



An Update on the Decline in Drug Overdose Deaths After State Policy Changes – Florida, 2013

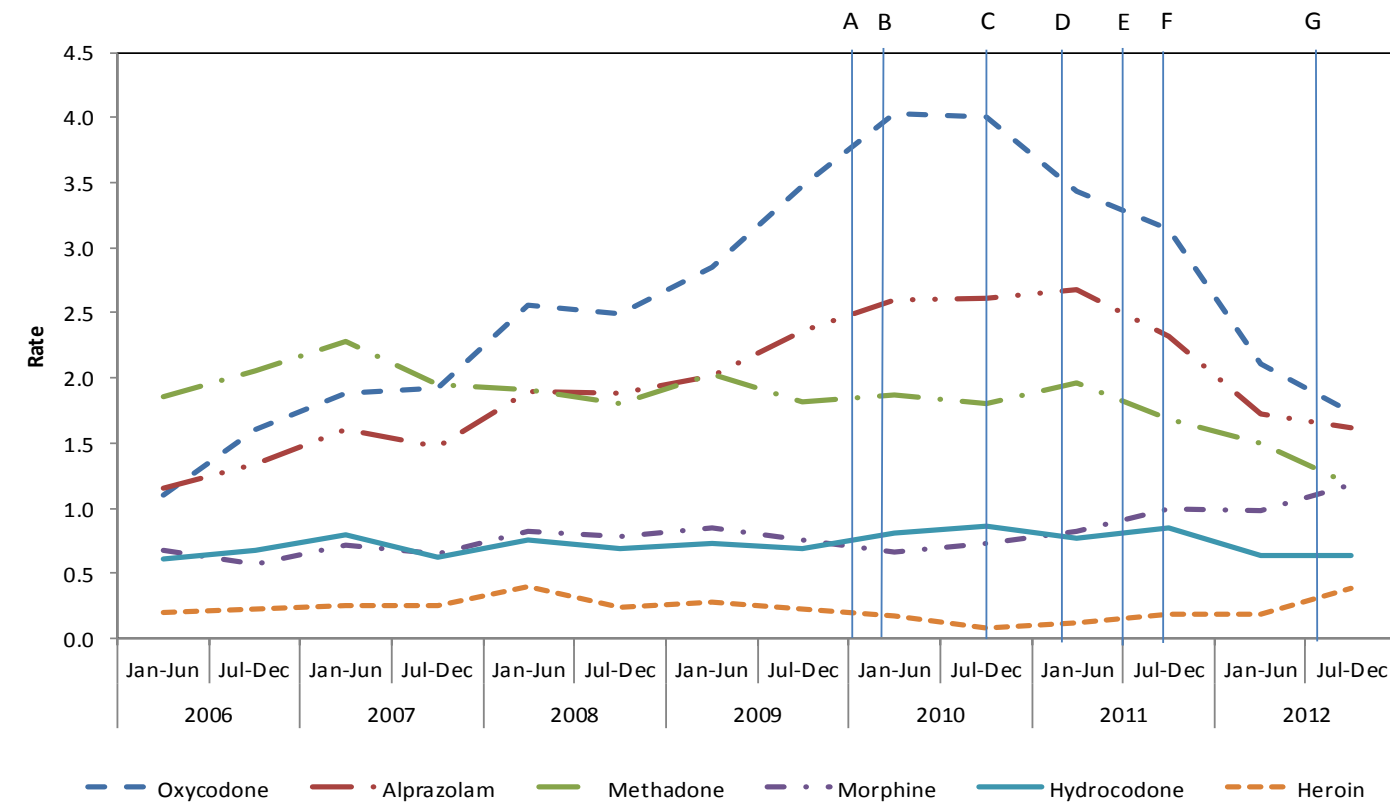
Hal Johnson, MPH

Hal Johnson Consulting, Tallahassee, Florida

Background

In July 2011 an analysis of the trends in overdose deaths in Florida between 2003 and 2009 was published in MMWR¹. Death rates increased for all substances except cocaine and heroin in that span. The death rate for prescription drugs increased by 84.2%, with oxycodone (264.6%) and alprazolam (233.8%) showing the largest increases. In July 2014 a follow up analysis was published in MMWR² that examined continuing trends through 2012 in light of the numerous changes to legislation, law enforcement, and policy implemented in Florida from 2009 through 2012. Between 2010 and 2012, the rate of drug overdose deaths decreased 17.7%. The decline for prescription drugs overall was 23.2%, for oxycodone 52.1% and for alprazolam 35.6%.

FIGURE 1. Semi-annual drug overdose death rates* for selected drugs, and selected prescription drug diversion and misuse actions taken - Florida, 2006-2012†



- A. January 4, 2010. Pain clinics must register.
 - B. February, 2010. Operation Pill Nation: DEA, state and local law enforcement began investigation of rogue pain clinics.
 - C. October 1, 2010. Pain clinic regulation expanded.
 - D. February 23, 2011. Operation Pill Nation: Joint law enforcement raids begin.
 - E. July 1, 2011. Physician dispensing prohibited and statewide regional strike forces activated.
 - F. September 1, 2011. Mandatory reporting to prescription drug monitoring program begins.
 - G. July 1, 2012. Wholesale distributor regulations expanded.
- * Per 100,000 population. Based on Florida Department of Health resident population estimates. Available at <http://www.floridacharts.com/FLQUERY/Population/PopulationRpt.aspx>.
† The source of overdose death data is the Florida Medical Examiners Commission.

Methods

Florida medical examiners are required to submit a report to the Florida Medical Examiners Commission (FMEC) on each death in which a drug is detected in the decedent. The report includes information on which of nearly 50 monitored drugs are detected, and whether these drugs are causal in the death or merely present. FMEC 2013 data³ was analyzed for this presentation. Additionally, data from the 2014 interim FMED report, which includes deaths from January - June 2014, was used to estimate 2014 rates. Only cases in which drugs were deemed causal in the death are included.

Results

Deaths caused by Oxycodone and Alprazolam continued to decline. The Oxycodone death rate decreased by 72% (8.1 to 2.2 per 100,000) from 2010 through 2014, and the Alprazolam rate decreased by 51% (5.2 to 2.6 per 100,000). Additionally, Methadone deaths decreased by 53% (3.7 to 1.7) and Hydrocodone deaths decreased by 27% (1.7 to 1.2). Hydromorphone was one of the few substances that showed an increase in death rate from 2010 to 2012 (0.3 to .09 per 100,000). However, the rate declined somewhat since 2012 to a rate of 0.7, which is still more than double the 2010 date.

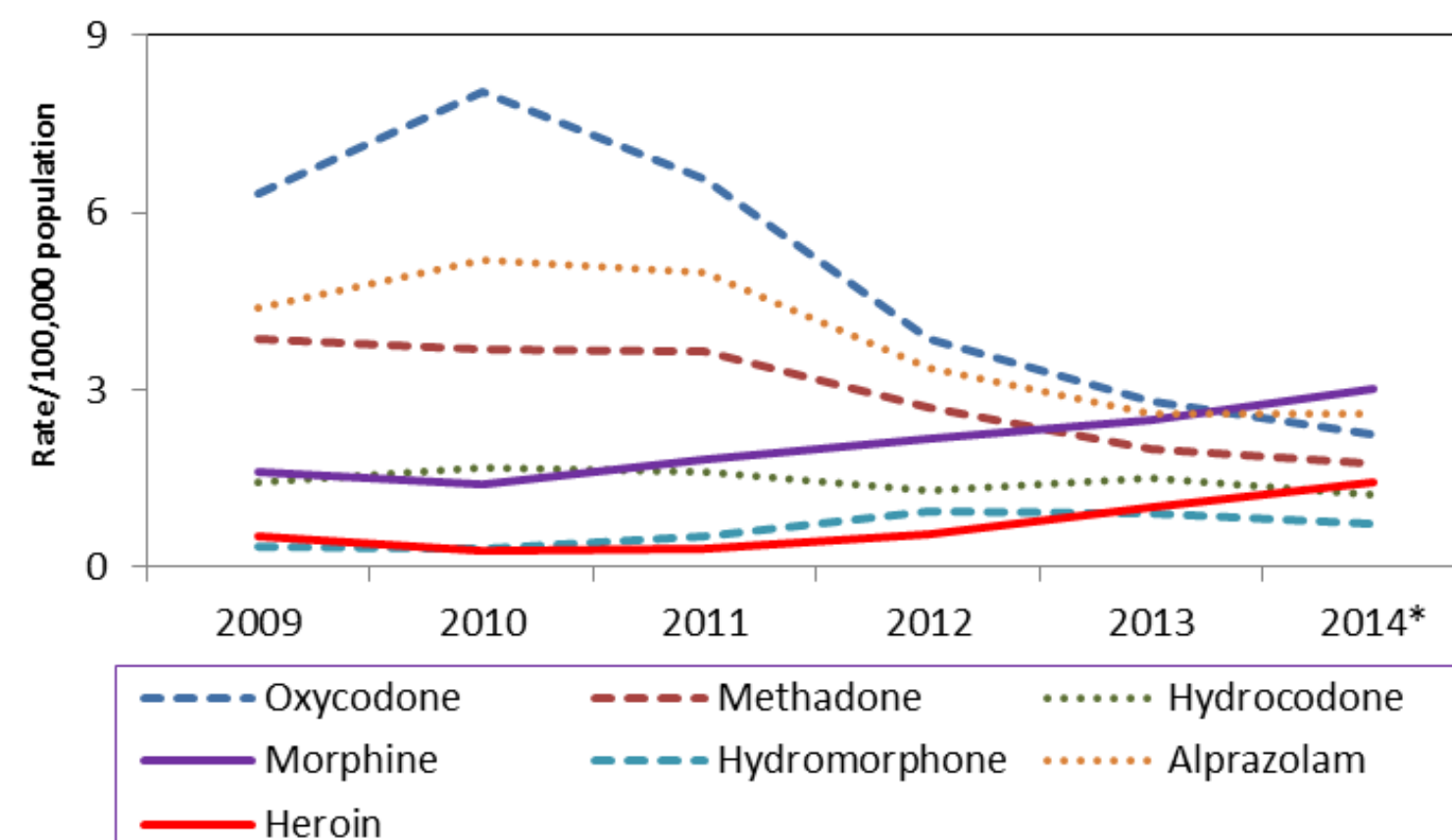
Table 1. Change in rates of selected substance-caused deaths, 2009-2014

	2009	2010	2011	2012	2013	2014*	% Change 2010-14
Oxycodone	6.3	8.1	6.6	3.9	2.8	2.2	-72%
Methadone	3.8	3.7	3.6	2.7	2.0	1.7	-53%
Hydrocodone	1.4	1.7	1.6	1.3	1.5	1.2	-27%
Morphine	1.6	1.4	1.8	2.2	2.5	3.0	117%
Hydromorphone	0.3	0.3	0.5	0.9	0.9	0.7	134%
Alprazolam	4.4	5.2	5.0	3.4	2.6	2.6	-51%
Heroin	0.5	0.3	0.3	0.6	1.0	1.4	462%

*2014 data is estimated based on the interim report for January through June

Heroin deaths, which increased 122% from 2010 to 2012, continued to increase through 2014. From a low of 0.3 deaths per 100,000 population in 2010, the rate increased 462% to a projected rate of 1.4 in 2014. Morphine deaths also increased from 2010 to 2012 and continued to increase through 2014. The rate increased 114% from 1.4 to 3.0 per 100,000. The rate of heroin and/or morphine caused deaths varies greatly by medical examiner district. There was little change in gender, race/ethnicity or age trends from the previous report.

Figure 2. Trends in rate of deaths caused by selected substances, 2009-2014

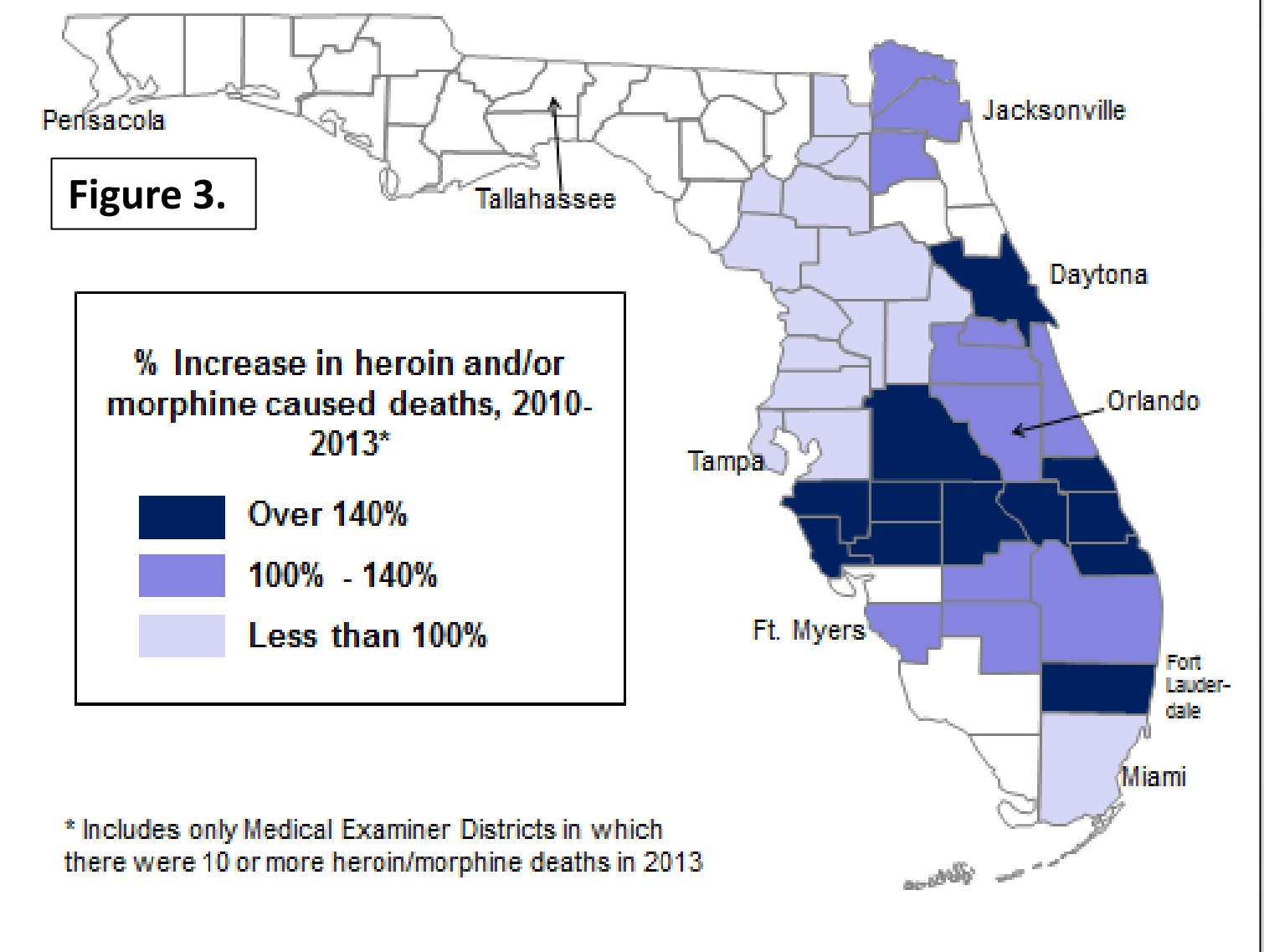


Conclusions/Discussion

There was a dramatic increase in opioid and benzodiazepine caused deaths, especially those caused by oxycodone and alprazolam, from 2003 through 2009. Following a series of legislative, administrative and law enforcement actions to address this problem, Florida saw a reversal to this trend between 2010 and 2012. This reversal continued through 2014. The notable exception is the increase in heroin and morphine caused deaths. The increase in deaths attributed to morphine is at least partially attributable to the metabolism of heroin. Heroin metabolizes within a few minutes to 6-Monoacetylmorphine (6-MAM), and then within about 8 hours to morphine⁴. Therefore, many cases in which morphine is detected in the decedent are the result of heroin use. If there is physical evidence on or near the decedent such as heroin, needles or other paraphernalia, the medical

examiner will likely document heroin use. If there is no evidence, the presence of 6-MAM in addition to morphine will indicate heroin use. However, several of the 24 medical examiner districts in Florida do not have the ability to detect 6-MAM. As seen in Figure 2, the trends in deaths from morphine and heroin are very similar. Therefore these drugs were combined in Figure 3 to examine the geographic differences in overdose deaths by medical examiner district. It is worth noting that the areas with the highest rates of heroin/morphine caused deaths are generally the same areas that previously had the highest concentrations of pain clinics.

Figure 3.



* Includes only Medical Examiner Districts in which there were 10 or more heroin/morphine deaths in 2013

References

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- Mayo Clinic: <http://www.mayomedicallaboratories.com/test-info/drug-book/opiates.html>

For Questions or Comments Contact:

Hal Johnson
 Hal Johnson Consulting
 8616 Kingston Ct., Tallahassee, FL 32311
www.HJC-Epi.com . hal@hjc-epi.com . (850)566-0931