

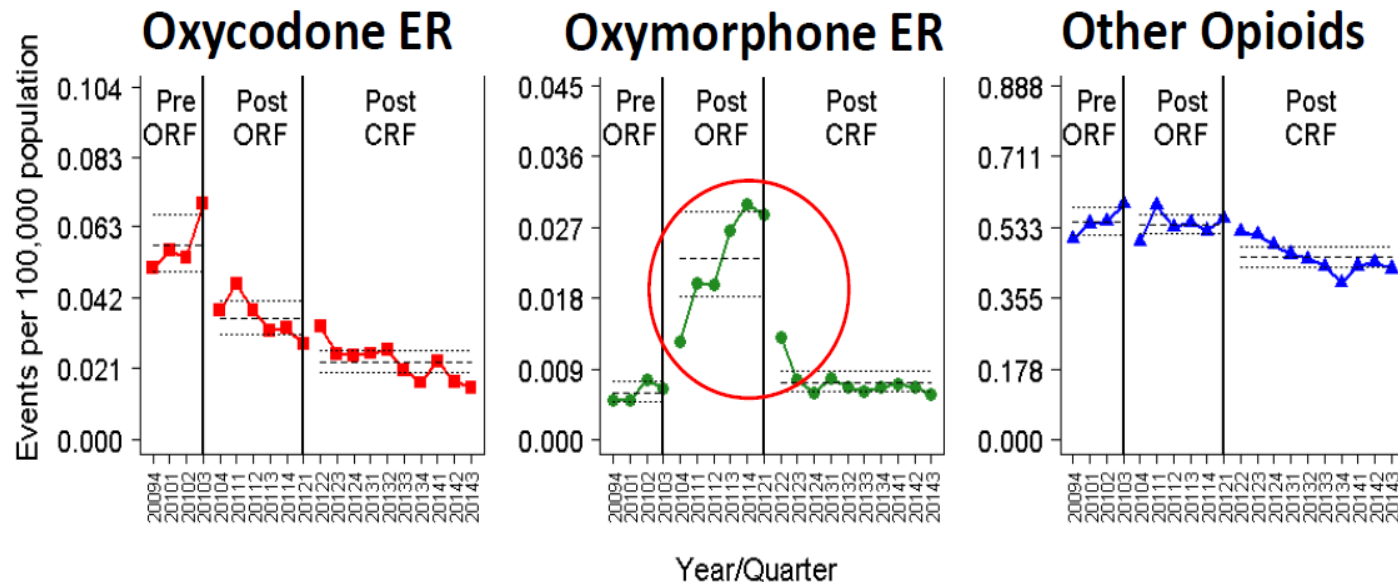
# Disclosures and Disclaimer

- I am a full-time employee of Grünenthal USA, Inc.
- Grünenthal develops and licenses abuse-deterrent formulation technology.
- Products applying Grünenthal's abuse-deterrent formulation technology are being marketed in the US.
- The statements and opinions expressed in this testimony are my own and not necessarily those of Grünenthal and certainly not made by or on behalf of any of the partners.

# ADF technology has an impact on abuse

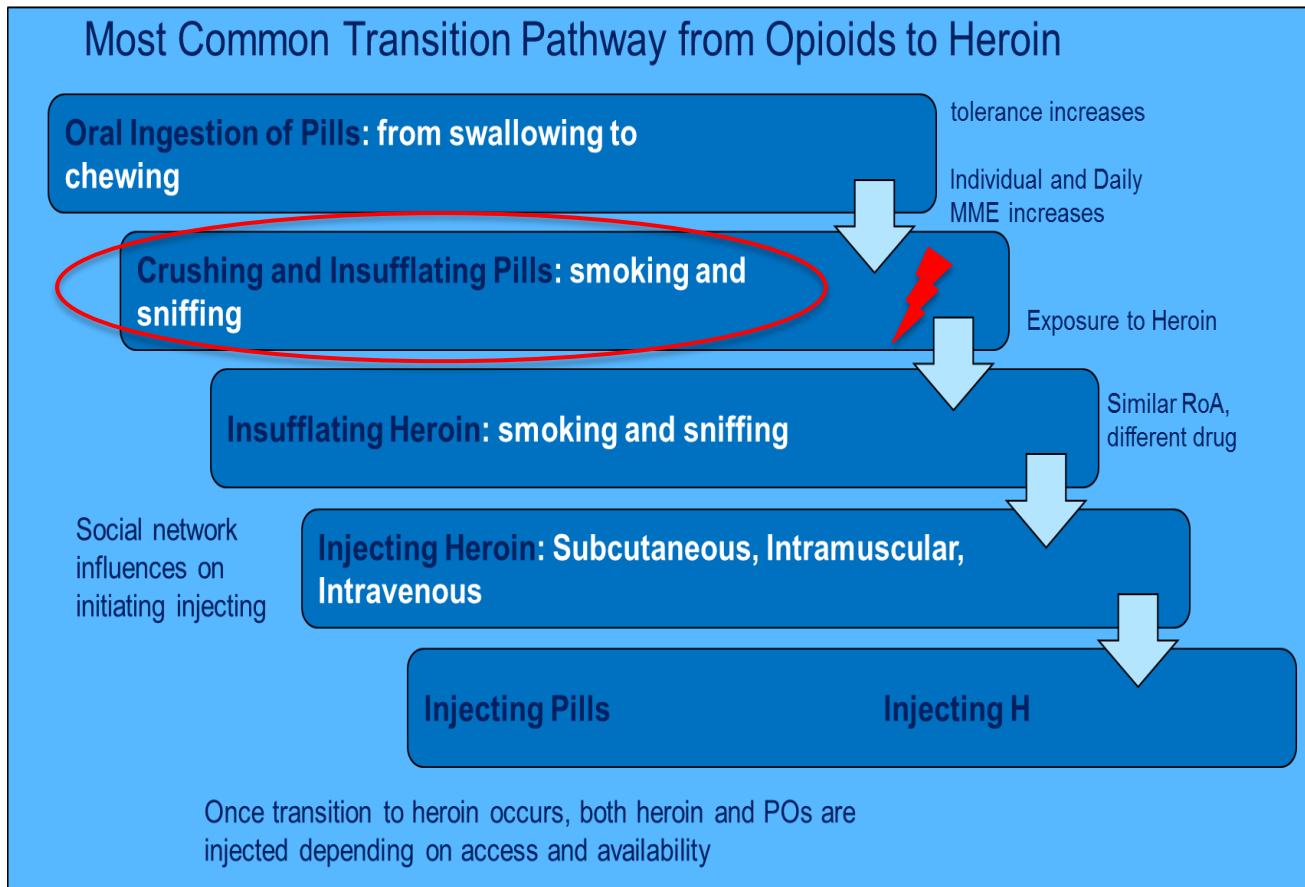
## Changes in Abuse Indicators Following Introduction of Abuse Deterrent Formulations

### Poison Center Intentional Abuse



Source: <http://www.radars.org/Portals/1/AnnualMeeting/2016> (accessed 5/31/16)

# Why Crush-Resistance is Important



Source: CDC presentation by J. Ziebell at Nat Rx Abuse & Heroin Summit 2016 (reproduced from slide presentation)

Abuse-Deterrent technology may create a preventive barrier against non-oral routes and progression into later heroin abuse