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In This Issue

RADARS[®] System Hosts Sixth Annual Scientific Meeting: 10 Years of Expanding the Horizons of Prescription Drug Surveillance

RADARS System Global Poison Centre Abstracts Presented at European Association of Poison Centres and Clinical Toxicologists

Ranking by State

RADARS System Group at the Annual NACCT Meeting

Recent RADARS System Publications and Presentations

RADARS System Presentations

RADARS System Quarterly Technical Reports

Contact Information

Mission Statement

RMPDC and DHHA

RADARS[®] System Hosts Sixth Annual Scientific Meeting: 10 Years of Expanding the Horizons of Prescription Drug Surveillance

The Sixth Annual RADARS System Scientific Meeting took place on Tuesday, April 24, 2012, in Bethesda, MD, marking the 10th Anniversary of the RADARS System. The meeting this year was split into two distinct sessions: the morning focused on the current state of prescription drug abuse intervention efforts and the afternoon provided some insight into the future of prescription drug surveillance, both domestically and internationally.

Dr. Richard C. Dart, M.D., Ph.D., Director of Rocky Mountain Poison and Drug Center (RMPDC), provided a historical perspective of the RADARS System and the growth it has seen over the last 10 years. He also reviewed 2011 RADARS System data detailing the latest trends in misuse, abuse and diversion by program and active pharmaceutical ingredient.

Below is a list of guest speakers and their presentation topics.



Eric Lavonas, M.D.

Did You Know?

On July 9, 2012, the FDA approved a risk evaluation and mitigation strategy (REMS) for extended-release (ER) and long-acting (LA) opioids as part of a federal initiative to address the prescription drug abuse, misuse, and overdose epidemic.

Did You Know?

A new law in Kentucky took effect on July 20, 2012, requiring all prescription providers to register with Kentucky All Schedule Prescription Electronic Reporting (KASPER)

- Karen Kelly, President and CEO of Operation UNITE, presented UNITE's history, mission, and current intervention efforts to curb prescription drug misuse, abuse and diversion in Eastern Kentucky.
- Eric Lavonas, M.D., Associate Director of RMPDC, presented *What Do the Data Say About PDMP [Prescription Drug Monitoring Program] Effectiveness?*
- Richard Dart, M.D., Ph.D., Director of RMPDC, presented the latest update and analysis of abuse/tamper deterrent formulations.
- Jody Green, Ph.D., Director of Research Administration at RMPDC, presented *RADARS System Global Prescription Drug Initiative*.
- Cathy Stannard, M.D., Consultant in Pain Medicine at Frenchay Hospital, Bristol UK, presented *Prescription Drug Misuse, Abuse and Diversion: A Perspective from the United Kingdom*.
- Elizabeth Garrard, PharmD, RPh., Chief Safety Officer at Drug Safety Alliance, presented *AE Reporting in the Era of Web 2.0: The Challenges of Having a Two-Way Conversation*.

PDF versions of all presentations and posters presented at the meeting along with audio/video of each presentation can be found on our website: www.radars.org

RADARS System Global Poison Centre Abstracts Presented at European Association of Poison Centres and Clinical Toxicologists

The RADARS System was fortunate to have two different abstracts selected as poster sessions for the 32nd International Congress of the EAPCCT held in London, England on May 29 to June 1, 2012. The focus of the abstracts was on the data obtained during the first RADARS System Global Poison Centre Pilot conducted in 2011. The United Kingdom, United States, Germany, Italy, Switzerland, Netherlands, and Australia all participated in the pilot and contributed data from their respective countries related to exposures reported to poison centres for prescription opioids and stimulants. The detailed abstracts that were presented are shown below:

International Perspective on Prescription Opioid Exposures Reported to Poison Centres from 2007-2010

JL Green¹, SHL Thomas², JP Thompson³, H Kupferschmidt⁴, H Desel⁵, N Gunja⁶, JA Brown⁶, F Sesana⁷, G Milanesi⁷, I de Vries⁸, RC Dart¹

¹Rocky Mountain Poison & Drug Center, Denver Health, Denver CO, US, ²National Poisons Information Service (Newcastle Unit), Newcastle, UK, ³National Poisons Information Service (Cardiff), Cardiff, UK, ⁴Swiss Toxicological Information Centre, Associated Institute of the University of Zurich, Zurich, Switzerland, ⁵GIZ-Nord Poisons Centre, University Medical Centre Göttingen, Göttingen, Germany, ⁶NSW Poisons Information Centre, The Children's Hospital Westmead, Sydney, Australia, ⁷Milan Poison Centre, Azienda Ospedaliera Ospedale Niguarda Ca' Granda, Milano, Italy, ⁸National Poisons Information Centre, Utrecht, Netherlands

Objective: Prescription opioid abuse has been deemed as epidemic in the United States (US). Abuse in other countries is not well studied. The objective of this study is to characterize human exposures to specific prescription opioids reported to poison centres from multiple countries over a 4 year study period.

Methods: Human exposures to oxycodone, buprenorphine, and methadone reported to poison centres from 2007-2010 were obtained using a standardized data template with written definitions. Rates are reported as number of exposures reported per 100,000 population.

Results: Seven countries participated; Australia, Germany (Göttingen), Italy, Netherlands, Switzerland, United Kingdom (UK) and US. All centres manage calls from health care providers. Australia, Italy, Germany, Switzerland and US manage calls from the public as well. All countries reported increased oxycodone rates during the study period ranging from 30% to 410% (Table). Five of 7 countries reported increased buprenorphine rates (range 11-295%) while Germany and Italy reported decreases of 14% and 49%, respectively). Four of 7 countries reported increased methadone rates (range 4-29%) while Netherlands, UK and Australia reported decreased methadone rates (range 5-11%).

Conclusions: Oxycodone exposures reported to poison centres in all participating countries increased during the study period. Methadone rates were relatively unchanged during the study period, yet larger increases were reported in some countries for buprenorphine. While these data illustrate rates over time within each country, one cannot compare rates between countries due to variation of data collection methods (some centres accept calls from the public, some do not). Additional data on reporting bias, drug availability, drug supply source, and types of exposures reported are required to further understand these findings.



Country in % Change Rank Order	Exposure rate per 100,000 population				Rate change (first rate reported to 2010)	% change (first rate reported to 2010)
	2007	2008	2009	2010		
OXYCODONE						
Italy	0.008	0.007	0.038	0.043	+0.034	+410%
Switzerland	0.159	0.369	0.302	0.525	+0.366	+230%
Netherlands	0.190	0.238	0.212	0.392	+0.203	+107%
Australia	1.904	2.142	3.010	3.286	+1.382	+73%
Germany	0.212	0.348	0.280	0.364	+0.152	+71%
United States	3.497	4.193	4.535	4.856	+1.359	+39%
United Kingdom	NR	0.099	0.145	0.128	+0.029	+30%
BUPRENORPHINE						
Netherlands	0.012	0.037	0.024	0.048	+0.036	+295%
United States	0.413	0.684	0.835	0.944	+0.530	+128%
Australia	0.337	0.419	0.499	0.530	+0.192	+57%
Switzerland	0.238	0.198	0.342	0.289	+0.050	+21%
United Kingdom	NR	0.104	0.121	0.115	+0.012	+11%
Germany	0.167	0.144	0.182	0.144	-0.023	-14%
Italy	0.045	0.052	0.033	0.023	-0.022	-49%
METHADONE						
Italy	0.096	0.107	0.096	0.123	+0.028	+29%
Germany	0.432	0.402	0.455	0.500	+0.068	+16%
Switzerland	1.112	1.147	1.131	1.220	+0.108	+10%
United States	1.186	1.172	1.232	1.230	+0.044	+4%
Netherlands	0.514	0.488	0.461	0.489	-0.025	-5%
United Kingdom	NR	0.206	0.171	0.188	-0.018	-9%
Australia	0.607	0.586	0.583	0.539	-0.068	-11%

NR=not reported

International Perspective on Prescription Stimulant Exposures Reported to Poison Centres from 2007-2010

JL Green¹, SHL Thomas², JP Thompson³, H Kupferschmidt⁴, H Desel⁵, N Gunja⁶, JA Brown⁶, F Sesana⁷, G Milanese⁷, I de Vries⁸, RC Dart¹

¹Rocky Mountain Poison & Drug Center, Denver Health, Denver CO, US, ²National Poisons Information Service (Newcastle Unit), Newcastle, UK, ³National Poisons Information Service (Cardiff), Cardiff, UK, ⁴Swiss Toxicological Information Centre, Associated Institute of the University of Zurich, Zurich, Switzerland, ⁵GIZ-Nord Poisons Centre, University Medical Centre Göttingen, Göttingen, Germany, ⁶NSW Poisons Information Centre, The Children's Hospital Westmead, Sydney, Australia, ⁷Milan Poison Centre, Azienda Ospedaliera Ospedale Niguarda Ca' Granda, Milano, Italy, ⁸National Poisons Information Centre, Utrecht, Netherlands

Objective: Prescription stimulant abuse is on the rise in the United States (US). Abuse in other countries is not well studied. The objective of this study is to characterize human exposures to specific prescription stimulants reported to poison centres from multiple countries over a four year study period.

Methods: Human exposures to methylphenidate and amfetamines reported to poison centres from 2007-2010 were obtained using a standardized data template with written definitions. Rates are reported as number of exposures reported to poison centre per 100,000 population.

Results: Seven countries participated; Australia, Germany (Göttingen), Italy, Netherlands, Switzerland, United Kingdom (UK) and US. All centres manage calls from health care providers. Australia, Italy, Germany, Switzerland and US manage calls from the public as well. Methylphenidate: Five of 7 countries reported an increase during the study period (range 17-137%; Table). The UK reported a decrease of 28%. Amfetamine: US reported the highest rate and surpassed second ranked Netherlands by almost 4-fold. While US, Netherlands and Australia reported increased amfetamine rates (range 18-221%), the remaining countries suggesting a downward trend from 8 to 45%. There are no prescription amphetamines available in Switzerland.

Conclusions: Methylphenidate exposures per person increased in the majority of participating countries. Amphetamine exposures were less commonly reported to participating non-US centres and were indicated less than 50% change during the study period. While these data illustrate rates over time within each country, one cannot compare rates between countries due to variation of data collection methods (some centres accept calls from the public, some do not). Additional data is required on reporting bias, drug availability, drug supply source, and perhaps cultural differences that may contribute to these findings.

Country in % Change Rank Order	Exposure rate per 100,000 population				Rate change (first rate reported to 2010)	% change (first rate reported to 2010)
	2007	2008	2009	2010		
METHYLPHENIDATE						
United States	1.043	2.406	2.381	2.468	+1.425	+137%
Netherlands	2.202	2.730	2.717	3.578	+1.376	+63%
Australia	1.643	1.561	2.140	2.328	+0.685	+42%
Switzerland	1.734	1.662	2.301	2.427	+0.693	+40%
Germany	0.742	0.826	0.833	0.871	+0.129	+17%
United Kingdom	NR	0.355	0.352	0.257	-0.099	-28%
Italy	0.000	0.000	0.007	0.003	+0.003	---
AMFETAMINE						
United States	1.171	2.885	3.181	3.756	+2.586	+221%
Netherlands	0.734	0.853	0.728	0.983	+0.250	+34%
Australia	0.776	0.895	0.875	0.916	+0.140	+18%
United Kingdom	NR	0.162	0.171	0.149	-0.013	-8%
Germany	0.030	0.030	0.045	0.023	-0.008	-25%
Italy	0.015	0.015	0.013	0.008	-0.007	-45%
Switzerland	NR	NR	NR	NR	---	---

Rankings by State

Which states are most at risk for abuse, misuse and/or diversion based on prescription and/or exposure trends? RADARS® System data was used to identify the top five “at risk” states based on three different analyses:

- (1) Unique Recipient of Dispensed Drug (URDD) per 100 Population: number of individual opioid prescriptions filled (excluding refills), calculated with 2010 US Census data.
- (2) Population Rate per 100,000: intentional exposures per 100,000 persons, calculated with data from our Poison Centers and 2010 US Census data.
- (3) URDD rate per 1000: intentional exposures per 1000 persons based on individual prescriptions for opioids (excludes refills), calculated with data from our Poison Centers and 2010 US Census data.

Rank	URDD per 100 Population		Population rate per 100,000		URDD rate per 1,000	
1	AL	22.52	WV	9.67	MN	0.706
2	TN	21.96	KY	8.00	SD	0.640
3	WV	21.21	AZ	7.08	AZ	0.588
4	KY	20.27	ME	6.27	IA	0.523
5	OK	18.87	IN	5.66	MD	0.465

Higher rates indicate higher risk. According to our 2012 RADARS® System data:

Highest rate of opioid prescriptions filled is Alabama
 Highest rate of intentional opioid exposures based on population is West Virginia
 Highest rate of intentional opioid exposures based on URDD rate is Minnesota

“Rankings by State” will become a recurring feature in our quarterly newsletters.

RADARS System Group at the Annual NACCT Meeting

RADARS® System Group at the Annual NACCT Meeting

Representatives from RADARS® System Group, in addition to other colleagues from the Rocky Mountain Poison and Drug Center (RMPDC), attended the annual North American Congress of Clinical Toxicology (NACCT) meeting at the Cosmopolitan Hotel in Las Vegas, NV from October 1-6, 2012.

The RADARS® System Poison Center Group presented the following 4 posters:

Brown KR, et al. RADARS® System poison center intentional exposures to OxyContin®: a look at the differences in rates of abuse via unintended routes before and after reformulation intervention.

Davis JM, et al. Regional differences in seasonal trends in suicide exposures to prescription opioids as reported to poison centers participating in the RADARS® System.

Fischer LJ, et al. Prescription opioid and stimulant use among pregnant women: surveillance by poison control centers participating in the RADARS® System.

Winter EJ, et al. Systematic misclassification in product-specific coding of poison center data: the example of buprenorphine in the RADARS® System poison center program.

And Dr. Jody Green, Ph.D, presented our international initiative in a platform entitled "Intentional and Unintentional Prescription Opioid Exposures in Italy, Germany and the United States".

Recent RADARS System Publications and Presentations

- Bucher Bartelson B, Severtson SG, Davis JM, Surratt H, Chilcoat H, Coplan P, Green JL, Dart RC. A comparison of the street price of original and reformulated extended release oxycodone product. International Association for the Study of Pain Annual Meeting. Madison, WI. August 2012.
- Cicero TJ, Ellis MS, Surratt HL. Effect of abuse-deterrent formulation of OxyContin. New England Journal of Medicine. 2012;367(2):187-189.
- Dart RC, Cicero TJ, Surratt HL, Rosenblum A, Bartelson BB, Adams EH. Assessment of the abuse of tapentadol immediate release: The first 24 months. Journal of Opioid Management. In press.
- Dart RC, Adams E, Bucher-Bartelson B, Baker G, Pitner J, Vorsanger G. Tapentadol abuse: the first 18 months. American Academy of Pain Medicine (AAPM) Annual Meeting. Palm Springs, CA. February 2012.
- Dart RC, Adams E, Bucher-Bartelson B, Baker G, Pitner J, Vorsanger G. Trends in the non-medical use of tapentadol immediate release by college students. American Academy of Pain Medicine (AAPM) Annual Meeting. Palm Springs, CA. February 2012.
- Dasgupta N, Bailey JE, Dart RC, Jonsson Funk M. Using Poison Center Exposure Calls to Predict Methadone Poisoning Deaths. PLoS ONE 7(7): e41181. doi:10.1371/journal.pone.0041181 (ejournal)
- Davis JM, Severtson SG, Bucher Bartelson B, Muñoz A, Schneider MF, Surratt H, Chilcoat H, Coplan P, Green JL, Dart RC. Reduction In Extended Release (ER) Oxycodone Diversion Rates Following the Introduction of a Reformulated ER Oxycodone Product. International Association for the Study of Pain Annual Meeting. Madison, WI. August 2012.
- Davis JM, Severtson SG, Bucher Bartelson B, Muñoz A, Schneider MF, Surratt H, Chilcoat H, Coplan P, Green JL, Dart RC. Reduction In Extended Release (ER) Oxycodone Diversion Rates Following the Introduction of a Reformulated ER Oxycodone Product. International Society for Pharmacoeconomics Annual Meeting. Barcelona, Spain. August 2012.
- Green JL, Thomas SHL, Thompson JP, Kupferschmidt H, Desel H, Gunja N, Brown JA, Sesana F, Milanesi G, de Vries I, Dart RC. International Perspective on Prescription Opioid Exposures Reported to Poison Centres from 2007-2010
- European Association of Poison Centres and Clinical Toxicologists (EAPCCT) Annual Meeting. London, England. May 2012.

Did You Know?

The Medical Association of Georgia has developed the initiative called "Think About It". The program takes a three-pronged approach: creating legislation, educating health care professionals, and providing safe places to dispose of and store prescription drugs

Cont.

- Reifler LM, Droz D, Bailey E, Schnoll SH, Fant R, Dart RC, Bucher Bartelson B. Do prescription monitoring programs impact state trends in opioid abuse/misuse? PAIN MED.2012;13:434-42.
- Reifler LM, Droz D, Bailey E, Schnoll SH, Fant R, Dart RC, Bucher Bartelson B. Do prescription monitoring programs impact state trends in opioid abuse/misuse? PAIN MED.2012;13:434-42.
- Rosenblum A, Fong C. Heroin use is a risk factor for injecting prescription opioids. American Association for the Treatment of Opioid Dependence National Conference. Las Vegas, NV. April 2012.
- Rosenblum A, Fong C. Opioid use study: project recap 2012. American Association for the Treatment of Opioid Dependence National Conference. Las Vegas, NV. April 2012.
- Severtson SG, Bucher-Bartelson B, Chilcoat H, Coplan P, SurrattH, Dart RC. A comparison of the street price of original and reformulated OxyContin® and immediate release (IR) oxycodone products. American Pain Society (APS) Annual Meeting. Honolulu, HI. May 2012
- Severtson SG, Bucher Bartelson B, Davis JM, Muñoz A, Schneider MF, Chilcoat H, Coplan P, Surratt H, Dart RC. Reduction In OxyContin® Diversion Events Following the Introduction of Reformulated OxyContin College on Problems of Drug Dependence (CPDD) Annual Meeting. Palm Springs, CA. June 2012.
- Severtson SG, Bucher Bartelson B, Davis JM, Muñoz A, Schneider MF, Coplan P, Chilcoat H, Green JL, Dart RC "Decline in rates of abuse of extended release (ER) oxycodone following the introduction of a reformulated ER oxycodone product using data from the RADARS® Poison Center Program. International Association for the Study of Pain Annual Meeting. Madison, WI. August 2012.
- Severtson SG, Bucher Bartelson B, Davis JM, Muñoz A, Schneider MF, Coplan P, Chilcoat H, Green JL, Dart RC. Decline in rates of abuse of extended release (ER) oxycodone following the introduction of a reformulated ER oxycodone product using data from the RADARS® Poison Center Program. International Society for Pharmacoepidemiology Annual Meeting. Barcelona, Spain. August 2012.
- Surratt H, Kurtz SP, Cicero TJ, Dart RC. Street prices of prescription opioids diverted to the illicit market. College on Problems of Drug Dependence Annual Meeting. Palm Springs, CA. June 2012.
- Surratt H, Kurtz SP, Cicero TJ, Dart RC. Street prices of prescription opioids diverted to the illicit market. PAINWeek. Las Vegas, NV. September 2012.



RADARS System Presentations

- PAINWeek, September 5-8, 2012. Las Vegas, Nevada.
- American Academy of Pain Management, September 20-23, 2012. Phoenix, Arizona.
- North American Congress of Clinical Toxicology, October 1-7, 2012. Las Vegas, Nevada.
- ACEP Scientific Assembly and Research Forum, October 8-11, 2012. Denver, Colorado.
- International Society of Addiction Medicine, October 14-18, 2012. Geneva, Switzerland.
- National Association of State Controlled Substance Authorities, October 23-26, 2012. Scottsdale, Arizona.
- Association for Medical Education and Research in Substance Abuse Annual Meeting November 1-3, 2012, Bethesda, Maryland.
- International Society for Pharmacoeconomics and Outcomes Research European Congress, November 3-7, 2012. Berlin, Germany.
- American Academy of Physical Medicine and Rehabilitation Annual Meeting, November 15-18, 2012, Atlanta, Georgia.
- Academy of Addiction Psychiatry, December 2-9, 2012. Aventura, Florida.

RADARS System Quarterly Technical Reports

RADARS® System Technical Report #2012Q1-1

Fatalities and polysubstance use among prescription opioid abuse cases using the RADARS System Poison Center program

Please copy the web address into your web browser to view the pdf:

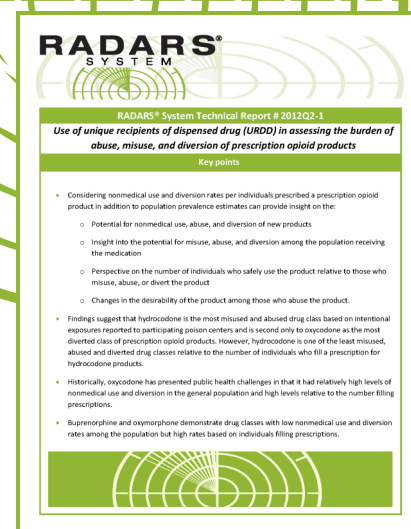
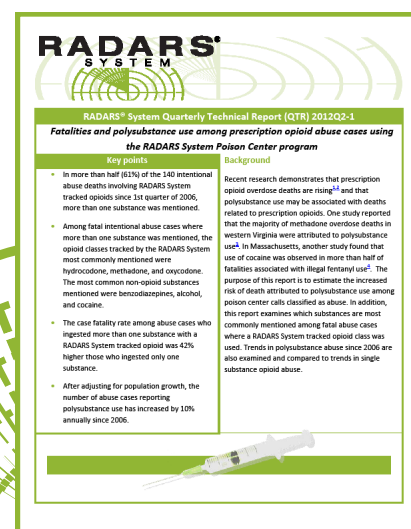
http://www.radars.org/Portals/1/Tech_report_Case_Fatality_2012Q1.pdf

RADARS® System Technical Report (QTR) 2012Q2-1

Use of unique recipients of dispensed drug (URDD) in assessing the burden of abuse, misuse, and diversion of prescription opioid products

Please copy the web address into your web browser to view the pdf:

http://www.radars.org/Portals/1/URDD_and_population_2012Q2.pdf



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RADARS System Mission Statement

The RADARS System provides timely, product specific and geographically-precise data to the pharmaceutical industry, regulatory agencies, policymakers and medical/public health officials to aid in understanding trends in the abuse, misuse, and diversion of prescription drugs in the United States.

Rocky Mountain Poison and Drug Center and Denver Health and Hospital Authority

The RADARS System is a governmental nonprofit operation of the Rocky Mountain Poison and Drug Center (RMPDC), an agency of Denver Health (DH). The RMPDC has been in operation for more than 50 years, making it one of the oldest poison control centers in the nation. DH is the safety net hospital for the City and County of Denver and is the Rocky Mountain region's academic Level I trauma center and includes Denver Public Health, Denver's 911 emergency medical response system, nine family health centers, 12 school-based clinics, NurseLine, correctional care, Denver CARES, the Denver Health Medical Plan, and the Rocky Mountain Center for Medical Response to Terrorism, Mass Casualties and Epidemics.



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