submit
7 1571 and a cover letter when submitting
8 electronically. You will not need to submit the same
9 safety reports for crossed-reported INDs separately,
10 because now we have a mechanism that allows you to do
11 that. You will also receive an immediate
12 acknowledgement if your report is accepted or if there
13 are errors which you need to, then resubmit the
14 report.

15 Other potential benefits include
16 submitting ICSRs directly from your safety database
17 and eliminates the need to route ICSRs to your
18 regulatory affairs division and thus saving time,
19 effort, and money.

20 Okay. So in the next couple slides,
21 we're going to talk about a few different example

1 scenarios to illustrate how you would submit IND
2 safety reports in the pre-market space. So in the
3 first scenario, we're just talking about very simple,
4 submitting a safety report to a primary IND. So I
5 want to draw your attention to this new data element
6 called "IND number where the AE occurred." And this
7 is to capture the primary IND number and it's a new
8 regional extension. Now the max length of the field
9 is 10 and the data type is numeric. And the
10 conformance and business rules for this element are
11 described on this slide. But the bottom line is that
12 the data field is required when you're submitting an
13 IND Safety Report.

14 So in the second scenario, you're
15 submitting a ICSR with a cross-records IND. So in
16 this case, you're going to need to include the cross-
17 referenced IND number in the data element called "IND
18 number of cross reported INDs." And note that this
19 data element can accommodate more than one cross-
20 referenced IND numbers and the business rules and the
21 conformance for this data element is also listed on

1 this slide, so I'm not going to read through them.

2 In the third scenario, we'll talk about
3 reporting from aggregate analysis from several ICSRs.
4 So there's a couple of elements that are important
5 here. The first one you'll notice is that you need to
6 submit the aggregate analysis header, it's only unique
7 safety report identifier. And this is submitted as
8 data element C.1.1. Now, you will also need to
9 include a parent IND and you will submit that under
10 the data element FDA.C.5.5a, and the D1 value must be
11 denoted as aggregate. And finally, you're also going
12 to need to include all the ICSRs that makeup the
13 aggregate analysis, and that must be reported using
14 the data elements C.1.10.r.

15 So in this scenario, the sponsor is
16 investigating drug A versus an approved drug B. So
17 you know that for suspect drug A, you will use the
18 company code, the established name or the proprietary
19 medicinal product name under the element ID G.k.2.2.
20 Now, for drug B, you will report the proprietary
21 medicinal product name along with the active drug

1 substance name. If the proprietary name is not
2 available, then you must at least submit the active
3 substance name. And it's important to note to
4 distinguish between the company code versus the
5 proprietary medicinal name.

6 Now, in this scenario, you have a two
7 arms trial. Both drugs are approved. However, you're
8 conducting a trial where the approved drug A is being
9 studied to support a new indication. So here you'll
10 note that you need to submit two reports to FAERS, if
11 report meeting IND and post-market safety reporting
12 requirements. You need to submit one under the IND
13 and one in the post-market.

14 Next slides. So here we're going to
15 discuss reporting of causality for IND Safety Reports,
16 and this slide outlines the data elements that's
17 needed for recording of causality information. So you
18 can see here that you will need to include a source of
19 the assessment, the method of assessment and the
20 result of assessment, and the business rules are also
21 listed here.

1 So I want to highlight a couple other
2 IND regional requirements. The first one is that you
3 need to include the study name, and this is where you
4 would submit the study ID along with the abbreviated
5 trial name. The study ID should be the same value
6 used in the study tagging file format of the eCTD
7 submission.

8 For an aggregate report, the study type
9 where the reaction observed here must be -- the value
10 must be 1, which indicates clinical trial. So this is
11 the other element that I want you to be aware of, is
12 the study type where the reaction occurred. You must
13 also submit this information.

14 Next slide. So another one is the
15 element date of death. Now, if your -- the element
16 death, which is in the EI.3.2a, if that value is true,
17 then you're required to submit the date of death as
18 D.9.1. Okay.

19 So now we'll pass this on to Jung Lee
20 to talk about BA and BE study safety reporting for
21 generic drugs. Thank you.

1 MS. LEE: There's the next one.

2 Hi, my name is Jung Lee. I'm from the
3 Division of Clinical Safety and Surveillance in the
4 Office of Safety and Clinical Evaluation at the OGD.
5 I will be presenting on BA/BE Study Safety Reporting
6 for Generic Drugs.

7 Here are the objectives for my
8 presentation today. I'll be briefly covering the
9 generic drug pharmacovigilance overview and
10 bioavailability and bioequivalence study safety and
11 reporting requirements and processes, and will focus
12 on electronic pre-market safety reports from BA/BE
13 studies.

14 The key characteristic of generic drug
15 pharmacovigilance is that it is a collaborative
16 process. We work with the colleagues at CDRH to
17 handle safety issues regarding generic drug regarding
18 combination products. And we engage with different
19 offices within CDER, as listed on this slide, as well
20 as internally within the OGD to address various
21 generic product safety issues.

1 Not only is it across the centers, and
2 the offices, the next slide, but the generic drug
3 pharmacovigilance covers the entire life cycle of the
4 generic drugs. In the pre-market phase, the safety
5 issues observed during the BA/BE studies conducted
6 under IND application, referred as Bio-IND studies, as
7 well as the safety reports from BA/BE studies, not
8 conducted under an IND, referred as IND-exempt BA/BE
9 studies, are reviewed. And they inform the safety
10 variation of the abbreviated new drug application
11 (ANDA) safety issues, which in turn support post-
12 market safety review, surveillance, and
13 pharmacovigilance efforts for generic drugs.

14 Next Slide. The safety reporting
15 requirements are different for BA/BE studies conducted
16 under an IND and those not conducted under an IND.
17 Those under an IND must meet the safety reporting
18 requirements under 21 CFR 320.31 and 312.32. Under
19 these requirements, sponsors are required to submit
20 IND safety reports for events that are serious,
21 unexpected and suspected adverse reactions referred as

1 SUSAR(s). These regulations require reporting of
2 individual case safety reports and aggregate reports.

3 The BA/BE study not conducted under an
4 IND must meet IND-exemption under 21 CFR 320.31.

5 These studies are required to meet safety reporting
6 requirements under 21 CFR 320.31(d)(3), which require
7 reporting of any serious adverse events [SAEs] during
8 the conduct of the BA/BE study, regardless of whether
9 the event is considered drug related or not in an
10 expedited manner.

11 This slide compares the current pre-
12 and post-market safety report submissions and review
13 processes for generic drugs. Pre-market safety
14 reports are also separated by Bio-IND and IND-exempt
15 BA/BE safety reports. This is a busy slide and what I
16 want to emphasize here is that the generic drug pre-
17 market safety reports are both still submitted on Form
18 FDA 3500A in PDF formats. The Bio-IND safety reports
19 are required to be submitted via eCTD and IND-exempt
20 BA/BE safety reports are sent to the OGD's inbox by
21 email, which are then entered into a tracking system

1 manually and the linkage between initial and follow
2 reports are also done manually.

3 And these pre-market processes contrast
4 with that of post-market safety reports that are
5 submitted to FAERS database in E2B format via
6 Electronic Submission Gateway through database-to-
7 database [D2D] transmission or via Safety Reporting
8 Portal. The good news is that FAERS II new
9 enhancements will bring the opportunities for
10 electronic submission of adverse events from pre-
11 market BA/BE studies for generic drugs.

12 The IND safety reporting requirements
13 under 745A(a) of the Food, Drug, and Cosmetic Act has
14 already been covered by Veronica. I'm going to just
15 recap the highlights here. So according to this draft
16 guidance for industry, published in 2019, sponsors of
17 commercial INDs have two options in meeting the
18 electronic submission requirements. One is through
19 Electronic Submission Gateway, via D2D transmission,
20 and the other is through the Safety Reporting Portal.
21 Sponsors can begin voluntary submission in E2B (R3)

1 format. The FAERS website will. And the requirements
2 for the electronic submission will begin 24-months
3 after final guidance is published. And what I'd like
4 to point out here is that Bio-IND safety reports must
5 meet the electronic ICSR reporting requirements under
6 745A(a).

7 As mentioned earlier, the IND-exempt
8 BA/BE safety reports are currently submitted on the
9 Form FDA 3500A to the OGD [premarket safety] mailbox.
10 This option will continue to be available in the
11 future. But once the FAERS II enhancements become
12 available, E2B format will be an acceptable form of
13 notification to the FDA of SAE(s) required under 21
14 CFR 320.31(d)(3).

15 Like post-market and IND pre-market
16 safety reports, there will be two options for
17 submitting ICSR's from IND-exempt BA/BE safety reports
18 in E2B(R3) format. One will be via the Electronic
19 Submission Gateway in D2D transmission, which will be
20 the focus of the rest of my presentation. And the
21 other will be via the Safety Reporting Portal.

1 If a company or person or CRO
2 conducting IND-exempt BA/BE studies chooses to use the
3 electronic submission option to notify FDA, we'd like
4 to recommend the following: First of all, to
5 understand the requirements. These are clearly stated
6 in the FDA Regional Implementation Guide for E2B(R3),
7 electronic transmission of ICSRs for Drug and
8 Biological Products, also known as a Technical
9 Specification Document. Also, note that OGD has
10 published a draft Guidance for Industry Electronic
11 Submissions of Expedited Safety Reports from IND-
12 exempt BA/BE Studies to support this process. I have
13 also listed additional resources and hope you find
14 them helpful.

15 The next step in this process is to
16 prepare your IT system for E2B (R3) submission -- next
17 slide -- by learning about the specifications for
18 preparing and submitting electronic submissions of
19 ICSRs. If you do not already have a FAERS account,
20 please create one. Here's the contact information for
21 creating an account with FAERS electronic submission

1 coordinator.

2 The next thing to remember is to obtain
3 a pre-assigned ANDA number, which is refer as a pre-
4 ANDA number. This number can be requested via CDER
5 NextGen Portal. Instead of waiting until an SAE is
6 observed, it will be ideal to have this pre-ANDA
7 number ready prior to submitting an SAE report or even
8 before recruiting for BA/BE studies.

9 Now that you have your system ready,
10 all the information you need and ready to submit your
11 safety report, at this point, I can't emphasize enough
12 the importance of correctly identifying ICSRs from
13 IND-exempt BA/BE studies, first of all, by complying
14 with the business rules for submission path. You're
15 familiar with this table today, I'm sure. There are
16 FDA defined header attributes and routing IDs specific
17 for CDER pre-market ICSRs. Please use the information
18 on this table to specify the submission paths for
19 IND-exempt and BA/BE safety reports.

20 In addition, please be sure to include
21 message receiver identifier with a value of CDER IND

1 EXEMPT BA BE, and the batch receiver identifier with
2 the value ZZFDA_PREMKT within your ICSR. And please
3 remember that these business rules are created to
4 differentiate between pre- and post-market ICSRs and
5 to ensure pre-market reports are not published
6 publicly and to make IND-exempt BA/BE safety reports
7 available for the OGD reviewers.

8 In addition to complying with the
9 submission path business rules, please indicate Type
10 of Report data element C.1.3 as 2 to indicate that
11 this is a Report from Study.

12 Lastly, please be sure to include pre-
13 ANDA number in your submission in FDA C.5.5b. This is
14 an FDA regional data element with maximum lengths of
15 10 and a numeric data type with the conformance rule
16 of conditional required. Meaning that if the type of
17 report is 2, indicating this is a report from a study
18 and the message receiver identifier is CDER IND EXEMPT
19 BA BE, then this Pre-ANDA Number Where AE Occurred
20 becomes a required data element, according to the
21 business rule. And also, please remember that this

1 pre-ANDA number must be a valid one for processing and
2 routing.

3 In addition to correctly identifying
4 and routing the ICSRs, it is also important to
5 identify drugs the subject was exposed to. In E2B
6 (R3) ICH data element G.k.2.2 titled Medicinal product
7 Name as Reported by the Primary Source will be used to
8 report the proprietary name of the product. And ICH
9 data element G.k.2.3.r.1 will be used to report drug
10 substance name. If there's no proprietary name,
11 please report only drug substance name.

12 And it is also important to
13 characterize the role of a drug in the data element
14 G.k.1. You can select the values for the role of the
15 drug: 1 for the suspect, 2 for concomitant and 3 for
16 interacting drug. You'll also have the element value
17 of 4 to indicate Drug not administered. Occasionally,
18 this situation is observed in the IND-exempt BA/BE
19 studies where the subject experienced serious adverse
20 event without being exposed to a study drug. For
21 example, if the subject was signed the consent form

1 for an IND-exempt bioequivalence study, has an
2 accident and was hospitalized even before the study
3 drug was administered, because of the outcome of
4 hospitalization, that accident would constitute a
5 serious adverse event that must be reported to the
6 FDA. And this would be the case that where Drug not
7 administered value can be used.

8 There's an FDA regional data element
9 titled, FDA Additional Information on Drug. This is a
10 data element with maximum length of 2 and a numeric
11 type data with conformance rule of conditional
12 required. So if FDA C.5.5b includes the Pre-ANDA
13 number, any drug exposure is required to have at least
14 one of these data elements listed in this table. 1
15 for test, 2 for reference, and NA for all other drugs
16 or if information is not available. This data element
17 is unique to the OGD and an important one for us to
18 understand the correct drug exposure in reviewing the
19 pre-market safety reports.

20 In this presentation, I have
21 highlighted some data elements required to

1 successfully submit the IND-exempt BA/BE study safety
2 reports. However, as you have heard earlier today,
3 there are a lot of other data elements necessary to
4 make up a successful electronic pre-market submission.
5 So I highly recommend referring to Technical
6 Specification Document for more information on other
7 ICH and regional E2B data elements.

8 To support this transition sample xml
9 files are made available at the FAERS website. Please
10 feel free to take a look and let us know if you have
11 any questions. Finally, please review
12 acknowledgements and notifications as you start
13 submitting the electronic pre-market safety reports.
14 These will indicate status of submission whether the
15 submissions are accepted or rejected. And in case of
16 rejection, the reason for rejection after submission.
17 Again, the FAERS electronic submission coordinator is
18 available to help with any issues.

19 I would like to end this presentation
20 with encouragement to the companies considering
21 voluntarily electronic submission of IND-exempt BA/BE

1 safety reports by reviewing the advantages listed in
2 this slide. First of all, the pre-market safety
3 reports will not be in the public space. FAERS II
4 will use specific data elements to identify pre-market
5 safety reports and sequester them from post-market
6 reports that are available in the public portal. And
7 secondly, for efficiency purposes. If not all, most
8 of the pharmaceutical companies with approved products
9 already have a pharmacovigilance system in place. And
10 if you are here listening to our presentation, the
11 chances are very high your company already has IT
12 systems that support E2B submission of post-market
13 safety reports to FAERS. IND and Bio-IND pre-market
14 safety reports will be required in electronic format.
15 It just makes sense for efficiency purpose to have all
16 safety data in one submission method, including IND-
17 exempt BA/BE safety reports, with the added benefit of
18 automated confirmation of receipt.

19 Another advantage of submitting IND-
20 exempt BA/BE safety reports in electronic format is
21 supporting generic drug pharmacovigilance. This

1 transition will improve generic drug safety, signal
2 detection and enhanced data management and analytics
3 both in your own drug safety system, as well as the
4 regulatory environment at FDA.

5 So with this, I would like to end the
6 presentation with acknowledgement to my division
7 management as well as Suranjan. Thank you for joining
8 us and looking forward to engaging with you during the
9 Q&A session.

10 And now, I'll give the podium back to
11 Suranjan. Thank you.

12 MR. DE: All right. Thank you, Jung.

13 Okay. So with that, we will get into
14 the next area of the presentation, which will be the
15 validation and implementation.

16 So when we talk about validation, what
17 we're talking about here is how do you validate your
18 XML file that you have generated. How do you test
19 that, how do you make sure that the files are good and
20 will be accepted. So during once, maybe if, you
21 generated your first XML file, you need to be (R3),

1 which includes the FDA's regional extension, now you
2 want to test that. So how would we do all that and so
3 we go into some of the specifics as to how this can be
4 done.

5 So the mechanism provided into the
6 (R3), so every rule provided a mechanism for industry
7 to validate the regional E2B (R3) XML files. The
8 mechanism can be used and will be available to -- can
9 be used to pre-validate prior to production submission
10 and it will be available to everyone through a public
11 URL. The URL will be posted on the FAERS Electronic
12 Submission webpage. You can, and I will show you in
13 the next screen, as to how that validator looks like.
14 But the validator is somewhere where you can upload a
15 file and say validate and test the file. But when you
16 uploading the file these files are not stored with us.
17 It's for temporary validation and it will tell you all
18 the issues that the file has, or it will say that the
19 XML is valid, which means, you know, when you submit
20 through the Gateway, the data will -- and the file
21 will be accepted. Okay?

1 So in order to do that basic
2 validation, let's see how the validator screen
3 typically will kind of look like. So here is the
4 mechanism for to validate E2B (R), either E2B file.
5 So if you look here, that on the screen there is a
6 browse button. When we link, that will be provided on
7 the Electronic Submission page. When you click on
8 that link updates will open up which will say E2B
9 Validator. You can browse and pick the XML file that
10 you want to test and show your source, which will say
11 FDA_R3, which means we are using the (R3), you know,
12 we are sending to the (R3) structure that you have
13 picked. And with regional elements of (R3). The XML
14 file is shown here, what the file is. And then,
15 basically, you have -- you will have a button which
16 will say validate. And you probably will not have the
17 converter XML, because that too actually have -- can
18 also convert and (R2) to an (R3). We will have not be
19 providing that. We just providing to validate your
20 (R3). So you'll have a validate button and as soon as
21 you click on the validate button, you will see the

1 list of issues that the XML file has and it's in the
2 screen you see here at the bottom, it displays the
3 list of issues that that file have. If there were no
4 issues, it will say it's a valid XML and -- and then
5 you are good to go to submit this.

6 Now, again, remember that when you're
7 using this validator, this validator is something that
8 you will use just for a temporary period of time. I
9 mean, we don't want you to before every submission,
10 production submission, you are going to the validator
11 and validating it. Because you might have so many
12 submissions and this validator can only validate one
13 XML at a time. Right? So the idea here is that when
14 you are doing your validation, any issues that are
15 identified, you will probably go back and fix that in
16 your safety database so that this issue doesn't happen
17 for the ICSR you just validated and for any future
18 ICSRs that you will generate from there. So this
19 validator is more than way of checking everything is
20 good, so that you have a process running and you
21 probably don't have to come to this validator anymore.

1 So this validator will be more used through kind of a
2 first-time thing. But once you've corrected
3 everything, you probably don't have to come to this
4 validator anymore.

5 So then to this will actually give, you
6 know, a way for you to test, rather than emailing us
7 and depending on FDA to respond back every time, this
8 validator will really help you to expedite your
9 validation. Okay?

10 Now, with this validator, the next
11 thing is we go into what some of the implementation
12 plans are and where we are. Right? We have list of
13 regional specifications, there are certain things that
14 we have here. We published a regional specification.
15 We published on April 2022, and the link below here
16 kind of give you whether it's published. We also have
17 some updates in August of 2022, I believe, and then we
18 had some updates in January, I think, again. Because
19 as we are implementing, especially that spreadsheet of
20 those core and regional elements have been updated.
21 But we are almost there, I mean, there is no major

1 changes to those. There's one or two business rules,
2 you know, but the data elements are still the same,
3 the active rules are still the same, there's no
4 changes to that.

5 Any progress, what we have is to
6 investments, so we are enhancing both of the tools
7 that we have, which is the LSMB Tool and the Audit
8 Subject Tool to include regional extensions so that
9 each of these tools is used for, which is to and
10 from -- which is used for case processing that we do.
11 And then, we have the Audit Subject Tool, which is
12 used for data analytics and several -- and because of
13 (R3) elements, they all have to be -- and regional
14 elements, they all have to be enhanced and updated.
15 And also downstream system enhancements because we
16 also have some downstream systems this data goes to
17 that also need to be enhanced. So that role is now in
18 progress. The Gateway is set-up. I think we have
19 completed that for pre-production environments set-up
20 up for routing ID. And set-up up has been completed
21 for inbound and outbound folder, so the set-up up for

1 ESG is completed. We are now, we have yet to start
2 the system testing because I think that just only may
3 have started because we just got release from the
4 tool, release back from the tool vendor, so we starting
5 the testing, probably not as much as deployed and it
6 fixes our issues and identifies what issues need to be
7 fixed, so that system testing, so that's basically
8 will be happening. It started to happen, and it was a
9 continuous process so as we find issues we will go
10 back and forth with the vendor to make sure that the
11 issues are fixed. Then we want to do some pure
12 industrial testing, which is just with a few companies
13 we want to do in this, just that we cannot do more
14 than eight or nine. We have identified a few, we have
15 got some responses from a few. We will be just
16 testing with them, but again, I said that the
17 violation tool, which we saw in the -- in the previous
18 slide will be available very soon. I believe that
19 testing is going on for the validation code right now,
20 so that will be available. You can do as much testing
21 as you want, even though, you know, you have not been

1 invited to do specific testing. But you can do as
2 much as -- testing as you want. And we will test both
3 pre and post-market ICSRs for these, some companies
4 with the viable Gateway. You know, testing like times
5 will be late summer, some time in probably
6 July/August, and we'll have also a second round of
7 testing sometime in October if any issues show up and
8 test the E2B validator so as we showed the previous
9 thing that you do validator, you can test there as
10 much as you want in that validator. There is no, you
11 know, there's no limit to that. You can test as many
12 -- as many times as you want.

13 At the end of the day, we will be
14 basically, especially for those specifications for
15 testing, we will be providing like S progress and all
16 that. But for everybody else, you know, again, I
17 repeat that the E2B validator will be available, and
18 you can go and test that. Because I think the first
19 step will be to make sure that XML file is correct and
20 it's a valid XML file. So that will take some steps
21 to be done.

1 Gateway testing, it's the same gateway
2 testing, except that, you know, you have to route it
3 to a different location. You know, if you want to
4 send something that you are not ready, you have looked
5 everything through the E2B validator, your XML file is
6 approved, everything is set-up, now it's just -- you
7 want to just test the acknowledgements, just let us
8 know to faersesub@fda.hhs.gov and we will work with
9 you to, you know, get some of those XML files that you
10 can submit through a pre-production on test gateway
11 and have acknowledgements. Because you should already
12 get acknowledgements once you start submitting through
13 the pre-production of the test gateway.

14 And public communication, we are
15 communicating by SBI Conference, we have G-Prod
16 meeting, which is happening today, we have some BI
17 conferences and our page on the Electronic Submission
18 webpage will be updated. Right now, the way you see
19 the Electronic Submission webpage for FAERS, pre-
20 market at the top, post-market is at the bottom, we're
21 going to have separate pages for E2B (R3) and then --

1 and then separate for (R2) so that, you know,
2 eventually at some point, we will break out (R2).
3 There's no date yet in regards to (R2), so we'll have
4 two separate pages so that we can redact that page
5 when we redact (R2). And we are preparing Q&As for
6 the technical specs onboarding and any inquiries, so
7 this Q&A, as you are submitting a Q&A here, and with
8 all the communication, the first that we've had, we
9 are using those questions to prepare the Q&A and we
10 will be posting that, you know, sometime as we come
11 close to the implementation date.

12 Lastly, we actually have the
13 communication go live date that will be communicate to
14 the FAERS Electronic Submission page. We don't have
15 an ETA, we just heard that, you know, we are trying to
16 get something done by end of this year for voluntary
17 submission of IND Safety Reports. But until that date
18 you get, you know, we are ready, sponsors continue to
19 submit pre-market ICSRs and post-market ICSRs in the
20 ECPD and the E2B (R2) format respectively, until FAERS
21 is ready for (R3). So please do not start submitting

1 (R3). Let us all be ready first and then you guys, you
2 all can then start submitting during the voluntary
3 period. Okay. So until then, eCTD and E2B, of pre
4 and post-market respectively.

5 Okay. All right. Next. Sponsors
6 should notify when they're ready for the first
7 production submission. Just as a courtesy so that we
8 all know that you will be submitting so that we can
9 keep an eye on it that you're first submission in
10 (R3), and we all have been done through (R2), but
11 first submission in (R3), we'll keep an eye on that.
12 And all submissions regarding, you know test --
13 regarding testing must be sent to
14 faersesub@fda.hhs.gov, with subject line asking to be
15 (R3) testing. So that, actually, that helps us that
16 you want to go through some E2B (R3) testing.

17 Now, if you look at this timeline, so I
18 can give you some points on this timeline what the
19 standard is saying. So we don't have a date. Okay.
20 We don't have a date when FDA goes live with E2B (R3)
21 and the safety reporting portal. Okay. Consider that

1 date as 00. Okay? Consider that date as 00. So from
2 the 00, to all the way up to year two, you have the
3 volume needed to submit the ICSRs in E2B (R3) format.
4 Because many companies will be preparing for E2B (R3).
5 Some companies may be ready. But during that period,
6 as you're getting ready to start submitting in E2B
7 (R3) format. Okay. Now, you get two years, so you're
8 at two cups, this is where you have mandatory ICSR
9 submission by the ESG or the SRP. And from that point
10 onwards, you have to go into mandatory ICSR submission
11 using E2B (R3) format or by SRP. So this is how
12 the -- would work. Now, when is it 00, when is the
13 00, as we said? End of this year. We are trying to
14 make that 00, but please don't hold that to us. We're
15 trying our best with all the condenses that we have
16 that, as I said, if we will notify 30-days before when
17 FDA is basically ready to accept E2B (R3). 30-days
18 prior to when we can become ready, yes.

19 Now, a few suggestions or
20 recommendations here for all of you. It's during the
21 voluntary submission period, for pre-market ICSRs.

1 Okay. And I'm talking about pre-market ICSRs, you
2 literally can use the Safety Reporting Portal for
3 submission, if you can. Because what it will give you
4 is if you go to the Safety Reporting Portal, we'll get
5 you an account, you can then enter your own safety
6 report ID on what we call is a Manufacturer Control
7 Number or MCN. You can use your own safety report ID.
8 The advantage that it gives you is that you don't have
9 to now submit 1571 or the cover letter and it
10 eliminates sending the report to your company's area
11 prefix. Right? Is not mandated. Let me repeat, it
12 is not mandated. Because you have an advantage and we
13 also have an advantage that the report is only
14 electronic because if at that time you're submitting
15 through the SRP during that voluntary submission
16 period until you are ready, with E2B (R3), but it's a
17 web-based form, we'll have the data -- we'll have the
18 data until, you know, OCR or whatever we do. And data
19 into it and make sure things are coded and all that
20 all that. The Safety Reporting Portal, whose active
21 duties are also a win for us. Okay.

1 So that is one choice that you have.
2 You can do that. So during that year, you go into
3 year two, you can use the Safety Reporting Portal
4 until you are ready to submit through the Gateway.
5 But once you -- once ready to submit pre-market safety
6 report, you need to be (R3) format via Gateway, then
7 you notify us, and we can deactivate the SRP account.
8 And once you deactivate it, as I said at this time,
9 you cannot submit to both methods at the same time.
10 We will deactivate that account and then from that
11 point onwards you will be submitting the E2B (R3) XML
12 file through the Gateway. Okay.

13 So in your choice, you can let us know
14 and we will walk through to, you know, get you an
15 account, so. It takes again, as I said, it takes
16 about five business days, so the sooner you could do
17 the better it will be and if every company starts
18 coming like this, you know, we will have probably get
19 into some backlogs so, you know, when we notify this
20 to you and when we are ready, we'll notify this to
21 you, if you want to submit through the Safety

1 Reporting Portal, please let us know once we have
2 notified to you that we are ready so that we can
3 create your account. Okay?

4 So data submission change that may
5 happen once you move to E2B (R3) for IND Safety
6 Reports. So the change that will happen is, here's
7 what is happening. So this picture kind of shows what
8 is happening today. You have the sponsor, you submit
9 a letter up front to eCTD, it goes to our Gateway. We
10 have our re-submission database that the data goes to.
11 And then front there, we keep that and we will send it
12 back to FAERS and which means that the network has to
13 be data entered into the FAERS database. And so we
14 will have it in FAERS. So that is the process that
15 will happen before the first two years.

16 Now, once that two years is over, okay,
17 if you have done -- completed and are ready to submit
18 E2B (R3), within that -- within that two years this is
19 what will happen. So, yes, what will happen now is
20 that your sponsors will submit the E2B XML to the
21 Gateway and from that Gateway, it will still go into

1 FAERS. So which means, you don't have to submit that
2 MedWatch, just on about the MedWatch, to the eCTD and
3 won't be in on the new to submission database because
4 it's already going into FAERS, like all the post-
5 market reports. And eliminate a step, be save a step
6 in FDA to not take that MedWatch and enter it into
7 FAERS. Right? Because the XML has already come and
8 the XML sending to the Gateway will send you an
9 acknowledgement back to your safety data -- an
10 acknowledgement back which will be in your safety
11 database and two acknowledgements will go there so
12 that is a record for you that we have submitted the
13 (R3) safety reports to at the end. So this will be
14 the process that -- the change that will happen when
15 you move fully into submitting IND Safety Reports
16 using E2B. Okay?

17 So now, going into rejections and
18 warnings. I want to focus little bit on the
19 rejections and warnings because rejection and warning,
20 that's very important that things will get anywhere
21 rejected and you will all want to be aware of that.

1 So our saying is we recommend, do not include greater
2 that hundred ICSRs in a single batch. It really helps
3 us, and it really helps us in -- it probably helps you
4 all too. Maybe the file, because it doesn't create a
5 huge, large file. It's also easy in transmission,
6 smaller files. It's easy to parse and load into our
7 FAERS database and then soon I'll be able to send
8 acknowledgements, you know, sooner, quicker, faster
9 than having large batches. So if you have, let's say
10 300 ICSRs to be sent, you know, send three batches
11 each with 100 ICSRs. And that will also be processing
12 much faster. Also, ICSRs in a single batch must have
13 the same sender. So the sender information that you
14 have, the batch that you have for sender, the sender,
15 what do you call, the batch -- the sender identifiers,
16 it must be the same in a single batch. Right? You
17 cannot -- please do not use different sender
18 identifiers in one batch. Right? So one batch would
19 have 100 ICSRs and they can be from the same sender.

20 All the ISCR batch must be for a common
21 receiver. What do we mean by this? That means

1 batching all post-market ICSRs together. Okay. Or
2 all of them -- and I'll give an example, all pre-
3 market receiver together. All right. So do not put
4 pre and post-market in one batch and send it to us.
5 Right? Because, like I said, very important that data
6 does not go public. So that's why submitting it out
7 will always make it easy for us to catch that and be
8 put into different buckets, so they are not published
9 publicly. So do not mix pre-market ICSRs for CDER
10 with CBER, or pre-market ICSRs with post-market ICSRs
11 in the same batch. Okay?

12 Again, I have this data table here.
13 Right? A very important table. So follow this table
14 and submit your batches, also.

15 All ICSRs must be coded in the latest
16 version of MedDRA, you understand that. Another
17 important area to note on rejection is, do not send
18 initial and follow-up reports in the same batch. If
19 you send initial and follow-up, it will be difficult
20 to know, and we may anticipate the follow-up as
21 initial first. So if you put it in separate batches,

1 then we know which came first, which came next. Do
2 not send follow-ups in the same case, in the same
3 batch. Right? That means you're sending that batch
4 at that point, you know, in case you have forgotten
5 about the follow-up if you were going to send that,
6 and most, I mean 98 percent of the time, I would
7 believe that, you know, when you're sending that and
8 completed the report and follow the batch, you know,
9 you should not have two follow ups in the same batch.
10 So please keep that in mind. Okay?

11 Next, do not submit modification or
12 amendment ICSRs in the initial report. If you have a
13 modification, it can't be the initial report because
14 only have the initial report we will know that you are
15 sending a modification. Right? So do not send
16 modification or an amendment. In the way we have the
17 initial report, you will not know about an amendment
18 so your amended report cannot be the initial report
19 and your modification report cannot be the initial
20 report. Okay?

21 So there are other regions where, you

1 know, specific rejection and warnings, but these are
2 many reason there are rejections that are related to
3 what ICH has said. These ones, which you will see
4 now, are specifically what FDA says. So this has --
5 was extracted from that spreadsheet, the ones which
6 are regional. Okay. That is regional extensions.

7 So back to receiver identifier, we
8 talked about that, that ICSR sent to post-market route
9 should not have a value ZZFDA. Should not have the
10 sent to -- sorry. Yeah. Back to receiver identifier,
11 which is saying that ICSR send to -- so that there has
12 come we have rejected that and we're saying that ICSRs
13 were sent to post-market route, it should be other way
14 around. So oh, they're saying to you that the ICSR
15 you send to the post-market route does not have the
16 value ZZFDA, so that's why this error shows up. The
17 next one say the ICSR sent to the pre-market route
18 does not have the value ZZFDA and is called pre-
19 market. That's why this error has shown up.

20 Then the message receiver identifier,
21 so N.2.r.2 provided is not seen SR reports and does

1 not match with N.1.3. So the N.1.3 is basically the
2 message that sender identifier, I believe. So they do
3 match, and it should be the same for all the reports.
4 They have a message receiver identifier. In this are
5 two rules that if N.1.4 is ZZFDA then N.2.r.3 is not
6 CDER. That's why the error message came and then
7 similarly, you have N.1.4 is pre-market, ZZFDA is pre-
8 market, but N.2.r.3 is not this, these values. So
9 that's where it errors have shown up.

10 Then you have type of report. If N.1.4
11 is pre-market, then you know C.1.3 must, is not 2. It
12 should be 2 clearly, you know, it says removed from
13 study. Documents held by the sender must be put here
14 as C.1.6.1 is true, we have documents that are to be
15 included and the last one here.

16 The last one I want to show on this
17 slide is that the case footprint and criteria. We
18 talked about this, we said that your initial report
19 cannot have a value of NI, because you have to say
20 does it contain criteria, true or false. The initial
21 report cannot have the value of NI.

1 Other regional -- some other data
2 points, local criteria report type. So the local
3 criteria report type, we don't know when these errors
4 will come. So you will get a error if your
5 B.S.e.1.7.1 must have the observation code value of 1
6 or 4, when in a B.S.e.1.12, which I think is
7 combination product, and C.1.7 is true. So these are
8 some of the data values that checks will happen for
9 the local criteria report value and get you a
10 rejection.

11 There are two warnings here, which is
12 identification number of the report, which is linked
13 to the report, so Veronica talked about the links
14 reports for aggregate. So should be, so C.1.10 simply
15 provided when B.1 is aggregate. Will -- not able to
16 give you a warning, but we would like it to. Correct
17 it the next time.

18 Study medical reaction. So if you have
19 C.5.4 should be 1 when B.1 is aggregate. So I think
20 there is an alternate rule saying that if you have
21 type of report is report from study, then you still

1 need to have the study type which should be 1,
2 clinical trial. So that should be there, but then we
3 are asking you to also have the patient D1 as
4 aggregate.

5 ID Number as adverse encounter, very
6 important here. It's C.5.5a must be provided when
7 C.1.3.2 is report from study and N.2.r.2 is CDER IND
8 or CBER IND. Same with the pre-ANDA number. And IND
9 number for cross-reporter IND. So if it's not
10 provided, if this particular field is not provided our
11 nullflavor is not referred to as NA. When you have
12 the IND number, the participant number there, the
13 participant number is provided. So if you don't fill
14 this field up and you don't say it's not applicable it
15 will get an error because you said it is NI, you said
16 that IND number where it wasn't even occurred is
17 there.

18 So next field we have elements is
19 patient initial. We talked about the aggregate. We
20 did talk about, oh. There's on important thing. If a
21 patient it says, D1 must have a nullflavor NA when FDA

1 C.1.12. which is, I think, this is for accommodation
2 products, is true. And FDA G.k.12.r.1 is true. That
3 means is non-function and E.i.2.1.b is report to that
4 Med Report, which is no adverse event. So which means
5 there was no adverse event, there was only
6 malfunction. It wasn't a combination product, so D.1
7 must use the nullflavor, NA. Because it was not of
8 any patient. It was a non-function that happened and
9 there is no patient involved.

10 Date of death, we talked about patient
11 race and ethnicity also. We talked about that when
12 you have, you can put it as nullflavor NA and the D.1
13 is provided as NA, some on your aggregate that means
14 there's no patient here or there's a group of patient
15 here.

16 Characterization of drug rule also we
17 did talk about. The specific rules here. Right? And
18 then we have -- and then we have FDA other
19 characterization.

20 We talked of the similar device and
21 lastly in the slide before we take a break it is about

1 some data elements that we have like the source of
2 assessment, the method of assessment. I mean, they
3 need to be provided when you have -- when you have IND
4 event, adverse event occur. Value is there and then
5 you have it's a report from study, then you have to
6 provide these values. Then we'll have the malfunction
7 flag because you're talking about the malfunction then
8 you're talking about a combination product, so you
9 need to let us know if it is true or false. We have
10 the device problem code, because if malfunction, you
11 have to let us know what these problem codes are then
12 we need to have the rules for the common device name
13 because as we talked about the rules, if we have to
14 have -- if you have a device brand name or common
15 device name, if you don't have, actually, common
16 device name or brand name you need to provide us with
17 the device product code and also the device brand name
18 and device common device name is required when it's a
19 combination product. But if you don't have it, you
20 will submit it as no information, but then give us the
21 device product code.

1 And so with that, we are at 1:45 and we
2 will take a break of 15-minutes and come back at 2:00
3 p.m. and then go into some of the areas with OIDs and
4 forward compatibility and then eventually close up
5 with Q&A. Okay? So thank you and we will join back
6 at two.

7 (Off the record.)

8 MR. DE: All right. So welcome back.

9 The next two topics are talking about
10 FDA specific object identifiers so going into the next
11 slide, which is the object identifier, let's talk
12 about -- let's just -- you know, let me talk about
13 what this is and how we have set-up this up for the
14 regional elements in FAERS.

15 So an object identifier is a sequence
16 of numbers that numerically identifies an object. And
17 the reason I'm saying this is because you will find
18 some object identifiers you may not recognize and just
19 to give you what one of these identifiers are, I think
20 it would be useful when you see the X fact what the
21 identifiers are and what values you need to send in

1 the X amount of those identifiers.

2 So each of OID corresponds to a known
3 in the product tree, in the hierarchy. So it is
4 formally defined using the International
5 Telecommunication Unions added to you for each
6 standard X.6.6.0. The rule of the tree contains the
7 following three -- you have zero that is the
8 International Telecommunication Union, you have 1,
9 which is for ISO and 2 which is joint ISO and ITU. So
10 if you look at any of these value numbers, if it like
11 starts with a 2 that means it was a tree and is a
12 joint value between ISO and ITU. These numbers are
13 written either as a string of digits separated buy
14 dots or as a list of named branches. So to give you
15 an example of MedDRA it should be of those. If
16 identified by the OID 2.16.840.1.113883.6.163. So
17 what does it mean? That means that this object
18 identifier in the Union guide could identify anyone if
19 they use this OID number. And the OID number, every
20 number has got some significance, which is that it is
21 2, starts with a 2, which means it's a joint ISO and

1 ITU. 16 identifies the country, and 14 is U.S. 1 is
2 an organization. 113883 is an HL7 standard. And then
3 you have external code system, which is 6. And then
4 you have 163 which points to MedDRA. So which means
5 that the data point it says MedDRA code was OID will
6 be 2.16.840.1.113883.6.163. That is how this has been
7 set-up up.

8 So let's go into the HL7 the UN
9 pharmaceutical base. This is a bit informal and from
10 here we went into identifying how will be identifying
11 specifically that element, that regional element and
12 define that. Right? So this is a huge complex model.
13 So in that complex model, we look for and how do we
14 define some of the regional data elements. So going
15 into the next slide, going into like the type of
16 report you see the investigation characteristics.
17 That's the class that we took, the HL7 with the CE as
18 the data type. Okay? If you look at the data type
19 for this data element, the type of it, it shows as an
20 example. We already have the type of reports. It
21 shows as an example that you have the core system,

1 which is a OID, and it is a data type which is CE, you
2 know, and the value type would be, OBS in observation
3 would be in a data type any and then the use of the C,
4 C for this instance has been used. So as I said, it's
5 an ICH report type and we just showed you the type of
6 report, C.1.3 because using that same concept we, you,
7 we created the regional data element, which is a local
8 criteria report type. So if you look at the local
9 criteria report type, the only difference is the code
10 system that we have, it says 2.16.840.1.113.883.3.989.
11 Then you have .5.1.2.1.1.1 and we'll tell you what
12 each of these actually means.

13 And so going to the next slide, we have
14 another example of study administration number and
15 we're showing, you know, what the root is and what the
16 extension is, so which is taken from the study's
17 registration class and -- and then that you'll have
18 the instance added to five, which is an extension STN
19 the UID rule that we have. This is just to give you
20 an example of and the type 2 data type that we have.

21 Now, comes the FDA point, and if you

1 look at this, you see the ICHR. So when we talk about
2 5.1.2, up to 989, we are all clear that this stands
3 out all the way up to ICH. Then we have the regional
4 specialized, which is 5. Then we have the sub-region
5 1 FDA, which is 2. And then after FDA, we have using
6 if for FAERS, which will be 1 or if it was used for
7 eCTD, it will be 2. So that is how the OID, FDA OID,
8 has been set-up up. So it goes all the way up to ICH,
9 then it has the regional specialized in sub-region and
10 then FDA. Some other region, maybe 3, some other
11 region maybe 4, some other region -- FDA region 5, so
12 that FDA which is 2 is 2 for FDA, it could be 3 for
13 some other region and 4 for some other and so on, so
14 forth. All right?

15 But if you go into the next slide.
16 Okay. So in here, now, let's look at the entire
17 thing, which goes all the way up to 5121. So you have
18 the joint ISO/ITU. You have the country, the U.S.,
19 840. Organization, which is 1, HL7 which is 113883.
20 External group uses 3, ICH 989, regional specialized
21 is 5 sub-region 1, FDA 2, FAERS 1. Now, we have a

1 data element called local criteria report type.
2 Right? So that local criteria report type is .1. So
3 at the end you'll see the .1, that's the local
4 criteria report type. So now we know that why that
5 OID is there because it's the regional feed and
6 looking at all that, we'll exactly know that this
7 local criteria report type is specific to FDA and not
8 any other group or any other region.

9 But then, they have the operator for
10 the device. So the operator for the device, if you
11 look at, it's .2. So we go through all the way.
12 Right. Now, you have the code list, which is 51 --
13 512 and FAERS is 1, then you have the code list for
14 that local criteria report type is 1 and the value in
15 that is .1. So when you go to that .1, it tells you
16 that these are the values, 1, 2, 3, 4, 5. Then you
17 have the operator of the device, which has a value of
18 1, 2, 3. How do you define that value, 1, 2, 3, that
19 we go all the way up to .2 at the end, which takes us
20 to the value. So which means 5 becomes -- so FAERS is
21 1, which is the third number from the right. And then

1 you have 1, which is in red, then .1, which means a
2 support list, and then 6, operator of the device is 3.
3 So these are the values for that, the OID values for
4 those three. When you have -- these are part codeless
5 values. Then you have names pieces. So when you have
6 a names piece, the last digit after that 1 is .2 and
7 then you have IND number where adverse event occurred.
8 So .2.1, then becomes that OID for IND number where it
9 was to have occurred. So which means the IND number
10 for this report number is 2 is joined by ISO/ITU,
11 country is 16, U.S. 840, organization is 1, 113883 is
12 the HL7 code, the external use rule is 3989, it is for
13 ICH. The regional specialized is 5, then you have
14 sub-region as 1, then you have FDA as 2, then you have
15 FAERS as 1, then you have name space as 2 and then the
16 last one is 1, which means it's for IND number
17 and -- number. So if you take that same concept, the
18 pre-ANDA number that occurred is goes that way. So
19 it's .2 at the end for that.

20 If you have an observation code, so you
21 have combination product flag. Right? Observation

1 code of true or false, then the observation code goes
2 as the ICH is 989, then you have a regional
3 specialized as 5, sub-region as 1 and FDA is 2, FAERS
4 is 1, and then .3 is for observation code. So .1 is
5 codeless, .2 is name space, .3 is observation code.
6 And now, we have a combination product fact which is
7 .3.1. We have the single use device which is .3.2,
8 and so already we will have for remedial action .3.3.
9 So that is how the FDA FAERS OIDs are being set-up up.
10 So tomorrow if you have any other new data points,
11 that is how the OIDs will be set-up up for that. So
12 that is how you will expect the OIDs to be defined and
13 to be used.

14 All right. So this is basically all
15 about FDA OIDs as the keeper of this knowledge that I
16 wanted to share so that you have an idea how FDA OIDs
17 are being utilized. Okay.

18 So with that, we are going to go into
19 the next topic which is, there's been some questions,
20 on (R2) to (R3) regional forward compatibility. So
21 what is this regional forward compatibility? So you

1 have been submitting into E2B (R2) through FAERS,
2 through the Gateway. When we move to (R3) what all
3 regional data elements that we have in (R2) that a
4 submitter needs to take care in (R3). Right? So it
5 is very important for us to know that. Now, there are
6 also forward compatibility for all of the ICH data
7 elements that needs to be also considered along with
8 the regional forward compatibility. We did not put
9 anything about the core ICH elements because they are
10 already available from ICH. We've been talking about
11 basically the regional forward compatibility and this
12 list of tables that you will see in the next few
13 slides; they are also available on the FAERS
14 Electronic Submission webpage and then they go,
15 remember what this morning -- the documentation of the
16 packages, the implementation packages that you have,
17 what document was that. Okay?

18 So the first few elements, the way this
19 forward compatibility is set-up up, the table, that
20 you have a rule, it shows you what the regional (R2)
21 field is, what the description of the field is, what

1 the (R2) values are and then it goes into what does it
2 map to the regional field (R3), the description of the
3 regional field, what the codeless values are and the
4 comment that tells you, you know, how the things need
5 to be mapped. Okay.

6 So let's take a few elements here and
7 go over these elements for forward compatibility. So
8 we have a rule, FDA01. That rule says that for
9 element A19 and (R2) element does at least fulfill
10 locale criteria for expected report. The values used
11 to be 1, 2, 4, 5, 6, 15-day, expedited, five day, 30-
12 day, seven-day. But now, what has happened is that
13 this field now in (R2) now in (R3) is a Boolean field
14 -- now that this needs to map to in (R3). In (R2)
15 this needs to map to the regional extension field
16 called local criteria report type, FDA.C.1.7.1. It
17 has those values, I think that the values are called
18 expedite, non-expedited now. But still, the value is
19 2. And we map 1, 2, 4, 5 and 6. Of course, 6 is not
20 there. Sorry. That's -- we're not doing E2B (R2) for
21 pre-market, so 6 is not there. So when I do 4 and 5

1 should be mapped to 1, 2, 4 and 5 to this new field in
2 (R3). Okay.

3 Another rule is combination product
4 flag, so it's yes, no. In (R2) it's not set-up, which
5 means empty in (R2). In (R2) it is A.1.FDA.15. In
6 (R3), it's become a Boolean field and it a regional
7 element here called combination product flag, but it's
8 two-fold. So the mapping is yes goes to true, no goes
9 to false. If it is not set-up in (R2), then use a
10 nullflavor, NA, in (R3). Okay.

11 Then study guide. So again here, you
12 have 1, 2, 3 then it goes to -- maps to the same
13 thing. Study type, here, 1, 2, 3. This is a
14 straightforward one.

15 Next one is malfunction. So
16 malfunction flag that we have in (R2) is yes, no and
17 not set-up. Like in (R3), it's true or false. Either
18 there was a malfunction or there was no malfunction.
19 For mapping yes to true and no to false. If not set-
20 up in (R2), then set-up this field value to 4 and not
21 3. Okay.

1 Then we have, you know, correction and
2 additional information response request. So we just
3 say follow up or type of follow up. That's basically
4 the field, so these are the values. We usually have
5 separate things for these fields in (R2), but in (R3)
6 we have just one field and you can mention the value,
7 I think you can repeat any of these in (R3), you can
8 repeat it and you can have these values there. So how
9 do you map it? The way you map it is if correction
10 was yes, then you send a value of 1. If additional
11 information was yes, that means you send the value of
12 2. So if correction was yes and additional
13 information was yes, then you will send the necessary
14 -- you will send correction and additional
15 information. Right? As 1 and 2.

16 Since this is a repeating entity, that
17 could be marked with values, each (R2) value as set-up
18 up as repeatable values within the (R3) entity. If
19 the value of (R2) field is null or not set-up, then
20 don't need in (R3), you know, because it's not
21 mandatory field. So but if you have a yes, if you

1 have yes for one or more of these (R2) data fields,
2 then you will send it as a repeating type. Okay.

3 So we have the next few data elements
4 where they were in (R2), they were all separate data
5 elements, which is that remedial action initiator. In
6 (R3) they become repeatable, same as the previous data
7 element that I talked about. You could have markable
8 values, each (R2) tab value is set-up up as a
9 repeatable value with (R3) and if you just -- there's
10 in no value -- if the answer is no or not set-up, you
11 know, you don't send them. But if you have a value of
12 yes, let's say, you had a recall and then you repair
13 and then recall and then replace, both of these, then
14 you will send in repeatable type in a 1 or 2 or a 1 or
15 3 and that's all you will send us in the XML.

16 Then you have, let me jump over into
17 the evaluation value. So the evaluation value is
18 interesting because we had a field called evaluation
19 value, which now we only asking for device problem
20 code. So if your evaluation value used to be 01 for
21 device problems and used to be evaluation value 01 in

1 relation to code type, should use to be 01. And then
2 you see evaluation value would be actual value of that
3 device problem code. So we have a type and a value in
4 (R2). In (R3), we just have device problem code. So
5 you copy the value of the device problem code, when
6 the (R2) tag has an evaluation type as 01, device
7 problem code. Okay?

8 And later going, this is a repeatable
9 field, so you know, you can have more than one device
10 problem code. But to keep in mind that a device
11 problem code from (R2) to (R3) is based on the
12 evaluation type of 01, which stands for device
13 problem. And the evaluation value will be the value
14 which will go in the field device problem code. So
15 since we are not asking for all other types of
16 evaluation. We are asking only for the device problem
17 code. Okay.

18 So the next few fields that we have
19 here is, we have the brand name, that's a
20 straightforward copy. We have the common device name
21 and the product code, which is a straightforward copy.

1 We have the field rule for the manufacturer names,
2 which is also straightforward copy. Device usage,
3 again, it's a straightforward copy. Device lot
4 number, again, straightforward copy. All taken off
5 the device.

6 The operator of the device used to be a
7 free text. Now, we have the values. So in (R2), map
8 (R2) value of health professional. And we used to
9 have free text, but we had, I think in (R2) we had
10 still said even though it's a free text, it's an
11 auditable list of the use of values of health
12 professional and names or patient. So in such case,
13 if you have a database for the operator of the device
14 in (R2) was, you know, health professional, then in
15 (R3) they become 1, if it is a lay user/patient, then
16 it becomes a 2. Okay. And if (R2) value is not
17 health professional or lay user, then set-up it to 3,
18 which is other. Okay?

19 All right. Some more data fields.

20 This does not require a forward compatibility, but I
21 have shown it here just because it's a regional field.

1 Okay. So there will not be -- since (R2) does not
2 have the patient race code data element compared to
3 (R2) from (R3), when you are transferring the data you
4 can use the nullflavor unknown. Okay? And then
5 submit that for the follow ups. If you're able to
6 capture the value, then of course, then you can use
7 the value, which are here. But for data, let's say,
8 you have already a case in the database, now you have
9 the patient race code, and you don't have race code,
10 send it as unknown and we should be good to go. The
11 same thing with ethnicity code. That you send the
12 value of unknown if you don't have the value.

13 Okay. Before I inter-mention, since
14 you don't have the value, you know, from (R2) to (R3)
15 you send it as NI, no information. And that's how you
16 map something. (R2) does not have this, now you have
17 your (R3) source to move your case of the follow up
18 that you are submitting in (R3), we use the value NI
19 in that case.

20 And then you have the characterization
21 of the drug rule. Since that in (R2) has a value of

1 1, 2, 3 and 4, Okay. We did not have, you know, drug
2 not administered, we had a value of 4 with similar
3 device in (R2). That similar device now goes to FDA
4 other characterization of drug, as similar device. So
5 when you do that mapping from (R2) to (R3), you will
6 map the (R2 value of similar device to 1 in (R3). And
7 since G.k.1 is required, set-up the value to 4, drug
8 not administered. So which means, your G.k.1 in such
9 case will be 4, drug not administered, but any case
10 where you had a similar device, regular value is 1.

11 So in summarizing the last one, if you
12 have a case where characterization of the drug rule in
13 (R2) was 4, you will migrate back to FDA other
14 characterization of drug rule as 1, similar device,
15 and make G.k.1 as drug not administered. Okay.

16 So with that, we go into a summary and
17 let's see what we talk about today. Okay.

18 So today we talked about inter-relation
19 of the E2B (R3) for both pre and post-market report at
20 the same time. So whenever the increment and the day
21 comes it will be both for post-market and pre-market.

1 Okay. And it will be both for SRP and Gateway, all
2 happening at the same time. Okay.

3 Next, we have the new day for voluntary
4 reporting will be communicated on the FAERS Electronic
5 Submission webpage.

6 Next is, we talked about if the FDA
7 regional code, regional -- sorry. We talked about E2B
8 (R3) core and regional data elements and business
9 rule, the document for all four ICH and regional
10 extensions. So this was a document that Excel
11 spreadsheet that we opened up where you were able to
12 see all the different tabs in there, you did see all
13 of, you know, what tabs are for what purpose. You saw
14 the X file tab, you saw the actual elements tab, you
15 saw the rules, the rejections, the warnings and so and
16 so for the acknowledgment and all that that you saw in
17 that document.

18 We talked about using controllable
19 vocabularies, like EVS, GSRS and EDQM and so on. We
20 expounded many times on the separate submission pack
21 and we hold on on the separate submission pack and

1 business rules for IND versus IND-exempt, pre versus
2 post-market, so many of my colleagues, who are also
3 presented, they showed you that table, so it's a very
4 important table to make sure that the table is
5 followed and is aligned in your submission so that
6 reports don't go public, especially for pre-market
7 reports. Okay.

8 We talked about submission methods and
9 mechanism based on AS2 header and routing ID.

10 All right. Next, we discussed also
11 regional extensions, so we went into many of the data
12 elements, almost all of the data elements, actually.
13 We talked about extensions that included the data
14 elements, which included any rules that were
15 different, any -- any things, and conformance that
16 were changed. All the rules were discussed today for
17 IND, IND-exempt BA/BE and post-market safety report.

18 All right. We went into talking about
19 validation and implementation. We talked about the
20 E2B Validator, and I will repeat again that E2B
21 Validator, once posted, you can use it when it is

1 posted and you should be able to use that to do your
2 testing as you are developing and as I said, as you
3 deliver XML, you can test it during the testing phase.
4 And I also mentioned that, you know, the vendors, if
5 they want to get into, want to do the testing, they
6 can request for a testing web created account, which
7 then you can test through the validator first, making
8 sure their XML is all valid and then you can test your
9 Gateway. For those developing IDs and you should be
10 able to do that through the Web Creator test account.
11 Okay.

12 Please let us know if you have any
13 issues requesting those test accounts. You should --
14 it's straightforward. It's on the internet, it's on
15 the fda.gov, how to request for those test accounts.
16 E2B Validator, as I said, will be posted on the FAERS
17 Electronic Submission web page. All right.

18 Then we have, we went over the regional
19 specific rejections and warnings. So we saw all the
20 different rules that we have for rejection. All the
21 rules that we had for warning, and we went over the

1 list. And as I said, these are regional specific.
2 There are code ICH specific rules, but what I talked
3 about today is regional. For the core ones, you have
4 to get into the Implementation Guide, look at the core
5 rules. Today, FDA just talked about their regional
6 specific rules.

7 We went through overview on the FDA
8 OIDs, the regional extensions. How the FDA OIDs are
9 set-up up, how those number are. Why those numbers
10 are that way. And in future, if we have any new
11 regional extensions or data points, new data points,
12 that is how those OIDs will be used and that is how
13 those OIDs will be, basically set-up up.

14 Of course, we will go into the HL7 more
15 to look at the right location, the right data point
16 that is to be used to define that field, you know,
17 what type of data point, data field, but then the OIDs
18 will come along with it. And, of course, if there are
19 any observation code, then we will first look at the
20 standard organization to make sure the observation
21 codes are there before we create our report. Okay.

1 And lastly, we went through the (R2) to
2 (R3) forward compatibility and regional elements. We
3 went over some of those specific ones where we need to
4 keep an eye on when you are moving from (R2) to (R3)
5 when you, you know, do your submissions, do the
6 testing with (R3) making sure that the forward
7 compatibility rules are in line. Also, please make
8 sure that along with the forward compatibility rules,
9 that the regional elements that we talked about,
10 please do not forget the core and ICH elements that
11 are in the Implementation Guide of ICH, so you need to
12 also look at that. One thing that we are not doing is
13 once we're moving to (R2) to (R3), we are not moving
14 back to (R2). We are not doing a backward
15 compatibility of things. We might use some of the
16 backward compatibility just for our internal purposes,
17 just to making sure that certain data points are kind
18 of populated from a perspective of, like for example,
19 the data elements of seriousness, which is at the
20 event level, we would want to roll it up at the case
21 level, so how do you do that. So that's where we may

1 use it. But please, from a submission perspective,
2 we're not going from -- if you move to (R3) you're not
3 going to (R2) back. Okay.

4 And the (R2) to (R3) forward
5 compatibility is only applicable for post-market
6 safety reports. So that's where we today -- so with
7 that, we will just the next slide is some of the
8 references. These are all the documents that we have
9 and so many places you have seen these document names
10 wrote down, so these are accessible, we will add these
11 links. You can go and download them and look at them.

12 So with that, we will take a short --
13 we'll come back at 2:40, it's 2:36. We'll come back
14 at 2:40 to now start answering question and answers
15 that you have been submitting throughout the day. All
16 right? Thank you and we'll see you in four minutes.

17 (Off the record.)

18 MR. DE: All right. All right.

19 So we are back, and we will start with
20 some of the questions that we have for IND Safety
21 Reporting. And so far, that Veronica, I ask you to,

1 you know, repeat the question and then give a
2 response.

3 DR. PEI: Okay. Thank you.

4 The first question is, "Could you
5 please confirm that for IND cross-reporting, sponsors
6 will submit only one report to primary study IND and
7 list all INDs in the report that requires cross-
8 reporting. Is that correct?" And the answer is, yes.

9 The second question is, "For the date
10 of death, and if you remember that element is D.9.1,
11 you advised as if result in death that element is
12 E.1.3.2a, and if that value is true then date of death
13 is required. However, it was not mentioned that the
14 nullflavor is accepted for this value. Is the
15 nullflavor accepted?" And again, the answer here is
16 yes. It is correct. So just to clarify it, so the
17 date of death is required if the death value is true.
18 But it's not -- you don't have -- if you have a null
19 value, such as MSK mask or ASKU, which is ask unknown
20 and the NASK not asked, you can use those three null
21 values for the date of death.

1 Another question is, "Regarding
2 analysis of similar events requirement for IND Safety
3 Reporting, is there a specific data element where this
4 information should be provided?" So the answer to
5 that question is, no. There is no specific data
6 element for the analysis of similar events.

7 The second part of the question is,
8 refers to, "Where to report this information?" And we
9 would recommend that you report this information in
10 the narrative portion of your submission.

11 MR. DE: All right. Thank you,
12 Veronica.

13 So my next, I will request Jung Lee to
14 answer some of the question or give response to some
15 of the questions that she has -- that has been asked
16 specifically to the IND-exempt BA/BE.

17 MS. LEE: Thank you, Suranjan.

18 So the question is, "How do I identify
19 the product name for a study drug?" The submitters
20 should use the drug substance name (the non-
21 proprietary name) in the G.k.2.3.r.1 and proprietary

1 name in G.k.2.2 to answer the question. The name
2 should fit within the established E2B character
3 lengths.

4 The second question is, "What study
5 drug should be identified in the IND-exempt BA/BE
6 study reports?" Submitter should report all drugs to
7 which the subject was exposed using the appropriate
8 E2B data fields referenced in the Technical
9 Specification Document.

10 The next question is, "How do I
11 classify the subject's drug exposures?" Each of the
12 subject's drug exposures should fit into one of the
13 following classifications: first, Past Drug Therapy,
14 second, Drug Exposure During Study Enrollment and
15 Follow-up Period. For the Past Drug Therapy, they
16 should include any drug the subject was taking prior
17 to study enrollment that was discontinued prior to
18 study initiation. These drugs should be reported
19 using the E2B data element D.8.r, Relevant Past Drug
20 History.

21 Secondly, for the Drug Exposure During

1 Study Enrollment and Follow-up Period, drug exposure
2 during study enrollment may include the test drug
3 reference, placebo, vehicle and/or other drugs (such
4 as an allowed concomitant drug) administered to the
5 subject during the study or protocol-defined follow-up
6 period.

7 Question number four, "What are the
8 appropriate descriptions of data elements for
9 reporting subject drug exposures that occur after
10 enrollment in the BA/BE study?" As in my
11 presentation, there are three important key components
12 to remember when reporting the drug exposures. One is
13 the name of the drug. Give us the proprietary name or
14 substance name if there's no proprietary name. Second
15 of all, give us the role of the drug played. Was it a
16 suspect drug, a concomitant drug, an interactive drug
17 or was no drug administered at all? Third and the
18 last component mentioned was, "Is this a test or
19 reference drug?" If unknown or neither, then let us
20 know by flagging that as NA.

21 And the next question is, "What does no

1 exposure mean for purposes of electronic submission of
2 these expedited safety reports?" A subject that has
3 no exposure to a study drug if the subject experienced
4 an SAE after study enrollment but prior to study drug
5 exposure. Such an event meets the FDA's expedited
6 reporting requirements. To report an SAE that
7 occurred without any study exposure during IND-exempt
8 BA/BE study, the submitter should select G.k.1 4 =
9 Drug not administered, with G.k.2.2 for proprietary
10 name [if available] and G.k.2.3.r.1 for [test] drug
11 substance name, and FDA.G.k.10.a.r, number one for
12 test drug.

13 That's all for me. Thank you.

14 MR. DE: All right. Thank you, Jung.

15 So this is Suranjan, and I will go into
16 some of the questions, so.

17 Question number 1, "There is a
18 nullflavors, non-values on the backward/forward
19 compatibility mapping Excel under the BA/BE material.
20 Will the spreadsheet be corrected, or the null values
21 are intentional?" Yes, the null values are

1 intentional because you're doing a forward/backward
2 compatibility review, so you know, sometimes a value
3 cannot be appropriate or the value cannot be
4 transferred back or, you know, there are values that
5 the field may be a mandatory field. So you have to
6 have a value, so that's why you use a nullflavor.

7 The second question is, "Please confirm
8 if we can send picture or articles as E2B (R3)
9 attachment to the FDA?" Yes. The technical
10 specification document says that, and you could submit
11 that. Also, it has a reference that you could submit.

12 "Will there be accept XML files with
13 nullflavor?" Yes, the E2B (R3) will accept XML files
14 with nullflavor. Again, this is only for E2B (R3),
15 E2B (R3). If it doesn't have a file, will accept
16 nullflavor.

17 Okay. "For a small business sponsor
18 that has a ESG account, but does not have in house XML
19 capability, are they able to submit ICSRs through
20 SRP?" Yes. They will be able to submit ICSRs through
21 SRP.

1 Okay. "Then, can we upload an XML file
2 in SRP, instead of actually entering it manually?"

3 No. Please do not do that because that will not get
4 processed. The whole purpose of SRP is you have the
5 screens where you can submit to the -- that you can
6 submit other work, so they are structured.

7 One thing that I did not mention is
8 part of the questions that have come over the slides
9 today. Yes, all the slides, all the presentations and
10 the recording will be all posted on the FDA's meeting
11 page where you have the Zoom link. So they all will
12 be posted within three to four business days. And so
13 we will have them there, the slides will be there and
14 the entire talk, the video, the presentation will also
15 be there.

16 All right. Okay. "Is there any work
17 being done to sync the fields and required fields
18 between FAERS and MedWatch?" Yes, we have done. I
19 mean many of the fields that we have for like,
20 especially for VAERS and FAERS have been harmonized.
21 We're using the same observation code, the same data

1 element and so on. The both fields have also been
2 harmonized between MedWatch and FAERS because without
3 that, you know, we really cannot get -- import the
4 data into FAERS because sometimes you will have
5 MedWatch, I mean the first MedWatch comes in different
6 flavors, one is for consumers and health care
7 professionals, one is for manufacturers.

8 Manufacturers really, from our
9 perspective of IND Safety Reports, is manufacturers.
10 Submitter MedWatch that we have mapped to FAERS, so
11 yes. We have, doing this activity and most of them
12 have been all harmonized.

13 Okay. "If you do have a patient name
14 or initials for malfunction report without AE, should
15 we not report this?" Because if you have a
16 malfunction and there was no AE, you know, that means
17 that the event did not occur on the patient, so in
18 that case we will just make it consistent, we use NA
19 for this -- for this report.

20 And then, "Regarding medicinal product
21 name as reported, presumably it would be preferred to

1 use the coded product description followed by the
2 trade name from company product library, rather than
3 the verbatim?" True. But please make sure that
4 they're your local trade name on a product description
5 from the company product library matches with the SPL
6 that you have submitted or with the active ingredient
7 name that is in the GSRS.

8 There was a question about NDC codes,
9 "You know, it's challenging to get NDC codes." Yes.
10 Totally agree. "It's a challenge to get an NCD code.
11 We may not get NDC codes for continuous reports." But
12 what we are saying here, is if it is available the
13 please report to us and if you are able to ask that
14 and get that, please report to us. It is not a
15 mandated field, you know, the product name is for
16 post-marketing is mandated. So it's again, that if
17 you have it, please report it.

18 "Regarding the specialized product
19 category for combination product, would it just be
20 entered or any combination product?" And the answer
21 is yes.

1 Okay. Okay. So let's see.

2 Okay. I guess there is a question.

3 "Is there additional mandatory data collection
4 requirement for (R3)." No. Anything that has been
5 listed today and is in the spreadsheet of Core and
6 Regional Data Elements are the data elements and if
7 they have been, if conformance is been set-up
8 required, that means it's required. So that -- those
9 will be the mandatory data elements. There may be
10 some data elements that is conditionally required,
11 based on another data element, so every element that
12 is listed in there is available there.

13 "So when would we need to use the (R2)
14 to (R3) format compatibility if you are submitting
15 post-market safety reports today and then you move to
16 an (R2) format and now you move to (R3) format?" You
17 will need to use that forward compatibility document.

18 "So when will FAERS reporting in lieu
19 of the ESG submission be required for safety reporting
20 on investigation agent?" Again, as we said in the
21 presentation that you should check with the FAERS

1 Electronic Submission webpage. The date will be, you
2 know, we -- when FDA is ready from that point onwards,
3 you will get two years to prepare yourself and then
4 submit in a shorter timeline that from year 00 to year
5 two, you can use SRP to submit while you are working
6 on your Gateway submission or your XML. And once
7 you're ready with your XML, then you can start
8 submitting XML and we will deactivate the SRP account,
9 so.

10 "Do submitters need to have FAERS and
11 ESG account?" No. There's no specifically FAERS
12 account, but there's an ESG account for submitting
13 electronically. So but if you're submitting through
14 the Safety Reporting Portal, yes. You need to have --
15 you need to have a -- a account created for Safety
16 Reporting Portal.

17 There is one question which says, "Can
18 we send EDQM terms instead of SPL?" We clarified
19 that. You know, please try to send the SPL down
20 first. If you don't have the SPL down, then send the
21 EDQM down.

1 Okay. "After the voluntary period is
2 over, the FDA will no longer accept E2B (R2) or will
3 both (R2) and (R3) be accepted for a period of time
4 after the mandatory date?" No. After the mandatory
5 date we will want to move on over to E2B (R3) and so
6 that we don't have to maintain two versions because,
7 you know, companies are given almost two years from
8 the day we go. That should be, you know, should be
9 enough time for us to do that, you know, to get E2B
10 (R3). So as I said, with the document (R3), we will
11 go with that. Once we move to (R3) we move to (R3).
12 We don't want to go to (R2) back again.

13 Okay. "Is there a field limitation to
14 narrative? If so, if narrative goes over the limit
15 will that automatically be truncated?" Yes. There is
16 a field called narrative, which is 100,000 characters.
17 And if it is goes above 100,000 characters, yes, it
18 will get truncated. But you could -- we also have
19 sender comments and reporter comments. You may -- you
20 could probably also use it but mention in your
21 narrative that additional comments are mentioned in

1 the sender's comments and then we can -- we can work
2 that out that way.

3 So there is also another question is,
4 "Which option, A or B, of reporting can valid testing
5 be done on?" And you will basically for option A,
6 valid testing will be done on.

7 "Is there a fee associated with ESG
8 portal, or everybody can use the platforms?" The ESG
9 Gateway Portal actually, if you have to do like a
10 batch submission, there is a one stop certificate that
11 has to be shared with the FDA. The certificate,
12 actually, as I understand, costs some fee. That's why
13 a lot of organizations, smaller organizations have not
14 gone into there. If you use Web Creator, which is
15 free, you cannot do batch submission. You can do one
16 file submission at a time. That is for free and
17 doesn't cost anything and if you use the Safety
18 Reporting Portal, that also, the submission is one sub
19 file at a time, or one ICSR at a time, which is also
20 for free.

21 All right. So with that, we are -- any

1 -- any further -- any additional questions that you
2 have we will request you to submit to the docket of
3 the FR notice for this particular meeting. So you can
4 submit to the docket, and we will go through to
5 addressing those questions.

6 If any other questions that we have, we
7 will also go back through to respond to you through
8 the docket.

9 So with that, I'd like to thank
10 everyone who have attend this e-prompt webinar. And
11 for all of us, we hope that we have given enough
12 information and good information for you to start your
13 work in implementing E2B (R3) for submissions to FDA.
14 We are also going in the FDA in full speed in trying
15 to implement E2B (R3). So with that, our next talk
16 about E2B (R3) will be at the Annual DIA and then the
17 one next e-prompt meeting will be in November of this
18 year.

19 So with that, I would like to end the
20 meeting and thank you all for attending and providing
21 your questions to this webinar. And thank you to our

1 other guest speakers, Veronica and Jung Lee. So
2 really, thank you for your presentation.

3 And you all have a wonderful evening
4 and a wonderful week.

5 Thank you.

6 (Whereupon, the meeting concluded at
7 4:49 p.m.)

8

9

10

11

12

13

14

15

16

17

18

19

20

21

1 CERTIFICATE OF DEPOSITION OFFICER

2 I, RICHARD LIVENGOOD, the officer before
3 whom the foregoing proceedings were taken, do hereby
4 certify that any witness(es) in the foregoing
5 proceedings, prior to testifying, were duly sworn;
6 that the proceedings were recorded by me and
7 thereafter reduced to typewriting by a qualified
8 transcriptionist; that said digital audio recording of
9 said proceedings are a true and accurate record to the
10 best of my knowledge, skills, and ability; that I am
11 neither counsel for, related to, nor employed by any
12 of the parties to the action in which this was taken;
13 and, further, that I am not a relative or employee of
14 any counsel or attorney employed by the parties
15 hereto, nor financially or otherwise interested in the
16 outcome of this action.

17
18 *Richard Livengood*

19 RICHARD LIVENGOOD

Notary Public in and for the

20 State of Maryland

21

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

CERTIFICATE OF TRANSCRIBER

I, BERNADETTE SAMBRANO-PRATTI, do hereby certify that this transcript was prepared from the digital audio recording of the foregoing proceeding, that said transcript is a true and accurate record of the proceedings to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

A handwritten signature in black ink, appearing to read 'B. Sambrano-Pratti', is written over a light gray rectangular background.

BERNADETTE SAMBRANO-PRATTI

&	167:10,14	174-175 3:4	63:10
& 2:4 6:9	178:17	175-178 3:5	2018 1:9
0	1,3 81:12	178-188 3:3	2019 117:16
00 137:1,1,2,12	1.3 52:1 56:4	1:45 151:1	2022 130:15,17
137:13,14	1.3. 104:19	2	2023 1:13 4:3,6
184:4	1.4 52:3,3,4	2 24:10,10,13	56:5
000000 89:10	93:2 99:19	71:3,6,6,15	21 105:16
01 163:20,21	100:8	78:4 80:19	106:11 115:18
164:1,6,12	10 71:11 79:3	81:15,16 82:1	116:4,6 118:13
09:00 1:14	79:16 93:19,20	83:12,13 91:21	21201 1:18
1	104:3 110:9	92:2,17 94:5	24 15:19 16:5
1 24:6 70:18,20	121:15	121:10,17	106:20 118:2
70:20 71:1,11	100 142:11,19	122:15 123:10	250 16:12 61:9
72:1,1 80:11	100,000 185:16	123:15 146:11	63:4,5
80:13,14,14	185:17	146:12 152:9	28435 189:18
81:8,10,15,15	105-113 3:4	152:11,21,21	29637 190:14
81:18,21 82:3	10:15 7:9	154:20 155:5,7	2:36 173:13
83:11 92:2,17	10:30 49:4,6,10	155:12,12,21	2:40 173:13,14
94:6 104:19	113883 153:2	156:11,16,18	3
113:10 122:15	155:19 157:11	156:18,19	3 5:18 69:16,16
123:14 147:5	114-126 3:5	157:6,10,14,15	80:11,13,14,14
147:19 148:1	11:44 98:9	157:19 158:3,5	81:8,10,15,16
152:8 153:1	11:45 8:2 98:16	160:11,19,19	81:18 82:1,3
155:5,6,19,21	126-174 3:3	161:1,12,13	82:13 88:2
155:21 156:2,3	12:30 8:2 98:10	162:12,15	92:2 116:6
156:13,14,15	98:16	163:14 165:16	118:14 122:15
156:15,16,18	12:31 98:20	167:1	155:10,12,20
156:18,21	14 153:1	2.1 157:8	156:16,18,18
157:1,1,6,11	15 7:9 8:15	2.16.840.1.1...	157:2 158:4,5
157:14,15,16	68:19 69:1,14	154:10	161:12,13,21
158:3,4,4	71:18 72:1,10	2.16.840.1.1...	163:15 165:17
160:11,19	151:2 160:11	152:16 153:6	167:1
161:1,12,13	1571 109:7	2.3 87:21	3.1. 158:7
162:10,15	138:9	2.5 88:2	3.2 158:7
163:14,14	16 153:1	200 47:21	3.3. 158:8
165:15 167:1,6	157:11	2000 16:12	30 68:20 69:9
	163 153:4	61:10 63:4,5,6	69:14 71:7

72:13 102:3 107:6 137:16 137:17 160:11 300 47:19 142:10 312.32. 106:12 115:18 320.31 115:18 116:6 118:14 320.31. 116:4 3500a 34:7,8 34:10 116:18 118:9 3989 157:12	155:4,11,21 156:16,20 157:13 158:3 160:11,19,21 161:1 5.1.2 155:2 5.1.2.1.1.1 154:11 500 47:19 51 156:12 512 156:13 5121 155:17 5672964 1:21	a a.1.fda.15. 161:5 a.m. 1:14 4:3 a19 160:9 abbreviated 113:4 115:10 ability 189:10 190:7 able 4:15,18 24:12 27:10 29:17,18,20 30:10 38:16 53:10 91:1 142:7 147:15 166:5 168:11 170:1,10 179:19,20 182:13 above 185:17 absence 56:19 57:7 accept 16:20 19:17 107:1 137:17 179:12 179:13,15 185:2 acceptable 19:20 20:2 118:12 acceptance 49:1 accepted 60:2 95:4,8,10 108:9 109:12 124:15 126:20 127:21 174:14	174:15 185:3 accepting 51:4 51:5 access 36:3 accessible 62:17 173:10 accident 123:2 123:4 accommodate 16:13 34:15 110:19 accommodati... 149:1 account 12:21 13:1 26:18,20 27:2,4,6,7 29:19 34:3 35:12,17 119:19,21 138:5 139:7,10 139:15 140:3 170:6,10 179:18 184:8 184:11,12,12 184:15 accounts 26:18 32:3 170:13,15 accurate 189:9 190:5 ack 24:5,6 34:4 74:8 ack.b.4.r.b.8 61:8 ack.b.r.7 16:10 63:9 ack.b.r.7. 18:14
4	6 69:15 72:1,2 94:3 153:3 157:2 160:11 160:19,19,21		
4 1:13 4:3 70:18,20,21 71:1 80:13,14 80:15 81:7,11 81:12 82:1,3,6 83:13,19 92:3 92:9,10 122:17 147:6 155:11 155:13 156:16 160:11,19,21 161:1,20 167:1 167:2,7,9,13 178:8 4-105 3:3 400 47:19 4002 1:9 4:49 188:7	7 7 69:15 745a 10:11 106:15 117:13 118:6		
5	8 8 42:21 840 155:19 157:11		
5 69:14,14 71:6 71:7 74:18 82:21 83:1 92:4 102:3	9 5:17 72:16 98 144:6 989 155:2,20 158:2 99 89:15,17 92:10 9:00 4:3		

acknowledge... 15:7,10,12,15 15:15,18,19,21 16:6,8 24:10 24:10,13 25:14 42:10 48:18 52:13 56:20 57:9 59:21 60:4 61:21 62:2,20,21 63:1,1 64:14 95:4,8,9 96:7,9 96:10 108:10 109:12 126:6 141:9,10	actually 21:16 23:19 27:1 35:9 50:16 51:15 55:5 59:12 61:11 65:10 72:7 76:11 77:6 83:8 89:15 90:1,17 91:3 94:7,11 102:17 104:14 128:17 130:5 135:12 136:15 150:15 154:12 169:12 180:2 186:9,12	75:6,6,15,21 104:13 114:20 addressing 187:5 administer 81:8,11 administered 80:15 83:14,18 122:17 123:3,7 167:2,8,9,15 177:4,17 178:9 administration 1:1 22:5 91:7 154:14 advantage 27:8 31:10 125:19 138:8,12,13 advantages 125:1 adverse 1:4,5 35:12 77:2 78:5,6 81:5 115:21 116:7 117:10 122:19 123:5 148:5 149:4,5 150:4 157:7 advice 83:6 advised 174:11 ae 55:6 110:6 121:19 181:14 181:16 ae2 36:13 affairs 2:15 109:18 afternoon 6:11 105:7	agency 11:11 12:15 85:21 87:11 agenda 7:5 9:6 agent 183:20 aggregate 77:19,20,20,21 78:3,11,14,19 79:9,21 111:3 111:6,11,13 113:8 116:2 147:14,15,19 148:4,19 149:13 aggregation 78:12 agree 182:10 ahead 15:9 28:9 82:14,15 87:3 101:17 align 108:8 aligned 169:5 allow 37:12 79:3 105:19 106:4 allowed 54:4 58:10 71:1 72:1 74:16,19 75:3 92:2 177:4 allows 109:10 alpha 54:3 74:15 75:1 79:2,16 91:21 93:20 103:14 104:3,14 alphabet 21:18 73:17
acknowledge... 15:10,11 47:17 48:1 124:12 134:7,11,12 141:11 142:8	ad 47:6 adapted 20:11 add 64:15 69:4 82:17 83:2,19 89:21 173:10		
acknowledg... 168:16	added 27:13 74:14 82:19 100:13 125:17 152:5 154:18		
act 117:13	addition 13:13 120:20 121:8 122:3		
action 35:19 36:8 158:8 163:5 189:12 189:16 190:8 190:12	additional 57:6 88:8,8,8,9 91:17 119:13 123:9 162:2,10 162:12,14 183:3 185:21 187:1		
actionable 106:7	additionally 12:10 107:14		
active 86:4,5 88:3 111:21 112:2 131:3 138:20 182:6	address 5:21 28:11 35:14,16		
activity 181:11			
actual 85:17 164:2 168:14			

alphabets 45:17 alternate 147:20 ambiguity 63:12 amended 144:18 amendment 144:12,16,17 amount 152:1 ample 11:13 analysis 14:16 111:3,6,13 175:2,6 analyst 2:15 analytic 105:20 106:5 analytics 126:2 131:12 anda 90:7 93:5 93:8 115:11 120:3,4,6 121:13,19 122:1 123:12 148:8 157:18 animals 108:21 annual 187:16 answer 6:2 14:20 49:9 58:21 59:2,5 163:10 174:8 174:15 175:4 175:14 176:1 182:20 answered 80:10	answering 173:14 answers 59:3 173:14 anticipate 143:20 anymore 61:18 129:21 130:4 appear 14:14 appears 86:5 87:4 appendix 38:15 48:5 98:1 applicable 9:1 54:21 55:1,2 57:11,16 59:7 62:9 65:16 77:8 97:9 148:14 173:5 application 88:16 89:2,9,9 89:12,12 115:6 115:10 applied 88:18 97:17 apply 44:17 70:7 71:16 93:12 appreciate 53:11 63:14 approach 39:6 51:8 appropriate 57:9 176:7 177:8 179:3 appropriately 45:15,19 62:17 89:18 90:1	approve 4:21 approved 85:21 86:7 89:9,11,20 92:4 111:16 112:7,8 125:8 134:6 april 1:13 4:2 130:15 area 70:16 126:14 138:10 143:17 areas 8:17 31:4 84:4 151:3 ares 89:12 arms 112:7 arrow 70:4 articles 179:8 as2 13:4 37:20 38:15 39:10,11 42:1,3,5,18 43:6,13 44:3 45:7 48:4 100:2,6 108:3 108:11 169:9 asked 26:14 33:1,1,2 57:12 75:3,6,7,8,18 174:20 175:15 asking 14:19 19:16 45:12 90:21 136:14 148:3 163:19 164:15,16 asku 174:19 assessment 112:19,19,20 150:2,2	assigned 120:3 assist 50:19 associate 2:7 6:15 associated 58:21 91:20 93:18 186:7 assure 46:15 attachment 28:21 29:2 179:9 attachments 16:3 26:3 50:20 51:4 attack 30:9 attend 187:10 attendees 2:2 attending 107:16 187:20 attention 110:5 attorney 189:14 190:10 attribute 41:13 75:12 108:1 attributes 17:11 20:21 37:10 52:12,13 56:12 90:12 94:11 120:16 audio 189:8 190:4 audit 102:10 131:7,11 auditable 165:11 august 130:17 133:6
---	--	---	---

authorization 88:16	b.4 61:8	151:8 167:13	146:1 158:14
automated 125:18	b.s.e.1.12 147:6	172:14 173:3	159:11 162:3
automatically 185:15	b.s.e.1.7.1 147:5	173:13,13,19	171:13 186:5
availability 35:4	b1 78:18	179:4 185:12	batch 16:4
available 12:12	ba 4:20 5:13	187:7	31:16 41:8
12:17 17:9	6:20 8:8 39:2	background	45:5 46:6 47:2
24:15 27:1	46:6,11 47:11	9:8,10 49:15	47:2,15,15,16
31:20 35:6	65:2 89:3,4	99:1	67:5 77:11,12
38:18 48:5	90:4,7,11,14	backlogs	77:14 121:1
51:17 69:20	92:11,18 93:4	139:19	142:2,12,14,15
84:10 85:9	93:7,12 113:20	backward 98:2	142:16,18,18
86:9 87:1 88:7	114:5,12 115:5	172:14,16	142:20 143:4
91:2,11,12,14	115:7,8,15	178:18 179:1	143:11,18
92:21 103:21	116:3,8,15,20	bad 49:5	144:3,3,8,9
104:3,4 112:2	117:11 118:8	baltimore 1:18	186:10,15
118:10,12	118:17 119:2	bar 54:1	batches 47:4,5
121:7 123:16	119:12 120:8	base 75:21	47:10,13,14,20
124:9,18 125:6	120:13,19	153:9	48:1 142:9,10
127:8,10	121:1,6,19	based 10:4	143:14,21
132:18,20	122:18 124:1	12:6,7 16:4	batching 143:1
133:17 159:10	124:21 125:17	22:18 25:9	bcps 2:14
159:13 178:10	125:20 169:17	26:1 28:14	believe 40:16
182:12 183:12	175:16 176:5	34:7,8 40:19	64:19 130:17
aware 113:11	177:10 178:8	62:6,16 64:14	132:18 144:7
141:21	178:19	74:6,9 76:7	146:2
b	back 9:12,12	138:17 164:11	benefit 109:3
b 25:6,20 26:11	24:7 25:11,12	169:9 183:11	125:17
27:13,17 37:13	42:10 49:4,12	basic 128:1	benefits 109:15
49:21 50:3	56:9 62:4 63:2	basically 7:14	bernadette
98:1 111:16,20	63:16 84:6	14:11 16:17	190:2,15
186:4	98:10,16,19,20	17:3 25:10,14	best 137:15
b.1 147:15,19	105:5 126:10	31:14 39:18	189:10 190:6
	129:15 130:7	50:1,3 51:16	better 10:7
	132:4,10	59:8 62:10	96:13 139:17
	140:12 141:9	69:16 75:17	bi 134:16
	141:10 145:7	80:21 104:9	bigger 47:16
	145:10 151:2,5	128:15 132:7	93:16
		133:14 137:17	

binarities 37:2 bio 115:6 116:14,18 118:4 125:13 bioavailability 41:17 114:10 bioequivalence 114:10 123:1 bioequivalent 41:17 biologic 4:21 89:1,5 94:3 biological 90:5 119:8 biomedical 2:8 6:16 bit 5:4 9:9 49:15 51:3 53:12 83:6 141:18 153:9 bla 89:6,6 blank 57:5 104:6 blue 51:14 bn 89:3,5 boolean 69:6,8 73:5,6 100:20 100:21 160:13 161:6 bottom 14:9 53:21 55:11,21 63:3 107:13 108:19 110:11 129:2 134:20 branches 152:14 brand 103:9,17 103:20 104:6	150:14,16,17 164:19 break 5:19 7:9 8:1,1,15 49:3,4 49:13,14 50:7 98:9,16,20 99:4 135:2 149:21 151:2 breaks 5:18 brief 105:12 briefly 114:8 bring 90:13,13 117:9 browse 128:6,9 buckets 143:8 bulk 92:3,3 bullet 95:6,7 burden 9:18 business 17:6 17:12 28:7 46:13 51:21 52:12 54:7,9 54:12,14 56:18 58:15,17,18,19 59:16,18,20 60:3 61:2 66:3 66:6,9,15 73:19 76:18 78:19 79:8 80:5,7 95:16 100:6 102:11 102:12,21 103:16 110:10 110:20 112:20 120:14 121:3,9 121:21 131:1 139:16 168:8 169:1 179:17	180:12 busy 116:15 button 25:10 33:20 128:6,15 128:20,21 buy 152:13 <hr/> c <hr/> c 2:1 3:1 4:1 21:17,18,20 69:13 73:16,17 73:17 79:4,5 79:17 91:8 94:1,13,13 101:21 102:9 154:3,4 c.1.1 66:12 c.1.1. 66:8 111:8 c.1.10 147:14 c.1.10.r. 111:14 c.1.12 73:1 c.1.12. 73:4 149:1 c.1.3 67:3,8 121:10 146:11 154:6 c.1.3.2 148:7 c.1.6.1 146:14 c.1.7 72:5,11,14 147:7 c.1.7.1. 69:10 c.2.r.2.8 74:14 c.3.3. 76:3 c.5.4 147:19 c.5.4.5a. 69:12 c.5.5a 90:9 148:6	c.5.5b 90:10 123:12 c.5.5b. 121:13 c1 65:19 66:5 c54451 102:16 c54456 90:21 91:1,8 c54595 104:18 call 13:8 15:13 23:1,21 34:12 34:12,13 69:5 82:21 83:1 138:6 142:15 called 14:3 53:9 69:9 70:11 93:16 100:16 110:6 110:17 145:18 156:1 160:16 160:17 161:7 163:18 185:16 capability 27:15 179:19 capital 21:18 capture 110:7 166:6 care 44:15 69:18 84:14 159:4 181:6 case 25:9,13 30:11,17 32:15 57:6,15 61:15 65:20 66:5,7 66:14 70:14 72:4,8,18 77:13,20 79:15 80:13,18 95:18 101:5 105:11
--	--	--	--

108:10 110:16 116:2 123:6 124:15 131:10 144:2,4 146:17 165:12 166:8 166:17,19 167:9,9,12 172:20 181:18 cases 87:19 catch 63:14 67:20 143:7 categorization 80:4 category 93:16 94:16 182:19 causality 112:15,17 cause 86:16 cber 36:20,21 37:1,8,14,15 37:17,20 39:1 40:2,3,4,5,8,9 40:12,13 41:15 41:16,16 43:8 43:11,13,15,18 43:19,21 46:5 46:11 47:6,10 48:14 89:3 93:11 108:2 143:10 148:8 cd 30:20 cdcr 1:2 2:5,9 2:13,15 4:11 6:10,17 7:3 36:20,21,21 37:7,8,9,14,15 37:17,19 39:1 39:12,13,17	40:10,11 41:14 41:15 42:13,17 42:20,21 43:4 43:6,9,10,17 44:4,5 45:4,4 46:1,2,5,6,10 46:11,12 47:5 47:10,11,11 48:13 100:7,9 108:2 114:19 120:4,17,21 121:18 143:9 146:6 148:7 cdcrh 114:16 ce 153:17 154:1 center 1:2 24:6 centers 115:1 certain 4:19 24:20,20 49:20 53:8 57:17 60:12 130:13 172:17 certificate 186:10,11 189:1 190:1 certificates 26:8 certify 189:4 190:3 cetera 94:5 cfr 105:16 106:11 115:18 116:4,6 118:14 challenge 26:16 182:10 challenging 182:9	chances 125:11 change 10:4,9 13:2 14:20,21 16:7 21:10,11 36:1,8,14 61:9 66:6 106:14,20 140:4,6 141:14 changed 10:1 63:3,6,7,10 66:3,4 76:13 169:16 changes 7:20 34:6,7,9,19 52:5 55:18 56:7 131:1,4 character 176:2 characteristic 114:14 characteristics 76:16,16 91:20 93:18 153:16 characterizati... 82:8,12,18 83:13 149:16 149:19 166:20 167:4,12,14 characterize 122:13 characters 16:12,13 61:10 61:10 63:4,6 63:10 185:16 185:17 chat 5:20 check 23:5 44:13 61:3,12 68:12,13 77:7	78:19 93:9 183:21 checking 77:6 129:19 checkmark 59:18 60:1 checks 45:20 147:8 choice 139:1,13 chooses 119:2 choosing 56:15 cia 21:3 city 104:13 clarified 184:18 clarify 174:16 class 153:17 154:17 classifications 176:13 classify 176:11 clear 19:8 155:2 clearance 10:10 clearly 46:16 119:5 146:12 click 51:14 74:5 128:7,21 clinical 2:11,12 7:1,2 105:15 113:10 114:3,4 148:2 close 87:21 88:2 135:11 151:4 closed 24:13
--	---	--	---

<p>closer 11:9 code 19:17,20 20:1,4 21:17 21:20 22:6 42:2 60:7 62:1 69:12 70:18 73:16,16,17,17 78:21 79:1,1,2 79:4,6,14,15 79:17 81:18 82:8,11,15,16 83:5,11,12 84:1,11,11,21 85:3,4 86:16 90:21 91:8,9 92:17 95:5,15 101:21,21 102:9,9,14,15 102:18,19 103:12 104:1,3 104:8,18 111:18 112:4 132:19 147:5 150:10,17,21 153:3,5 154:9 156:12,13 157:12,20 158:1,1,4,5 163:20 164:1,3 164:4,5,7,10 164:11,14,17 164:21 166:2,9 166:9,11 168:7 171:2,19 180:21 182:10 coded 138:19 143:15 182:1</p>	<p>codeless 19:21 20:21 157:4 158:5 160:3 codes 18:8,19 20:21 22:4,5,8 22:9,9,12 45:11 79:5 94:1,13,13 102:17,19 103:1,3 104:5 150:11 171:21 182:8,9,11 coding 22:2 collaborative 114:15 colleagues 114:16 169:2 collection 183:3 column 54:6,7 54:10,18 55:5 57:20 58:2 59:2,19 60:1 61:13 63:4 65:3 columns 53:8 53:14 54:13,20 58:17,20 60:5 60:6,12 61:2 64:3,4 com 92:10 combination 51:6 64:21 68:21 70:7,8,9 70:11,13,19 71:2,3,8,9,12 71:14 73:2,9 73:11,14,15,20</p>	<p>73:21 74:2,10 77:10,11,12 79:20 80:19 81:3,4 83:7,12 83:15 93:17,18 94:2 101:16,18 103:7,8,17,19 114:18 147:7 149:6 150:8,19 157:21 158:6 161:3,7 182:19 182:20 combine 44:21 combined 82:1 come 11:2,8 15:2,18 18:13 20:9,13 22:21 23:18 24:4 34:8 45:7 46:8 47:18,18 49:4 80:21 85:17 88:2 96:19 98:10 105:3 129:21 130:3 135:10 141:7 145:12 147:4 151:2 171:18 173:13,13 180:8 comes 9:2 15:14 35:19 39:14 40:10 84:20 90:2 154:21 167:21 181:5 coming 20:5 53:5 63:9 139:18</p>	<p>commander 2:6 comment 16:11 160:4 comments 56:13 185:19 185:19,21 186:1 commercial 31:17,20 106:15 117:17 common 7:18 22:7 60:13 65:14,14,15,17 84:2 99:11 103:10,13,20 104:6 142:20 150:12,14,15 150:18 164:20 communicate 5:16 11:15 12:8 135:13 communicated 11:5 168:4 communicati... 134:15 communicati... 107:16 134:14 135:8,13 comp 89:15,17 companies 12:7,20 25:3 31:5 35:9 50:5 81:19 124:20 125:8 132:12 133:3 137:4,5 185:7</p>
---	--	---	--

<p>company 111:18 112:4 119:1 125:11 139:17 182:2,5</p> <p>company's 138:10</p> <p>compared 166:2</p> <p>compares 105:13 116:11</p> <p>compatibility 9:1 96:18,20 96:21 97:1,6,8 97:11,16 98:2 98:4 151:4 158:20,21 159:6,8,11,19 160:7 165:20 172:2,7,8,15 172:16 173:5 178:19 179:2 183:14,17</p> <p>compatible 64:1,7</p> <p>complete 33:6</p> <p>completed 98:21 131:19 131:20 132:1 140:17 144:8</p> <p>completing 51:9</p> <p>complex 153:12,13</p> <p>complexity 10:5</p> <p>compliance 76:8</p>	<p>complied 18:12 95:1</p> <p>comply 18:19 106:10</p> <p>complying 120:13 121:8</p> <p>component 177:18</p> <p>components 177:11</p> <p>compounded 89:14,19</p> <p>compounding 76:20 89:17,18 92:4,8</p> <p>comprehensive 55:14</p> <p>computer 14:4</p> <p>concept 77:19 82:9,10 154:6 157:17</p> <p>concluded 188:6</p> <p>concomitant 80:20 81:16 83:2,12 122:15 177:4,16</p> <p>condenses 137:15</p> <p>condition 57:7 58:14 92:1</p> <p>conditional 57:8 58:12,13 58:13 102:1,1 102:5 103:6,15 104:5 121:16 123:11</p>	<p>conditionally 83:9,21 183:10</p> <p>conditions 22:3 95:3,7</p> <p>conduct 107:15 116:8</p> <p>conducted 115:5,8,15,16 116:3</p> <p>conducting 112:8 119:2</p> <p>conference 134:15</p> <p>conferences 134:17</p> <p>confirm 63:17 174:5 179:7</p> <p>confirmation 125:18</p> <p>conformance 17:12 18:4 19:15 52:12 54:7,8,15,16 56:14,18 58:11 58:11,11 66:4 69:11 73:8 74:16 75:1 76:13 79:3 92:1 93:21 95:21 101:3 110:10,21 121:15 123:11 169:15 183:7</p> <p>conformation 83:9</p> <p>connect 4:15</p> <p>connecting 25:5</p>	<p>connection 30:4</p> <p>consent 122:21</p> <p>consider 136:21 137:1</p> <p>consideration 74:21</p> <p>considered 72:11,13 116:9 159:7</p> <p>considering 124:20</p> <p>consistent 181:18</p> <p>constitute 123:4</p> <p>consumers 69:17 181:6</p> <p>contact 119:20</p> <p>contain 146:20</p> <p>contains 60:17 60:19 152:6</p> <p>content 67:16 68:2,2</p> <p>contents 99:8</p> <p>continue 14:21 32:8 36:7,8 109:2 118:10 135:18</p> <p>continuous 132:9 182:11</p> <p>contrast 117:3</p> <p>control 138:6</p> <p>controllable 168:18</p> <p>controlled 20:16,17 21:1 21:2,8,9 23:10</p>
---	--	---	--

51:9 convenience 94:6 convert 128:18 converter 128:17 converting 68:10 coordinate 50:10 coordinator 120:1 124:17 copied 32:10 copy 164:5,20 164:21 165:2,3 165:4 core 18:3 51:20 81:10,15 82:3 82:14 83:4 96:12 99:9,10 130:20 153:21 159:9 168:8 171:3,4 172:10 183:5 corner 14:9 75:15 correct 16:20 19:11,11 61:17 84:6 123:18 133:19 147:16 174:8,16 corrected 96:15 108:11 130:2 178:20 correction 162:1,9,12,14 correctly 120:12 122:3	corresponds 152:2 cosmetic 117:13 cost 35:12 88:8 186:17 costs 186:12 council 1:6 counsel 189:11 189:14 190:7 190:10 country 19:17 19:20 20:1,4 104:13,14,16 153:1 155:18 157:11 couple 56:6 109:20 111:4 113:1 course 10:6,16 16:3 22:13 32:19 35:2 37:4 39:17 52:1 71:12 79:10 86:18 97:21 160:19 166:6 171:14 171:18 courtesy 136:7 cover 109:7 138:9 covered 117:14 covering 114:8 covers 115:3 crack 44:16,19 cracks 93:13 create 14:2 32:9 34:3	45:17 119:20 140:3 142:4 171:21 created 18:20 121:3 154:7 170:6 184:15 creates 29:21 30:5 creating 119:21 creator 170:10 186:14 credential 28:10 credentials 26:6 27:18 28:5,7,10 criteria 68:16 68:17 69:3 70:15,20 71:4 71:10,15,20 72:4,9,12,19 102:2 146:17 146:20 147:2,3 147:9 154:8,9 156:1,2,4,7,14 160:10,16 criteria s 83:19 101:1 cro 119:1 cross 31:7,12 cross 78:19 110:15,16,18 110:19 148:9 174:5,7 crossed 109:9 csr 9:21	csrs 80:9 cups 137:8 current 34:16 105:13,16 116:11 currently 75:12 118:8 cycle 115:3
			d
			d 4:1 116:6 118:14 d.1 149:6,12 d.8.r 176:19 d.9.1 174:10 d.9.1. 113:18 d1 111:10 148:3,21 d2d 117:7,19 118:19 data 5:12 8:19 12:6 13:12,14 14:2 15:16 16:10,21 17:3 17:6,11,15,16 17:19,20 18:2 18:3,7,14,17 18:18,19 19:3 19:14,20 20:1 20:19,19 21:16 28:1 29:8 34:21 36:4 37:9 42:1,2 44:3 45:3,5,9 45:14,21 46:7 51:21 52:11,11 52:14 53:17,19 53:20 54:1,3,5

54:11,13,16,19	110:19,21	30:4,6,8,9,11	days 28:7
55:3,5,9 56:11	111:8,10,14	30:16 31:13	107:6 137:16
56:11,12,14,15	112:16 121:10	50:2,2 66:17	137:17 139:16
56:19 57:2,2,3	121:14,15,20	109:16 117:5,6	180:12
57:4,6,8,12,15	122:6,9,13	117:7 129:16	de 1:12 2:3 3:3
57:17,20,21	123:8,10,11,14	140:10,13	4:4,9 6:4 49:12
58:2,3,5,6,9,9	123:16,21	141:3,11 142:7	53:3 98:19
58:10,13,18,21	124:3,7 125:4	165:13 166:8	126:12 151:8
59:3,9,11,17	125:16 126:2	datapoint	173:18 175:11
60:21 61:1,5	127:20 131:2	21:16 39:16	178:14
62:8,12,13	131:12,16	43:19	deactivate
63:3 66:8,12	138:17,18,18	datapoints	139:7,8,10
66:12,16,20	140:4,10,13	34:18	184:8
67:3,21,21	141:9 143:5,12	date 11:2,4,7,8	death 101:1
68:2,3,18 69:2	147:1,8 150:1	11:14,15,16	113:15,16,17
69:4,9,10 70:6	153:5,14,18,18	12:8,9 55:20	149:10 174:10
70:10,11 72:3	153:19 154:1,3	56:3 93:5	174:11,12,17
72:7,18,21	154:7,20 156:1	107:1,5 113:15	174:17,21
73:1,4,5,6	158:10 159:3,6	113:17 135:3	decide 12:8
74:13,15,21	163:1,3,4,6	135:11,13,17	73:19,20 74:7
75:10,19 76:4	165:19 166:2,3	136:19,20	decided 10:4
76:17 77:4	166:7 168:8	137:1,1 149:10	12:5,6
79:2 80:6,10	169:11,12,13	174:9,12,17,21	decision 74:9
84:5,7,8,18	171:11,11,15	184:1 185:4,5	deep 8:4
85:4,5 90:9,12	171:17,17	day 68:19,20	define 40:17
90:15,16,19	172:17,19	68:20,21 69:1	58:18,20 69:2
91:16,21 92:15	175:3,5 176:8	69:2,9,14,14	94:2 108:3
93:19,20,20	176:19 177:8	69:15,15 70:21	153:12,14
95:2,4,5,14,15	180:21 181:4	70:21 71:7,11	156:18 171:16
96:1,2,2,12	183:3,6,6,9,10	71:18,19 72:1	defined 8:19,20
97:17 98:3	183:11	72:2,10,10,10	10:14 13:17
99:10 100:1,13	data's 12:5	72:13 93:8	23:10 46:14
100:17,18,20	database 10:20	102:3 133:13	57:4 62:8,16
101:8,10 102:8	23:21,21 24:1	160:11,11,12	66:2 74:1 95:3
102:10,11	24:1,9 25:5,5	160:12 167:20	96:3 120:16
104:19,21	26:7,7 27:14	168:3 173:15	152:4 158:12
105:20 106:6,9	27:15 29:8,10	185:8	177:5
110:5,9,12,17	29:15,18 30:3		

<p>defines 42:3 57:21 58:2,8 90:17 95:21</p> <p>definitely 11:15 47:12</p> <p>definition 13:8</p> <p>delineated 46:16</p> <p>deliver 170:3</p> <p>delivery 15:12 94:4</p> <p>denoted 111:11</p> <p>dependence 10:21</p> <p>dependencies 10:10</p> <p>dependent 10:16,20</p> <p>depending 130:7</p> <p>depends 15:21</p> <p>deployed 132:5</p> <p>deposition 189:1</p> <p>deputy 2:3 4:10 6:8</p> <p>describe 92:17</p> <p>described 110:11</p> <p>describes 51:8 60:6</p> <p>describing 64:17</p> <p>description 17:21 55:20 56:3 60:6 62:1 159:21 160:2 182:1,4</p>	<p>descriptions 60:7 61:19 177:8</p> <p>destination 39:11 40:3,10 40:12 42:20</p> <p>destruct 36:16</p> <p>detail 52:14,15</p> <p>detailed 5:12</p> <p>details 28:18 50:21 66:21</p> <p>detection 126:2</p> <p>developed 35:3</p> <p>developing 170:2,9</p> <p>deviation 58:19 59:17</p> <p>device 22:6,7 80:11 81:7 82:9,10,20 83:10,16,17,18 83:21 94:4 101:11,12,19 102:14,17 103:4,9,10,11 103:13,17,20 103:20 104:1,2 104:4,6,6,7,10 104:11,12,12 104:17,20 149:20 150:10 150:12,14,15 150:16,17,17 150:18,18,21 156:10,10,17 157:2 158:7 163:19,21 164:3,4,5,6,9</p>	<p>164:10,12,14 164:16,20 165:2,3,5,6,13 167:3,3,4,6,10 167:14</p> <p>devices 104:8</p> <p>dia 107:17 187:16</p> <p>dictionaries 20:18 22:20</p> <p>dictionary 28:4 89:21</p> <p>difference 25:20 56:15 154:9</p> <p>different 7:21 18:15 20:1 24:21 27:11 38:20 39:3 46:14 47:4,4 47:10,13 56:17 64:17 65:8 96:1,18 108:15 109:21 114:18 115:15 134:3 142:17 143:8 168:12 169:15 170:20 181:5</p> <p>differentiate 121:4</p> <p>differentiation 40:13</p> <p>difficult 19:18 68:5 143:19</p> <p>digit 157:6</p> <p>digital 189:8 190:4</p>	<p>digits 152:13</p> <p>dire 30:7</p> <p>direct 31:12,13 34:20 69:17</p> <p>directly 27:15 50:6 69:17 86:17 97:7 109:16</p> <p>director 2:3,7 4:10 6:8,15</p> <p>disclose 19:19</p> <p>disclosure 4:17</p> <p>discontinued 176:17</p> <p>discreet 67:21</p> <p>discuss 4:7 11:19 107:17 112:15</p> <p>discussed 78:8 169:10,16</p> <p>display 14:3,6 14:10,10</p> <p>displays 14:11 129:2</p> <p>disrupt 37:3</p> <p>distinguish 112:4</p> <p>distribution 92:6</p> <p>dive 8:4 9:7</p> <p>divide 83:17</p> <p>divided 56:13 56:17</p> <p>division 2:10 7:1 109:18 114:3 126:6</p> <p>docket 1:9 187:2,4,8</p>
--	---	--	---

document 13:10 17:8,13 17:14,14 19:1 19:2,2,4,13 29:6 50:17,18 51:12,15,18,19 51:20 52:1,8 52:10,17,19,20 55:18,19 63:20 63:20,21 64:15 65:21 67:1 119:9 124:6 159:17 168:9 168:10,17 173:9 176:9 179:10 183:17 185:10	downstream 131:15,16 dr 3:4 105:6 174:3 draft 117:15 119:10 draw 110:5 drop 37:21 42:6,7 dropped 42:8 drug 1:1,2 4:21 6:16 22:1 80:3 80:3,4,6,15,18 81:7,11 82:4,5 82:8,12,18 83:13,14 84:11 88:14,20 89:1 89:8,11 90:5 91:18 92:4,18 92:19,19 94:2 94:4 111:16,16 111:17,20,21 112:8 114:9,14 114:17 115:2 115:10 116:9 116:16 117:13 119:7 122:9,11 122:13,15,16 122:17,20 123:3,6,9,13 123:18 125:21 126:1,3 149:16 166:21 167:1,4 167:7,9,12,14 167:15 175:19 175:20 176:5 176:11,12,13 176:14,15,16	176:19,21 177:1,2,4,9,12 177:13,15,16 177:16,16,17 177:19 178:3,4 178:9,10,12 drugs 2:8,12 7:3 8:8 84:3 91:17 92:17,20 93:17 112:7 113:21 114:6 115:4,13 116:13 117:11 122:5 123:15 176:6,18 177:3 due 18:4 30:9 duly 189:5 duties 138:21	58:19 59:18 62:7 69:21 95:5,15 105:10 106:4,9 107:11 117:5,21 118:12,18 119:6,16 122:5 124:7 125:12 127:7 128:4,4 128:8 133:8,17 134:5,21 135:20 136:3 136:16,20 137:3,4,6,11 137:17 138:16 139:11 140:5 140:18,20 141:16 159:1 160:20 167:19 168:7 169:20 169:20 170:16 176:2,8,19 179:8,13,14,15 185:2,5,9 187:13,15,16 earlier 107:21 118:7 124:2 easier 67:7 77:7 easy 62:2 142:5 142:6 143:7 ecom 4:6 ecpd 135:20 ectb 9:3 ectd 14:17 15:1 15:5 29:5 105:18 109:2 113:6 116:19
documentation 13:6 159:15	documented 65:12	documents 50:16 51:13,16 52:14 95:17,18 107:12 146:13 146:14 173:8	doing 8:12 9:13 19:5 34:6,15 38:5 50:4 68:12,14 98:11 129:14 160:20 172:12,14 179:1 181:11
dosage 22:6 90:20 91:4	dots 152:14	download 173:11	e e 2:1,1 3:1 4:1 4:1 61:13 187:10,17 e.1.3.2a 174:12 e.i.2.1.b 149:3 e2b 1:6 4:9 5:2 5:8 6:15,21 7:7 7:10 9:13,20 10:2 11:21 12:1,11,15 13:14 15:1,5 17:2,5 23:17 24:4 26:15 27:2 29:1 30:21 33:8,11 33:16 34:15 35:5,7 42:1 50:8,15 51:20

136:3 140:9 141:2 155:7 edqm 22:5 168:19 184:18 184:21 effective 106:20 107:1 efficiency 125:7,15 effort 88:8 109:19 efforts 115:13 ei.3.2a 113:16 eight 64:18 132:14 either 17:17 73:9 84:12 91:6 92:19 101:4 103:21 128:4 152:13 161:17 electronic 1:4 7:13 11:5 27:16 30:17 50:19 51:17 106:13,18 107:2,5,9,10 114:12 117:6 117:10,18,19 118:2,5,18 119:3,7,10,18 119:21 124:4 124:13,17,21 125:14,20 127:11 128:7 134:17,19 135:14 138:14 159:14 168:4	170:17 178:1 184:1 electronically 109:8 184:13 element 14:3 16:10 17:20,20 17:21,21 18:3 18:3 19:14 21:17 45:3,5,9 46:7 52:11 53:17,18,19,20 54:5,17,19 55:5 56:11,19 57:3,4,7,8,15 57:17,20,21 58:2,3,5,6,9,10 58:18 59:1,11 59:17 61:5 62:7,13,20 63:3 66:8,12 67:3 68:18 69:2,9 72:3,21 73:1,4,5,5 74:14 75:10 79:2 80:10 84:7,8,18 85:4 85:5 90:9,10 90:11,19 91:16 91:19 92:15,20 95:15 96:1 100:13,14,18 101:3,7,10,15 101:17 102:8 104:19,20 110:5,10,17,19 110:21 111:8 111:10,19 113:11,15,15	121:10,14,20 122:6,9,13,16 123:8,10,16 153:11,11,19 154:7 156:1 160:9,9 161:7 163:7 166:2 174:10,11 175:3,6 176:19 181:1 183:11 183:11 elements 5:12 8:5,5,19 10:13 13:12,14,16,16 17:3,6,11,15 17:16,19 18:7 18:9 19:20 21:6,15 45:21 51:21 52:11,14 55:9,14 56:12 57:4 58:14 59:3,9 61:1,1 62:8,12 64:16 65:5,10 66:1,1 66:2,4,12 70:6 76:4,5,14,17 77:4 78:7 90:13,15,15,16 95:6 96:2 97:17 98:3,5,6 99:10 100:1,12 101:9,14 104:21 111:4 111:14 112:16 123:14,21 124:3,7 125:4 128:13 130:20 131:2,13,14	148:18 150:1 151:14 153:14 159:3,7,9,18 160:6,7 163:3 163:5 168:8,14 169:12,12,14 172:2,9,10,19 177:8 183:6,6 183:9,10 eligible 4:21 eliminate 141:5 eliminates 109:17 138:10 email 25:14 28:11 33:18 34:3 35:13,14 35:16 75:6,6 75:15,21 76:1 116:21 emailing 130:6 embedded 16:2 emphasize 116:16 120:11 employed 189:11,14 190:8,11 employee 189:13 190:10 empty 161:5 encevs 102:9 104:18 encounter 148:5 encountered 52:6 encouragement 124:20
--	---	--	---

endorsed 83:4	epidemiology 2:5 4:11 6:10	163:17,17,18	154:14,20
engage 114:18	error 16:10	163:20,21	172:18
engaging 126:8	60:7,7,8,8 61:6	164:2,6,12,13	examples 39:18
enhanced	61:7,19 62:1,1	164:16	64:14
126:2 131:14	95:10 145:16	evening 188:3	exceeded 60:18
131:17	145:19 146:6	event 1:4,5	exceeds 60:19
enhancements	147:4 148:15	77:2 78:5,6	excel 17:7,8,10
117:9 118:11	errors 16:15,16	81:5 100:15,15	52:18,20 53:1
131:15	16:17 100:18	116:9 122:20	53:1,7,8 55:7
enhancing	109:13 146:9	123:5 149:4,5	65:16 168:10
131:6	147:3	150:4,4 157:7	178:19
enrollment	es 189:4	172:20 178:5	except 13:1
176:14,17	esg 38:15 42:3	181:17	24:18 65:2
177:1,2,10	51:2 132:1	events 22:2	134:2
178:4	137:9 179:18	28:19 115:20	exceptions 44:7
ensure 121:5	183:19 184:11	116:7 117:10	excited 4:7
ensures 38:5	184:12 186:7,8	175:2,6	excluding 4:21
enter 25:8	especially 13:2	eventually 28:3	exclusively
28:13,17 32:13	26:12 31:6	40:17 87:18	92:5
82:14,15 103:9	76:20 78:3,14	135:2 151:4	excuse 53:4
138:5 141:6	88:19 130:19	everybody	exempt 4:20
entered 116:21	133:14 169:6	10:18 35:15	5:13 6:19 39:2
140:13 182:20	180:20	49:13 105:7	41:16 42:13
entering 180:2	esrp 35:8	133:16 186:8	46:6,11 47:7
enterprise 21:3	established	evp 91:2,5,12	47:11 81:21
entire 41:21	111:18 176:2	evs 21:14,21	82:4 90:4,6,11
115:3 155:16	et 94:5	69:13 73:18	90:14 92:11,16
180:14	eta 135:15	79:4,18 91:1	92:18 93:4,11
entity 162:16	ethnic 14:10,11	104:18 168:19	93:11 115:8
162:18	ethnicity	exact 85:2	116:14,19
envelope 42:19	149:11 166:11	exactly 18:13	118:7,17 119:2
42:20 43:1,10	eu 19:17,19	42:6 156:6	119:12 120:13
43:10,20,20,21	20:2,4,5,8	example 14:9	120:19 121:1,6
environment	104:15,16	39:10 75:13,19	121:18 122:18
126:4	evaluated 90:6	82:12 94:5	123:1 124:1,21
environments	evaluation 1:2	109:21 122:21	125:17,20
131:19	2:12 7:2 114:4	143:2 152:15	169:1,17
		153:20,21	175:16 176:5

178:7 exemption 116:4 existing 22:2 35:20,20 72:5 82:11,16 83:2 105:14 106:7 106:11 expect 40:11 86:20 95:13 158:12 expected 68:19 70:16 72:4,9 72:19,19 160:10 expecting 39:21 40:5 expedite 130:8 160:18 expedited 69:14 70:15 71:6,10,15,16 71:20 72:11,13 72:14 116:10 119:11 160:11 160:18 178:2,5 experienced 122:19 178:3 experiment 69:6,7 70:19 71:4,19 explain 41:12 57:1 explaining 17:5 explains 41:13 exposed 122:5 122:20 176:7	exposure 123:13,18 176:14,21 177:1 178:1,3 178:5,7 exposures 176:11,12 177:9,12 expounded 168:20 extended 16:12 extension 13:9 13:17 16:9 45:12 54:17 65:21 84:3 100:14 110:8 127:1 154:16 154:18 160:15 extensions 5:4 7:19,19 13:11 17:2 18:2,4 51:10 58:1,5 65:14,15,16,18 99:12,15 131:8 145:6 168:10 169:11,13 171:8,11 external 153:3 155:20 157:12 extra 94:11 extracted 70:3 145:5 eye 136:9,11 172:4	fact 72:14 151:20 158:6 facts 17:13 85:1 100:5 faers 1:5 5:10 7:13 9:16 12:12 14:19,20 15:2,16 17:9 24:8,9,12 27:3 29:7,9,9 30:2 34:2 35:1 39:14,16 42:8 42:14 51:17 95:4 100:7 106:4,16 107:5 107:8 108:5,14 108:17 112:10 117:5,8 118:1 118:11 119:19 119:21 124:9 124:17 125:3 125:13 127:11 134:19 135:14 135:20 140:12 140:13,14 141:1,4,7 142:7 151:14 155:6,21 156:13,20 157:15 158:3,9 159:1,13 168:4 170:16 180:18 180:20 181:2,4 181:10 183:18 183:21 184:10 184:11 faersesub 35:14 63:13	134:8 136:14 fail 88:2 fall 44:16,18 88:5 93:13 falls 62:12 71:5 false 69:6 71:9 71:13,20 72:14 73:7,10,14 74:8 101:21 146:20 150:9 158:1 161:9,17 161:19 familiar 107:20 120:15 far 173:21 faster 48:2 142:8,12 fda 1:1,4,9 2:5 2:9,13,16 4:8 4:11,14 5:7 7:12 8:18 10:1 11:12 13:19 14:15 17:17,19 18:1,1 19:14 19:21 20:6 21:9 22:9 26:14 44:14 50:16 51:20 52:11,15 53:16 53:19 54:5,19 58:1,4 62:15 64:14 68:18 69:10 73:1,4 74:3,5,14 76:5 76:7 84:11 85:1,7 90:9,10 93:16 94:15 95:10 102:19
	f		
	facility 14:4		

105:9 106:7,9 107:1,4,11,15 116:18 118:9 118:13 119:3,6 120:16 121:13 121:14 123:6,8 123:9,12 126:4 128:11 130:7 136:20 137:17 141:6 145:4 148:21 149:2 149:18 151:10 154:21 155:5,5 155:7,10,11,12 155:12,21 156:7 157:14 158:3,9,15,16 167:3,13 168:6 171:5,7,8 179:9 184:2 185:2 186:11 187:13,14 fda's 13:12 15:12 21:2 26:15 34:1 86:6,9,16 87:4 87:6 127:1 178:5 180:10 fda.c.1.12. 79:15 fda.c.1.7.1. 160:16 fda.c.5.5a 111:10 fda.e.i.3.h.2. 100:17 fda.g.k.10.a.r 178:11	fda.g.k.12.r 101:14 fda.g.k.13.r. 93:19 fda.gov 27:1 170:15 fda.gov. 17:10 fda.hhs.gov 63:13 134:8 136:14 fda.hhs.gov. 35:14 fda01 160:8 fdafaers 100:8 fdas 40:5 43:15 43:17 fdr 87:1 fds 87:7 federal 106:11 fee 186:7,12 feed 18:14,17 18:18,19 156:5 feel 100:20 124:10 field 14:6,12 42:2,2 53:9,14 53:17,17 54:1 54:2,11,13 55:3 57:14 59:8 66:16 67:6 69:4,5 70:10,11 71:19 72:5,7,18 73:3 80:5 82:7,8 84:1 86:12 90:8 91:3,13 91:14 92:10 93:16 94:15	97:18 102:10 102:12,15 103:2,14,16 104:16 110:8 110:12 148:10 148:14,18 159:21,21 160:2,3,13,13 160:15 161:1,6 161:20 162:4,6 162:19,21 163:18 164:9 164:14 165:1 165:21 171:16 171:17 179:5,5 182:15 185:13 185:16 fields 39:18 41:7 45:14 57:13 78:16 100:21 104:9 104:11,14 162:5 163:1 164:18 165:19 176:8 180:17 180:17,19 181:1 fifth 82:19,19 file 13:13 14:2 15:17 16:1,18 16:20 24:8 29:18 33:8 39:12,14,21 40:4,6,11 41:1 42:6,7,12 43:2 43:2 52:18,21 61:16,21 62:2 62:11 64:16,17	64:17,19 65:4 72:10 113:6 126:18,21 127:15,15,16 127:18,20 128:4,9,14,14 129:1,3 133:19 133:20 134:5 139:12 142:4,5 168:14 179:15 180:1 186:16 186:19 filed 65:9 files 15:5 16:14 38:17 42:4,7 42:21 47:20 48:14 52:12 62:5,6,7,9,10 62:14,15,17,18 65:7,8,9,10 100:3,7 108:4 108:5 124:9 126:19 127:7 127:16 134:9 142:6 179:12 179:13 fill 27:19 70:16 148:13 filled 94:4 filling 28:16 40:11 final 10:11 106:21 118:3 finally 9:5 62:19 68:13 96:17 111:11 124:11
--	--	---	---

financially 189:15 190:11	fix 129:15	footprint 146:17	97:6,8,11,14
find 19:6 61:14	fixed 11:15	forbid 95:9	97:16 98:1,4
63:11,14 97:8	132:7,11	foregoing	126:8 151:4
119:13 132:9	fixes 95:14	189:3,4 190:4	158:20,21
151:17	132:6	foreign 86:10	159:6,8,11,19
findings 31:18	flag 150:7	86:11 87:2,3	160:7 165:20
108:20,20	157:21 161:4,7	forget 97:21	172:2,6,8
first 4:6 6:4 9:7	161:16	172:10	173:4 178:18
9:17 11:20	flagging 177:20	forgotten 144:4	179:1 183:17
15:6,11 23:20	flavors 181:6	form 22:6 25:9	found 64:7
24:5,14 51:12	focus 84:4	26:2 27:4,20	four 9:12 13:16
52:17 53:13	88:10 114:11	28:14,17 33:7	41:18 48:1
55:12 80:9,9	118:20 141:18	50:4 90:20	49:3,5 50:16
80:17 81:2,6	fold 161:8	91:4 116:17	82:18 168:9
81:20 84:13,15	folder 42:4,7,8	118:9,12	173:16 177:7
85:7 91:8 95:7	42:13 45:7	122:21 138:17	180:12
97:10 99:15	108:4,6 131:21	formally 152:4	fr 187:3
101:15,20	folders 42:9	format 5:2,8	free 35:11
106:18 109:6	folks 63:17	12:5 27:16	45:14 91:13,14
110:3 111:5	follow 16:21	89:3 97:3,4	103:2,5,13
113:2 119:4	30:2 32:7,9,11	103:1 105:17	124:10 165:7,9
120:13 125:2	32:11 66:13,14	106:4,14 107:2	165:10 186:15
126:21 130:2	66:17,18,19,19	107:11 109:2	186:16,20
133:18 135:8	97:3,5 102:7,7	113:6 117:5	front 33:2
136:6,9,11	117:1 143:13	118:1,12,18	42:19 140:9,11
140:15 143:21	143:18,19,20	125:14,20	fulfil 70:15
144:1 159:18	144:2,5,8,9	135:20 137:3,7	71:4,10,14
170:7 171:19	162:3,3 166:5	137:11 139:6	72:4
174:4 176:13	166:17 176:15	183:14,16,16	fulfill 160:9
181:5 184:20	177:1,5	formats 116:18	full 58:19
fist 136:1	followed 169:5	forms 79:7	84:13,15
fit 34:18,18	182:1	forth 22:3	187:14
176:2,12	following	28:19,20	fully 141:15
five 28:6 68:20	106:3 119:4	132:10 155:14	function 77:11
70:21 72:10	152:7 176:13	forward 8:21	149:3,8
139:16 154:18	follows 34:20	64:1,7 96:17	further 56:13
160:11	food 1:1 117:13	96:20,21 97:1	56:17 63:4
			187:1 189:13

190:9 future 59:2 118:11 129:17 171:10	139:4,6,12 140:9,21,21 141:8 159:2 168:1 170:9 184:6 186:9	73:10,13 185:7 187:11 gives 50:20 51:6 53:16,20 54:1 55:2 85:1 138:8	98:9,10 105:10 108:13 127:3 129:5,15 130:11 132:9 133:18 135:13 136:16 137:10 138:4 139:2 140:21 141:11 143:6 151:3 153:8 155:15 156:11,15,19 158:18 159:14 160:7 164:14 166:10 167:16 169:6 171:14 173:11 178:15 185:8,11,12 187:4,7
g	gathering 12:4 general 18:21 25:11 42:10 58:5 generate 129:18 generated 126:18,21 generic 2:12 7:3 8:8 113:21 114:6,9,14,17 114:21 115:2,4 115:13 116:13 116:16 117:11 125:21 126:1 ger 29:3 getting 19:18 47:1 48:18 87:19 137:6 give 9:9 11:6 16:19 26:17 30:11,12 54:11 58:6 61:16 103:5 126:10 130:5,16 136:18 138:3 143:2 147:16 150:20 151:19 152:14 154:19 174:1 175:14 177:13,15 given 14:9 26:19 67:2	giving 87:9 94:7 gk 80:2 84:3 88:15 91:17 gk.2.2 85:5 gk3.1. 88:16 global 22:10 86:6 go 4:14,16 5:15 5:15 7:10,20 8:4,15,21 9:5 9:18 15:8 16:15 17:4,4 19:11 20:6 22:15 23:13,17 24:21 28:17 30:2,21 31:18 32:21 36:10 38:20 41:11 42:8 46:21 50:11 53:1,12 54:18 55:10,20 56:9 59:13 60:9,11 61:13 62:4,9 63:16 64:1 65:13 70:2,6 77:17 78:21 79:1 82:14,15 84:6 86:10 87:3 89:19 90:17,21 95:6 97:6 98:6	133:18 135:13 136:16 137:10 138:4 139:2 140:21 141:11 143:6 151:3 153:8 155:15 156:11,15,19 158:18 159:14 160:7 164:14 166:10 167:16 169:6 171:14 173:11 178:15 185:8,11,12 187:4,7 goal 107:3 god 95:9 goes 24:20,20 29:9 39:14 54:4 131:16 136:20 140:9 140:10 155:8 155:17 157:18 158:1 160:1 161:8,8,12 167:3 185:14 185:17 going 4:18 5:1 5:18 6:12,13 6:18 7:6 9:11 12:13 14:21 19:18 27:12,21 28:11 36:17 44:5 47:16 56:5 57:18

59:1 61:7 62:21 66:5 70:2 74:12 75:4 90:17 92:8 99:20 100:11 105:3,8 105:10 109:21 110:16 111:1 111:11 112:14 117:14 129:10 132:19 134:21 141:4,17 144:5 151:10 153:14 153:15 154:13 158:18 164:8 173:2,3 187:14 good 4:5 25:17 43:5 96:12 98:11 105:7 117:8 126:19 129:5,20 166:10 187:12 great 43:1 53:12 greater 142:1 grid 19:6 group 14:10,11 81:3 149:14 155:20 156:8 gsrs 22:11 86:9 86:16 87:1,5,7 88:4,13 168:19 182:7 guaranteed 30:12 guess 49:3,5 105:4 183:2	guest 188:1 guidance 10:11 72:6 74:2,3,5,6 74:6,9 106:21 117:16 118:3 119:10 guide 50:17 51:11 98:1 119:6 152:18 161:11 171:4 172:11 guidelines 49:16 guys 136:1 h h 54:6 hand 55:12 handle 114:17 happen 5:9 30:21 44:2,11 90:14 129:16 132:8 140:5,6 140:15,19,19 141:14 147:8 happened 33:12 149:8 160:12 happening 33:10 132:8 134:16 140:7,8 168:2 happens 25:13 87:2 harmonization 1:6 harmonized 180:20 181:2	181:12 header 36:13 37:21 39:10,11 42:1,3,5,18,18 43:6,14 44:3 48:4 59:21 60:5,6 100:6 108:3,11 111:6 120:16 169:9 headers 13:4 39:21 45:7 100:2 health 2:7 69:18 165:8,11 165:14,17 181:6 hear 13:15 49:13 78:7,13 96:10 105:4 heard 33:9 124:2 135:15 heart 63:20 held 146:13 help 14:7 50:13 88:13 89:15,16 94:11 124:18 130:8 helpful 119:14 helps 47:13 86:16 87:9 90:1 94:1,1,8 136:15 142:2,3 142:3 hereto 189:15 190:11 hey 26:15 29:17 32:8	hi 114:2 hierarchy 152:3 high 125:11 highlight 5:3 113:1 highlighted 29:11 100:4 123:21 highlights 108:1 117:15 highly 63:14 124:5 history 55:16 55:17,21 56:2 56:10 176:20 hit 25:10 33:20 hl7 55:5 62:6 62:16 153:2,8 153:17 155:19 157:12 171:14 hold 137:14 168:21 holders 32:3 hope 15:18 49:13 119:13 187:11 hopefully 20:12 hoping 16:20 61:16 hospitalization 123:4 hospitalized 101:2 123:2 hours 5:17 15:19 16:5
---	---	--	--

house 179:18	42:17 56:11,12	87:21 99:16,17	ii 117:8 118:11
housekeeping	57:20 59:11,20	147:12	125:3
5:16	60:2 64:11	identified 52:5	illustrate 110:1
huge 109:4	66:13 84:14	52:8 129:15	immediate
142:5 153:12	86:2 110:15	132:14 152:16	109:11
human 14:4	118:5 121:2	176:5	immediately
89:1 92:3	129:17 137:8	identifier 41:9	70:12
hundred 47:20	137:10 145:8	41:10 45:3,5	impact 20:6
74:15,21 142:2	145:11,14,17	46:5,7 55:3	implement
i	186:19	58:3 66:10,11	9:20 10:1
ic 82:13	icsr's 118:17	67:6 84:7 85:4	11:13 106:13
ich 1:6 4:9 5:2	icsrs 15:2 16:3	99:16 111:7	187:15
5:8 6:15,21	20:19 22:21	120:21 121:1	implementati...
13:13,16,17	23:5,6 27:16	121:18 145:7	5:5,10 6:8 7:7
17:1,15,17,18	29:12 41:15,15	145:10,20	7:10,11 8:10
17:19 18:3	41:17,18 47:2	146:2,4 151:11	8:11,15 9:15
21:8 41:6 45:9	51:8 81:13,14	151:15 152:18	9:16 11:4,8,9
51:11 52:11	85:17 108:2,19	identifiers	11:11,11,14,18
53:16 54:7,8,8	109:16,17	142:15,18	11:20 12:11,13
55:14 56:13	111:3,12 119:7	151:10,18,19	13:21 17:14
58:7,19 59:10	119:19 120:12	151:21 152:1	19:3,5 49:16
59:18 62:7	120:17 121:4	identifies 132:6	50:8,9,15,17
65:9 66:8 98:1	122:4 129:18	151:16 153:1	51:11 52:6,15
98:3 106:4,9	133:3 135:19	identify 104:9	63:21 99:2,4
107:10 122:6,8	135:19 137:3	108:6 122:5	106:10 107:18
124:7 145:3	137:21 138:1	125:4 152:18	119:6 126:15
154:5 155:3,8	142:2,10,11,12	175:18	130:11 135:11
155:20 157:13	142:19 143:1,9	identifying	159:16 169:19
158:2 159:6,9	143:10,10,15	101:15 120:12	171:4 172:11
159:10 168:9	144:12 145:12	122:3 153:10	implementing
171:2 172:10	179:19,20	153:10	23:17 26:16
172:11	idea 129:13	idn 90:11	51:10 130:19
ichr 155:1	158:16	ids 13:3 22:12	187:13
icsr 39:8,9	ideal 120:6	36:14 37:10	implements
icsr 13:13 15:5	identification	38:14,16,17	11:12
23:3 25:8,10	14:5 41:6 53:9	40:4 48:4 68:8	import 74:10
28:13 40:12	53:14,17 65:20	68:11 108:3	181:3
	66:5 78:9	120:16 170:9	

importance 120:12	included 34:10 83:4 146:15	108:2,13,15,16 110:1,4,6,7,13	73:3 74:11 83:12 103:7,18
important 11:18 14:13 15:3 19:13,15 23:16 29:1,11 38:1,19 39:19 40:15,21 41:4 41:6,11 46:3 46:19 49:19 51:20 66:20 75:9 78:15 80:5 81:18 84:3 85:13 87:16 92:21 100:10 102:15 111:4 112:3 122:4,12 123:17 141:20 143:5,13,17 148:6,20 159:5 169:4 177:11	169:13,14 includes 55:19 108:20 123:12 127:1 including 20:11 125:16 incorrectly 38:2,4,12 increased 16:2 109:1 increment 167:20 incurred 60:16 ind 4:20 5:7,13 5:13 6:13,19 8:7 22:8 39:2 39:17,18 40:17 40:19 41:14,15 41:16 43:4,8,9 43:9,10,17,19 43:21 46:5,5,6 46:11,11,11 47:6,11 48:13 64:11 65:1,2 69:1,1 77:17 77:18 78:4,6,7 78:7,12,15 81:14,21 82:3 84:20 89:2,4 90:3,4,4,6,6,7 90:11,13,14 92:11,16,18 93:4,7,11,11 102:18 105:3,9 105:15 106:14 106:16 107:1	110:15,17,17 110:20 111:9 112:11,12,15 113:2 115:6,6 115:8,8,16,16 115:17,20 116:4,4,14,14 116:18,19 117:12 118:4,7 118:15,17 119:2,11 120:13,19,21 121:6,18 122:18 123:1 124:1,21 125:13,13,16 125:19 135:17 140:5 141:15 148:7,8,8,9,12 148:16 150:3 157:7,8,9,16 169:1,1,17,17 173:20 174:5,6 175:2,16 176:5 178:7 181:9 indicate 121:9 121:10 122:17 124:14 indicates 59:19 60:2 113:10 indicating 121:17 indication 112:9 indicator 70:10 70:12 71:8,13	indirectly 27:10 individual 31:14,15 32:16 78:12 108:19 116:2 inds 36:6 41:15 41:16 106:15 109:9 110:18 117:17 174:7 industrial 132:12 industry 10:6 74:3 88:9 117:16 119:10 127:6 inefficient 105:18 inform 63:13 115:9 informal 153:9 informatics 2:8 6:16 information 12:10,16 13:5 17:1 25:17 27:21 28:13 29:16 32:10,11 32:12 55:19 57:11 61:20 71:5 72:18 73:7 74:8 76:3 76:8,11,12 79:19 80:3 81:1 88:15 91:17 92:21

101:4,5,11,12 101:19 112:17 113:13 119:20 120:10,17 123:9,16 124:6 142:13 150:20 162:2,11,13,15 166:15 175:4,8 175:9 187:12 187:12 informations 38:15 infrastructure 31:12,13 ingredient 88:4 92:3 182:6 ingredients 92:3 initial 9:19 10:1 32:7,8,10 66:13,17 72:15 72:17 78:1,16 117:1 143:18 143:19,21 144:12,13,14 144:17,18,19 146:18,20 148:19 initially 9:20 39:1 initials 77:16 181:14 initiation 176:18 initiator 163:5 inquiries 135:6 inside 43:10,20	inspection 33:14 inspectors 33:14 instance 64:12 64:12 65:7,8,9 65:10 154:4,18 instances 65:11 instructs 64:13 intended 31:11 31:21 intending 91:10 intensive 105:19 intentional 178:21 179:1 inter 91:19 166:13 167:18 interacting 80:15,18 81:11 122:16 interactive 81:16 177:16 interchange 48:20 interested 189:15 190:12 interesting 163:18 internal 172:16 internally 114:20 international 1:6 152:4,8 internet 170:14 intervention 100:16,19	101:6,10 introducing 5:15 invalid 60:17 invest 31:9 investigating 111:16 investigation 94:12 153:16 183:20 investments 131:6 invite 105:2 invited 133:1 invitro 108:21 involved 76:19 149:9 iscr 29:7 41:6 43:7 142:20 iso 104:14 152:9,9,12,21 155:18 157:10 issue 14:8 129:16 issued 95:1 issues 16:14 63:15 114:17 114:21 115:5 115:11 124:18 127:18 129:1,3 129:4,14 132:6 132:6,9,11 133:7 170:13 it'll 18:10 item 11:20 items 5:17 11:19 99:1	itu 152:9,12 153:1 155:18 157:10 j j 38:15 48:5 54:10 january 56:4 130:18 job 1:21 join 151:5 joined 157:10 joining 126:7 joint 152:9,12 152:21 155:18 july 133:6 jump 163:16 jumping 97:7 97:13 june 107:4 jung 2:10 3:5 6:19,21 113:19 114:2 126:12 175:13 178:14 188:1 k keep 20:14 21:9 25:18 32:1 33:18 36:16 37:4 38:10 47:15 136:9,11 140:11 144:10 164:10 172:4 keeper 158:15 keeping 36:15 44:7 65:11
---	--	---	---

keeps 32:14 kelley 2:14 kept 32:16 59:2 key 5:12 17:13 19:2 99:1 114:14 177:11 kind 11:10 17:4 18:12 20:9,18,18 26:4 40:13 51:1 63:11 69:20 81:1 85:20 128:3 130:1,16 140:7 172:17 know 5:9 7:15 8:11,18 9:2,17 10:18 14:2,7 14:15,20 15:2 15:8,20 16:1 16:13,18,19 18:17 19:8,9 20:14,19,20,20 21:7,17 22:1 22:17 23:18,18 24:19 25:4 26:11,17,17,19 27:9,11 28:15 30:13,20 31:7 34:1,6,16 35:19 36:4,11 37:2,19 39:2 40:8 44:7,9,16 44:18,20 45:13 45:17 46:19 47:2,15,19,21 49:18,20 51:1 51:5 55:9	56:14,14 59:10 61:8 63:12 65:21 67:18,20 68:4,19 69:5 72:5 73:11,13 75:7,14 76:7 76:10,11 77:3 78:13 79:12,13 82:10,20 83:3 84:20,20 85:2 85:19 87:8,10 87:19 92:7,16 93:3 94:3,9,10 94:11,20 95:1 95:13 96:2,10 96:11,13,20 99:21 111:17 124:10 127:19 128:11 130:6 131:2 132:21 133:4,11,16 134:2,3,8,9 135:1,10,15,18 136:8,12 138:18 139:13 139:14,18,19 140:1 142:8,10 143:20 144:1,4 144:7,8,14,17 145:1 146:11 146:12 147:3 150:9,11 151:12 154:2 154:15 156:4,6 159:5 160:4 162:1,20 163:11 164:9 165:14 166:14	167:1 168:13 170:4,12 171:16 172:5 174:1 177:20 179:2,4 181:3 181:16 182:9 182:15 184:2 184:19 185:7,8 185:9 knowledge 158:15 189:10 190:6 knowledges 23:10 known 85:3 86:4 119:8 152:2 knows 35:15 42:6	lay 165:15,17 lead 24:19 learn 24:18 learning 119:17 lee 2:10 3:5 6:19,21 113:19 114:1,2 175:13 175:17 188:1 left 14:9 53:21 55:12 legend 57:19 length 16:11 54:2 56:15 58:8,8 60:18 60:20 69:10 73:6 74:15,21 83:8 91:21 93:19,20 110:8 123:10 lengths 121:14 176:3 letter 43:2,2,11 43:21 60:16 109:7 138:9 140:9 level 67:11 68:12,13 172:20,21 levels 67:13 leverage 106:7 library 182:2,5 license 32:3 lies 44:12 lieu 183:18 lieutenant 2:6 life 101:1 115:3
		I	
		I 54:14 label 92:5 labeling 22:14 22:16,18 23:2 85:16 86:1 labor 105:18 lack 57:2 large 142:5,9 lastly 14:13 78:2 121:12 135:12 149:21 172:1 late 133:5 latest 75:13 143:15 launching 35:8	

lifecycle 66:14	110:21 112:21	38:15,17 39:13	lunch 5:19 6:11
likewise 65:5	114:19 119:13	39:14 40:4	8:1,1 50:7
limit 133:11	123:14 125:1	43:14,17 48:4	77:18 90:14
185:14	183:5,12	48:13 68:8,11	98:9 99:3
limitation	listening	100:8	m
185:13	125:10	longer 109:6	m 54:14
line 60:17	listing 17:10	185:2	m.ed. 2:6
100:2 110:11	104:8	look 13:7 20:20	made 12:11,16
136:14 172:7	lists 54:18	39:9,15 53:7	64:3 76:5
link 4:13,15	56:12 59:16	60:10 70:5	124:9
38:16,18 70:1	62:20	73:7,21 81:2	mail 30:20
74:4 95:19,19	literally 138:2	87:11 91:8	75:15,17
102:16,16	little 5:4 9:9	98:4 100:20	mailbox 118:9
104:4 107:12	17:5 51:3	124:10 128:3,5	main 46:21
128:6,8 130:15	53:12 141:18	136:17 152:10	96:12
180:11	live 135:13	153:13,18	maintain 44:13
linkage 117:1	136:20	154:8 155:1,16	185:6
linked 78:10	livengood 1:20	156:11 171:4	maintained
147:12	189:2,19	171:15,19	32:21 40:21
links 51:13,14	load 30:19	172:12 173:11	maintaining
147:13 173:11	142:6	looked 65:6	44:20
list 2:2 18:8,9	loaded 29:9	96:14 134:4	major 130:21
18:19 21:2	local 68:16,17	looking 45:6	make 10:12,17
52:10 56:6	69:3,9 70:15	49:8 85:2	22:21 23:5
60:14 61:18	72:4,9,12	87:13,15 126:8	28:3 33:16
62:6 64:12	85:11 102:2	156:6	34:20 37:18
81:2,20 82:16	147:2,2,9	looks 19:18	39:3,15 45:15
83:3 87:8 90:7	154:7,8 156:1	43:5 50:13	45:18 46:1,2
91:9 96:6	156:2,3,7,14	56:2 99:7	46:14,18 47:3
97:16 109:5	160:16 182:4	127:13	47:3 48:9,20
129:1,3 130:12	locale 160:10	loop 24:13	62:11 67:20
152:14 156:12	location 1:17	lot 9:18 22:5	68:14 71:16
156:13 157:2	24:21 25:1	35:15 49:19	74:9 87:17,19
159:12 165:11	62:13 134:3	104:20 124:3	88:7 91:5
171:1 174:7	171:15	165:3 186:13	93:12 102:7
listed 27:13,14	log 37:10	low 31:8	121:6 124:4
61:1,7 102:13	login 13:2,3	lsmb 131:7	126:19 132:10
106:17 107:14	28:4,7 38:5,14		

133:19 137:14 138:19 143:7 167:15 169:4 171:20 172:7 181:18 182:3 makes 66:16,18 67:9 77:7 125:15 makeup 111:12 making 15:3 19:10 34:2 38:7 68:6 88:10,11 170:7 172:6,17 malfunction 77:2,13 80:12 81:4,5,6 83:13 101:16,20 102:3,4,20 149:6 150:6,7 150:10 161:15 161:16,18,18 181:14,16 manage 10:20 21:12,13 management 126:2,7 mandated 138:11,12 182:15,16 mandatory 137:8,10 162:21 179:5 183:3,9 185:4 185:4 manner 116:10 manual 88:6	manually 25:8 28:14 117:1,2 180:2 manufacturer 92:5 104:11,12 104:12 138:6 165:1 manufacturers 44:14 87:13 181:7,8,9 map 160:2,14 160:15,19 162:9,9 165:7 166:16 167:6 mapped 160:5 161:1 181:10 mapping 161:8 161:19 167:5 178:19 maps 161:12 mark 61:3,12 markable 163:7 marked 58:1 162:17 market 4:8,8 5:7,13 6:6 7:16 7:16 8:3,6 9:2 9:2,3,13,14,15 9:17,21 10:2,2 10:8,8,14 12:2 12:2,4 13:3 22:15 23:17 24:16,17,20,20 24:21 25:2,2 28:16,17 31:19 32:19,20 33:3 33:3,5,5 34:11	34:14 35:2,5,8 36:1,3,4,5,7,12 36:17,18,19 37:7,9,10,12 37:12,13 38:2 38:3,3,4,6,8,9 38:11,12,12,13 38:20,21 39:7 39:8,12 40:4,5 40:7,7,9,12,16 40:16,20 41:18 41:19,20 43:16 44:2,2,8,9,11 46:15,16,17 47:4,5,5,6,6,12 47:12 48:19 54:11,12,14,15 56:16,16 67:7 67:10,17,18,19 68:1,1,4,7,9,9 70:9 71:11,18 74:1,1 80:7,7 81:12 85:8 87:14 88:19,20 97:2,4,9,12,14 97:15 99:13,14 100:4,5 101:7 105:1 106:8 110:2 112:11 112:13 114:12 115:4,12 116:12,13,17 117:3,4,11 118:15,15 120:17 121:4,5 123:19 124:4 124:13 125:2,4 125:5,12,13	133:3 134:20 134:20 135:19 135:19 136:4 137:21 138:1 139:5 141:5 143:1,3,4,9,10 143:10 145:8 145:13,15,17 145:19 146:7,8 146:11 160:21 167:19,21,21 169:2,6,17 173:5 183:15 marketed 87:12,15 89:8 89:11,14 90:5 marketing 37:1 38:21 39:1 70:8 88:18 100:12 182:16 maryland 189:20 mask 79:11 174:19 masking 79:12 match 23:2,7 44:1 83:20 88:3,4 146:1,3 matches 182:5 material 178:19 max 47:21 58:8 60:18,19 73:6 74:14,21 93:20 110:8 maximum 16:11 54:2 79:16 83:8
---	--	--	---

91:21 121:14 123:10 mba 1:12 2:3 mcn 138:7 md 1:18 2:6 mdn 15:6,13 24:7 me.txt 64:17 mean 13:11 42:16 92:11 129:9 130:21 142:21 144:6 150:2 152:17 178:1 180:19 181:5 meaning 121:16 means 16:17,18 17:19 21:20 25:11 29:8 30:19 32:15 36:4 40:8 42:16 44:8 47:17 53:19 61:4 65:4 70:16,18 71:3 71:6,6,7,9,13 72:2 73:5,9,18 78:3,4 79:4,17 81:15,16,16 83:14,18 84:10 88:5 92:15 97:2 103:8,18 127:19 128:11 140:12 141:1 142:21 144:3 149:3,4,13 152:11,17,21	153:4 154:12 156:20 157:1,9 157:16 161:5 162:11 167:8 181:16 183:8 measures 22:4 mechanism 24:14,15,17 109:10 127:5,6 127:8 128:4 169:9 mechanisms 6:7 7:8 23:15 23:15,19 49:17 99:3 med 149:4 meddra 143:16 152:15 153:4,5 media 30:19 medical 40:18 147:18 medication 76:21 100:18 medicinal 84:7 85:4,6,8,14 86:3 111:19,21 112:5 122:6 181:20 medwatch 34:7 141:2,2,6 180:18 181:2,5 181:5,10 meet 115:17 116:4,5 118:5 meeting 1:17 4:6,14 5:17,20 7:5 112:11 117:17 134:16	180:10 187:3 187:17,20 188:6 meetings 107:15 meets 178:5 mention 26:13 45:2 77:16 85:10 88:20 92:13 102:18 162:6 166:13 180:7 185:20 mentioned 13:11 33:7 58:14 61:3 63:6 73:3 92:8 92:9 118:7 170:4 174:13 177:18 185:21 mentioning 33:9 mentions 30:18 mess 44:19 message 15:12 16:8,11 18:11 18:12,13 19:8 41:10 45:2 46:4 59:21 60:3 61:6,7,16 61:18 63:8,8 120:21 121:18 145:20 146:2,4 146:6 messages 16:14 18:15,16 20:3 20:5 95:10 met 59:19,21 60:1,3 61:4,6	95:5 metal 65:4 method 23:20 76:17 106:18 106:19 112:19 125:16 150:2 methods 7:8 23:14,15,20 30:7 31:2 49:17 99:3 106:17 139:9 169:8 migrate 10:5 167:13 million 88:1 mind 32:1 44:8 65:11 144:10 164:10 minimal 77:4 minute 7:9 minutes 8:16 49:3,5 105:8 151:2 173:16 mistake 45:16 mix 47:10,12 143:9 mixed 45:10 mixing 89:20 model 62:6,16 153:12,13 moderated 1:12 modification 144:11,13,15 144:16,19 money 109:19 monitoring 98:15
--	---	--	---

month 56:6 monthly 87:7 months 106:21 118:2 morning 4:5 159:15 move 9:4,21 10:7 12:7 13:20 97:1 140:5 141:15 159:2 166:17 173:2 183:15 183:16 185:5 185:11,11 moving 15:9 172:4,13,13 mph 2:6,10 mpid 84:8,10 84:12,14,21 85:1 88:21 msk 174:19 multiple 30:5 77:14 79:21 95:17	93:2,10 108:7 146:5,7,10 n.1.4. 41:8 67:6 n.2.r.2 45:13 145:21 148:7 n.2.r.3 39:17 40:1,8 41:9 42:15 43:4,7 44:5 45:4,4,8 45:14 46:2,5 46:10 93:3,11 99:19 108:7 146:5,8 n.2.r.3. 43:3 45:9 46:1 48:18 name 4:9 14:3 14:6,6,10,11 22:19 23:2,3 53:20 58:5,6 68:3 76:17 77:1,12,15 78:16 85:6,7,8 85:13,14,15,17 85:18,18,19,20 85:20 86:1,3,4 86:5,7,11,18 86:19 87:4 88:3,4,11,12 103:4,9,10,13 103:17,20,21 104:6,6,12 111:18,19,21 112:1,1,3,5 113:3,5 114:2 122:7,8,10,10 122:11 150:12 150:14,15,16	150:16,17,18 157:15 158:5 164:19,20 175:19,20,21 176:1,1 177:13 177:13,14,14 178:10,11 181:13,21 182:2,4,7,15 named 152:14 names 23:6,7 58:7 86:10 88:10 157:5,6 165:1,12 173:9 naming 22:20 narrative 108:19 175:10 185:14,14,16 185:21 nask 75:3,4,16 79:18 174:20 navigate 50:13 nca 21:21 ncaevs 91:9 ncd 182:10 nci 69:13 73:18 74:17 79:4,17 91:1 ncievs 94:14 nda 88:21 89:2 89:4 ndc 84:11,13 84:13,21 85:3 85:3 182:8,9 182:11 necessary 91:18 101:13 124:3 162:13	need 11:19 16:9 32:2 36:14 51:7 53:3,4 68:18 75:19 77:4 82:4,13 94:12 95:1 103:19 109:6,8,13,17 110:16 111:5,8 111:12 112:10 112:12,18 113:3 120:10 126:21 131:17 132:6 139:6 148:1 150:3,9 150:12,16 151:21 160:4 162:20 172:3 172:11 183:13 183:17 184:10 184:14,15 needed 52:8 112:17 137:3 needs 18:5 62:17 63:11 74:17 89:19 159:4,7 160:14 160:15 negates 85:9 negative 56:20 95:7 96:7 108:10 neither 177:19 189:11 190:7 network 140:12 never 26:17 84:9
n			
n 1:9 2:1 3:1,1 4:1 54:3 n.1 41:5 n.1.3 93:2,10 146:1 n.1.3. 146:1 n.1.4 39:16,21 41:7,8 43:3,4,7 43:15 44:4 45:5,8,9,13,13 45:21 46:7,9 48:17 61:5			

<p>new 2:8 6:16 11:2,4 23:18 24:18 32:12 37:9 46:8 52:7 66:1,18 68:18 69:2,8 74:13 79:2 82:7 105:13 106:2 106:10 109:3 110:5,7 112:9 115:10 117:8 141:3 158:10 161:1 168:3 171:10,11 news 117:8 nextgen 120:5 nfr 79:21 ni 73:7,10,10 73:13 101:4,6 101:8 103:6,15 104:7 146:19 146:21 148:15 166:15,18 nice 32:5 nine 4:4 132:14 nines 89:13 non 69:14 71:6 71:16 72:14 77:1 89:10 149:3,8 160:18 175:20 178:18 normally 28:6 notary 189:19 note 27:4,5 38:10 45:2,10 56:19 75:9 100:10 110:18 112:3,10 119:9</p>	<p>143:17 noted 18:6 23:10 notice 111:5 187:3 notices 89:18 notification 15:13 118:13 notifications 124:12 notified 140:2 notify 96:8 119:3 136:6 137:16 139:7 139:19,20 november 187:17 nsa 79:15 null 103:10,11 162:19 174:18 174:20 178:20 178:21 nullflavor 54:21 57:10,16 59:7 62:8 72:16 75:2,4 75:11,16 76:21 77:3,6 79:8,18 92:6,20 103:5 148:11,21 149:7,12 161:10 166:4 174:14,15 179:6,13,14,16 nullflavors 54:21 57:1,11 57:16 59:8 178:18</p>	<p>number 17:21 17:21 21:18 24:10 39:19 40:17,19 53:18 55:16,19 56:2 58:2 60:15,17 60:19 66:18 73:18 78:5,6,9 80:19 88:16,21 89:4,4,5,5,7 90:3,7 92:14 93:5,8 104:20 107:11,14 110:6,7,17,18 120:3,4,4,7 121:13,19 122:1 123:13 138:7 147:12 148:5,8,9,12 148:12,13,16 152:19,19,20 154:14 156:21 157:7,8,9,10 157:16,17,18 165:4 171:9 177:7 178:11 178:17 numbers 37:17 58:4 110:20 151:16 152:10 152:12 171:9 numeric 54:4 69:11 74:15 75:1 79:3,16 83:9 92:1 93:21 103:14 104:4,15 110:9 121:15 123:10</p>	<p>numerically 151:16</p> <p>o</p> <p>o 3:1 4:1 o'clock 4:4 object 55:3 151:10,11,15 151:16,18 152:17 objective 5:6 objectives 114:7 obs 154:2 observation 18:8,19 20:21 45:11 60:16 69:12 70:17 72:1 73:16 80:13 81:10,15 81:17 82:11,14 82:15,16 83:5 83:11 90:21 91:8 92:9,16 101:20 102:9 102:15 104:18 147:5 154:2 157:20,21 158:1,4,5 171:19,20 180:21 observed 113:9 115:5 120:6 122:18 obtain 120:2 obtained 87:7 occasionally 122:17</p>
--	--	---	--

<p>occur 38:2 150:4 177:9 181:17</p> <p>occurred 78:5 93:5 110:6 113:12 121:19 148:16 157:7,9 157:18 178:7</p> <p>occurrence 109:1</p> <p>ocr 138:18</p> <p>october 105:4 133:7</p> <p>office 2:4,8,11 2:12 4:11 6:9 6:16 7:2,3 114:4</p> <p>officer 2:10 7:1 189:1,2</p> <p>officers 40:18</p> <p>offices 114:19 115:2</p> <p>ogd 2:12 114:4 114:20 118:9 119:9 121:7 123:17</p> <p>ogd's 116:20</p> <p>oh 95:6 145:14 148:20</p> <p>oid 55:2 59:8 152:2,16,19,19 153:5 154:1 155:7,7 156:5 157:3,8</p> <p>oids 8:18,19,20 8:20 59:8,10 59:10 151:3 158:9,11,12,15</p>	<p>158:16 171:8,8 171:12,13,17</p> <p>okay 4:16 5:14 7:4 10:3 12:9 12:19 14:12,17 15:9 16:21 20:2 23:12,14 24:2 25:7,9 26:2 29:6,12 31:1,4 33:8 38:7 39:6 40:1 41:3 42:13 43:1,5 45:4 46:3,12 49:5 50:14 51:12 53:3 55:18 57:17,18,21 61:21 62:3 63:15,18 65:12 65:18 66:17 67:9,12 68:15 71:7 72:20 74:10 76:2,14 76:16 78:20 79:1 80:1,14 81:4,13,20 84:12 85:7 87:1,5 89:13 90:8 91:2,15 93:14 94:16 95:14 96:16 97:5 98:6 101:10 102:21 103:12 104:2,7 104:17 109:20 113:18 126:13 127:21 130:9 136:3,5,19,21</p>	<p>137:1,7 138:1 138:21 139:12 140:3,16 141:16 143:1 143:11 144:10 144:20 145:6 151:5 153:18 155:16 158:17 159:17 160:5 161:2,10,21 163:2 164:7,17 165:16,18 166:1,4,13 167:1,15,17 168:1,2 169:7 170:11 171:21 173:3 174:3 179:17 180:1 180:16 181:13 183:1,1,2 185:1,13</p> <p>onboarding 135:6</p> <p>once 11:11,14 29:8 30:1,21 32:5 35:4 42:7 85:2 118:11 126:20 130:2 134:12 139:5,5 139:8 140:1,5 140:16 169:21 172:13 184:6 185:11</p> <p>ond 2:8</p> <p>ones 48:7 52:7 55:1 62:15 108:18 145:3,5 171:3 172:3</p>	<p>online 33:7 50:3</p> <p>onwards 137:10 139:11 184:2</p> <p>open 52:18,19 70:1 128:8</p> <p>opened 52:21 99:6 168:11</p> <p>opening 64:6</p> <p>opens 51:15</p> <p>operate 30:10</p> <p>operator 156:9 156:10,17 157:2 165:6,13</p> <p>opportunities 117:9</p> <p>option 23:20 25:6,20,20 26:11,11 27:13 27:13,17 29:13 30:12 31:3 49:21,21 50:1 50:3 118:10 119:3 186:4,5</p> <p>optional 58:12 76:4,13 84:18 93:21 102:10 102:12 104:14 104:19,20</p> <p>options 29:13 31:2 49:21 117:17 118:16</p> <p>order 106:13 128:1</p> <p>organization 27:21 30:8,9 83:3 153:2</p>
---	--	---	---

155:19 157:11 171:20 organizations 21:11 186:13 186:13 ose 2:5,15 outbound 131:21 outcome 123:3 189:16 190:12 outline 7:4 98:21 outlined 106:11 outlines 108:14 112:16 overview 4:17 51:6 105:12 114:9 171:7 own 126:3 138:5,7	135:4,14 170:17 180:11 pages 134:21 135:4 parent 111:9 parse 142:6 part 16:2 32:5 42:19 92:14 157:4 175:7 180:8 participant 148:12,13 participate 29:20 particular 18:6 48:3 54:13 55:3,7 57:19 61:5 63:19 66:16,20 70:5 75:10 80:6 84:1 86:12 94:15 99:21,21 100:1,4 148:10 187:3 particularly 21:5 parties 189:12 189:14 190:8 190:11 party 76:10 pass 34:1 113:19 passed 15:17 past 176:13,15 176:19 patch 94:5 path 33:4 120:14 121:9	paths 120:18 pathway 37:11 38:3,4,13 pathways 37:11,14 patient 28:18 32:16 76:15,16 76:17,19 77:1 77:1,3,5,8,15 77:21 78:16 79:2,9,11,21 148:3,19,21 149:8,9,10,14 149:14 165:12 165:15 166:2,9 181:13,17 patients 77:14 pause 17:4 pdf 50:17 105:17 116:18 pei 2:6 3:4 105:6 174:3 people 12:3 67:17 percent 88:2 144:6 performed 34:10 period 48:12 129:8 136:3 137:5,21 138:16 176:15 177:1,6 185:1 185:3 person 119:1 perspective 68:6 77:5 172:18 173:1	181:9 pharmaceutical 90:20 91:4 125:8 153:9 pharmacovig... 114:9,15 115:3 115:13 125:9 125:21 pharmd 2:14 phase 115:4 170:3 physical 30:18 pick 25:1 42:9 128:9 picked 128:13 picture 24:6 140:7 179:8 piece 17:18 81:19 157:6 pieces 157:5 pinpoint 85:1 86:17 place 125:9 placebo 177:3 places 95:20 173:9 plan 5:5 9:19 10:1 28:9 43:9 planned 9:20 97:11 planning 9:14 28:8 52:16 plans 6:8 8:11 107:18 130:12 platforms 186:8 played 177:15
p			
p 2:1,1 4:1 54:19 p.m. 5:18 151:3 188:7 pack 168:20,21 package 7:11 7:12,14 50:8,9 50:15 99:4 packages 159:16,16 packed 7:5 page 3:2 4:14 7:12 12:12 17:10 27:17 128:7 134:17			

<p>please 15:2,4 17:2 19:8 23:4 27:4,5 28:9 29:1,4,5 30:6 31:2,2 32:1 33:16 38:10 45:2,14,18 47:3 49:7 63:12 74:20 85:3 97:21 98:13 107:19 119:20 120:17 120:20 121:2,9 121:12,21 122:11 124:9 124:11 135:21 137:14 140:1 142:17 144:10 170:12 172:7 172:10 173:1 174:5 179:7 180:3 182:3,13 182:14,17 184:19 podium 126:10 point 12:3 21:7 26:10 66:20 67:21 74:18 80:6 118:4 120:11 135:2 137:9 139:11 144:4 153:5 154:21 171:15 171:17 184:2 points 20:1 36:4 136:18 147:2 153:4 158:10 171:11</p>	<p>171:11 172:17 policy 2:14 populate 22:20 populated 78:17,17 86:20 86:21 172:18 portal 5:11 25:7,7,15,19 26:1,2,7 28:8 29:3,20,21 30:1,13 31:5,6 31:7,10,11 32:17,18 33:1 33:12 70:13 106:20 117:8 117:20 118:21 120:5 125:6 136:21 138:2,4 138:20 139:3 140:1 184:14 184:16 186:8,9 186:18 portfolio 87:14 portion 14:16 14:17,18 15:1 175:10 positions 17:3 positive 48:16 48:18 96:9,10 96:11 post 4:8 5:7,12 6:6 7:16 8:3,5 9:1,3,14 10:2,8 12:2,4 22:15 24:16,20 25:2 28:16 31:19 32:19 33:3,5 34:14 35:8</p>	<p>36:1,7,12 37:1 37:12 38:3,3 38:12,12,20,21 40:9,12,16,20 41:18,20 44:2 44:9 46:15 47:4,12 48:19 54:11,12 56:16 66:14 67:17,18 68:1,9 70:8 71:11 74:1,1 75:5 80:7 88:18,20 97:2 97:14 99:12,13 99:14 100:4,5 100:12 105:1 106:8 112:11 112:13 115:11 116:12 117:4 118:15 121:4 125:5,12 133:3 134:20 135:19 136:4 141:4 143:1,4,10 145:8,13,15 167:19,21 169:2,17 173:5 182:16 183:15 posted 13:5,6 50:4,6 56:4,5 65:12 74:4,6 107:11 127:11 169:21 170:1 170:16 180:10 180:12 posting 52:9 135:10</p>	<p>postmark 34:17 potential 44:19 109:4,15 pratti 190:2,15 pre 4:8 7:15 9:2,13,15,17 9:21 10:2,8,14 12:1,21 13:2 22:2 23:17 24:17,19,21 25:2 28:17 31:19 32:19,20 33:3,4 34:11 35:2,5,8 36:2,3 36:5,17,18,19 37:7,9,10,12 37:13 38:2,4,6 38:7,9,11,13 38:20 39:1,7,8 39:12 40:4,5,7 40:7,16 41:19 43:16 44:2,8 44:11 46:15,16 47:5,5,6,6,12 54:14,15 56:16 67:7,10,19 68:1,4,7,9 70:9 71:18 80:7 81:12 88:19 90:7 92:13 93:5,8 94:3 97:4,9,12,14 99:12 101:7 110:2 114:12 115:4 116:11 116:13,16 117:3,10</p>
---	---	--	---

118:15 120:3,3 120:6,17 121:4 121:5,12,19 122:1 123:12 123:19 124:4 124:13 125:2,4 125:13 127:9 131:19 133:3 134:10,13,19 135:19 136:3 137:21 138:1 139:5 143:2,4 143:9,10 145:17,18 146:7,7,11 148:8 157:18 160:21 167:19 167:21 169:1,6 prefer 47:9 preferred 181:21 prefix 18:1 58:4 75:11 138:11 premarket 118:9 premk 39:16 40:6 42:21 43:4,7,15,18 44:4 46:7 93:3 93:10 121:2 preparation 107:9 prepare 12:14 119:16 135:9 184:3 prepared 190:3	preparing 119:18 135:5 137:4 prescription 89:8,11 92:4 present 92:15 93:6,8,9 presentation 64:5 92:12 114:8 118:20 123:20 124:19 125:10 126:6 126:14 177:11 180:14 183:21 188:2 presentations 180:9 presented 107:21 169:3 presenting 114:5 presumably 181:21 pretty 35:15 55:4 65:4 previous 41:7 56:7 66:21 132:17 133:8 163:6 previously 51:19 63:5,7 66:10 69:2 85:10 99:19 primary 85:6 110:4,7 122:7 174:6 prior 107:6 120:7 127:9	137:18 176:16 176:17 178:4 189:5 private 92:5 prmk 42:21 43:16 probably 47:18 49:2 54:6 56:5 88:21 98:11 128:16 129:15 129:21 130:3 132:5 133:5 139:18 142:3 185:20 problem 25:20 26:3 29:21 34:1 102:14,17 150:10,11 163:19 164:3,4 164:5,7,10,11 164:13,14,16 problems 163:21 proceeding 190:4 proceedings 189:3,5,6,9 190:6 process 11:3 19:10 24:9 25:4,13 26:21 30:14,20 34:1 42:9 68:21 75:20 88:7 105:13,13,14 105:17 106:2 106:10,14 109:3 114:16	119:12,15 129:20 132:9 140:14 141:14 processed 15:16,17 29:3 33:15 180:4 processes 106:7 114:11 116:13 117:3 processing 122:1 131:10 142:11 procodes 22:7 prod 134:15 product 12:12 17:9 22:13,16 22:18 23:1,2,6 51:6 68:3 70:10,12,19 71:2,3,8,9,13 71:14 73:2,12 73:14,15,20,21 74:10 76:20 77:10 79:20 80:9,17,18,18 80:20 81:2,9,9 82:2 83:15 84:7 85:2,4,6,8 85:10,14,16 86:1,3,10,11 87:3,3,10,11 87:15 89:2,6,8 89:11,14,18,20 90:5 91:20 93:16,19 94:2 94:9,10,16 101:16,18 102:5 103:7,9
---	--	--	--

103:11,18,19 104:1,2,5 111:19,21 114:21 122:6,8 147:7 149:6 150:8,17,19,21 152:3 157:21 158:6 161:3,7 164:21 175:19 181:20 182:1,2 182:4,5,15,18 182:19,20 production 12:21 27:7 48:6 127:9 129:10 131:19 134:10,13 136:7 products 4:21 28:2,3,19 70:7 70:8 74:2 77:1 77:11,12 80:19 81:3,4 82:1 83:8 87:14,18 87:20 88:5,6 89:21 90:6 114:18 119:8 125:8 149:2 professional 165:8,12,14,17 professionals 69:18 181:7 progress 131:5 131:18 133:15 prompt 187:10 187:17 proper 19:7	properly 85:12 proprietary 111:18,20 112:1,5 122:8 122:10 175:21 175:21 177:13 177:14 178:9 protocol 177:5 prove 95:2 provide 11:8 56:14 86:5,8 91:20 93:18 103:20 104:1 150:6,16 provided 60:15 64:13 65:7 66:21 78:5,6 79:8 83:11 86:4 103:2 107:12 127:5,6 128:6 145:21 147:15 148:6 148:10,10,13 149:13 150:3 175:4 provides 52:1 52:10 55:14 67:11 providing 128:19,19 133:15 187:20 public 2:7 125:3,6 127:10 134:14 143:6 169:6 189:19 publication 106:21	publicly 38:6,8 38:10 44:9,10 46:17 67:14 86:9 93:14 121:6 143:9 publish 38:6 67:14,21 68:6 93:13 107:5 published 7:12 10:15 38:8,10 44:9,10 46:17 68:7,14 117:16 118:3 119:10 121:5 130:14 130:15,16 143:8 publishing 67:12 pure 132:11 purpose 50:18 52:4 125:15 168:13 180:4 purposes 27:6 27:7 125:7 172:16 178:1 pushed 10:9 put 14:5 34:2 46:20 57:19 59:5 64:4 66:15 76:19 95:19,19 104:5 104:15 143:3,8 143:21 146:13 149:12 159:8 putting 48:13 49:7 67:13	q q&a 5:20,21 9:6 49:8 53:10 58:20 59:5,6 98:14 126:9 135:7,7,9 151:5 q&as 50:11 135:5 qualified 189:7 quality 11:4 95:2 quantities 96:12 question 35:18 58:21 59:1,5,6 90:2 173:14 174:1,4,9 175:1,5,7,14 175:18 176:1,4 176:10 177:7 177:21 178:17 179:7 182:8 183:2 184:17 186:3 questionnaire 34:12,13,14,17 34:20 36:5 questionnaires 34:11 35:3,9 questions 5:19 6:2,2 14:19 19:16 35:16 49:7,7,8 59:3 98:13,14,15 99:5 124:11 135:9 158:19
--	--	--	---

173:20 175:15 178:16 180:8 187:1,5,6,21 quicker 142:8	15:1,5 16:1 17:2 23:17 26:15 27:2 29:2 31:1 33:8 33:11,16 34:15 34:19,21 35:5 35:7 50:8,15 51:7,20 58:19 59:18 64:7,14 68:11 69:21 95:5 97:4,6,7 97:13,19,19 99:2 100:9 105:10 107:11 117:21 118:18 119:6,16 122:6 126:21 127:6,7 128:11,11,12 128:13,18,20 131:13 134:21 135:21 136:1 136:10,11,15 136:16,20 137:3,4,7,11 137:17 138:16 139:6,11 140:5 140:18 141:13 158:20 159:2,4 160:2,13,14 161:2,6,10,17 162:5,7,18,20 163:6,9 164:4 164:11 165:15 166:3,14,17,18 167:5,6,19 168:8 172:2,4 172:6,13 173:2 173:4 179:8,13	179:14,15 183:4,14,16 185:3,5,10,10 185:11,11 187:13,15,16 r4 17:5 68:10 race 78:21 79:1 79:1,2,6,10,14 149:11 166:2,9 166:9 ras 2:15 rate 109:1 rather 130:6 182:2 rational 34:13 reaction 100:14,15 113:9,12 147:18 reactions 115:21 read 55:10,11 55:21 56:9 59:14,14 62:3 62:4,19 63:11 64:17,19 104:16 111:1 reading 48:14 67:17 ready 35:4,7 120:7,9,10 134:4 135:18 135:21 136:1,6 137:5,6,17,18 138:16 139:4,5 139:20 140:2 140:17 184:2,7	realized 9:16 37:16 really 14:6 37:3 53:11 63:14 82:13 85:12 88:13 89:20 94:1,7 105:19,21 130:8 142:2,3 181:3,8 188:2 reason 52:4 57:2 66:15 75:5 82:17 99:20 124:16 145:2 151:17 reasoning 67:2 reauthorization 34:9 recall 163:12 163:13 recap 117:15 receipt 125:18 receive 27:18 88:1 108:9 109:11 received 26:5 receiver 41:8 41:10 45:3,5 46:4,6 67:5 120:21 121:1 121:18 142:21 143:3 145:7,10 145:20 146:4 receiving 87:20 recognize 5:6 25:1 151:18 recommend 14:4 22:17
r			
r 2:1 4:1 52:20 52:21,21 60:8 128:4 r.ph. 2:10 r2 9:4,13,17,20 10:5 12:2,5,7 34:18 64:7 69:3 84:9 97:3 97:4,10,19,19 128:18 135:1,2 135:3,5,20 136:10 158:20 159:1,3,20 160:1,9,13,14 160:20 161:4,5 161:5,9,16,20 162:5,17,19 163:1,4,8 164:4,6,11 165:7,8,9,14 165:16 166:1,3 166:14,16,21 167:3,5,6,13 172:1,4,13,14 173:3,4 183:13 183:16 185:2,3 185:12 r3 1:6 4:9 5:2,8 6:15,21 7:7,10 9:4,18,21 10:2 10:5,8 12:1,2,7 12:11,15 13:14			

84:19 119:4 124:5 142:1 175:9 recommenda... 13:21 14:1 19:4 recommenda... 87:9 137:20 recommended 89:3 recommending 86:15 record 49:11 98:18 141:12 151:7 173:17 189:9 190:5 recorded 189:6 recording 112:17 180:10 189:8 190:4 records 5:2 33:19 110:15 recruiting 120:8 red 63:5 157:1 redact 135:4,5 reduced 189:7 refer 17:2 120:3 reference 21:19 75:12 82:5 92:2,19 123:15 177:3,19 179:11 referenced 110:17,20 176:8	references 173:8 referred 115:6 115:8,21 148:11 referring 124:5 refers 13:12 175:8 regarding 114:17,17 136:12,13 175:1 181:20 182:18 regardless 116:8 regards 135:3 region 82:21 83:1 155:4,9 155:10,11,11 155:11,13,21 156:8 157:14 158:3 regional 5:3,12 6:5 7:6,11,19 7:19,20 8:5,19 8:21 10:13,17 11:18,19 13:8 13:10,17,18 16:9,9 17:1,2,6 17:20 18:2,4,5 18:9 21:6,15 45:12 49:15 50:16 51:10,21 52:11,13,15 53:19 54:17,19 58:1,18 59:9 59:17 62:7 64:16 65:10,14	65:15,15,18,21 70:11 72:8 73:4 78:7 84:2 84:12,14 90:10 90:11,15 91:19 92:15 95:5,15 98:5 99:1,9,10 99:12 100:13 110:8 113:2 119:6 121:14 123:8 124:7 127:1,7 128:13 130:13,14,20 131:8,13 145:6 145:6 147:1 151:14 153:11 153:14 154:7 155:3,9,20 156:5 157:13 158:2,20,21 159:3,8,11,20 160:2,3,15 161:6 165:21 168:7,7,8,9 169:11 170:18 171:1,3,5,8,11 172:2,9 183:6 regionally 51:9 regions 144:21 registered 26:5 86:18 registration 22:11 26:4 27:17,19,20 86:6 154:17 regular 167:10 regularly 39:2	regulations 106:11 116:1 regulators 20:11 regulatory 2:3 2:14,15 4:10 6:9 109:18 126:4 reject 38:11 41:2 61:15 72:15 rejected 16:18 56:21 57:9 59:20 72:16,20 100:3 124:15 141:21 145:12 rejection 8:13 17:12 18:10 38:1,5 43:8,12 43:18 44:1,5 45:18 48:15 59:12,13,19 60:8,9 61:4 96:6,6 124:16 124:16 141:19 143:17 145:1 147:10 170:20 rejections 43:6 44:6 47:1 48:21 141:17 141:19 145:2 168:15 170:19 related 74:20 116:9 145:2 189:11 190:7 relating 64:21 65:1,2
--	--	---	--

relation 164:1 167:18	repeating 162:16 163:2	103:7,9,18,19 105:1,4 109:12	reporter 4:2 74:13 100:15
relationship 39:4 40:21 42:1 68:11	replace 163:13	109:14 110:4 110:13 111:7	148:9 185:19
relative 189:13 190:10	report 7:21 25:2,2,16,17 25:18,21 28:18	111:20 112:11 113:8 116:12	reporting 1:5 4:7 5:11,13 6:7
release 132:3,4	30:2 32:6,7,7,8 32:10,11,13	120:7,11 121:10,11,17	8:4,6,7,8 9:21 10:19 11:4
relevant 7:15 7:16 21:7 23:11 107:11 176:19	33:3,5 34:2,4 36:2,3 38:6,8 38:11,12 40:16 44:11 65:20	121:17 122:8,9 122:11 138:6,7 138:10,13 139:6 144:8,12	20:8 24:16,17 25:7,7,15,19 26:1,2,6 28:2,8 28:16 29:2,19 29:21 30:1,13
remedial 158:8 163:5	66:6,7,10 67:4 67:4,8,10,10 67:12,14,16,18 67:19 68:2,7	144:13,14,17 144:18,18,19 144:20 146:10 146:18,21	30:18 31:5,6,7 31:10,11,19,21 32:1,17,18 33:1,12 36:1,7
remember 11:10 14:14 15:2 120:2 121:3,21 129:6 159:15 174:10 177:12	68:17,17,19,20 68:20 69:1,3,6 69:7,9 70:10 70:12,15 71:2 71:4,7,9,12,14 71:16,19,21,21	147:2,3,9,12 147:13,21,21 148:7 149:3,4 150:5 153:16 154:5,6,8,9	36:13,18,19,19 37:4,6 65:1 70:17 72:9 74:2 75:21 77:4 78:11
reminder 107:21	71:21 72:2,4 72:10,12,17,17 72:19,20 73:2 73:9 75:19	156:1,2,4,7,14 157:10 160:10 160:16 167:19 169:17 171:21 174:6,7 175:8	77:4 78:11 81:1 90:5 93:7 99:15 105:9 106:8,14,20 111:3 112:11
reminds 93:1	76:2,6,7,9,10 76:12,20,21 77:1,15,17,18 77:20,21 78:3 78:4,10,10	175:9 176:6 178:6 181:14 181:15,19 182:13,14,17	112:15 113:20 114:5,11 115:14,17 116:1,5,7 117:7,12,20 118:5,21
remote 1:17 107:15	79:20 80:11,12 81:17 85:7 88:2 89:16 90:17,18 91:2 91:5,11,12 93:14 94:9 97:12 102:2	160:16 167:19 169:17 171:21 174:6,7 175:8 175:9 176:6 178:6 181:14 181:15,19 182:13,14,17	106:8,14,20 111:3 112:11 112:15 113:20 114:5,11 115:14,17 116:1,5,7 117:7,12,20 118:5,21
removed 146:12		reported 1:20 6:14,20 36:6 78:14 81:10,17 82:2 85:6 109:9 110:18 111:13 122:7 123:5 176:18 181:21	136:21 138:2,4 138:20 139:3 140:1 168:4 173:21 174:5,8 175:3 177:9,12 178:6 183:18 183:19 184:14
rename 77:10			
repair 163:12			
repeat 91:18 133:17 138:11 162:7,8 169:20 174:1			
repeatable 162:18 163:6,9 163:14 164:8			
repeated 80:3 101:13			

184:16 186:4 186:18 reportings 31:18 reports 1:4 4:8 4:20 5:8 6:6,14 6:20 10:3,14 12:4 22:15,21 30:14 31:3,8 31:14,15 32:5 32:15 33:15 37:11 38:2,3,9 40:19 44:8,10 44:15,18 46:16 46:17,18 65:16 66:11,17 67:8 69:17 70:13 72:11 77:19 78:4,8,13,14 88:1 90:4 97:9 101:7 105:9,16 106:3,16 107:2 107:10 108:13 108:15,17,19 108:21 109:9 110:2 112:10 112:15 114:12 115:7,20 116:2 116:2,14,15,17 116:18,20 117:2,4 118:4 118:8,16,17 119:11 120:19 121:5,6 123:19 124:2,13 125:1 125:3,5,6,13 125:14,17,20 135:17 140:6	141:5,13,15 143:18 145:21 146:3 147:14 153:20 169:6,7 173:6 176:6 178:2 181:9 182:11 183:15 request 23:4 26:20 27:1 28:10 35:12,17 84:18 96:13 162:2 170:6,15 175:13 187:2 requested 120:4 requesting 26:21 170:13 require 5:7 27:17 116:1,6 165:20 required 18:18 35:20 36:9 54:11,15,16 56:19 57:2,3,6 57:8,14 58:12 58:13,13,14 60:14,15 69:11 73:8 74:16 75:1 76:5,13 79:3,16 83:9 83:10,21 92:1 100:16,19 101:3,6,10 102:1,2,20 103:6,12,16 104:5,8 105:15 106:15 108:12 110:12 113:17	115:19 116:5 116:19 118:13 121:16,20 123:12,13,21 125:14 150:18 167:7 174:13 174:17 180:17 183:8,8,10,19 requirement 58:12 102:5 175:2 183:4 requirements 4:19 6:5 10:17 13:18,18 112:12 113:2 114:11 115:15 115:18,19 116:6 117:12 117:18 118:1,5 119:5 178:6 requires 26:4 174:7 research 1:2 31:18,20 reserve 69:18 resolution 20:9 resources 107:14 119:13 respect 90:13 respectively 90:12 135:20 136:4 respond 21:12 130:7 187:7 response 6:2 75:11 162:2 174:2 175:14	responses 39:8 132:15 responsibility 21:13 44:12 responsible 76:9 rest 118:20 resubmission 108:11 resubmit 109:13 result 56:20 57:8 96:7,9 112:20 174:11 resulting 95:3 95:7 results 22:2 105:18 resume 49:6 review 4:19 14:1 40:18 64:9 90:18 96:13 105:21 106:5 115:12 116:12 124:11 179:2 reviewed 115:9 reviewers 94:8 121:7 reviewing 123:18 125:1 reviews 105:19 revision 55:16 55:17,21 56:1 56:2,3,3 rf 102:18 richard 1:20 189:2,19
--	---	---	---

right 4:4,5 6:3 8:12 11:17 15:9 19:7,12 19:14 20:16 23:13 24:19 25:3 29:4,11 32:4 33:4,7 34:5,5 35:3 36:10,20 37:21 38:7 41:3 42:14 48:17,17 48:21,21 49:1 49:9,12 53:6,6 56:4 58:6,15 62:12,13 63:15 65:19 67:9 68:16 70:21 71:17,17 72:2 72:21 73:8 80:2,4,15 84:1 84:4 86:18 87:13,19,20 90:20 91:6,16 93:6,15 94:12 95:10 96:1 97:20 98:19 99:3 100:11 102:13,14 126:12 129:13 130:12 132:19 134:18 136:5 138:11 141:7 142:16,18 143:3,5,13 144:3,15 149:17 151:8 153:12 155:14 156:2,12,21	157:21 158:14 159:4 162:15 165:19 169:10 169:18 170:17 171:15,15 173:16,18,18 175:11 178:14 180:16 186:21 role 80:6 82:18 122:13,14 131:17 177:15 roll 172:20 root 154:15 round 133:6 route 91:7 109:17 134:2 145:8,13,15,17 routed 42:4 108:4 routing 24:19 36:13 42:3,5 43:14 48:17 108:3,11 120:16 122:2,4 131:20 169:9 row 41:19 63:5 rows 41:18,19 108:16 rq 34:13 rss 2:4 rule 30:18 45:6 45:6 48:3 54:8 58:15,18,20 59:20 60:3,10 61:2 66:6,9,15 67:5 72:6,12 78:2 79:8 80:13 89:17	92:13,13,18 93:1,5,12 95:11,12,16 102:5,11,21 103:16 121:15 121:21 123:11 127:6 147:20 149:16 152:6 154:19 157:12 159:20 160:8,8 161:3 165:1 166:21 167:12 167:14 168:9 rules 8:14 17:6 17:12 18:9,10 18:10,11,15,21 19:1 20:5,10 44:17,20,21 45:1,8 46:14 51:1,21 52:12 54:9,12,14,18 56:17,18 58:17 59:16,18 61:11 64:1 66:3 69:20 70:3,4,6 70:7 71:16 73:19 74:1 76:18 78:20 80:4,6,7 87:6,8 88:17,17 94:17 94:20,21 95:3 95:21 96:3,3,6 96:7,8,14 97:9 97:16,17,19 100:6 102:13 110:10,20 112:20 120:14 121:3,9 131:1	131:3 146:5 149:17 150:12 150:13 168:15 169:1,14,16 170:20,21 171:2,5,6 172:7,8 run 30:3 40:6 running 30:4 30:16,17 129:20 s s 2:1 3:1 4:1 54:19,19 116:1 118:13 133:15 sae 118:13 120:5,7 178:4 178:6 saes 109:1 116:7 safety 2:10,11 2:11 4:8,20 5:8 5:11,13 6:6,14 6:20 7:1,1,2 8:4,6,7,8 10:2 10:14,19,20 14:16 24:16,17 25:6,7,15,19 26:1,2,6 28:8 29:2,19,20 30:1,13,16,17 31:5,6,7,10,11 31:18,19 32:5 32:17,18,21 33:12 36:12,17 36:18,19 37:10 65:1,20 66:6,7
---	---	---	---

66:9 74:2	178:2 181:9	153:5 154:10	secondly 125:7
77:17,18 78:7	183:15,19	160:8 179:10	176:21
78:10,12 90:4	184:14,15	184:17	section 23:11
95:9 97:9,12	186:17	sbi 134:15	41:5 64:7
99:14 101:7	sambrano	scale 94:6	65:17,19 66:5
105:1,4,9,16	190:2,15	scenario 64:20	76:3 78:15
106:3,8,14,16	sample 124:8	64:21 65:1,2,3	80:10 94:19
106:19 107:2	satisfied 58:15	110:3,14 111:2	101:13
107:10 108:13	satisfies 77:8	111:15 112:6	sections 7:14
108:15,16	save 141:5	scenarios 48:11	100:1
109:9,16 110:2	saves 70:12	64:13,18,18	security 67:11
110:4,13 111:7	saving 109:18	65:6 105:11	67:13
112:11,15	savings 109:5	110:1	see 4:14 13:9
113:20 114:3,4	saw 27:8 57:10	scheduled 23:9	17:15 18:17
114:5,10,12,17	95:14 96:4	science 2:4	19:1 21:17,20
114:21 115:4,7	132:17 168:13	4:10 6:9	23:1 24:6
115:9,11,12,14	168:14,15,16	scored 104:18	28:15,15 33:10
115:17,20	170:19	scratch 32:14	38:17,21 40:3
116:2,5,12,13	saying 16:4	screen 28:15	41:4 49:10,13
116:15,17,18	29:16 34:4	127:13 128:2,5	51:13,14 53:4
116:20 117:4,7	37:8 70:18	129:2	53:4,10,18
117:12,20	80:16 103:8	screens 32:20	54:6,10 55:11
118:4,8,9,16	136:19 142:1	180:5	58:4 59:11
118:17,21	145:11,12,14	scripted 14:16	60:11 61:2,11
119:11 120:11	147:20 151:17	14:17,18 15:1	61:19,20 62:10
120:19 121:6	182:12	scroll 53:21,21	62:15 63:3,18
123:19 124:1	says 9:19 17:18	61:11 63:2	67:12 73:16
124:13 125:1,2	17:19 39:10,12	search 87:18	75:14 85:15
125:5,13,14,16	39:17 40:3,4	91:1	89:16 90:3
125:17,20	42:20 43:4,4,7	second 4:17	92:12 93:9
126:1,3 129:16	43:8,10,11,15	15:7,14,17,19	95:17 96:5
135:17 136:21	43:21 44:3	51:18 52:19,19	99:7 105:14
138:2,4,5,7,20	54:19 55:13	63:20 95:6	106:17 107:13
139:3,5,21	60:13,14 61:3	106:19 110:14	108:14 112:18
140:5 141:9,10	72:7 75:15,17	133:6 174:9	128:2,21 129:2
141:13,15	90:4 93:11	175:7 176:4,14	134:18 145:3
169:17 173:6	96:5 145:4	177:14 179:7	151:20 153:16
173:20 175:2	146:12 148:21		155:1 156:3

159:12 164:2 167:17 168:12 168:12 173:16 183:1 seen 31:7,8 99:18 145:21 173:9 segments 84:13 84:15 select 122:14 178:8 send 15:19 20:11 24:5,9 25:12 26:8 29:5,16,17,18 47:20,20,21 66:7 76:9 84:15 89:17 134:4 140:11 141:8 142:7,10 143:4,17,19 144:2,5,15 145:11,15 151:21 162:10 162:11,13,14 163:2,11,14,15 166:10,11,15 179:8 184:18 184:19,20 sender 66:9 76:4,6,8,14 142:13,13,14 142:14,15,17 142:19 146:2 146:13 185:19 sender's 186:1 sending 16:4 61:21 62:1	76:6,10,11 84:17 90:1 128:12 138:10 141:8 144:3,7 144:15 sense 67:9 125:15 sent 24:7,8,11 42:10 116:20 136:13 142:10 145:8,10,13,17 separate 32:3 36:21 37:6,13 68:9 134:21 135:1,4 143:21 162:5 163:4 168:20,21 separated 37:18 116:14 152:13 separately 32:4 32:21 37:16 109:9 separation 37:12 sequence 151:15 sequester 125:5 serious 81:19 115:20 116:7 122:19 123:5 seriousness 101:1,9 172:19 service 2:7 21:3 services 21:4 64:21	session 126:9 set 10:14 17:18 19:7 21:14,14 37:20 44:7,21 45:19 46:19,21 51:2,2 64:2 71:17 90:16 92:9,10 96:18 103:6 131:18 131:19,20,21 134:6 151:13 153:7 155:8 158:9,11 159:19 161:4,9 161:17,19,20 162:17,19 163:8,10 165:17 167:7 171:9,13 183:7 seven 28:6 64:18 68:21 69:1 71:19 72:2,10 160:12 several 111:3 131:12 share 107:16 158:16 shared 53:1,2,7 63:18 186:11 she'll 6:19 shop 15:13 short 5:18 34:13 173:12 shorter 184:4 show 28:12 39:2 50:12 55:8 73:1 127:12 128:10	133:7 146:16 showed 69:21 70:2 94:18 133:8 154:5 169:3 showing 41:21 154:15 shown 75:13 108:7 128:14 145:19 146:9 165:21 shows 108:16 140:7 145:16 153:19,21 159:20 side 11:13 36:9 40:20 48:16 55:12 71:18 sides 44:19 sign 66:13 signal 126:1 signature 189:18 190:14 signed 122:21 significance 152:20 similar 64:11 81:6 82:9,10 82:20 83:10,16 83:17,21 100:21 149:20 167:2,3,4,6,10 167:14 175:2,6 similarly 40:9 55:8 60:21 146:7 simms 2:14
--	---	---	---

simple 110:3	96:19 98:7	158:5	133:14
simply 147:14	105:11 109:20	speaker 6:18	specifics 127:3
single 142:2,12	112:14 159:13	speakers 5:16	specified 72:6
142:16 158:7	180:8,9,13	6:4,12 8:7,7	86:14 106:16
site 4:13 48:10	small 8:15 14:8	188:1	specify 120:18
situation 29:14	47:16 179:17	specialized	specifying 72:7
30:8,15 31:1	smaller 142:6	93:16 94:16	specs 21:19
122:18	186:13	155:4,9,20	135:6
situations 77:9	snapshot 107:8	157:13 158:3	speed 187:14
six 5:17 89:10	solution 23:19	182:18	spend 105:8
89:13	solutions 20:13	specific 8:5	spent 49:18
size 16:1,2	somebody 53:9	13:18 33:15	spl 22:19 23:7
47:15	82:20 98:14	34:8 54:5 57:3	88:3,11 182:5
sizes 47:16	soon 11:5 12:7	59:3 78:18	184:18,19,20
skills 189:10	20:13 25:10	99:14 100:12	sponsor 24:3,3
190:6	33:20 42:5	104:21 120:16	32:3 37:19
slide 4:16 9:7	52:2,3,9,16	125:4 133:1	39:9 41:1
9:19 23:13	128:20 132:18	145:1 149:17	42:17 44:12
27:12 28:12	142:7	151:10 156:7	52:14 105:17
34:5 38:19	sooner 15:21	170:19 171:1,2	106:3 111:15
41:7 46:19	16:6 47:18	171:6 172:3	140:8 179:17
73:2 104:2	48:1 139:16	175:3,5	sponsors 11:12
107:13,19,20	142:8	specifically 6:6	12:20 16:20
110:11 111:1	sorry 17:16	49:18 62:11	23:4 24:7,12
112:16 113:14	53:4 74:17	83:7,7 88:18	25:3 26:19
114:19 115:2	145:10 160:20	145:4 153:11	27:10,11 29:14
115:14 116:11	168:7	175:16 184:11	31:8,11 44:14
116:15 119:17	sort 105:12	specification	67:18 84:6
125:2 132:18	source 17:15	10:12 13:10	85:15 105:15
146:17 149:21	17:16 53:15,15	18:21 23:11	106:15 109:4,5
151:11 153:15	53:15,16,16	50:18 52:16	115:19 117:16
154:13 155:15	57:20,21 62:15	64:15 67:1	117:21 135:18
173:7	85:7 112:18	72:8 94:19	136:5 140:20
slides 16:17	122:7 128:10	107:18 119:9	174:5
17:4 39:3	150:1 166:17	124:6 130:14	spot 19:21
46:18 63:17,17	sources 98:3	176:9 179:10	spreadsheet
63:18,18 64:2	space 110:2	specifications	17:7,8,10 18:6
64:4,10 75:4	125:3 157:15	119:17 130:13	18:7 21:20

50:10,11,12,12 50:14 53:7,8 53:11,12,13 55:8,11,13,17 59:4 63:11,12 64:2,3,4,8,9 69:21 70:1,4 94:18 95:20 96:4,5 99:6,6,7 99:8,9 130:19 145:5 168:11 178:20 183:5 sr 145:21 srp 32:5 33:8 33:17,19 34:6 34:6,12,16 35:5,11,13,17 35:19,20,21 36:1 137:9,11 138:15 139:7 168:1 179:20 179:21 180:2,4 184:5,8 staff 2:4,15 6:9 stakeholders 107:17 standard 11:20 11:21 12:13 18:16 21:11 27:3 43:15 58:7 60:14,15 66:8 83:3 136:19 152:6 153:2 171:20 standards 1:7 4:9 6:15,21 12:1 105:10 106:9	stands 67:4 80:14 155:2 164:12 staring 132:4 start 7:14 21:18 46:21 49:7,8 84:8,10 84:19,21 99:16 101:13 107:6 124:12 132:1 134:12 135:21 136:2 137:6 173:14,19 184:7 187:12 started 9:12 20:7 132:3,8 starting 67:9 78:4 starts 18:1 53:18 60:8,9 73:17 139:17 152:11,21 state 76:5 104:13 189:20 stated 119:5 statement 74:13 states 63:5 79:7 85:9 87:12,13 87:16 status 11:21,21 124:14 stays 76:18 step 119:15 133:19 141:5,5 steps 88:6,9 133:20	stick 29:13 31:3 stn 154:18 stop 84:17 186:10 stored 42:14 127:16 straight 97:13 straightforwa... 161:14 164:20 164:21 165:2,3 165:4 170:14 strictly 41:17 string 152:13 structure 34:16 34:21 85:9,16 128:12 structured 22:13,16,17 23:2 85:12 86:1 106:6 180:6 studied 112:9 studies 4:20 8:8 108:20 114:13 115:5,6 115:7,9,15 116:5 117:11 119:2,12 120:8 120:13 122:19 study 71:21 88:20 92:11,18 113:3,4,5,6,8 113:12,20 114:5,10 116:3 116:8 121:11 121:17 122:20 123:1,2 124:1	146:13 147:18 147:21 148:1,7 150:5 154:14 161:11,13 174:6 175:19 176:4,6,14,17 176:18 177:1,2 177:5,10 178:3 178:4,4,7,8 study's 154:16 sub 155:4,9,21 157:14 158:3 186:18 subject 122:5 122:19,21 131:8,11 136:14 176:7 176:16 177:5,9 178:2,3 subject's 176:11,12 submission 1:4 5:2 7:8,13 11:5 12:4,12 15:20 17:9 23:14,15 24:14 27:12,16 31:13 33:19,20 36:11,12 39:8 39:9 40:14,15 41:1 49:17 50:20 51:17 62:18 72:15 94:17,20,21 95:3 99:2 106:18 107:4,5 107:7,10 108:9 113:7 117:6,10 117:18,19,21
---	--	---	---

118:2,19 119:3 119:16,21 120:14,18 121:9,13 124:4 124:14,16,17 124:21 125:12 125:16 127:9 127:12 128:7 129:9,10 134:17,19 135:14,17 136:7,9,11 137:9,10,21 138:3,15 140:4 140:10 141:3 159:14 168:5 168:20,21 169:5,8 170:17 173:1 175:10 178:1 183:19 184:1,6 186:10 186:15,16,18	33:4,11,20 34:3,4 35:13 36:12 37:21 38:11 39:8,20 40:15 43:9,19 44:3 47:8,9,15 48:10 67:17 72:17 77:15 79:19 89:10,13 90:3 91:14 97:3 98:14 101:6 102:19 103:15 105:15 105:17 106:3 106:16 108:15 109:6,8 110:1 111:6,9 112:2 112:10,12 113:4,13,17 115:19 120:10 124:1 127:19 129:5 134:10 135:19 137:3 138:9 139:4,5 139:9,21 140:8 140:17,20 141:1 143:14 144:11 150:20 166:5 174:6 179:10,11,19 179:20 180:5,6 184:4,5 187:2 187:4	32:6,15 38:2,4 39:5 48:16 66:10 85:16,21 101:8 108:17 109:2 111:7 116:17,19 117:5 118:8 141:12 182:6 submitter 95:14 96:15 159:4 176:6 178:8 181:10 submitters 25:8 27:14 28:13 29:7 50:19 175:19 184:10 submitting 4:19 20:14 22:18 24:2 28:1 33:2 41:14 42:17 44:4,15 46:4 51:8 66:13 75:10 91:6 108:2 109:7,16 110:4,12,15 118:17 119:18 120:7 124:13 125:19 134:12 135:7,21 136:2 136:8 137:6 138:14 139:11 141:15 143:6 159:1 166:18 173:15 183:14 184:8,12,13	subsequent 96:15 substance 22:10,12 86:4 86:5,6,7,14,14 86:17,19 87:4 112:1,3 122:10 122:11 175:20 177:14 178:11 successful 124:4 successfully 25:16 124:1 suggestions 87:8 137:19 summarize 9:5 summarizing 167:11 summary 77:16 79:9 167:16 summer 133:5 supply 85:3 support 11:21 112:9 115:11 119:12 124:8 125:12 157:2 supporter 11:21 supporting 125:21 supports 12:1 sur 14:15 suranjan 1:12 2:3 3:3 4:9 6:4 105:6 107:20 126:7,11 175:17 178:15
submissions 10:6 27:14 35:6 96:15 116:12 119:11 119:18 124:15 129:12 136:12 172:5 187:13 submit 5:19 14:15 15:1,4 22:19 23:6 24:3 25:9,10 25:21 26:6 27:2,4,15 28:8 28:14 29:8,12 30:1,5,13 31:3 31:15 32:4,13	submits 95:14 submitted 5:8 13:13 14:17,18 18:18 23:3,8 25:16,18 32:6		

<p>sure 10:12,17 15:3 19:10 22:21 23:5 28:3 33:16 34:2,20 37:18 39:3,15 45:15 45:18 46:1,2 46:14 47:3 48:9,20 62:12 67:20 68:6,14 71:17 87:17,19 88:10,11 91:5 93:12 107:19 120:15,20 121:12 126:19 132:10 133:19 138:19 169:4 170:8 171:20 172:6,8,17 182:3</p> <p>surveillance 2:4,11 4:11 6:9 7:2 114:3 115:12</p> <p>susar 116:1</p> <p>suspect 28:18 80:14,17 81:11 81:16 102:4 111:17 122:15 177:16</p> <p>suspected 115:21</p> <p>sworn 189:5</p> <p>sync 180:17</p> <p>syringe 94:4</p> <p>system 1:5 14:4 22:11 86:6 94:4 106:1</p>	<p>116:21 119:16 120:9 125:9 126:3 131:15 132:2,7 153:3 153:21 154:10</p> <p>systems 125:12 131:16</p> <p>t</p> <p>t 3:1,1</p> <p>tab 52:20,21,21 55:10,12,12,16 55:21 56:2,9 56:10,11 57:19 59:11,12,13,14 59:14,16 60:10 62:4,9,19,20 62:20 63:1,1 163:8 168:14 168:14</p> <p>table 41:4,10 41:11,11,12,12 41:13 42:16 49:18,19 99:18 100:4 108:1,8 108:14 120:15 120:18 123:14 143:12,13,13 159:19 169:3,4 169:4</p> <p>tables 64:9 159:12</p> <p>tabs 62:5 96:5 99:8 168:12,13</p> <p>tag 164:6</p> <p>tagging 113:6</p> <p>take 7:9 30:19 33:4,18 43:13</p>	<p>44:15 47:17 49:4 70:5 74:5 74:20 84:14 88:5 98:16 102:20 124:10 133:20 141:6 149:21 151:2 157:17 159:4 160:6 173:12</p> <p>taken 21:21 64:3 73:18 74:17 79:4,17 94:14 95:12 102:9 154:16 165:4 189:3,12 190:9</p> <p>takes 28:6 51:15 63:2 102:16,17 139:15,15 156:19</p> <p>talk 4:18 5:4 6:1 7:13,18,21 8:3,9,14 11:17 12:13 13:3 20:4 23:14 41:9 49:17 50:8 51:2 55:8 64:8,10 77:18 90:14 94:18,20 96:19 97:14 99:4,13 101:9 105:3 109:21 111:2 113:20 126:16 148:20 149:17 151:11 151:12 155:1 167:17 180:14</p>	<p>187:15</p> <p>talked 41:7 49:14,15,20 51:3,19 61:9 63:19 64:6 67:6 68:8,10 69:13 93:2 98:21 99:2,11 99:19 101:17 145:8 146:18 147:13 148:19 149:10,11,20 150:13 163:7 167:18 168:6,7 168:18 169:8 169:13,19 171:2,5 172:9</p> <p>talking 5:1 6:5 6:7,13,19 7:6,7 7:10 8:13,18 8:21 12:14 13:15 37:5 41:5 83:15,16 83:17 98:5 100:5 101:19 105:8 110:3 126:17 138:1 150:7,8 151:9 159:10 169:18</p> <p>talks 18:17 51:5</p> <p>team 94:8</p> <p>technical 10:12 13:6,10 21:19 23:11 50:18 51:8 52:15 64:14 67:1 94:19 107:17</p>
---	--	--	---

119:8 124:5 135:6 176:8 179:9 technologies 85:11 technology 51:10 77:5 telecom 75:11 75:13,14 telecommuni... 152:5,8 tell 18:10,14 53:14 54:2 55:15,17 57:15 64:19 127:17 154:11 telling 93:6 tells 40:7,8 41:12 54:21 55:4 58:8 156:15 160:4 temporary 127:17 129:8 tentative 107:3 termid 86:14 86:15,20,21 90:20 terminologies 13:12 20:17,17 21:1,2,8,9,12 21:14 50:21 terminology 21:16 terms 184:18 test 12:15,21 12:21 26:15 27:3,9,11 44:17 48:11,13	48:15,16 82:4 92:2,19 123:15 126:18 127:2 127:15 128:10 130:6 133:2,8 133:9,11,18 134:7,10,13 136:12 170:3,7 170:8,10,13,15 177:2,18 178:10,12 testifying 189:5 testing 12:11 12:16,18 13:1 26:12 27:6,7 48:6,7,9,10,10 48:12 50:1,3,5 65:6 107:18 108:21 132:2,5 132:7,12,16,19 132:20 133:1,2 133:4,7,15 134:1,2 136:13 136:15,16 170:2,3,5,6 172:6 186:4,6 tests 22:2 49:21 text 45:14 91:13,14 103:2 103:5,13 165:7 165:9,10 thank 49:9 53:3 98:17 105:6 113:21 126:7,11,12 151:5 173:16 174:3 175:11 175:17 178:13	178:14 187:9 187:20,21 188:2,5 theirs 37:6 theme 46:21 theming 100:16 therapeutic 37:2 therapy 176:13 176:15 thing 9:3 14:14 19:16 26:10 29:1 30:21 48:19 56:18 60:13 74:12 84:16 93:1 120:2 130:2,11 133:9 148:20 155:17 161:13 166:11 172:12 180:7 things 8:10 14:14 19:11,12 19:18 20:10 39:7 42:12 49:20 60:12,13 72:15 84:6 89:15,20 130:13 138:19 141:20 160:4 169:15 172:15 think 12:20 16:11 27:8 28:11 47:9 48:7 49:2 64:5 91:13 98:8,11 130:18 131:18	132:2 133:18 147:6,19 149:1 151:19 160:17 162:7 165:9 third 6:18 63:21 68:13 111:2 156:21 177:17 thought 10:7 threatening 101:1 three 9:12 23:19 41:19 43:16 47:21 67:13 70:21 78:16 83:19 104:9 108:16 108:16,20 142:10 152:7 157:4 174:20 177:11 180:12 time 5:21 6:1 10:3 11:13 13:9 25:21 27:5 28:10 31:15 34:14 35:6,7 47:17 49:3,19 52:9 55:15 56:6 61:17 88:9 95:13 98:9 104:10 109:4 109:18 129:8 129:13 130:2,7 133:5 138:14 139:8,9 144:6 147:17 167:20 168:2 185:3,9
---	---	--	---

186:16,19,19 timeline 136:17 136:18 184:4 timelines 10:9 10:17 11:1 times 13:15 23:1 33:10 67:7 85:15 95:17 133:4,12 168:20 timing 98:12 tings 162:5 titled 122:6 123:9 today 4:19 9:3 9:6 10:19 11:6 24:15 36:8 97:2 107:16 114:8 120:15 124:2 134:16 140:8 167:17 167:18 169:16 171:3,5 173:6 180:9 183:5,15 today's 5:6 6:3 7:5 together 47:8 143:1,3 tomorrow 33:13 158:10 took 153:17 tool 10:18 26:13,14 131:7 131:8,11 132:4 132:4,17 tools 10:19 27:9 105:20,20 106:5 131:6,9	top 41:19 52:17 60:11 108:16 134:20 topic 23:16 158:19 topics 98:11 151:9 totally 182:10 towards 9:11 44:20 track 32:14 68:5 tracking 32:16 105:21 106:6 116:21 trade 86:10,11 182:2,4 trader 48:11 traditional 26:17,18,20 27:2 trainer 26:12 transcriber 190:1 transcript 190:3,5 transcriptionist 189:8 transferred 179:4 transferring 166:3 transition 124:8 126:1 transmission 23:21 24:1 27:15 41:6 51:7 99:16	117:7,19 118:19 119:7 142:5 transmitting 50:19 tree 152:3,6,11 trend 85:19 triage 39:7 trial 112:7,8 113:5,10 148:2 trials 105:15 tried 109:5 true 57:7 69:6 70:14,17 71:20 72:12 73:7,15 74:7 78:3 80:12 83:20 101:4,21 102:4 102:12,21 103:8,18 113:16 146:14 146:20 147:7 149:2,2 150:9 158:1 161:8,17 161:19 174:12 174:17 182:3 189:9 190:5 truly 73:11 truncated 185:15,18 try 30:3 41:11 43:13 47:3,15 50:9,11,12 52:18 85:19 93:9 184:19 trying 43:19 135:15 137:13 137:15 187:14	tst 48:8,8 tuesday 1:13 4:2 turn 115:11 two 5:18 6:12 8:17 11:12 15:10 21:7 37:9,11,13 39:18 41:6 49:21 60:5 67:8,10,10,13 80:8 84:13,15 90:12,15,16 95:18 104:11 106:17 112:6 112:10 117:17 118:16 131:1 135:4 137:2,7 137:8 139:3 140:15,16,18 141:11 144:9 146:5 147:11 151:6,9 161:8 184:3,5 185:6 185:7 txt 64:19 104:20 type 28:15 40:14 44:6 54:1,2,3 56:15 67:4,4,8 68:17 68:17 69:10 71:21,21 72:13 73:3 74:15,21 75:13,14,20 78:2 87:8 89:2 93:20 94:3,5,6 94:9 100:17,20
---	---	--	--

102:2 110:9 113:8,12 121:9 121:15,16 123:11 146:10 147:2,3,21 148:1 153:15 153:18,18,19 153:20 154:1,2 154:3,5,5,8,9 154:20,20 156:1,2,4,7,14 160:16 161:13 162:3 163:2,14 164:1,3,6,12 171:17 types 7:21 20:10,10 43:16 79:6 80:1 108:15,16 164:15 typewriting 189:7 typically 12:18 26:13 27:18 84:5 92:7 108:18 128:3 typo 45:17	un 153:8 under 9:7 33:13,13 54:6 54:10 59:19 60:1 61:12 80:10 90:6 91:17 100:14 106:15 111:9 111:19 112:12 115:6,8,16,16 115:17,18,18 116:3,4,6 117:13 118:5 118:13 178:19 understand 5:11 15:4 37:15 39:4 119:5 123:18 143:16 186:12 understanding 14:5,7,8 unexpected 115:21 unfortunately 11:6 union 152:8,18 unions 152:5 unique 22:12 58:3 66:10 86:16 87:6 111:6 123:17 united 79:7 85:9 87:12,12 87:16 universal 105:21 unknown 44:1 53:2 57:12	79:11,13,18 166:4,10,12 174:19 177:19 update 10:10 10:12 19:9 32:12 34:10 75:4 updated 16:8 87:6 130:20 131:14 134:18 updates 34:14 52:2 128:8 130:17,18 updating 59:4 upload 26:3 28:21 29:1,4 33:8,16 127:14 180:1 uploaded 29:7 uploading 127:16 ups 144:2,9 166:5 url 127:11,11 usage 104:17 165:2 use 19:13 20:19 21:1 22:1,4,7 22:13,20 24:16 25:6 26:12 30:7,12,18 31:2,6,10 35:9 35:12,17 39:13 45:12 50:1 57:15 66:9,11 69:7 71:5 76:21 77:2,21 79:11,19,21	81:7,21 84:11 84:12 85:13,19 86:1,7,9,15 87:1 90:9,21 91:2,5,10,12 92:20 97:10 104:14,15,16 105:19 106:4,8 106:8 111:17 119:2 120:17 125:4 129:8 138:2,7 139:3 142:17 149:7 152:19 154:3 157:12 158:7 161:9 164:1 165:11 166:4,6 166:18 169:21 170:1 172:15 173:1 174:20 175:20 179:6 181:18 182:1 183:13,17 184:5 185:20 186:8,14,17 used 13:1 20:2 21:5,8,15 22:9 22:14 27:10 31:17,19 41:14 48:9 50:21 57:1,3,10,17 58:16 62:13,17 65:6 69:7,16 70:19 77:14 79:6 82:6,9 84:12 88:19 89:3 91:19,19 92:7,17 93:17
u			
u.s 2:5,7,9 u.s. 2:13,16 153:1 155:18 157:11 ucum 22:3,5 ue 19:20 uid 154:19 ultimately 97:10			

94:15 100:18	v	39:16 42:2,14	166:18,21
102:11 108:2	vaccine 5:1,1	57:4,13,14	167:2,6,7,10
113:6 122:7,9	20:8 31:21	59:9 60:16,17	174:12,14,17
123:7 127:8,9	32:1 37:4	60:19 66:16	174:19 179:2,3
130:1 131:9,10	vaers 180:20	67:10 69:4,7	179:6
131:12 154:4	valid 122:1	69:16,16 70:18	values 36:14,15
155:6 158:13	127:19 129:4	70:20 71:3,11	38:17,18,21
160:10 163:20	133:20 170:8	71:15 72:1,17	40:1 41:14
163:21 165:6,8	186:4,6	74:18 75:2,12	42:15 43:3
171:12,16	validate 85:13	75:14,17 77:21	45:10,10,11,15
useful 151:20	88:6 103:1	78:18 79:10	45:18 46:8,10
user 36:2	126:17 127:7,9	80:13 81:7,10	48:20,21 54:4
165:15,17	127:15 128:4	81:15,18,21	58:9,9 68:1
users 27:1,21	128:16,19,20	82:3,5,11,14	69:4,12,13
35:20,21,21	128:21 129:12	82:15,17,21	74:16,19,20
uses 10:18 55:5	validated 87:17	83:1,2,11,19	75:3 77:16
155:20	88:10 129:17	91:9 92:17	78:17,18 79:3
using 1:5 4:8	validates 85:8	100:18 101:21	79:5 82:16,19
5:2 6:14,21	validating	103:11 104:7	83:5 85:20
12:19 14:17	87:10 129:11	104:19 111:10	90:1 91:9,10
21:2 22:8,11	validation 8:9	113:5,9,16	92:2 94:7,15
31:7 35:21,21	126:15,16	120:21 121:2	101:3 108:1,6
48:13 62:14	127:17 128:2	122:16 123:7	108:7,8 122:14
79:14 84:8,10	129:14 130:9	145:9,16,18	146:8 147:8
84:19,21 85:12	132:19 169:19	146:19,21	150:6 151:21
88:12,12,19	validator	147:5,9 150:4	156:16 157:3,3
93:21 105:9	127:13,14	152:10,12	157:5 160:1,3
111:13 128:11	128:2,9 129:7	154:2 156:14	160:10,17,17
129:7 135:9	129:7,10,12,19	156:17,18,20	162:4,8,17,18
137:11 141:16	129:21 130:1,4	160:18 161:20	163:8 165:7,11
152:4 154:6	130:8,10 133:8	162:6,10,11,17	174:21 178:18
155:5 168:18	133:9,10,17	162:19 163:8,9	178:20,21
176:7,19	134:5 169:20	163:10,11,17	179:4
180:21	169:21 170:7	163:17,19,20	variation
usually 18:5,6	170:16	163:21 164:2,2	115:10
162:4	value 14:3	164:3,5,13,13	variations
utilized 158:17	18:20 19:21	165:8,16 166:6	85:18
		166:7,12,12,14	

<p>various 114:20 vehicle 177:3 vendor 10:16 10:19 11:1 27:9 132:4,10 vendors 10:21 26:14,14,18,20 27:9,9 170:4 verbatim 182:3 verified 26:19 verify 42:14 62:11 108:6 veronica 2:6 3:4 6:13 105:3 117:14 147:13 173:21 175:12 188:1 versa 46:9 version 52:1,3 52:3 55:19,20 56:4,8,10 143:16 versions 30:6 185:6 versus 21:11 44:2 45:7 111:16 112:4 169:1,1 viable 133:4 video 180:14 view 55:14 viewers 88:7 views 23:9 violation 132:17 visé 46:9 visualization 105:20 106:5</p>	<p>vocabularies 85:11 168:19 vocabulary 21:3,4 volume 31:8 137:3 voluntarily 124:21 voluntary 107:4,6 117:21 135:16 136:2 137:21 138:15 168:3 185:1</p> <hr/> <p style="text-align: center;">w</p> <hr/> <p>w 60:9 waiting 105:4 120:5 walk 139:14 want 5:16 12:15 13:21 19:19 21:9 26:10,13 31:5 31:9 33:11 36:2,15,16 37:3,3,18 38:9 38:9 44:11 45:1 48:9,11 48:12,15,16,19 48:20 76:7,10 76:17 80:17 84:8,9 96:11 110:5 113:1,11 116:16 127:2 128:10 129:9 132:11,13,21 133:2,10,12 134:3,7 136:16</p>	<p>139:21 141:18 141:21 146:16 170:5,5 172:20 185:5,12 wanted 59:5 94:20 158:16 warning 8:13 16:10,19 18:10 59:12,13 60:1 60:3,8 61:13 61:15,18 95:12 96:6,8,8,10,14 141:19 147:16 170:21 warnings 16:15 16:16,18 17:13 60:10 95:11 141:18,19 145:1 147:11 168:15 170:19 water 44:10 way 36:7 38:7 40:14 41:1 44:8 46:15,20 60:11 94:13 101:17 129:19 130:6 134:18 137:2 144:16 145:13 155:3,8 155:17 156:11 156:19 157:18 159:18 162:9 171:10 186:2 ways 89:16 we've 109:5 135:8 159:10 web 25:9 26:1 26:11 27:4</p>	<p>28:14 48:11 138:17 170:6 170:10,17 186:14 webinar 187:10,21 webpage 7:13 11:6 51:17 107:6,9 127:12 134:18,19 159:14 168:5 184:1 website 50:3 107:12 118:1 124:9 week 188:4 week's 52:9 weeks 56:6 welcome 4:6,12 98:19 151:8 went 18:20 49:16 95:20 153:10 169:11 169:18 170:18 170:21 171:7 172:1,3 win 138:21 witness 189:4 wo 89:16 wonder 69:15 wonderful 188:3,4 word 13:10 89:14 work 9:13 19:9 81:20 114:16 134:8 137:12 180:6,16 186:1</p>
---	---	--	---

187:13 working 5:7 11:7 20:7,8,12 32:8,20 184:5 works 76:8 92:14 worry 21:10 write 86:11 written 152:13 wrote 173:10	140:20 141:7,8 163:15 170:3,8 179:12,13,18 180:1 184:6,7 184:8 xmls 16:1 27:3 29:5 30:19,21
x	y
x 17:13 52:12 62:5,6,7,9,10 62:11,14,15,16 62:18 97:18,19 151:20 152:1 168:14 x.6.6.0. 152:6 xml 14:2,8,8 15:5,16 24:4,4 24:8 25:12 27:5,13,16 29:2,2 33:8,11 33:16 38:17 39:12,21 40:4 40:6,11 41:1 42:4,6,7,7,12 42:21 43:2,2 48:14 64:13 80:21 100:7 108:4,5 124:8 126:18,21 127:7,19 128:9 128:13,17 129:1,4,13 133:19,20 134:5,9 139:11	y 2:6 3:4 97:18 97:20 yeah 18:5 81:12 145:10 year 88:1 135:16 137:2 137:13 139:2,3 184:4,4 187:18 years 9:11,12 11:12 137:7 140:15,16,18 184:3 185:7 yellow 29:12
	z
	zero 152:7 zeros 89:10 zip 64:16,16 zoom 4:15 180:11 zzfda 39:16 40:11 43:4,7 43:16 44:4 45:6 46:1,2,7,9 93:3,10 100:9 121:2 145:9,16 145:18 146:5,7 zzlp 40:6