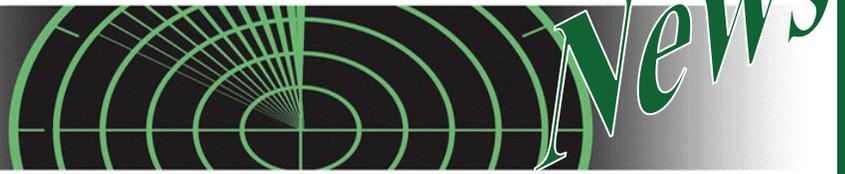


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RADARS[®]

S Y S T E M



Researched Abuse, Diversion, and Addiction-Related Surveillance (RADARS[®]) System

VOLUME 1, ISSUE 1

SEPTEMBER 2006

In January 2006, the Rocky Mountain Poison and Drug Center (RMPDC) at Denver Health acquired the RADARS[®] System from Purdue Pharma L.P. to study and track the prevalence of abuse, misuse and diversion of prescription drugs.

“**T**he transfer of this innovative system to an independent third party will allow pharmaceutical companies and government agencies to more readily access valuable data on opioid abuse and diversion,” said J. David Haddox, D.D.S., M.D., vice president of Risk Management and Health Policy at Purdue Pharma L.P. “Purdue intends to continue to receive data by subscription to the RADARS System in order to inform and enhance our risk management programs.”

“RADARS System is one of the most comprehensive surveillance systems available for gathering this type of data and has established a scientific foundation for developing more effective prevention and intervention efforts to address illegal trafficking and abuse of prescription medications,” said Richard C. Dart M.D., Ph.D., director of the RMPDC, and executive director of the RADARS System.

The RMPDC has assembled a staff of professionals who are directly involved in research and development, and who have already compiled first quarter data for 2006. The System gathers data from four signal detection systems that provide quarterly reports on different populations across the nation. The signal detection systems include a Poison Control Center System, a Key Informant Network System, a Methadone Clinic System—American Association for the Treatment of Opioid Dependence (AATOD), and a Drug

Diversion System. The following drug substances, and in some cases specific drug products, are monitored by the RADARS System for pharmaceutical companies, government agencies and health agencies: buprenorphine, fentanyl, hydrocodone, hydromorphone, methadone, morphine, oxycodone, oxymorphone and tramadol.

RADARS System professionals will continue to improve the surveillance system by adding new signal detection systems and investigating other drugs that have the potential to be abused. RADARS System will provide system data to industry and government subscribers and others who could benefit from timely and geographic data on prescription drug abuse in the United States. Please see the contact information located on the back of this newsletter or visit us at www.radars.org.



Did You Know?

Quarterly reports provide a timely analysis of drug abuse by geographic area, drug, signal detection system, and use two denominators: 1)Population and 2)Unique Recipients of a Dispensed Drug. *See page 3.*

Signal Detection Systems & Data Reporting

The RADARS System consists of four signal detection systems that provide unique data and insight into the abuse, misuse and diversion of prescription drugs. Please visit www.radars.org for more information.

[Drug Diversion System](#)

James Inciardi, Ph.D., is the principal investigator of this signal detection system. The system includes more than 300 diversion investigators from jurisdictions in all 50 states, Puerto Rico, and the Virgin Islands, and includes a mix of rural, urban and suburban populations. The system tracks unlawful acts involving regulated pharmaceuticals including incidents of illegal sale by physicians and pharmacists; theft, forgery, or alteration of prescriptions; robbery or theft from drug manufacturers, distributors and pharmacies; theft of institutional drug supplies; residential burglaries; and illegal Internet sales. This system is able to report on unlawful incidents linked to drug abuse nationwide, allowing the RADARS System to identify trends in geographic areas and to possibly impact local and national drug policies.

[Key Informant Network System](#)

Theodore Cicero, Ph.D., is the principal investigator of this signal detection system. This system consists of key informants across the nation who report on prescription drug abuse in their areas. This network includes leading professionals in the field of drug abuse such as clinicians, epidemiologists, treatment counselors and others who are in positions to recognize and report on drug problems. This nationwide network of reliable professionals covers 25 percent of the three-digit zip code areas in the nation including rural, urban and suburban areas. Each quarter, key informants from this system are asked to fill out a survey regarding current drug abuse trends in their geographic areas. The RADARS System is currently working to expand its geographic coverage even further and is actively enrolling informants in all regions of the country.

[Poison Control Center System](#)

Richard C. Dart, M.D., Ph.D., is the principal investigator of this signal detection system, which is the largest of the signal detection systems. The Poison Control Center System consists of 40 poison control centers nationwide serving a population of more than 197 million people.

Weekly data involving cases of drug abuse and misuse are sent to RADARS System analysts for quality review, and are compiled for the quarterly reports for subscribers. The data provided by this signal detection system allows RADARS to recognize and track trends in prescription drug abuse on a weekly basis.

[Methadone Clinics—American Association for the Treatment of Opioid Dependence \(AATOD\)](#)

Mark Parrino, M.P.A., AATOD, and Andrew Rosenblum, Ph.D., National Development and Research Institute Inc., are co-principal investigators of this signal detection system. This signal detection system includes 75 methadone treatment centers. Patients who are admitted to these treatment centers are asked to complete an anonymous questionnaire, which inquires about the patient's drug use in the past month, lifetime drug abuse, the age when first drug use occurred, and the primary source of the abused drug(s). Each quarter, the questionnaire results are analyzed by professionals at the RADARS System. This year, the RADARS System has received more than 15,000 questionnaire results from across the country. This system obtains personal information from the very population that is abusing prescription opioid medications. Their input is an invaluable resource for any organization.

[Data Analysis and Reporting](#)

Each quarter the signal detection systems send the collected data to a centralized database, which are then sent to Johns Hopkins University analysts who provide epidemiological and biostatistical consultation to aid the RADARS System analysts in interpreting the data. The data are then presented to a scientific advisory board which performs assessments and interpretation of the results and provides recommendations for further investigation. The RADARS System then produces quarterly and annual reports that are sent to subscribers.

Data Properties

The following are characteristics of the RADARS System data:

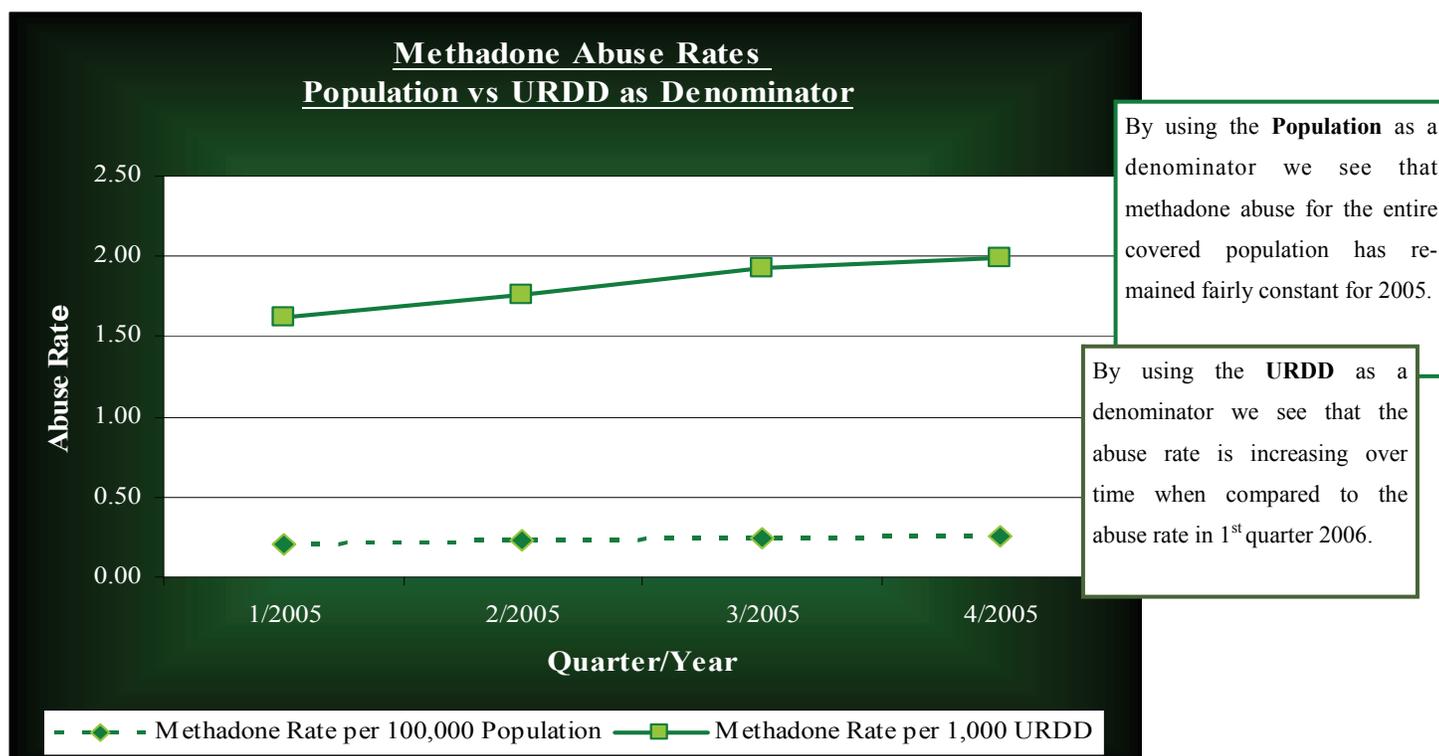
- ◆ **Abuse or Diversion Count Data:** The RADARS System determines the number of cases of abuse, misuse, or diversion for each drug, for each quarter, and for each three-digit zip code covered by the System.
- ◆ **Time:** The RADARS System collects data on both a weekly and a quarterly basis, providing a mechanism to track trends as they develop over time.
- ◆ **Location:** RADARS System data can provide a unique and specific look at different areas of the United States, and can map areas across the nation where prescription drug abuse, misuse or diversion is prevalent. This also provides the ability to track trends in a specific geographic area.
- ◆ **Specific Drugs:** Data are reported for each drug that the RADARS System is monitoring individually, and can be compared to other drugs being monitored in the RADARS System.

- ◆ **Multiple Signal Detection Systems:** The RADARS System is composed of four signal detection systems. The addition of others is being explored.

- ◆ **Denominators for Rate Calculations:** The RADARS System uses two different denominators in data reporting that can assist subscribers in risk management planning. These two denominators estimate rates of abuse in different at-risk populations.

1. Population — Calculating rates using population as the denominator presents the problem of abuse, misuse and diversion of prescription drugs from a public health perspective. These rates represent the burden of the issue on the community.
2. Unique Recipients of a Dispensed Drug (URDD) — Calculating rates using URDD as the denominator presents the problem in terms of how much of the drug is legally available within a geographic area.

* The graph below demonstrates population versus URDD as denominator using methadone as an example.



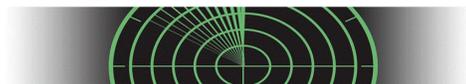
Recent Publications Using RADARS System Data

Recent Events/Publications Using RADARS System Data:

- ◆ “The Effect of FDA Approval of a Generic Competitor to OxyContin® (oxycodone HCl controlled-release) Tablets on the Abuse of Oxycodone,” was accepted for publication by *Drug and Alcohol Dependence*, an internationally known journal that publishes original research, scholarly reviews, commentaries and policy analysis in the area of drug, alcohol and tobacco use and prevention.
- ◆ Representatives of the RADARS System traveled to Scottsdale, Ariz., to present five posters at the 68th annual scientific meeting hosted by the College on Problems of Drug Dependence (CPDD).
- ◆ “Adolescent Prescription Opioid Abuse and Misuse: Surveillance by Poison Centers,” Dart RC, Hughes AA.
- ◆ “Pain as a Reason for Seeking Admission to Methadone Treatment,” Haddox JD, Smith MY, Colucci S, Rosenblum A, Fong C, Maxwell C, Parrino M.
- ◆ “Abuser-reported Sources of Illegally Obtained Opioid Analgesic Medications,” Kline AT, Smith MY, Haddox JD, Rosenblum A, Fong C, Parrino M, Maxwell C.
- ◆ “Relative Rate of Opioid Analgesic Abuse in Communities in the U.S.,” Smith MY, Irish W, Wang J, Haddox JD, Dart RC.
- ◆ RADARS System researcher Elise Bailey traveled to Philadelphia to present a poster titled, “Demographic Difference in the Misuse and Abuse of Oxycodone Formulations: Poison Center (PC) Surveillance,” at the 42nd annual scientific meeting hosted by the Drug Information Association (DIA).

For information on current publications and events, please visit www.radars.org

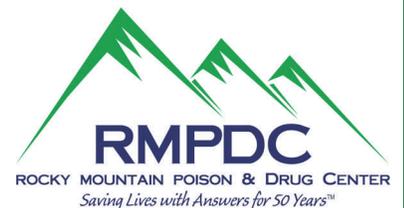
RADARS[®] SYSTEM Mission Statement



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

RMPDC and Denver Health

The RADARS System is an independent operation of the Rocky Mountain Poison and Drug Center (RMPDC), an agency of Denver Health and Hospital Authority (DHHA). The RMPDC has been in operation for 50 years, making it one of the oldest poison control centers in the nation. DHHA 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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