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Medicine Health RHODE ISLAND

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Heroin In the Corrections System

A CME Issue

What's in a Name???

GOOD - authentic, honest, just, kind, pleasant, skillful, valid

NEIGHBOR - friend, near

ALLIANCE - affiliation, association, marriage, relationship

CORPORATION - company, business establishment

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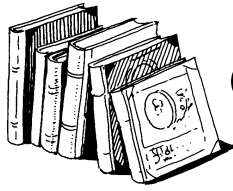
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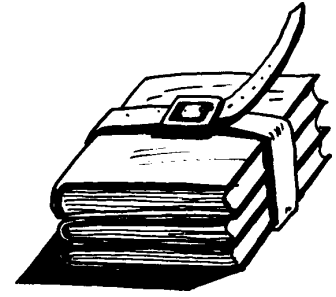
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Commentaries

Common Sense



A recent submission to the journal mentioned that alternative therapies for a particular condition, though still popular, had never been shown to be of any benefit in reliable clinical trials. The article was about the surgical treatment of this condition, the accepted medical approach in this era, but the article didn't mention studies supporting its efficacy. So I wrote to the author, asking whether adequate studies have shown the surgical intervention to be beneficial, or whether there were only poor studies of it, too, so that current methods were based on "clinical experience."

As a clinical neurologist I am a strong believer in clinical experience, often referred to pejoratively as "anecdotal experience" (sidetrack to an old clinician's joke...). "In my experience" means that the physician has seen one case. "In my series" means that the physician has seen two cases. When he's seen three cases, it becomes, "In case after case after case...". As a clinical trialist I am a strong believer in double-blind controlled trials. When clinical trial results contradict current medical approaches I try to evaluate the clinical trial, my own experience, if I have some, and the opinions of people I know and trust who have a lot of experience. I have reviewed enough clinical trials to know that some results clearly indicate problems with the trial, either with design or the carrying out of the trial. "Garbage in, garbage out."

The author responded that there was, in fact, stronger evidence that the procedure worked better than the alternatives, but "common sense" demonstrated the clear benefit. I was impressed by invoking common sense in an article. I am a great invoker of "common sense," but I am always conscious that what makes sense to me doesn't necessarily to others.

Common sense in medicine not only changes over time it changes in space. Common sense dictates different solutions to the same problem in different places.

I'm sure that bleeding made a lot of sense to doctors two hundred years ago. Not being an historian of medicine, I'm unsure of the rationale but assume it was thought to reduce the bad circulating humors, something like plasmapheresis does today. It undoubtedly had a strong scientific basis in its time. James Parkinson treated his eponymic disease by making an incision in the posterior neck and inserting cork to keep the wound from healing. The pus that formed presumably reflected the nefarious toxins that had been culled from the spinal fluid, reducing the attack on the brain. It made sense.

A much more scientifically valid procedure, by modern standards, was the external-internal carotid bypass graft. It is intuitively obvious that anastomosing the internal carotid to the middle cerebral artery when the carotid and the other three major arteries supplying the brain are blocked reduces the risk of stroke. This is a wonderful operation because it had low morbidity and the connection remained patent forever, supplying the brain with plentiful blood. Unfortunately the prospective clinical trial showed that the operation was of no value despite the attractive rationale.

For decades, common sense ruled in the treatment of stroke. Anticoagulation, although it didn't improve things, reduced the risk for a stroke worsening. Unfortunately, after a few decades of knee-jerk medicine, studies demonstrated that it was probably more useful to simply give antiplatelet drugs.

In late 2006 a prospective randomized study for the first time evaluated the utility of disk herniation surgery for the treatment of pinched nerves in the lumbar spine. This study required relatively concrete evidence that there was, in fact, a nerve being pinched by a disk fragment. It is quite obvious that if a nerve is being squeezed, the removal of the impinging object will relieve the pain and allow for better recovery of function. This, in fact,

turns out to be true. What had not been known before was that people who are not operated upon do just as well, but simply take a several weeks longer. So, common sense was partially correct, but practice parameters have now changed. It is no longer, "you can have this done now or later."

A very interesting situation exists for cervical myelopathy. Cervical myelopathy is a not uncommon disorder of the elderly, typically caused by a "hard disk," an accretion of bony growth between vertebral bodies, that slowly causes narrowing of the spinal canal, to the point that the cord gets compressed. This may or may not cause nerve root entrapment or pain, but may cause problems in the lower body, namely an overactive bladder and spastic gait. While it makes inherent sense to free up the cord and stop the compression, there is no data to imply that the operation is of any benefit. Most neurologists, myself included, believe "common sense dictates" that the offending tissue should be removed, especially since the narrowing worsens with neck extension so that a whiplash type injury could be catastrophic. When I was in training over 25 years ago, I was surprised to learn that many neurologists doubted the benefit of surgery and thought a clinical trial was needed. Two decades later an eminent neurologist, who believes that all such patients should be managed with a soft collar and no surgery, expressed the same lament. Yet we continue to refer patients for the procedure, following common sense and "standard of care."

So, where do I stand, as the editor of this journal? I believe in common sense, up to a point, just as I believe in clinical trials. When an author quotes studies to disparage one approach and common sense to support another, we all should be skeptical. What's good for the goose is good for the gander.

— JOSEPH H. FRIEDMAN, MD

A Modest Physician and His Outrageous Theory

Fame is a capricious thing. To many it is a lifelong goal, tenaciously sought but rarely achieved; to a few, it is less important than an independent verification of their pioneering accomplishments.

Consider the career and achievements of a modest Cuban physician named Carlos Juan Finlay [1833 – 1915]. It is true that he lived much of his productive life in Cuba but it would be more accurate to state that he was a child of the world both in heritage and education. His father, Edward Finlay was a Scottish physician born in Hull, England, and educated in France. In a military expedition to the Caribbean, his ship was wrecked, landing him in Trinidad. He later met a French woman, Isabel de Barres, also a resident of Trinidad. They married, went to Cuba, and in the city of Puerto Principe young Juan Carlos was born [he later reversed his two given names.] The family then moved to Havana, where the father established his medical practice. In 1844 young Carlos was sent to Rouen, France, for his early education. In 1846 he was a victim of typhoid fever that impaired his speech, leaving him with a troublesome stammer. After studies at the universities in Rouen and Metz, he returned to Cuba and then to Philadelphia's Jefferson College of Medicine for his formal medical education.

Carlos Finlay returned to Cuba and in 1857 established an independent practice of medicine. His interests, however, ventured beyond the illnesses and disabilities of his patients; he was particularly intrigued with the evolving patterns of communicable disease within the urban community and the epidemiology of pestilences. His private studies of the recurrent cholera epidemics in Havana convinced him that the disease was water-borne, a view not then endorsed by the medical community. But it was yellow fever, the dominant health threat in the Caribbean islands, which commanded his epidemiological attention.

Unaided by any outside funding, Finlay carefully gathered his data on the time and place of each new outbreak of yellow fever. He was intrigued by three observations: first, that there was a significant association between warm, rainy weather and augmented rates of yellow fever; second, that yellow fever was uncommon in Cuban villages elevated more than 100 meters above sea level; and third, that the only plausible way that the disease might be communicated was through the intervention of an intermediary mechanism whereby infected blood from an acute victim of yellow fever was transferred to an immunologically susceptible individual. He finally reached the outrageous conclusion that the disease was transmitted by a fragile little mosquito, *Stegomyia fasciata* [later called *Aedes aegypti*] which was dormant during the colder, non-rainy season and rarely inhabited ground significantly above sea level.

Finlay chose the *Stegomyia* species of mosquito, from amongst the many mosquito species prevalent in the Caribbean basin, because this striped insect was closely adapted to urban buildings and could proliferate in the smallest of still water sources such as a rain-filled can near a kitchen door.

In 1881, Finlay presented his outrageous hypothesis at the annual meeting of the Academy of Medical, Physical and Natural Sciences of Havana. His speech was described as stammering, awkwardly phrased and indifferently received. No questions were asked and the assembly, perhaps in embarrassment, hastily moved on to the next scientific paper.

During the next decade Finlay undertook experiments whereby yellow fever-infected mosquitoes were allowed to bite volunteer subjects; and in a few cases the volunteers came down with fever but the experiments were flawed by technical errors and the results, accordingly, were deemed questionable.

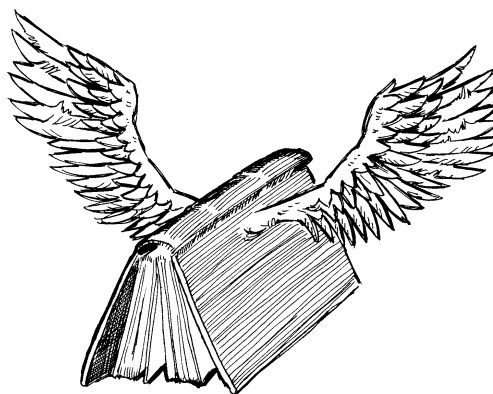
The American government was concerned about the inroads of yellow fever in the southern states. In Memphis alone, for example, the disease killed over 6,000 humans in the summer epidemic of 1878. A study committee of concerned scientists was assembled to visit Havana. They heard Finlay's theory but were skeptical.

During the Cuban campaign of the Spanish-American War of 1898, substantially more Americans died from yellow fever than from military action. In the same year Ronald Ross, a British army physician in India, demonstrated that malaria was transmitted by mosquitoes. In 1900, yet another yellow fever commission was assembled, led by Major Walter Reed. Their meticulously conducted clinical experiments verified Finlay's mosquito-vector theories.

The Reed Commission's conclusions were translated to reality by Gorgas' anti-mosquito campaign in the greater Havana region, leading to a dramatic reduction in the incidence of yellow fever. And the same sanitarian approach allowed American engineers to construct the Panama Canal without the fearful loss of lives to yellow fever experienced by their French predecessors.

Ross was awarded the Nobel Prize in medicine in 1902. Carlos Juan Finlay quietly continued his practice of medicine in Havana, dying in 1915. His *Journal of the American Medical Association* [August 28, 1915] obituary declared: "He lacked the genius for self-exploitation, and having established his doctrine modestly, lived on with no thought of further recognition."

— STANLEY M. ARONSON, MD



Heroin In the Corrections System: Introduction

Michelle McKenzie, MPH, and Josiah D. Rich, MD, MPH

We are honored to introduce this issue dedicated to concerns of opioid addiction and the criminal justice system in Rhode Island. The genesis of this special issue occurred in May 2006 when over 100 individuals gathered to discuss *Ending the Revolving Door: Heroin Addiction and the Criminal Justice System* at a conference at the Hilton in Providence. The conference brought together individuals from varying points of view (see sidebar) to discuss ways to integrate substance use treatment in corrections, community substance use treatment upon re-entry and alternatives to incarceration for drug-related crimes.

For over two decades, the national "war on drugs" has flooded correctional systems with increasing numbers of individuals struggling with addiction, raising rates of incarceration to unprecedented heights. Rhode Island follows the national trend. In February 2007, the Rhode Island Department of Corrections held an all-time record number of inmates. This high rate of incarceration comes at a tremendous fiscal cost, a fact that is not lost on many legislative leaders in the state. A central question that we, as a society, must explore is whether the criminal justice approach to addiction improves the public's safety or health? Nationally there is no decrease in drug arrests or police and correctional ex-

penditures. There is no lessening of injection drug use or slacking rates of HIV and hepatitis associated with addiction. And what happens to individuals when they re-enter the community as over 99% do? Securing employment, housing, health care and other support is an immense challenge. Low-cost housing is scarce and few employers hire someone with a criminal record. Though many inmates leave incarceration having not used illicit drugs, forced abstinence is not treatment. Without intervention, most individuals who are released from incarceration with addiction return to the lives they knew and relapse to drug use, putting them at risk for overdose, transmission of infectious diseases, other morbidity and re-incarceration. Forty-six percent of inmates leaving the Rhode Island Department of Corrections will return within one year of release.

Heroin is the focus of this special issue because of its widespread use, its devastating health and social consequences, and because heroin addiction can be effectively treated. Tangible measures clinicians can take to treat the disease of opioid addiction are: familiarity with opioid treatment options, exploring the possibility of office based opioid treatment, and collaboration with substance use treatment providers in managing patient care.

We hope that this issue provides a framework for clinicians to address opioid addiction in their practices and an overview of efforts in Rhode Island to find alternatives to incarceration in response to opioid use. Contributions provide an outline of available treatment options, office-based opioid treatment, treatment alternatives to incarceration, community re-entry efforts by Rhode Island Department of Corrections, and overdose prevention and treatment.

Recent developments by state leaders hold the promise of policy change. The Rhode Island House Finance Committee held hearings in January 2007 to investigate alternatives to incarceration for drug offenders and Governor Carcieri's

FY2008 budget calls for reducing the number of inmates held at the Rhode Island Department of Corrections with alternative sentencing and community corrections. Treatment alternatives to incarceration are in place. Our challenge is to see that these efforts receive adequate funding and incorporate the thousands of individuals who are processed through corrections each year for drug offenses.

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- Substance Use Treatment Specialists
- Judges
- Probation/Parole Officers
- Correctional Staff
- Public Defenders Office
- Attorney Generals Office
- Police Officers
- State Officials
- Community Members
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We would also like to especially thank Neil Corkery and the wonderful staff at the Drug and Alcohol Treatment Association of Rhode Island. Without Neil's courage, vision and support, the conference and this issue would never have happened.

Reflections

We are honored to share with you excerpts from Bobby DeCenzo's presentation. Bobby spoke with courage, conviction and insight based on his work as a substance abuse treatment counselor and his experience as an inmate struggling with opiate addiction. His words inspired everyone at the conference. Bobby DeCenzo died unexpectedly shortly after the conference. We dedicate this Special Issue of Medicine & Health/RI to his memory.

– Michelle McKenzie, MPH, and
Josiah D. Rich, MD, MPH

I think the best way to get my point across is to talk about when I started using drugs. I was about 13 years old and I used drugs until I was 31 years old. It progressed from things like alcohol and marijuana to opiates and heroin. During that time I was in and out of prison. It started off with 90-day sentences then progressed to a five-year sentence in 1995 followed by a lot of probation. I think what happened then, that didn't happen during other incarcerations, was the accessibility of drug treatment in the prison system. Prior to that, there were a lot of factors, such as length of the sentence, where I wasn't eligible to access the treatment and wasn't ready for treatment. The last time, I started to look at my own addiction and what was going on in my life. Just as importantly, the last time I had a plan. Other times I left prison, I had no job, had no place to live, I went back to the old neighborhood, and hooked up with the old friends. I was using again within a week at most. So I would go back to the same routine, in and out of prison. This prison stay I had a discharge planner who helped me get a social security card, a birth certificate, and an ID.

Previously I didn't have those things. Try to find a job when you don't have any of those things. Try to find a job when you are a convicted felon.

In 1993 I entered a methadone treatment program and I work in a methadone treatment program now. I work for the same program in which I was a patient. I was not a mild methadone patient. I did all the wrong things. If you were to ask me if methadone worked for me, I would probably say yes. Because at that point in my life I was shooting so much heroin, that if I didn't go into methadone treatment I probably would have died. So, even though other drug use continued, alcohol abuse continued, that was the last time I injected heroin. So did methadone work for me? Absolutely. It worked because I never shot heroin again and the seed was planted. I was kidding with Terry Foley earlier and said, 'I loved prison because it saved my life. Going to prison that last time saved my life—because accessing treatment saved my life. Today I'm a productive member of society. I go to work everyday, well except for those mental health days. I've been clean for over 10 years. It doesn't mean tomorrow that I couldn't be using heroin again if I don't continue to take care of myself. I am a recovering addict who needs continuous treatment, whatever treatment that works for me. Methadone, prison, residential treatment in the prison, 12 step, it was all a part of my process and it started with a methadone treatment program.



I hope I can help people understand that I didn't wake up one morning and say, "I think I'll be a heroin addict today." I didn't ask for this. It happened. Whether environment, genetics, whatever it is. I stopped trying to figure out why and started to figure out how I could stop it, that's when it worked for me. I think we need more treatment in the prison system. We need more accessibility to treatment and more planning when an inmate leaves prison. Handing someone leaving prison a plastic bag with a couple of pairs of jeans, and advise to go find a job and not to break the law anymore is not enough. Change became a reality for me when I was able to have a plan. That was the most important thing and I have stuck to that plan ever since I was released from prison on Sept 8 1998, and that man sitting there, Larry McDonald, actually took me to the treatment center that I was paroled to and I haven't looked back since. So if anybody here thinks that the revolving door can't shut at some point, you're wrong.

– ROBERT DICENZO

The Rhode Island Family Court's Therapeutic Response to Parental Substance Abuse

Jeremiah S. Jeremiah, Jr, JD

Over the years, the Family Court for the Department of Children, Youth and Families has seen an ever-increasing number of cases that involve diagnosed or suspected substance abuse or mental illness. In response, as Chief Judge of the Family Court, I introduced several specialty court programs. Two of these, The Rhode Island Juvenile Drug Court and Family Treatment Drug Court, have revolutionized the manner in which the Family Court handles substance abuse cases for both juveniles and adults.

These programs combine the persuasive powers of the court with the therapeutic regimen of treatment. This combination fosters rehabilitation while making participants accountable for their actions. Our programs provide constructive and intensive court supervision, and, when necessary, extensive substance abuse and/or mental health treatment, as well as educational and employment services. The use of rewards and sanctions encourages participants to succeed.

Parental substance abuse has a dire impact on permanency planning for children. This problem is a national epidemic: studies estimate that substance abuse impacts over half the families involved in the child welfare system.¹ The Child Welfare League of America reports chemical dependency in 40% to 80% of the cases coming into the child welfare system. In addition, in the early 1990s almost 80% of the 22,000 babies abandoned at birth tested positive for drugs.² In response to this problem, I created an alternative to the traditional Dependency-Neglect-Abuse calendar, known as the "Family Treatment Drug Court."

WHAT IS FAMILY TREATMENT DRUG COURT?

Consistent with federal and state policy, the purpose of the Family Treatment Drug Court (FTDC) is to protect children up to age eighteen whose health and welfare may be adversely affected by parental use of drugs and/or alcohol, to strengthen the family unit, to enhance

parental capacity to meet the health and developmental needs of their children, and to expedite permanency for children in state care. These objectives can be met by quickly identifying substance-involved families who are amenable to treatment, helping these parents access treatment, developing comprehensive multi-disciplinary case plans for families (in collaboration with child welfare services), ensuring intensive case monitoring and frequent court supervision of court orders, case plan compliance and progress in treatment. FTDC operates in Providence, Bristol, Kent and Washington counties.

Permanency planning for children is addressed on multiple levels. First and foremost, FTDC seeks to protect children by concentrating on the **best interests of the child** in all cases. Individuals who are accepted into FTDC are offered intensive judicial supervision, substance abuse and mental health treatment, urine testing and parenting education and support. Additional services offered through referral by the FTDC include, health and dental care, educational/vocational assistance, housing, transportation, living skills, employment training and referrals, vocational rehabilitation, child care, and children's services.

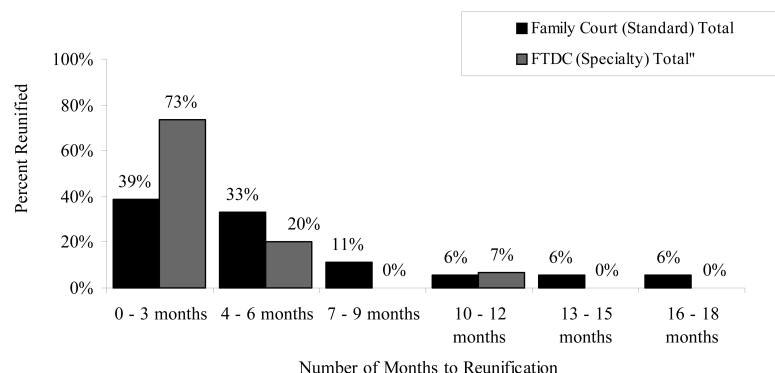
As an alternative to the regular Department of Children, Youth and Families' (DCYF) calendar, individuals who do well in FTDC may be reunified with their

children earlier than on the regular dependency/neglect/abuse calendar. This Specialized Court continues to be evaluated by the National Perinatal Information Center. Following two years of operation of the FTDC, a sample of 79 participants (mothers) in the Vulnerable Infants Program seen in the FTDC were compared with a sample of 58 participants (mothers) in the Vulnerable Infants Program and seen on the standard court calendar.

The samples were alike on a number of variables:

- primary drug of choice (predominantly cocaine, then opiates);
- total number of children (an average of three for each sample);
- Adult Adolescent Parenting Inventory -2 parenting scores (comparable average scores, with 55 percent of each sample having at least one high risk for child abuse/neglect score);
- previous behavioral health treatment (over two thirds of each sample had received substance abuse treatment and about half had received mental health treatment); and
- Substance Abuse Subtle Screening Inventory/probability of a substance abuse disorder data (about two thirds of each sample.)
- Comparable data concerning initial placement of the children

Figure 1: Average Time to First Reunification With Mother



Time to initial reunification (of infants) data was examined for the subset of these two samples that did not have physical or legal custody of their infants following birth. See Figure 1.

Although these two groups were similar, the average time to first reunification for the FTDC participants was significantly less – 73% of infants of mothers participating in the FTDC were returned within the first three months, compared to 39% of infants with mothers served through the standard court calendar. Further analysis of these families over time has demonstrated that the infants reunified within this early time period through the FTDC were not more likely to be removed at a subsequent point, and many have now achieved permanency with their mother. This finding has positive implications for attachment as well as permanency.

It has not been possible to duplicate this early finding with further data. The number of women served through the FTDC has disproportionately increased compared to the number of women served through the standard court calendar. The two samples differ now on many of the dimensions noted above, with increased symptom severity evident in the women served through the FTDC. Average time to initial reunification has increased for the FTDC as a whole, related to the increase in symptom severity. It is also likely that community factors have influenced the timing of reunification. After the initial analysis presented above was completed, a young child died in relative care and the state's DCYF was harshly criticized for placing the child in this home without sufficient scrutiny as to the appropriateness of the placement. Although this child/family was not involved with the FTDC, it is reasonable to assume that this event would impact placement (reunification) decisions by DCYF in general, potentially contributing to delays in early (within three months) reunification.³

To support reunification, the Court monitors families on a weekly basis, to secure the child's continued safety and the parent's abstinence. Participants who successfully complete the program benefit by having access to the above mentioned services and also have their legal petition dismissed and their cases closed to DCYF.

HOW CASES ENTER FAMILY TREATMENT DRUG COURT

Eligibility criteria for the FTDC are: 1) at least 18 years old with a residence or last known address in the county where the case is referred from/heard and with a child(ren) under the age of eighteen 18; 2) enrolled in the Vulnerable Infant Program (service coordination – not limited to parents of newborns) 3) children committed to DCYF through abuse or neglect, 4) needing and wanting substance abuse treatment to achieve reunification, 5) parental rights have not been terminated, 6) does not exhibit violent behavior or severe mental health concerns, and 7) willing to enter treatment and comply with drug court rules.

**To date the
Court has enrolled
228 parents and
overseen 302
children
(open court.)**

A case may be referred to FTDC in a number of ways. First, a Family Court judge can refer an existing case to the FTDC as long as the eligibility requirements are met. Second, a case can be referred from the Women & Infants "Vulnerable Infants Program" after having contact with the mother in the hospital following birth. Finally, a case can come directly to the FTDC for arraignment after DCYF files either an *ex-parte* or straight petition of dependency or neglect.

During the orientation, individuals interested in entering the FTDC are required to have an intake assessment. The assessment is performed by a representative of the Vulnerable Infants Program, a program of the Infant Development Center working in collaboration with Women & Infants Hospital and Brown University. The assessment considers background, drug history, family history and what level of treatment is appropriate for the participant. A mental health and parenting skills assessment will be conducted. Treatment plan recommendations are created and referrals are made to treatment facilities on behalf of the participant.

To enter FTDC, one must sign the

FTDC Contract, thereby agreeing to comply with the rules of the Court and to engage in substance abuse treatment. Finally, a participant must agree to follow a Court-approved case plan, submitted by DCYF.

HOW FAMILY TREATMENT DRUG COURT WORKS

Case conferences, held prior to Court sessions, are attended by representatives from the "Treatment Team," consisting of an Attorney from the Public Defenders Office, Attorney from Rhode Island Legal Services, private attorney, CASA attorney, guardian-ad-litem, social-worker and attorney from the DCYF and Care Coordinators from the Vulnerable Infants Program. Conferences are held to discuss each participant's status in treatment and the status of the children. The FTDC, in its discretion, may award incentives to a participant to acknowledge progress or sanctions for noncompliance. Rewards vary from small items donated to the Court (shampoo, disposable camera, sippy-cups) to an increase in visits with children. Rewards may also include moving from supervised to unsupervised visits, adding overnight visits, or a reduction in the number of urine screens. Sanctions vary from an increase in Court hearings, increase in level of treatment to decrease in visits with the child if a parent is in active relapse. In severe situations, a child may be removed from a parent's care or visits may be supervised to insure the safety of a child.

The FTDC works on a four-phase system. Participants are rewarded with praise, token gifts, and usually an increase in visits as they graduate to a new phase. Participants may also be "de-phased" if they relapse or if their performance in treatment is poor. Participants enter the FTDC at "Phase One." The purpose of Phase I is to encourage participants to engage in treatment and establish a period of abstinence. Participants in Phase I attend court every two weeks and remain closely supervised.

The purpose of Phase II is help the participant become stabilized in treatment. Thereafter, participants can begin to identify and address issues surrounding addiction and the impact that addiction has on their family, particularly their children. During this time, participants can access parenting classes, domes-

tic violence counseling, mental health treatment, or medication compliance. Participants in Phase II may be seen in court every two- three weeks.

The focus of Phase III is creating a “drug free lifestyle” and ways to overcome life’s daily struggles without relapsing. Participants will create an “aftercare” plan to guide them after treatment is completed. Finally, participants may begin to address their vocational and/or educational goals. Participants come to Court once a month.

In Phase IV, the time is structured toward achieving permanency for the children while helping participants maintain a sober lifestyle. Participants receive assistance finding housing (if this has not already been accomplished) and work toward the DCYF case plan goals.

GRADUATION

At the end of Phase IV, a participant is eligible to graduate from the FTDC program. The Court holds a graduation ceremony and the judge closes the participant’s presenting petition. DCYF services are simultaneously terminated. At this point there is permanency for the child(ren) and abstinent parent(s).

To be eligible for graduation, a participant must attain the following:

1. continued abstinence as evidenced by clean toxicology screens;
2. completion of a substance abuse treatment program;

3. participation in parenting, living skills, and other programming;
4. stable housing for the family;
5. safe maintenance of the child(ren) in the participant’s home; and
6. an approved aftercare plan
7. Any other individual requirements as ordered by the Court.

At graduation, the presenting petition will be closed and plea vacated.

FAMILY TREATMENT DRUG COURT TODAY

The FTDC serves men, women and all children in the family. To date the Court has enrolled 228 parents and overseen 302 children (open court.) The Court has graduated 80 participants, resulting in permanency for 97 children. The Court is grant-funded, spending almost 80% of the funds on treatment and other services for participants and their children. In September, the FTDC will have spent all dollars that have allowed the implementation and operations of this program for the past five years. If additional resources become available, we will continue the current programs in Providence, Bristol, Kent and Washington Counties with the hope of expanding into Newport County.

This Specialty Court approach is demonstrable, replicable and cost-effective. Drug courts coerce habitual drug offenders into tough, no-nonsense treat-

ment programs as a condition of probation. The progress of participants is monitored on a weekly basis, which allows us to respond quickly to program failure and success. The cost of services participants receive in these programs, along with intensive judicial supervision, are minimal compared to the thousands and thousands of dollars *per participant* that it would cost the DCYF or the Department of Corrections if these people were in their care.

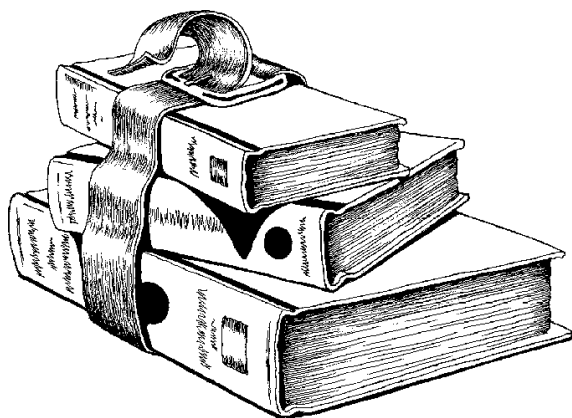
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An Integrated Program of Buprenorphine in the Primary Care Setting for HIV(+) Persons in Rhode Island

Jennifer Mitty, MD, MPH, Cindy Macleod, RN, Helen Loewenthal, MSW, Lara Thompson, and Lauri Bazerman, MS

While pharmacological treatments for opioid-dependent individuals have been mainly limited to methadone, buprenorphine provides an alternative approach. Buprenorphine is a long-acting partial opioid agonist that has been approved for opiate replacement therapy. Since 2003, it has been primarily marketed as Suboxone, a combination pill that comprised of buprenorphine and naloxone; the addition of naloxone deters misuse of the preparation by the injection route.¹

Buprenorphine has been approved for office-based administration with the goal of encouraging greater involvement of primary care physicians in the care of their opioid-dependent patients.² Physicians interested in providing buprenorphine must complete a minimum of 8 hours of training, be licensed or certified in addiction medicine, or be considered qualified by the state medical board. Buprenorphine is given sublingually, achieving peak plasma doses 1 hour after administration. It has a long half-life that makes once-daily dosing effective and alternate-day dosing feasible. Studies have shown that buprenorphine is feasible to implement in the office setting,^{3,4} and is superior to placebo in decreasing illicit opioid use.^{5,6} When compared with methadone maintenance therapy, the majority of studies have shown buprenorphine to be equivalent or superior in achieving this endpoint.⁷⁻¹⁰

There are several notable differences between the use of methadone and buprenorphine. As a partial agonist (unlike methadone, which is a full agonist), buprenorphine exhibits a ceiling effect such that increased concentrations do not produce any further opioid effects. Therefore, the sedation, respiratory distress and euphoria that can be seen with methadone are exhibited to a much lesser degree among patients on buprenorphine. At the same time, buprenorphine binds tightly and preferentially to the opioid receptors so that in the presence of opioids,

buprenorphine will displace the opioids and may precipitate mild to moderate withdrawal. For that reason, unlike methadone, patients on buprenorphine should not be receiving opiate therapy for pain control.

Buprenorphine is generally well tolerated. Liver function abnormalities have been seen, and studies are underway to evaluate the effects of buprenorphine on hepatic function.¹¹ Clinical side effects can also include sleep disturbances, headaches, nausea and drowsiness. Although buprenorphine is felt to be a safe medication, there have been reports of death with the use of IV buprenorphine and CNS depressants. As such, caution must be used when prescribing buprenorphine to patients on high doses or non-prescribed doses of benzodiazepines and/or to patients with chronic alcohol use.¹¹

BUPRENORPHINE IN THE HIV PRIMARY CARE SETTING

The epidemics of HIV and opioid dependence are associated with injection drug use (IDU) and these IDUs, their partners and children account for 36% of the cumulative number of AIDS cases in the US.¹² Treatment of opioid dependence can be a key component in promoting engagement in medical care and the effective use of antiretroviral therapy for this population. As such, the role of the HIV care clinician includes being a part of the team managing and treating substance use disorders. Buprenorphine provides an opportunity to link HIV and substance use treatment in the primary care setting.

IDU/HIV AND PRISON

A 1997 study reported that approximately 25% of HIV+ individuals in the United States are detained in jail or prisons each year.¹³ In a retrospective study of stored sera from sentenced inmates passing through the intake center at the Rhode Island Department of Corrections, we found an overall prevalence of HIV infection of 1.8%.¹⁴ In another study, we found a HIV prevalence of

3.3% among all incarcerated women between 1989 and 1997.¹⁵ In this study, IDU was reported as the primary risk factor (Odds Ratio 3.7, 95% CI: 1.3-10.1).

Prisons and jails represent an opportunity to provide both healthcare and linkages to care upon release, because many prisoners have not had adequate healthcare previously and most will return to their home-communities.¹⁶ In Rhode Island, several projects have shown that prison provides an opportunity to link individuals to both HIV care¹⁷ and substance abuse treatment.^{18,19} Although no program in Rhode Island initiates buprenorphine in the correctional setting and continues it after release, buprenorphine treatment is within the spectrum of substance abuse options that can be provided to HIV (+) ex-offenders after release. Through funding provided by the Health Resources and Services Administration (HRSA), clinic-based buprenorphine maintenance treatment has been integrated into the care provided by The Immunology Center at The Miriam Hospital.

BUPRENORPHINE AT THE IMMUNOLOGY CENTER AT THE MIRIAM HOSPITAL

The goal of buprenorphine treatment is to improve health outcomes and increase awareness, education, and referral among patients and clinicians regarding opioid addiction with the integration of onsite opioid treatment in an HIV primary care setting. Primary care physicians assess patients seeking opioid treatment at the Immunology Center using the DSM-IV criteria for opioid dependence. Patients are then provided an opioid education session. Patients choosing buprenorphine treatment see a nurse who enlists the patient in designing an individualized substance abuse treatment plan, as well as administers the buprenorphine. DATA 2000 [The Drug Addiction Treatment Act of 2000] permits physicians who meet certain qualifications to treat opioid addiction

with Schedule III, IV, and V narcotic medications approved by the FDA for that indication. Such medications may be prescribed and dispensed by physicians receiving a waiver in treatment settings other than the traditional Opioid Treatment Program (methadone clinic) setting. At The Miriam Hospital, DATA 2000-certified physicians prescribe buprenorphine and work closely with the nurse in monitoring outcomes. Patients meet weekly with a near-peer outreach worker, who is from the community and whose life has been affected by substance abuse or HIV.

Patients taking buprenorphine undergo three treatment phases: induction, stabilization and maintenance. It is essential for the patient to be induced while in mild to moderate withdrawal. On Day 1 of induction, the nurse assesses the patient for symptoms of withdrawal utilizing a tool such as the **Clinical Opiate Withdrawal Screen (COWS)**. Patients who meet the criteria for withdrawal receive serial doses of buprenorphine over the course of 2-3 hours. For patients not yet in withdrawal, induction will be deferred so as not to induce an intense "precipitated withdrawal." The goal of induction is to cause remission of withdrawal symptoms and begin the opiate blockade at the brain's mu receptors. The patient's comfort is a reliable guide to determining an acceptable outcome. The typical dose on day 1 is 8-12mg. During the next 4-5 days, the patient is seen daily for brief assessments in order to adjust the dose to eliminate any lingering withdrawal symptoms and opiate craving. When a stable dose of buprenorphine has been determined, typically between 12 and 20 mg. daily,²⁰ the patient is seen less frequently at the clinic. On the days that the patient does not see the nurse, the patient is given a prescription to fill at a pharmacy and take independently. For patients who have been on buprenorphine in the past, we use their last stable dose as a target and induce to that dose on day one or by day two. Throughout treatment, the patient is encouraged to engage in recovery-related activities as well as to pursue employment and/or education.

Throughout all stages of treatment, patients receive toxicology screens. During the induction/stabilization phase, toxicology screens are obtained weekly;

the frequency tapers as the patient becomes more stable. The toxicology screen seeks to assess whether the patient is still using opioids, and may need a higher dose of buprenorphine, and to identify the use of other illicit drugs.

...prison provides an opportunity to link individuals to both HIV care and substance abuse treatment...

SUCCESSES AND CHALLENGES OF THE INTEGRATED BUPRENORPHINE PROGRAM

Since January 2006, 29 HIV(+) patients at the Immunology Center have chosen buprenorphine treatment and have met DSM-IV criteria for opioid dependence. Twenty-one participants are male; 12 are white, 10 Hispanic, 6 African American, and 1 Cape Verdean. Of the 24 participants for whom incarceration data have been collected, 20 have a history of incarceration. Despite initial interest in the program, 2 patients never returned for induction. Of the 27 patients who were induced, 17 have remained on buprenorphine maintenance ranging from a few weeks for those newly induced to up to a year for 3 individuals. Of the 10 individuals who discontinued treatment, reasons include moving out of state, re-incarceration, relapse, un-resolved pain issues and allergic reactions.

We encountered several challenges in the implementation of this program. Pain may be one of the main reasons that many patients with opioid dependence do not engage in buprenorphine treatment. If patients have real or perceived chronic pain, the fact that they will not be able to be on a stable dose of opioid analgesics prevents them from initiating buprenorphine treatment. In these situations, clinicians must assess the need for narcotics to treat pain, and patients must have access to information about other non-narcotic pain treatments. Buprenorphine may provide some pain control, and patients must be willing to see if buprenorphine is an effective treatment.

Another challenging group of patients is those who are stable on methadone but want to switch to buprenorphine. Some patients dislike the social milieu at the methadone clinic, where they have daily contact with people who may still be using drugs and who are connected to their 'old life'. Many patients like the fact that buprenorphine can be provided at their primary care clinic, and can be obtained from local pharmacies. However, an individual must be on <50 mg of methadone to comfortably transfer to buprenorphine. The process of tapering down to this methadone dose can be long and difficult and patients are at risk for relapsing. In these situations, the nurse meets frequently with patients to monitor decreasing dosages and offer support. The nurse also works closely with the physicians at methadone clinics.

For many individuals initiating treatment for opioid dependence, and in particular, for individuals recently released from incarceration, social instability, including lack of housing, food and/or transportation, makes engaging in a substance abuse treatment program difficult. Treatment with buprenorphine alone will not resolve these difficulties. Consequently, we have introduced into our program near-peer outreach workers to work with patients, particularly on days when patients do not go into clinic. The outreach worker will remind participants to follow up with case management services, and make additional referrals as needed. In addition, near-peers will encourage patients to take their buprenorphine and to follow up with their substance abuse treatment plan.

Medicaid covers buprenorphine, therefore the clinic staff will work with patients and refer them to on-site financial case-management staff available for HIV (+) persons at the Immunology Center. In addition, through our initiative supported through HRSA, patients can receive a one-month supply of buprenorphine at no cost while trying to obtain these financial services. For patients without insurance, applications can be made to the manufacturer for patient assistance programs.

Finally, many patients want only a detoxification program, not maintenance therapy. At the Immunology Center, our program is focused on buprenorphine

maintenance. Data suggest that detoxification strategies do not lead to long-term stabilization,²¹ whereas maintenance therapy has shown to be more effective. Our team educates patients through intensive individualized sessions about the need for long-term therapy, in particular, the risk of relapse to heroin use following a quick detoxification process.

BUPRENORPHINE FOR HIV(-) PERSONS LEAVING PRISON IN RHODE ISLAND

It can be difficult for the HIV(-) individual leaving prison to connect with buprenorphine substance abuse treatment. At this time, no specific initiative is focused on linking HIV(-) persons to buprenorphine treatment after release. Although many providers are certified to provide buprenorphine treatment in the state,²² no site caters specifically to ex-offenders. Obtaining office-based buprenorphine is more challenging because many of these individuals are not linked to primary care providers. An even bigger barrier is the lack of funds available for patients to initiate buprenorphine treatment. HIV(-) opioid users are more likely to be uninsured, and unable to afford this therapy that costs approximately \$300 per month.^{12, 23}

CONCLUSION

Buprenorphine is an alternative therapy to methadone for the treatment of opioid dependent individuals. In Rhode Island, as well as in other states,²⁴ buprenorphine has been successfully integrated into the primary care setting for HIV(+) persons. For these individuals, especially those leaving the incarcerated setting, the use of buprenorphine allows for the integration of medical and substance abuse care, both of which must be addressed after release from prison. Given the many social demands on people leaving prison, a simplified, integrated approach to health care is crucial. In addition, the use of community-based outreach, such as near-peer outreach workers and case managers, can help these individuals establish and maintain linkages to this integrated care model. Future efforts should focus on initiating and/or continuing buprenorphine in the correctional setting to support our efforts in decreasing relapse upon release into the community.

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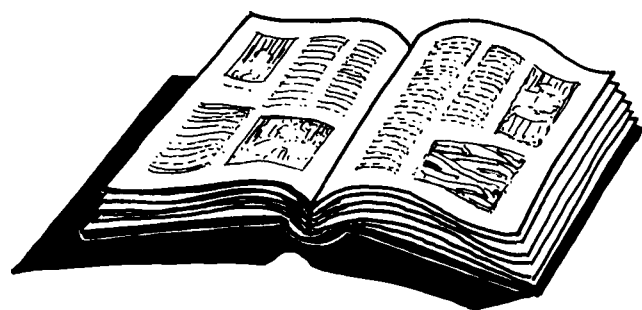
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An Overview of Heroin Overdose Prevention in the Northeast: New Opportunities

Portia Thurmond, MPH, and Sarah Bowman

The epidemiology and risk factors of opiate overdose have been described in several major cities in the United States, including San Francisco, Baltimore, Pennsylvania, and New York City. Opiate overdose is the leading cause of death among illicit opioid-users. Opiate overdose is readily preventable. Deaths as a result of overdose are seldom immediate, and in many cases the victim is not alone. Limited evidence also suggests that pharmacological interventions like prescription naloxone may prevent opiate overdose.¹⁻⁴ In the United States, several prevention programs utilizing take-home naloxone demonstrate the feasibility and acceptability of distributing take-home naloxone to opioid users.³

Heroin-addicted ex-offenders are at extremely high risk for overdose. Their risk of overdose in the two-week period immediately following release is *seven to eight times the risk* of overdose in any other two-week period in the 10 weeks following release.⁵⁻⁷ In Rhode Island, an estimated 59% of all heroin users are arrested each year.⁸ As opiate-addicted ex-offenders transition back into their communities, they often relapse into opiate use. For this reason, the creation of overdose prevention interventions targeting ex-offenders within correctional facilities and in the community is a priority. This review summarizes the literature, and highlights the response to opiate overdose in the Northeast.

MORBIDITY AND MORTALITY

The prevalence of non-fatal overdose among opiate users varies among cities and age groups. Among young injectors (median age=22-29), the prevalence of overdose ranges from 29% to almost 50%.⁹⁻¹¹ Among older injectors (median age=44), the prevalence is higher, ranging from 45% to about 50%.¹²⁻¹³

Darke et al. estimated that 3% of all opiate overdoses were fatal.¹⁴ Mortality rates have been estimated in several US cities and states, including: Baltimore, MD (16 per 100,000 PY);¹⁵ San Fran-

cisco (14 deaths per 100,000 PY);¹⁶ and Massachusetts (9 deaths per 100,000 PY).¹⁷ The ratio of fatal to non-fatal overdoses in the United States is unknown. Based on the findings by Darke et al., it is possible to hypothesize the percent of fatal overdoses in the US. For example, in San Francisco, CA, about 4% of opiate overdoses result in death (compared to 3% in Australia).

The burden of morbidity related to non-fatal overdoses has recently been highlighted. Warner-Smith et al. documented that 82% of the heroin users reported at least one overdose-related morbidity symptom.¹⁸ Pulmonary conditions (especially edema and pneumonia) appeared to be the most commonly reported complications of overdose. Muscular and neurological complications were also common.¹⁹ (Table 1) Peripheral neuropathy was reported in 49% of the sample. In this same study, Warner-Smith also found that among persons reporting overdose, there was no difference in symptoms reported among people in substance use treatment and those out of treatment. This suggests that although drug treatment may decrease OD risk, it

does not affect the presentation of morbid conditions related to overdose among treatment populations reporting overdose.

PREDICTORS OF OPIATE OVERDOSE

Demographics

The proportion of men reporting overdose ranges from 60% to 80%.^{9,20,12,21-22} In studies examining predictors of fatality, the proportion climbs to 90%.¹⁶⁻¹⁷ A few recent studies have suggested that among young injectors, reports of overdose are more equitably distributed between men and women.¹⁰⁻¹¹

Drug Use

High risk of overdose is strongly associated with polysubstance use. Alcohol, benzodiazepines and other opiates are central nervous system depressants and their concomitant use with heroin dramatically increases the possibility of respiratory depression. The mixture of cocaine and heroin found in speedballs may mask the “down” felt after heroin use, and an injector can easily use too much. Street-purchased heroin is often “cut” or mixed with other substances. For in-

Table 1: Commonly Reported Morbid Conditions Resulting from Opioid Overdose

Pulmonary effects	Pulmonary edema Bacterial pneumonia (resulting from edema and/or aspiration during poisoning)
Cardiac effects	Arrhythmia Acute cardiomyopathy Hemoglobinemia
Muscular effects	Rhabdomyolysis (leads to myoglobinuria, muscular necrosis, severe neurological complications, and renal failure; in extreme cases may lead to compartment syndrome)
Neurological effects	Cognitive impairment Seizures Peripheral neuropathy Paralysis
Other effects	Vomiting Injuries resulting from falls Burns Assaults

Table 2: Predictors of Opioid Overdose

Predictor	Comment	Reference
Alcohol use	Present in more than half of fatal poisonings. Strongly associated with non-fatal poisoning; relationship between BAC and blood morphine is inverse.	Darke et al. 2000, Seal et al. 2001, Warner-Smith et al. 2001, Brugal et al. 2002, Kerr et al. 2006
Benzodiazepine use	Frequently noted in fatalities involving polydrug use; associated with non-fatal poisoning	Brugal et al. 2002, Ochoa et al. 2005, Kerr et al. 2006
Injection drug use	Dramatically increased risk of poisoning.	Ochoa et al. 2005, Kerr et al. 2006, Sherman et al. 2006
Risky injection behavior (speedballing, sharing needles, etc.)	Dramatically increased risk of poisoning.	Ochoa et al. 2001, Ochoa et al. 2005, Kerr et al. 2006, Sherman et al. 2006

stance, a recent epidemic of overdose deaths has been attributed to heroin cut with fentanyl.²³ Individual behaviors associated with overdose are shown in Table 2.

With respect to route of administration, risk of overdose is dramatically increased among injectors (vs. heroin sniffers and smokers).²¹ Long injection careers are associated with overdose.¹¹ Other injection-related behaviors such as speedballing and needing help injecting are also associated with overdose.²²

Incarceration

Recent release from incarceration has long been cited as a major predictor of overdose in the United States.^{12,10} Lowered tolerance as the result of being in a controlled environment considerably increases the risk of overdose for users who have been recently released from prison. Seaman et al. reported that relative risk of overdose for prisoners infected with HIV was 8 times (95% CI: 1.5, 39.1) higher in the two weeks after release than per two-week interval in the subsequent 10 weeks.⁵ Bird and Hutchinson reported similar results among inmates in Scotland, with risk of death in the two weeks after release 7 times higher than in the subsequent 10 weeks.⁶ In the US, the only study reporting risk of death within two weeks of release reported a 13-fold increase in the risk of death among opiate users released from prison.⁷

Methadone treatment

Methadone maintenance treatment has been shown to prevent opiate overdose in several studies.²⁴⁻²⁷ However, some

reports document increases in methadone-induced overdose deaths.²⁸ Hickman et al. suggested that methadone-induced deaths were more common over the weekend, presumably due to the higher likelihood of methadone administration in the home.²⁹ Illegal diversion of legally prescribed or dispensed methadone has also been cited as a predictor of methadone-related mortality.³⁰ In order to evaluate evidence implying that methadone maintenance is responsible for the increases in opiate overdoses, Bryant et al. examined overdose deaths in New York City and found that methadone deaths remained relatively stable between 1990 and 1998, implying that MMT was not responsible.³¹ Bryant et al. also determined that methadone-induced deaths occurred only in persons exclusively using methadone for pain control. In 2006, the FDA issued a warning to physicians prescribing methadone for pain:

The FDA has received reports of death and life-threatening side effects in patients taking methadone.

These deaths and life-threatening side effects have occurred in patients newly starting methadone for pain control and in patients who have switched to methadone after being treated for pain with other strong narcotic pain relievers. Methadone can cause slow or shallow breathing and dangerous changes in heartbeat that may not be felt by the patient.

Prescribing methadone is complex. Methadone should only be

prescribed for patients with moderate to severe pain when their pain is not improved with other non-narcotic pain relievers. Pain relief from a dose of methadone lasts about 4 to 8 hours. However methadone stays in the body much longer—from 8 to 59 hours after it is taken. As a result, patients may feel the need for more pain relief before methadone is gone from the body. Methadone may build up in the body to a toxic level if it is taken too often, if the amount taken is too high, or if it is taken with certain other medicines or supplements.³²

Bystander Response

Many drug users report witnessing opiate overdose. A study in New York estimated that 67% of heroin users in the study ever witnessed a fatal or nonfatal overdose.¹³ Davidson et al reported that 73% of a street-recruited sample of IDUs reported witnessing an overdose.¹⁶ Studies in Australia and the UK have reported rates as high as 90%.³³⁻³⁴ These findings indicated that bystanders were common in overdose events, and that immediate death resulting from overdose was infrequent. This implies that bystanders can play a critical role in preventing fatal overdoses.

Reported responses to opiate overdose vary. Based on the literature, the complete lack of any attempt to respond is rare.^{12,35} Bystanders have reported physical stimulation (putting victim in a cold shower or ice bath, icing the genitals, walking victim around the room, talking to victim to keep them awake,

etc.); injection with household items (water, salt, bleach, milk); injection with other drugs; as well as attempts at medical intervention (calling 911, CPR, rescue breathing, hospital, etc.). The most common responses—often the first responses—are slapping and shaking the victim or walking him/her around the room. Calling emergency services were attempted much less frequently and rarely as the first response,^{36,13,35} perhaps because police often arrive on the scene when an ambulance is called.

NALOXONE-BASED INTERVENTIONS: RECENT DEVELOPMENTS IN THE NORTHEAST

Naloxone is an opioid antagonist that temporarily reverses respiratory depression associated with opioid overdose.³⁷ Naloxone displaces the heroin bound to the Mu2 receptors in the brain both reversing the effects of overdose and causing withdrawal. Emergency medical professionals have used naloxone for years when opioid overdose is suspected. Complications are rare and when no opiates are present in the system, there is no pharmacological effect. Generally a single 2 mg dose of naloxone is sufficient to reverse an opioid overdose. The half-life of naloxone is shorter than that of heroin (30-81 minutes), so subsequent doses may be necessary if large or long-lasting doses of heroin are present in the system.³⁸

The first programs utilizing naloxone as part of overdose risk recognition and symptom response programs for illicit drug users were in Chicago and San Francisco in 1999. The original pilot programs were designed to be delivered in a class-like setting, but programs in most cities have evolved to more mobile and fast paced trainings to serve a transient population. New York is conducting trainings as part of street outreach efforts; Baltimore and Boston are using mobile needle exchange vans as their primary sites. As of February 2006, naloxone programs have reported more than 900 episodes of peer-reversal of heroin overdose.⁴

The New York-based **SKOOP (Skills and Knowledge on Overdose Prevention)** program, which conducts 20-minute trainings on the street, has trained over 1200 participants since its inception in 2001 (T. Markham-Piper, personal communication, January 16, 2007). Partici-

pants each receive two doses of naloxone in pre-loaded syringes, and follow-up interviews have been conducted with over 160 people who have reported using one or two of the doses with success.

Baltimore's Staying Alive program conducts trainings in a variety of venues including a mobile van unit, community agencies and drug treatment centers. Each participant receives a 10 ml vial of naloxone, with 3 IM syringes. Since April 2004 Staying Alive has trained and prescribed naloxone to over 1100 people. Their 10% reported reversal rate is comparable to rates across the country. (M. Rutger, personal communication, January 18, 2007)

As of February 2006, prescription naloxone programs have reported more than 900 episodes of peer-reversal of heroin overdose.

Most recently in Boston, participants are being trained to use naloxone through intranasal administration (A. Epstein, personal communication, January 19, 2007). In Boston, the trainings, conducted in conjunction with the mobile needle exchange van, trained over two hundred participants during the first three months.

Providence is also implementing prescription naloxone programs. Rhode Island's small size will likely allow for Providence-based efforts to have a statewide impact. **PONI (Prevention Overdose Naloxone Intervention)**, the Providence-based naloxone distribution and overdose prevention program, began recruitment during the summer of 2006 as a pilot study out of the Miriam Hospital. The PONI training is housed at Community Access, an off-campus site of the Miriam Hospital on Providence's south side. The training is also designed for delivery at methadone clinics, treatment facilities and other community-based organizations that work with IDUs. At this time, trainings are regularly offered at the Family Life Center and Crossroads RI, in addition to Community Access. The PONI program has

received positive feedback from health service providers, community-based organizations and community members including IDUs, yet has seen very low turn out. Coordinators of the program have had difficulty recruiting participants to come into the sites. Further investigation into the possibility of making the training mobile may be a next step.

FUTURE WORK

The past few years have seen fast growth in the quantity and scope of naloxone distribution programs throughout the country. As these programs develop, a body of literature is becoming available about naloxone distribution for personal use. These programs are grounded in shared theory, and use similar curricula and materials though the route of administration of naloxone varies (nasal inhalation or intramuscular injection). Further evaluation of the efficacy of distributing pre-filled syringes, vials, or intranasal doses will help inform best practice guidelines as programs continue to develop. Such evaluation may take into account ease of use, outcomes, simplicity, cost and the relative likelihood that a bystander at the scene of an overdose would use any particular method more readily or successfully.

Overdose prevention efforts focused on bystander response to overdose, such as naloxone distribution, should continue alongside strategies to lessen the frequency of fatal and non-fatal overdose. Continued advocacy to expand the availability, affordability and duration of methadone maintenance, detox and drug treatment facilities will improve the success of these programs. Overdose prevention education, with and without naloxone distribution, should continue to emphasize education on safer injection, and high-risk situations.

Vancouver followed the lead of many European countries when it opened the first supervised injection site in North America in September 2003.³⁹ Supervised injection sites provide a controlled and sterile location for individuals to inject. At these sites clients receive safe injection information and additional resources and referrals. Supervised injection sites provide the community benefit of reducing illicit activity on the street. In case of an overdose on site, immediate medical response is available. Over 400 overdoses have oc-

curred; trained health professionals have handled most on site with no overdose fatalities.⁴⁰ Evaluation of this site continues as Canada awaits further results before opening up additional sites. An effort to expand services, continued evaluation and development of existing programs should consider the possibility for supervised injection sites within the continuum of care offered in the United States.

CONCLUSION

The harm reduction efforts examined in this article are behavior and skills-based interventions, which incorporate data on the predictors of opiate overdose and bystander response. Burris et al. argued that the criminal justice system plays a crucial role in determining the level and distribution of health among drug users.⁴¹ It is probable that drug laws and police practices inhibit overdose prevention in the same way they preclude reduction of HIV risk.⁴² Rather than restricting the focus of health interventions solely to behavioral change, Burris et al. encouraged the use of a more ecological framework for health interventions.

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Drug Court as an Alternative to Incarceration

Nickolas Zaller, PhD

At the end of 2004, more than 2.3 million US citizens were behind bars (just over 700 inmates per 100,000 residents), the highest incarceration rate in the world.¹ There are an estimated 11 million incarcerations (and releases) per year, comprising nearly 8 million individuals.² Many prisoners released into the community are soon re-arrested. Among 272,111 prisoners released in 1994, nearly 70% were re-arrested at least once for a new offense, 30% in the first six months and 60% within the first two years. Half were convicted of a new crime and 25% returned to prison.³ Approximately 25% of individuals incarcerated in the US are serving time for a non-violent, drug-defined or drug-related offense. About two-thirds of state prison inmates nationally have a history of illegal drug use.⁴

INCARCERATION IN RHODE ISLAND

Between 1984 and 2006 the population at the Rhode Island Department of Corrections grew from 1000 to over 3600.^{5,6} Forty-five percent of offenders who leave the Rhode Island Department of Corrections are re-arrested within one year of release.⁵ Eighteen percent of all offenses in 2005 in Rhode Island were drug related.⁷ Two-thirds of inmates in the Rhode Island Department of Corrections report having significant problems with drugs or alcohol.⁸

HEROIN USE

Bureau of Justice statistics indicate that 23% of state prisoners report lifetime heroin use (compared to 1.5% in the general population); 8% report using heroin within a month prior to incarceration.⁹ Heroin is inexpensive and availability is concentrated in the Northeast. According to a 2003 report, 15% of federal sentences in the Rhode Island were heroin-related compared to 7% nationally.¹⁰ Using Bureau of Justice statistics, at least 280 offenders at the Rhode Island Department of Corrections have untreated or under-treated heroin addiction.

ADULT DRUG COURTS

Drug courts offer an alternative to incarceration.¹¹ The first drug court was established in Miami, Florida, in 1989. Today there are more than 1,100 operational drug court programs in the United States.¹² They have been shown to decrease recidivism, save money in tax dollars, increase retention in substance use treatment and provide affordable treatment.^{11,12} Drug court participants not only include first-time offenders, but also repeat offenders with long criminal and substance use histories.¹³

Nationally, drug court programs differ by jurisdictions and criminal justice practices.¹⁴ With all drug court programs, judges preside over proceedings, monitor progress with drug screening and provide sanctions and rewards in collaboration with prosecutors, defense attorneys and substance use treatment providers.¹⁴ Although programs differ in type of substance use treatment offered, most programs require a full year of participation before completion.¹⁴ In addition, drug court participants are monitored more closely than other forms of community supervision.¹³ Beleko's description of common drug court program elements is summarized in Table 1. In concert, these elements are designed to reduce overall substance use and associated substance using behaviors, i.e. criminal activities, by engaging and retaining substance using offenders in programmatic and treatment services.¹³

Nearly all drug courts target drug-defined charges such as drug possession, and many more now target drug-related offenses, including theft/property offenses, check/credit card and prescription forgeries, prostitution and **driving while intoxicated (DWI)**.¹⁵ A majority of drug courts target individuals who manifest at least moderate substance use, as deter-

mined by clinical assessment,¹⁵ via standardized assessment instruments such as Addiction Severity Index, Michigan Alcohol Screening Test, or Substance Abuse Subtle Screening Inventory.¹⁶ However, some courts use screening instruments developed by court staff and not clinicians.¹⁶ Many screening instruments, such as those mentioned above, do not necessarily differentiate offenders with addiction compared with offenders who use drugs recreationally or sporadically.¹⁶

THE RHODE ISLAND ADULT DRUG COURT

The Rhode Island Adult Drug Court, established in 2002, operates under the jurisdiction of Rhode Island Superior Court. The Adult Drug Court is the result of collaboration between the RI Superior Court, Office of the Attorney General, Office of the Public Defender, Department of Mental Health, Retardation and Hospitals and the Department of Corrections. Similar to most other adult drug courts, the Adult Drug Court provides an alternative judicial mechanism for non-violent felony offenders with addiction. In 2005, the Adult Drug Court became a full-time program rather than a pilot initiative. It currently serves 115 active participants.¹⁷ In the same year, the court added a full time magistrate and court manager, allowing more non-violent offenders to participate in the court and thus access substance use treatment services.

Referrals to the Adult Drug Court are made by defense attorneys, prosecutors or judges. There is a two-step eligibility process. First, potential participants are evaluated by a representative from the Attorney General's Office to determine if they meet the legal criteria to enter the program. To be legally eligible, participants must have no pending charges or

Table 1: Common Elements of Adult Drug Courts¹³

- Judicial supervision of structured community based treatment
- Timely identification of potential defendants
- Status hearings to monitor treatment progress and program compliance
- Defendant accountability through sanctions and rewards
- Mandatory periodic drug testing

Table 2: Rhode Island Drug Court Active Participant Demographics (as of December 31, 2006)

Race/Ethnicity	Males (%) N=76	Females (%) N=39
White, non-Hispanic	49 (64.5)	32 (82.1)
Hispanic	15 (19.7)	3 (7.7)
African American	7 (9.2)	3 (7.7)
Native American	2 (2.6)	1 (2.6)
Asian	2 (2.6)	0
Other	1 (1.4)	0

past convictions for a felony crime of violence. Potential participants must also not have any pending charges or past convictions for delivery of a controlled substance or possession with intent to deliver a controlled substance. Any of these charges or past convictions immediately disqualify all drug court candidates. Second, if an offender is determined to be legally eligible for the program, s/he must attend a clinical assessment with the Clinical Case Coordinator, who uses DSM 4 criteria to make a clinical diagnosis of the participant's addiction. If a diagnosis is made, the Case Coordinator then uses **American Society of Addiction Medicine (ASAM)** patient placement criteria to arrange for an appropriate level of substance use treatment. The most common substances of use among participants referred to the drug court are cocaine and heroin.¹⁷

Typical treatment services for which participants are referred are: residential treatment, intensive outpatient (3-5 sessions per week) treatment, outpatient (1-2 sessions per week) treatment, detoxification and methadone maintenance treatment for opiate addicted offenders. Initially, partici-

pants must attend weekly or bi-weekly court reviews until the court magistrate determines them to be stable and ready for longer term or stretched-out court reviews. However, the longest period participants will go between reviews is 4 to 5 weeks at most. With respect to program completion, participants must complete all court-ordered treatment before they can graduate. Even if they have obtained 12 months of continuous sobriety, participants must successfully complete whatever treatment program they are in before they are allowed to graduate from the drug court. In addition, participants are required to be employed or enrolled in school (full-time) before program completion. Also, if there is any restitution that is owed on their cases, it must be paid-in-full before program completion.

DEMOGRAPHICS OF RHODE ISLAND DRUG COURT PARTICIPANTS

Since January 2004, the number of participants in the Rhode Island Adult Drug Court has more than tripled from 40 participants to 133 in June of 2006. As of December 2006, approximately 560 persons have been reviewed or are in the

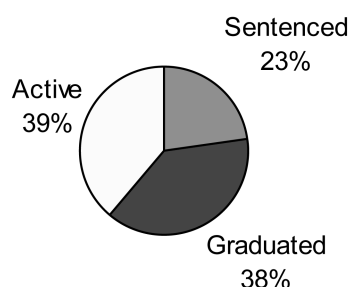
process of being reviewed for the Adult Drug Court Program. Of these, 313 have entered the Adult Drug Court Program and 88 have graduated. Demographics of active Adult Drug Court participants, as of December 31, 2006, are shown in Table 2. Overall, males are overrepresented in the Adult Court Program by a nearly 2 to 1 margin. In addition, of the total 115 active participants, 70% are white. In 2005, among all individuals awaiting trial, only 46% were white. Between the years 2004 and 2006, 44 Adult Drug Court participants were re-arrested and sentenced. During this same period 74 participants graduated and another 75 are still active. (Figure 1)

LIMITATIONS AND CHALLENGES

In a review of both published and unpublished drug court evaluations, Beleko found that drug courts have been more successful compared with other forms of community supervision in engaging non-violent drug offenders with substance use treatment.¹³ However, much of the data must be examined with caution. Most published studies on drug courts do not follow up for more than one year so outcome data is limited. In those studies which include outcome data, re-arrest has been the primary or only outcome.¹³ Overall, more research needs to be conducted in order to provide better estimates of the cost savings and overall efficacy of drug courts.

Financial constraints continue to plague the drug court system in many states. Rhode Island is no exception. The Rhode Island Adult Drug Court was initially funded through a three year \$500,000 grant from the Department of Justice. The time frame was extended an additional two years, but expired in August 15, 2006. The Adult Drug Court has asked the legislature to appropriate money in the FY2008 State Budget for the Court. Without funds specifically allocated for treatment purposes, only individuals with health insurance or the ability to cover all treatment costs will be able to participate in the Adult Drug Court program. Though statewide, 8% of the population is without insurance, a number that increases significantly among people living in poverty (16%), people with less than a high school education (18%) and

Figure 1: Drug Court Participant Outcomes 2004-2006



unemployed (46%).¹⁸ In short, most individuals who are likely clients of Drug Court are uninsured or underinsured. Additionally, though a detoxification program at SSTAR N. Kingston is free to the consumer, this is not true for any other treatment program in the state. The State does fund treatment slots for individuals who are underinsured or uninsured, however, these slots are limited, with extensive waiting periods. Thus, many individuals cannot participate in the Adult Drug Court unless the legislature provides adequate funding.

CONCLUSIONS

Pursuing alternatives to incarceration for individuals primarily involved in the criminal justice system due to drug addiction is a priority. A recent survey among Rhode Island residents conducted by the Bureau of Government Services indicated that 80% of respondents favored treatment and community service for non-violent drug offenders. In addition, Rhode Island legislators passed a resolution in 2004 proclaiming May as National Drug Court Month in Rhode Island. Furthermore, in June of 2006, the United States Conference of Mayors endorsed a resolution opposing mandatory sentencing for non-violent drug offenders and called for "fair and effective" sentencing policies. This represents collective will, both nationally and in the state of Rhode Island, to amend current sentencing policies associated with drug sentencing. However, viable alternatives

to corrections for addicted individuals must include substance use treatment and must be adequately financed. Adult Drug Court has much potential that cannot be realized without additional funding. However, given the small numbers served (313 over three years) and the high numbers of addicted individuals that pass through the system, other alternatives need to be developed. Without adequate funding, the individuals who are most in need, those who are underinsured or who have no insurance, will continue to be caught in the continuous cycle of addiction and incarceration.

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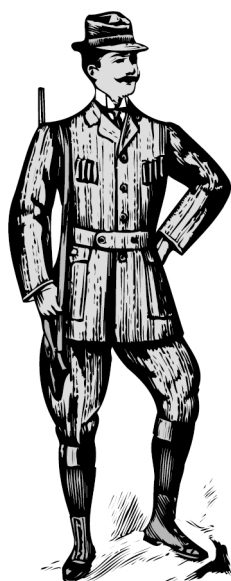
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Opioid Addiction and Incarceration: An Overview

Robert P. Schwartz, MD, Michelle McKenzie, MPH, and Josiah D. Rich, MD, MPH

Opioid addiction often presents as a chronic, relapsing disease.^{1,2} As a result of sustained use of heroin, molecular and neurochemical changes in the brain occur and may be persistent.^{3,4,5} Once established, addiction can be characterized by frequent and repeated cycles of cessation of drug use and relapse lasting decades, which may be accompanied by periods of imprisonment.³ Even heroin users who have been opioid-free for an extended time demonstrate a hyper-responsivity to chemically-induced stress.⁶ A variety of stressors may contribute to chronic self-administration of drugs of abuse and leave individuals whose addiction is in remission at risk of relapse.

Fortunately, there are a number of organized, effective treatments available in community settings for opioid addiction. These treatments generally can be initiated with opioid agonist medications through detoxification from heroin or through maintenance pharmacotherapy. For those who undergo detoxification, the latter is often followed by treatment in a residential program (such as a therapeutic community, halfway house or rehabilitation program) or by outpatient counseling. Attendance at self-help groups, such as Narcotics Anonymous is helpful to some individuals as well.

In terms of opioid agonist maintenance therapies, methadone treatment is the most common treatment in the US and is generally provided in specially licensed **opioid treatment programs (OTPs)**. In contrast, buprenorphine, a partial opioid agonist, can be provided as a detoxification or maintenance agent in an OTP or through physician office-based treatment by physicians who receive a waiver to prescribe buprenorphine from the federal Substance Abuse and Mental Health Services Administration.

The most studied and widely used treatment modality for opioid addiction is **Opioid Agonist Therapy (OAT)**. Three opioids have gained FDA approval for the treatment of opioid addiction: methadone, buprenorphine, and LAAM

(no longer commercially available in the US). **Methadone maintenance treatment (MMT)**, the most widely used OAT in the US, has been used to treat chronic heroin addiction for 40 years. Although opioid agonists can be used to detoxify individuals dependent on heroin, most individuals who undergo detoxification alone return to heroin use.⁷ Therefore, the goal for many patients receiving OAT is to reduce the chance of relapse by stabilizing them on longer-term pharmacotherapy.

...the goal for many patients receiving OAT is to reduce the chance of relapse by stabilizing them on longer-term pharmacotherapy.

OAT works through its blockade of the euphoric effects of heroin, relieving withdrawal symptoms and eliminating craving.⁸ Patients stabilized on OAT are able to feel normal and become productive members of their communities. Since individuals who are addicted to opioids often have other psychosocial problems, counseling and other services accompanying pharmacotherapy can be helpful. However, even without counseling, OAT is highly effective in reducing heroin use.^{9,10}

Repeated rigorously controlled randomized clinical trials have shown the effectiveness of OAT in reducing drug use.¹¹⁻¹³ Heroin use is significantly lower for those individuals in OAT than those who are not in drug treatment.^{7,14,15} Reduced heroin use is accompanied by reduced drug-related criminal behavior.¹⁶⁻¹⁸ OAT improves outcomes among criminal justice-involved heroin users^{19,20} and reduces HIV transmission and mortality.²¹⁻²⁴

In consideration of the evidence of OAT's efficacy and the especially high

rates of incarceration, overdose death, and HIV and hepatitis transmission associated with heroin addiction, there is broad-based medical, public health, and scientific support for expansion of OAT.²⁵ The National Institutes of Health's Consensus Statement on the Treatment of Heroin Addiction notes reductions in mortality, illicit drug use, criminal activity, and unemployment in association with methadone maintenance treatment and recommends treatment for all opioid dependent people under legal supervision.²⁶ Furthermore, the **American Association for the Treatment of Opioid Dependence (AATOD)** and the **World Health Organization (WHO)** have recommended OAT for drug-dependent inmates and ex-inmates.^{27,28}

Jails, from which most individuals return rapidly to the community following arrest or a brief sentence, provide an excellent opportunity to engage heroin-addicted inmates with opioid detoxification or maintenance, with referral to continued treatment in the community. In Baltimore, clinicians and correctional officials, foundations, and researchers have worked closely for the past five years to initiate a jail-based methadone program, based on the successful model at Rikers Island in New York City.²⁹ The design of this program would permit continued methadone treatment for individuals arrested while enrolled in methadone treatment, humane detoxification with methadone (or buprenorphine) detoxification for individuals withdrawing from heroin subsequent to arrest, and engagement of new patients in OAT. Methadone treatment was incorporated into the new Baltimore corrections contract last year, but has not yet been initiated at this writing.

Prisons, where individuals generally serve one year or longer, provide an opportunity to offer OAT for those inmates who use heroin despite being incarcerated or to initiate OAT prior to release to prevent relapse. A study in Baltimore with OAT (with LAAM) found that individuals initiated on medication prior to release were nine times more likely to enroll in treatment upon release than in-

FROM CORRECTIONS TO THE COMMUNITY

The Discharge Planning office of the Rhode Island Department of Corrections collaborates with planners from several community organizations (e.g., Family Life Center, Urban League of Rhode Island, Cranston Community Action Program, Fellowship Health Resources, The Miriam Hospital) to link offenders to community-based services. Spectrum Health Systems provides substance abuse treatment (residential and day programs) for incarcerated individuals, as well as, reintegration services. The Department of Corrections recently began a pilot assessment program for offenders leaving on parole. The pilot will assist about 50 offenders who are seeking substance abuse treatment to determine the optimal treatment. [<http://www.doc.ri.gov/index.php>]

The Miriam Hospital administers **Project Managing Opiate Dependency (Project MOD)**, a service funded by Substance Abuse and Mental Health Services Administration/Center for Substance Abuse Treatment. Project MOD links recently released, opiate-addicted ex-offenders to community methadone treatment. Project staff screen inmates referred by discharge planners to assess appropriateness for methadone maintenance. For eligible individuals, Project MOD makes all the logistical arrangements to enter community treatment (making appointments, transportation, identification, etc.) and provides financial assistance to pay for treatment for 24 weeks. In just over four years Project MOD has linked over 400 people to community treatment.

Another Miriam Hospital program is **Rhode Island Offers Methadone to Ex-Offenders (ROMEIO)**, a National Institute of Drug Abuse randomized controlled trial to examine the effects of initiating methadone treatment prior to release from incarceration on entry into community methadone treatment. As with Project MOD, ROMEIO participants receive financial assistance for community methadone treatment for 24 weeks and assistance with logistical arrangements. Additionally, a limited number of ROMEIO participants initiate methadone treatment one month prior to release from incarceration. Recruitment for ROMEIO began in January 2007.

dividuals who received a referral for treatment without initiating medication.^{30,31} These authors conducted a randomized clinical trial of methadone in a Baltimore prison to compare outcomes of individuals started on methadone prior to release *v.* immediately upon release *v.* counseling only, and an open label study of pre-release buprenorphine treatment in a prison in Puerto Rico.

Inmates face the daunting task of assimilating back into the community. Physical and mental health, substance abuse, education, employment, and housing issues can stymie community reintegration. Fragmented service systems make reintegration more difficult.³¹ In addition, the transition from a relatively controlled environment in the correctional facility to a lower level of supervision or complete freedom on the outside can exacerbate stress and anxiety for many inmates.³² Homelessness and social instability contribute to high-risk behaviors in this population.⁴² In this context, it is especially important to provide effective

drug addiction treatment services when indicated in order to increase the odds that inmates, once released, do not relapse to compulsive drug use.

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CME Background Information

This CME activity is sponsored by The Warren Alpert Medical School of Brown University.

Target Audience: This enduring material is designed for physicians licensed in Rhode Island.

Educational Objectives:

1. Readers will describe recent research in opioid addiction and incarceration.
2. Readers will know the responses to heroin overdose in the Northeast.
3. Readers will know the use of buprenorphine in the community setting for HIV+ persons.
4. Readers will describe the working of Drug Court in Rhode Island.
5. Readers will know the Family Court's response to parental substance abuse.

Needs Assessment/How was the need for this CME Journal determined?

Most people incarcerated in the correctional system return to the community. Many people incarcerated have opioid addictions. Opioid agonist therapy has been shown to have long-term benefits, marked by reductions in mortality, in illegal drug use, in criminal activity, and in unemployment. This issue seeks to educate clinicians in the community about the needs of their opioid-addicted patients, to alert them to community resources, the possibility of office-based treatment, and treatment options.

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OPIOID IN CORRECTIONS: CME QUESTIONS

Please circle the single correct answer for each of the questions below:

1. What has been the primary policy of the United States toward substance use and addiction for more than two decades?
 - a. Publicly funded substance use treatment
 - b. Illicit drug use is a crime
 - c. Addiction is a treatable disease
 - d. Treatment on demand for offenders with substance addiction
2. Which of the following statements about incarceration in the United States is true?
 - a. Increases in incarceration over the last two decades are primarily due to increased homicide rates
 - b. The RI Department of Corrections follows the national trend of record-high incarcerations
 - c. Incarceration, as a policy response to the epidemic of addiction, has resulted in less drug use and less drug-related crime
 - d. Afghanistan has the highest rates of per capita incarceration in the world
3. Which of the following statements about addiction to opiates is false?
 - a. Opioid addiction is a chronic, relapsing disease
 - b. Opioid addiction is an acute condition and curable with short-term treatment
 - c. Sustained use of heroin causes molecular and neurochemical changes in the brain
 - d. There are several treatment options for heroin addiction, the most researched is opioid replacement therapy
4. What role does opioid agonist therapy play in the management of heroin addiction?
 - a. Blocks the euphoric effects of opiates
 - b. Prevents pains of withdrawal
 - c. Eliminates or reduces cravings
 - d. All of the above
5. In addition to reducing drug use, other positive effects of opioid agonist therapy are:
 - a. reduces drug-related criminal behavior
 - b. decreases HIV and hepatitis risk behaviors
 - c. decreases morbidity and mortality associated with overdose
 - d. All of the above
6. Which of the following statements about buprenorphine and methadone is false?
 - a. Both are opioid replacement therapies
 - b. Both are full agonists, and are ideal for control of chronic severe pain
 - c. Daily dosing of methadone is required and alternate day dosing of buprenorphine is possible
 - d. Buprenorphine may be prescribed by a primary care physician for addiction to opiates and methadone is administered in opioid treatment programs for addiction to opiates
7. All of the following statements about buprenorphine/naloxone co-formulation therapy in a primary care setting are true EXCEPT?
 - a. Pain management is sometimes a challenge because opioid analgesics are not an effective option for patients on Suboxone
 - b. Patients in a primary care setting are engaged in medical care and ancillary services and avoid the stigma and inconvenience of methadone clinics
 - c. Primary care offices generally have addiction specialists on staff
 - d. Suboxone is expensive and often out of reach for uninsured or unemployed individuals
8. The following statements about buprenorphine/naloxone combination therapy are true EXCEPT:
 - a. The addition of naloxone deters misuse of the preparation by injection
 - b. Naloxone is an opioid antagonist that temporarily reverses the effects of opiates in the system and causes symptoms of withdrawal
 - c. The co-formulation therapy is primarily marketed as Suboxone
 - d. Combination therapy of buprenorphine and naloxone can be initiated safely and comfortably when a patient has used opiates within the last 6 hours.
9. Which of the following statements about opioid overdose is true?
 - a. Opioid overdose can be safely reversed by administering naloxone either nasally or by intramuscular injection
 - b. Most opioid overdoses are fatal
 - c. Bystanders of an opioid overdose rarely intervene
 - d. It is generally necessary to administer several doses of naloxone before it begins to reverse the symptoms of opioid overdose
10. Individuals addicted to heroin are at particular risk of opioid overdose in all of the following situations EXCEPT:
 - a. Re-initiating heroin use after abstinence (i.e. due to incarceration)
 - b. Using benzodiazepines, alcohol or morphine in addition to heroin
 - c. Snorting heroin (as opposed to other routes of administration)
 - d. Using heroin "cut" with fentanyl
11. Providing a smooth transition for offenders with heroin addiction to community substance use treatment upon re-entry is beneficial for all but one of the following reasons:
 - a. Helps prevent opioid overdose
 - b. Helps stabilize an often chaotic transition
 - c. Helps decrease the possibility of substance use relapse
 - d. Helps prevent cardiovascular disease
 - e. Helps prevent behaviors that are high risk for transmission of bloodborne pathogens
12. Which of the following statements about Adult Drug Court are true?
 - a. There are over 100 drug courts operational in the United States, including three in Rhode Island
 - b. Benefits of adult drug courts are reduced recidivism, savings of tax dollars in comparison to incarceration, and increased retention in substance use treatment
 - c. The primary diagnosis for entry in Adult Drug Court in Rhode Island is schizophrenia.
 - d. Rhode Island Adult Drug Court currently has sufficient funding to support everyone residing at the Rhode Island Department of Corrections with heroin addiction.
13. The purpose of the Family Treatment Drug Court is to:
 - a. Strengthen the family unit.
 - b. enhance parental capacity to meet the health and developmental needs of their children.
 - c. Expedite permanency for children in state care
 - d. All of the above
14. A two year study of the Family Treatment Drug Court revealed which of the following to be true:
 - a. Time to first reunification for families participating in Family Treatment Drug Court was considerably shorter than for families involved with the regular dependency/neglect/abuse court calendar
 - b. Early reunification was not maintained
 - c. The two comparison groups were dissimilar with regard to primary drug of choice, total number of children, etc.
 - d. the implications of the findings is that no impact was made on permanency of placement



The Use of Palliative and Hospice Care in the Nursing Home Setting

Ramona L. Rhodes, MD, MPH

CASE STUDY

Mrs. H. is a 94 year old woman with a past medical history of dementia, dysphagia and congestive heart failure. She is a nursing home resident who has lived in the facility for the past 6 years. Over the course of the last six months, the nursing home staff has noted that her oral intake has decreased; she often pockets her food and refuses her medications. She has lost 10 pounds in the past three months. The nursing staff has also noticed that her functional status has deteriorated significantly—she is now dependent for all **activities of daily living (ADL)**. Despite being evaluated by speech therapy and being placed on the appropriate diet, she was recently hospitalized for aspiration pneumonia. Though aggressive measures have been taken to prevent skin breakdown, she has a Stage III pressure ulcer on her coccyx. Her speech has become garbled and unintelligible. When the nursing home staff attempts to provide care, Mrs. H. moans and resists. Her daughter, who is her Durable Power of Attorney for Health Care, says, “My mother would not want to suffer; she would want to be comfortable. What can I do to respect her wishes?”

The function of the nursing home as a long-term care facility continues to evolve. The nursing home remains a place where some older persons come to reside; however, it is increasingly common for patients to come for rehabilitation from injury or acute illness. Still others come for wound care and specialized treatments that include long-term intravenous antibiotic therapy. As the function of the nursing home has become diverse, an important factor has come to light – a growing number of older persons are spending their last days in nursing homes. In fact, nationally, more than 20% of deaths occurred in nursing homes, and in Rhode Island, the percentage of patients who died in nursing homes increased from 20% in 1989 to 35% in 2001.^{1,2} Given that the nursing home is increasingly becoming the site of death for our nation's elderly, the utilization of palliative care in the nursing home setting should be addressed.

Several studies suggest that nursing homes residents who are nearing the end of life have unmet needs with regard to pain, dyspnea, depressed mood, and anxiety,^{2,3} and other studies have noted unmet needs of dying patients for emotional and spiritual support.^{4,5} Bereaved family members have continually expressed concern about not being informed of their loved one's condition, about nursing home staffing levels, and about the provision of spiritual support; family members have also reported pain control for residents as a top priority.^{6,7}

Hospice and palliative care services have been found to improve the quality of care that patients and their families receive at the end of life. Terminally ill cancer patients on hospice have ex-

pressed more satisfaction with their care than patients who did not use hospice services; and hospice patients' familial caregivers have shown somewhat more satisfaction and less anxiety than did caregivers of non-hospice patients.⁸ Family members of patients receiving hospice services have been found to be more satisfied with the overall quality of care their loved ones received. This improvement in quality extends to nursing home residents as well. Miller et al. found that nursing home residents receiving hospice care in the last 48 hours of life were more likely to have their symptoms adequately addressed.⁹ Additionally, studies have shown that residents on hospice are more likely to receive opioids for their moderate to severe pain than non-hospice residents. Hospice residents are twice as likely to receive regular treatment for daily pain than non-hospice residents.^{10,11} Family members have been found to believe that nursing home hospice services improve quality of care for symptoms, reduce hospitalizations, and add value and services for dying nursing home residents.¹²

There are several barriers to hospice utilization in the long-term care setting. Low reimbursement^{13,14} and nursing home administrators' attitudes toward hospice may influence its availability in nursing homes.¹⁵ Lack of knowledge among physicians, staff, and families; staff shortages and turnover; and difficulties in determining prognosis have also been cited as obstacles.¹⁶ For these reasons, educational interventions are being developed to increase physician and staff awareness of hospice as an option for end of life care;¹⁷ furthermore, disease-guidelines aid physicians in determining whether residents are appropriate for hospice services.^{18,19}

Now let's turn our attention back to Mrs. H., our 94 year old nursing home resident with severe dementia. Mrs. H. has multiple factors that make her eligible for hospice services: the progression of her dementia, significant decline in function, and recent hospitalization for pneumonia.²⁰ Upon further discussion with her daughter, hospice was presented as an option. Mrs. H. was subsequently enrolled in hospice services, and the nursing home and hospice staff provided the patient and her family with care that was consistent with her wishes. Mrs. H. subsequently died a “good death,” and bereavement and spiritual support were provided to her family well after the death. Mrs. H. is just one example of how hospice services can improve the quality of the dying experience for patients and their families. Continued education, collaboration, and eradication of barriers will continue to improve the care nursing home residents and their families receive at the end of life.

RESOURCES:

1. The National Hospice and Palliative Care Organization: <http://www.nhpco.org>
2. Hospice and Palliative Care Training for Physicians: The UNIPAC Book Series: http://www.liebertpub.com/publication.aspx?pub_id=119
3. Facts on Dying: Policy Relevant Data on Care at the End of Life: <http://www.chcr.brown.edu/dying/factsondying.htm>
4. The End of Life/Palliative Care Education Resource Center: <http://www.eperc.mcw.edu/>

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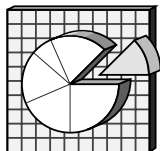
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Drug Intoxication Deaths Involving Methadone, 2004–2005

Wendy Verhoek-Oftedahl, PhD, Tucker Bittel, Michael K. Kim, Edward F. Donnelly, RN, MPH, and Thomas P. Gilson, MD, FCAP

Methadone has been shown to be an effective intervention for treating heroin addiction and lowering the risk of heroin-induced overdose deaths. In recent years increases in its use for pain management and its use in combination with illicit and prescription drugs have been associated with drug intoxication deaths.^{1,2} This analysis presents recent data on methadone-related overdose deaths in **Rhode Island (RI)**.

METHODS

Data presented here were abstracted from medical examiner records at the **RI Office of State Medical Examiners (OSME)**. All drug intoxication deaths occurring in RI are confirmed by state medical examiners through autopsy and toxicology testing. A toxicology screen is performed on body fluids with subsequent more comprehensive and confirmatory testing. The screen tests for the presence of amphetamines, alcohol, antidepressants, cocaine, marijuana, opiates, and selected other substances.

Prior to May 2006 the OSME routinely classified drug intoxication deaths as being of undetermined manner unless there was definitive evidence to justify another classification. In keeping with current forensic practice in most jurisdictions, this convention was supplanted in May 2006 with a protocol to designate overdose deaths lacking evidence or suggestion of intent as accidental.

All 2004 and 2005 deaths with a manner of undetermined intent were abstracted and electronically entered into the RI component of the **National Violent Death Reporting System (NVDRS)**, a project sponsored by the **Centers for Disease Control and Prevention (CDC)** to collect standardized information on violent deaths (homicide, suicide, manner undetermined, unintentional firearm) in 17 States across the nation. Detailed information including decedent demographics, autopsy and toxicology results, and life circumstances are computerized from medical examiner and hospital records, death certificates and police reports. Cases are identified by daily review of entries in the Medical Examiner Log. Information on accidental drug intoxication cases that were not included in the NVDRS system have been abstracted from hard copy death certificates and recorded in a supplemental database.

Final toxicology is still pending on some 2006 deaths; therefore, 2004 and 2005 are the only complete years of data available. Data on drug intoxication deaths with manner of undetermined and accident were combined for this analysis. Data on the source of methadone and blood level of methadone require further refinement and, therefore, are not presented here.

RESULTS

A total of 280 drug intoxication deaths occurred in RI during the two-year period 2004–2005. Of these 44 involved methadone as a contributing cause of death. Of the 112 drug intoxication deaths that occurred in 2004, 15 (13.4%) involved methadone while 29 of the 168 drug intoxication deaths (17.3%) that occurred in 2005 involved methadone as a cause.

Over half of decedents (59.1%) with methadone as a contributing cause were male. The majority of decedents (81.8%) were white, non-Hispanic; 11.4% were Hispanic and 6.8% were non-Hispanic persons of races other than white. Almost half of decedents (47.7%) were never married (including single, not otherwise specified), 27.3% were married, 15.9% were divorced, and 6.8% were widowed. The age distribution differed somewhat for males and females. (Figure 1) While overall 52.3% of decedents were age 40–49 years, a higher proportion of males (61.5%) than females (38.9%) were in this age group.

Of the 44 methadone-related deaths, 12 (27.3%) involved methadone alone as a cause of death, 20 (45.5%) involved methadone and one other drug, and 12 (27.3%) involved methadone in combination with two or more drugs. (Figure 2)

Of the 32 deaths with methadone in combination with other drugs as the contributing cause, 19 deaths (59.4%) involved cocaine, four (12.5%) involved cocaine with other opiates, and four (12.5%) involved other opiates. The five deaths that did not involve cocaine and/or other opiates involved one or more prescription drugs.

Blood alcohol assays detected the presence of alcohol for 13 (29.5%) decedents. However, of the 12 decedents with methadone alone as the contributing cause of death, only one (8.3%) tested positively for the presence of alcohol.

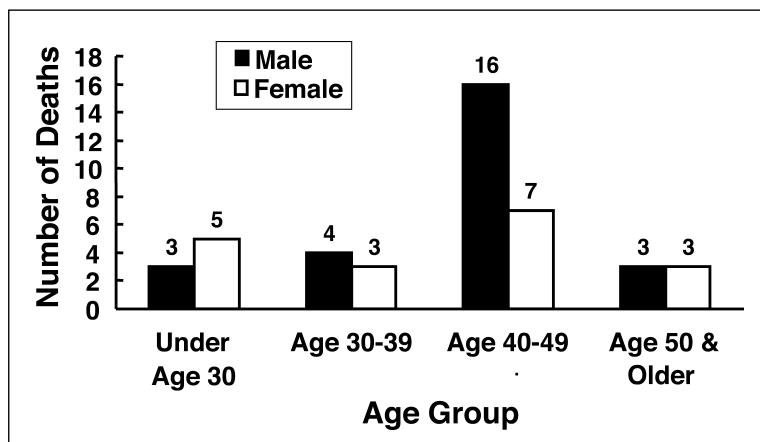


Figure 1. Methadone-Related Overdose Deaths, by Age Group and Sex, Rhode Island, 2004–2005.

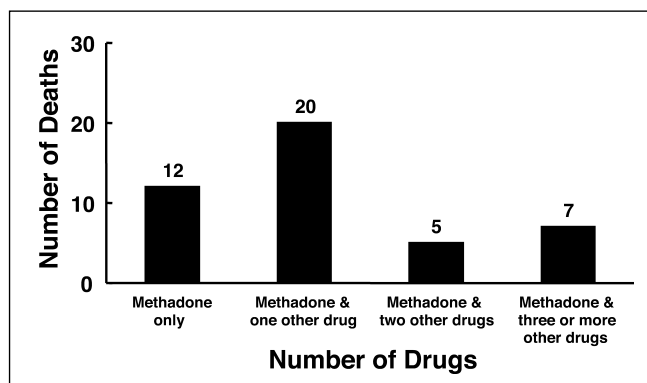


Figure 2. Methadone-Related Overdose Deaths, by Number of Contributing Drugs, Rhode Island, 2004-2005.

– Comment –

This is an alarming report. Recent changes in classification of overdose deaths, as described in the report, will enhance our understanding of this trend and efforts to prevent further deaths. It is unlikely that this recent change has led to increased reporting of overdose. We need additional details to clarify preventive interventions; e.g., were the decedents enrolled in methadone maintenance programs? Did a physician prescribe the methadone? Did the decedents obtain the drug illegally? What were the circumstances surrounding the deaths?

Opiates are often involved in overdose (see overdose article in this journal); mixing alcohol and other drugs increases the risk. Methadone is a long-acting opiate agonist. The long half life and slow onset of action can lead people to take additional or excessive doses, as well as to supplement with other drugs and alcohol.

There is an important distinction between the use of methadone prescribed by a physician for pain and methadone dispensed to treat addiction in a strict federally regulated program. The latter have consistently been shown to protect against overdose death.

Nationally, there has been a trend toward prescribing methadone for pain, and this has unfortunately been associated with increasing reports of methadone-associated deaths. The recent media publicity implicating methadone in the deaths of Anna Nicole Smith and her son have increased concern about the dangers of methadone. It is important to reduce the risks of overdose through education of both physicians and patients, and at the same time champion the life-saving benefits of methadone maintenance programs.

– Josiah D. Rich, MD, MPH, and
Michelle McKenzie, MPH

DISCUSSION

From 2004 to 2005 the number of drug intoxication deaths in RI associated with methadone nearly doubled, from 15 to 29. To date, 30 deaths in 2006 have been associated with methadone. Methadone-associated deaths are also reported to be increasing nationally.³ Research indicates that the increase may largely be due to the use of methadone for pain management.^{1,2} Methadone has a short-term analgesic effect but a long plasma half-life, which can expose patients who use frequent prescribed doses to toxic levels.²

It is possible that decedents with methadone as the only contributing cause of death also had additional drugs in their systems that were not among those for which toxicology testing was performed. Use of methadone in conjunction with such drugs may increase the risk of adverse reactions including death. There is no indication that methadone used as prescribed for substance abuse treatment increases mortality.

The marked increase in the number of methadone-associated deaths in RI from 2004 to 2005 warrants further study. Examination of the source of methadone, reason for use and level of methadone detected is needed to further characterize these deaths and to inform prevention recommendations.

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Book Review

Post Mortem. Solving History's Great Medical Mysteries

by Philip A. Mackowiak, MD

The American College of Physicians; 1st edition (May 1, 2007)

Dr. Mackowiak is Professor and Vice-Chairman of the Department of Medicine at the University of Maryland School of Medicine and Chief of the Medical Service of the Baltimore VA Medical Center. An authority on infectious diseases and fevers, his interest in the history of human ailments inspired the development of a series of clinico-pathologic conferences on the deaths of famous historical figures. This book includes twelve of those stories. Each chapter investigates the individual's terminal illness using the model of the CPC and explores not only the life and medical history of the 'patient' and his or her family, but also the historical context of the illness and the pathobiology of the various candidate conditions forming the differential diagnosis.

Subjects come from eras beginning with ancient Egypt, ranging through classical and medieval times, and ending with figures from the nineteenth and twentieth centuries. Somewhere in the middle, for example, is the biblical King Herod the Great, whose political and military triumphs become context for the murderous paranoia and physical dissolution that marked the final phases of his life. Dr. Mackowiak develops a rich selection of diagnostic hypotheses and advances his final choice, which I shall not reveal. For Herod and the other cases from ancient and medieval times there are obviously no hospital records, lab reports or final judgments from the autopsy room. But for Beethoven, Dr. Mackowiak has included the autopsy report of March 27, 1827, and, thanks to Booker T. Washington's granddaughter, we have the record of the hospital admission that occurred shortly before his death.

The pleasure of reading this book is heightened by the numerous nuggets in the notes at the end of each chapter. Thus we learn, for example, that between 1545 and 1548 close to 80%, or between five and fifteen million, of the indigenous peoples of Mexico were killed by a disease called "huey cocolitzli" (chapter

2); that Alexander the Great's corpse was hijacked as it was being transported to Macedonia and rested in a glass sarcophagus in Alexandria for five and a half centuries (chapter 3); that John Hunter may have contracted gonorrhea and syphilis by inoculating himself with pus from a patient suffering from both diseases (chapter 8); and that among the treatments recommended by Benjamin Rush for a fit of drunkenness is a severe whipping, which would effect a displacement of blood from the brain to the other parts of the body (chapter 10).

Dr. Mackowiak's book is written in a lively, readable style, filled with erudite digressions on subjects that arise in the course of a particular investigation. Its readers should by all means include medical students, especially beginning ones, who will get a good lesson in what can be relevant in a medical history. My one piece of advice to readers would be to attempt only one case at a sitting and take time to savor the details.

James T. McIlwain, MD, is Professor of Medical Science Emeritus, The Warren Alpert Medical School of Brown University.

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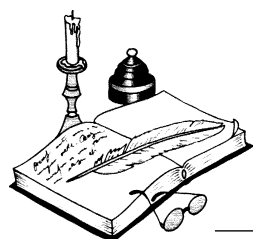
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Physician's Lexicon

The Morbid Influence of the Prefix

Three prefixes {mal- [Latin], dys- [Greek] and a- [Greek]} have largely monopolized the nomenclature of abnormal clinical states. There are other somber prefixes {such as *ab-* [Latin] or *hypo-* [Greek]}, but these three, like Macbeth's witches, seem to prophesy more dire misfortune either by declaring them bad [eg, dystrophy and malabsorption] or by noting the absence of a critical function or structure through the use of the privative prefix, *a-* [eg, asthenia, agenesis, apnea, ametropia, achondroplasia and anergy.]

The privative prefixes [*a-*, *an-*] are widely used in clinical neurology [eg, aphasia, amentia, agnosia, alexia, apraxia, anosmia, asterixis and even astasia-abasia]. But since English is an amalgamation of many languages, the privative *a-* can lead to some etymological confusion. Consider the word asteroid [*aster*-oid, mean-

ing star-like]. Someone unfamiliar with the word, however, might interpret the word as *a*-steroid [meaning without steroids].

Astasia, meaning unsteadiness in walking, incorporates the Greek root, *statos*, meaning steadfastness, and in Latin, *status*, meaning position or condition. The English word, apostasy, meaning a departure from one's faith or to revolt, uses the same root with the Greek prefix, *apo-*, meaning away from [as in apomorphine]. A congenital anomaly of peripheral blood vessels, called telangiectasia, has within it the same root but with three preceding modifying syllables: *tel-*, denoting far away or peripheral; *angio-* denoting blood vessel, and *ecto-* meaning external, expanded or dilated [as in the English words, ectoderm or ecstasy.] Ectopia, means a displaced or-

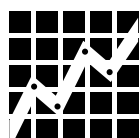
gan or tissue [such as an ectopic pregnancy] also employs the root, *statos*, as do words such as statute and biostatistics.

The privative prefixes also appear prominently in the terminology of developmental disorders.

Anomaly, meaning deviation from the normal or literally, from the Greek, without equal, has defined many of the structural hereditary disorders.

Atresia, from a Greek root meaning to pierce or perforate; and with the privative *a-*, the word denotes an imperforate structure, such as an anal atresia, generally congenital. Aplasia, meaning the absence [usually congenital] of some organ or tissue, and is derived from a Greek root, *plastos*, meaning forming, as in words such as plasticity and aplastic anemia.

— STANLEY M. ARONSON, MD



RHODE ISLAND DEPARTMENT OF HEALTH
DAVID GIFFORD, MD, MPH
DIRECTOR OF HEALTH

VITAL STATISTICS

EDITED BY COLLEEN FONTANA, STATE REGISTRAR

Rhode Island Monthly Vital Statistics Report Provisional Occurrence Data from the Division of Vital Records

Underlying Cause of Death	Reporting Period			
	May 2006	12 Months Ending with May 2006		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	240	2,743	256.4	3978.5
Malignant Neoplasms	212	2,315	216.4	6,311.5**
Cerebrovascular Diseases	28	445	41.6	650.0
Injuries (Accidents/Suicide/Homicide)	26	429	40.1	6,567.5
COPD	38	488	45.6	365.0

Vital Events	Reporting Period		
	November 2006	12 Months Ending with November 2006	
	Number	Number	Rates
Live Births	920	13,104	12.2*
Deaths	802	9,899	9.3*
Infant Deaths	(4)	(85)	6.5#
Neonatal Deaths	(3)	(69)	5.3#
Marriages	387	6,944	6.5*
Divorces	298	3,138	2.9*
Induced Terminations	306	4,688	357.8#
Spontaneous Fetal Deaths	75	898	68.5#
Under 20 weeks gestation	(71)	(838)	63.9#
20+ weeks gestation	(4)	(60)	4.6#

(a) Cause of death statistics were derived from the underlying cause of death reported by physicians on death certificates.

(b) Rates per 100,000 estimated population of 1,069,725

(c) Years of Potential Life Lost (YPLL)

Note: Totals represent vital events which occurred in Rhode Island for the reporting periods listed above. Monthly provisional totals should be analyzed with caution because the numbers may be small and subject to seasonal variation.

* Rates per 1,000 estimated population

Rates per 1,000 live births

** Excludes 1 death of unknown age



MEDICAL MALPRACTICE TOPICS

INFORMATION FOR RHODE ISLAND PHYSICIANS FROM BABCOCK & HELLIWELL

IDENTITY THEFT

Physicians Should Be Especially Vigilant

John Tickner, CPCU, President, Babcock & Helliwell

A medical technician who stole patients' credit cards and charged more than \$9,000 in illegal purchases was recently sentenced to 16 months in prison, making him the first person to be criminally prosecuted for violating the privacy provisions of the Health Insurance Portability and Accountability Act (HIPAA). The fact that this conviction stemmed from an act of identity theft shows that HIPAA penalties can apply to violations of other laws, and that anyone violating the law—not just covered entities—can be prosecuted.

Taking care of security no longer means locking filing cabinets and installing a reliable burglar alarm. Protecting personal data is both a legal and a customer relationship issue. While no one can totally prevent identity theft due to the human element of this crime, there are steps that medical practices can take to minimize the risk factors.

Most cases of identity theft involve the theft of personal information by employees—"inside jobs" committed by those in positions with access to personal information retained by the practice. Some temporary workers actually seek to be hired in order to steal personal information.

Safeguarding Electronic Data

The first line of defense against identity theft is computer security. This checklist, based on information from a number of federal agencies, can help you develop secure information management practices within your practice:

- Password-protect any programs that contain staff or patient information.
- Encrypt identity information (inexpensive software programs will help you do this).
- Make it office policy to memorize passwords and to keep written reminders locked up.
- Shred or render unreadable electronic documents, data storage devices, and databases containing patient or staff information when no longer needed.
- Terminate network access when an employee leaves.
- Dispose of an old computer when upgrading or bringing in a new computer. Reformatting or deleting programs

and files may leave recoverable information on a system so always permanently erase or destroy old hard drives.

- Use caution when disposing of high-end printers, fax machines, voice-messaging systems, and answering machines, which often have internal hard drives.
- Create policies and procedures to address the use of wireless personal computers or similar devices both in and out of the practice.

Beyond the Computer

In addition to securing electronic data, here are additional suggestions on how to protect your patients and staff from identity theft:

- Run thorough background checks on any potential employees. (Federal rules require businesses to dispose of sensitive information derived from consumer reports when no longer needed.)
- Keep prescription pads in a safe place, and protect your Medicare, DEA, and employer tax numbers.
- Keep patient information safe so that it cannot be seen or taken by others. Make it available only to those "with a need to know."
- Train everyone in the office on proper procedures regarding information disclosure.
- Just as with electronic records, shred paper documents containing outdated patient or staff information.
- Ask patients to tell you if they get statements from insurers for services you did not perform.
- If you suspect that personal information may have been compromised, call your police department immediately.

John Tickner, CPCU, is president of Babcock & Helliwell, a privately held independent insurance agency established in 1892 that provides professional insurance-related services of all kinds. Babcock & Helliwell is an agency for ProMutual Group, New England's largest medical malpractice insurance provider and the second-largest provider in Rhode Island.

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NINETY YEARS AGO, MAY 1917

Franklin S. Newell, MD, Assistant Professor of Obstetrics and Gynecology, Harvard University, observed in "The Present Status of Abdominal Cæsarian Section," the increasing use, as well as mortality, of this procedure. "The time has now been reached when some operators seem to resort to it for slighter indications than they would perform a low forceps operation, exercising little or no care in the selection of proper cases, with the result that although the published statistics still show it to be a safe surgical procedure under proper conditions, the unpublished results are appallingly bad." Dr. Newell canvassed "facts" from four communities (25,000-50,000 residents, within 40 miles of Boston). In Community A, no patient was known to have recovered after the procedure; in Community B, one surgeon estimated maternal mortality at 60-75%; in Community C, people assumed the procedure to be "universally fatal;" and in Community D, the mortality was 10-20% in average cases, but in procedures for eclampsia, the mortality was over 50%.

George A. Eckert, MD, in "Rupture of the Urinary Bladder, with A Report of 2 Cases," noted that the mortality of intraperitoneal rupture treated expectantly was 88%, but for cases treated operatively was 42%.

Anthony Corvese, MD, in "Appendicitis as a Sequel of Throat Infections," concluded that the evidence from 4 of his cases "seems to be a little more than coincidence."

FIFTY YEARS AGO, MAY 1957

Charles C. Goodman, MD, discussed "The Growth and Development of the Rhode Island Mental Hygiene Service." Dr. Goodman was the Chief of Clinical Psychiatry. The Hygiene Service began in 1922 after a Mental Hygiene Survey identified the need. In 1923 the newly formed Service hired a psychologist, in charge of examining people living in institutions, people in court cases, and "atypical children." In 1929 the Service "imported" a psychiatrist from the correctional institutions. In 1930, a Mental Guidance Clinic was established.

Helena H. Shea, MA, and Laurence A. Senseman, MD, contributed "Progress and Future Plans of the State Division of Alcoholism." The Division was established within the state Department of Social Welfare in 1952. At the time of publication, the Division operated a Clinic at 99 Doyle Avenue, offering care for 9 "bed patients" in its "dry-out" section. During the 3-day "dry-out," patients received: "adrenal cortical extract, solution of glucose/saline, suitable vitamin preparations, especially B complex and C, thorazine and antabuse."

TWENTY-FIVE YEARS AGO, MAY 1982

In "Progress in Neurology," Jeffrey Austerlitz, MD, and L.R. Jenkyn, MD, contributed "Computerized Tomographic Diagnosis of Subarachnoid Hemorrhage and its Complications." They advised, "The CT obtained within 48 hours will be positive in at least 83% of patients with SAH."

Peter B. Smith, MD, and Don B. Singer, MD, discussed "Erythroblastosis in a First Born Infant," in "Clinical Pathological Conference." The newborn, born after 35 weeks gestation, weighed 2445 grams. The birth was the first for the 19 year-old mother (blood group A, RH negative). At 1 minute the Apgar was 3, at 10 minutes it was 4. The newborn was intubated, put in a ventilator, and transfused.

Frank Thacker, MSW, John Fulton, PhD, Fran Yapchaian, MS, William Flynn, MSW, Bernard Beaudreau, MCP, Barbara Sylvester, BSN, Balbina Young discussed the "South Providence Needs Health Assessment." For instance, in this neighborhood of 10,000 residents, 14% of newborns weighed 2500 grams or less (Rhode Island statistic: 7%); 161 residents per 1000,000 had syphilis (Rhode Island: 15); 65 people per 100,000 died of cirrhosis (Rhode Island: 18); 68 people per 100,000 were discharged from the hospital with fractures (Rhode Island: 40)

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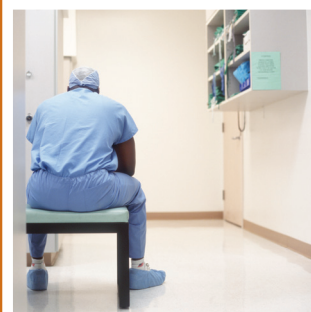
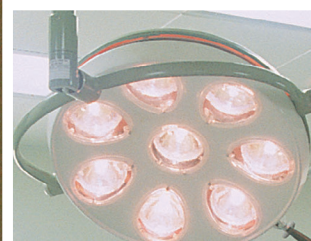
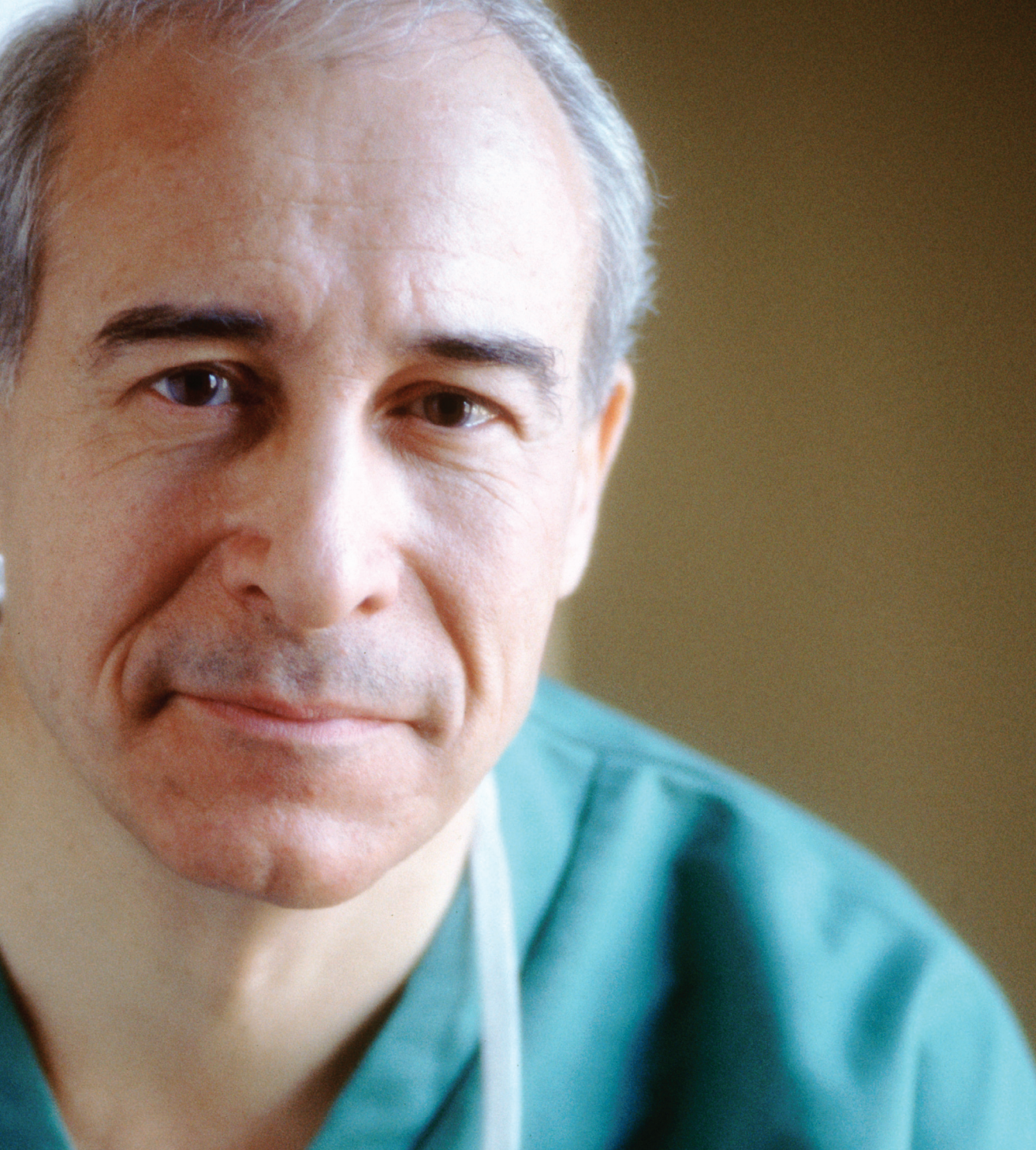
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