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Editorial

Editorial: 2nd Special Issue on behavior change, health, and health disparities

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ABSTRACT

This Special Issue of *Preventive Medicine (PM)* is the 2nd that we have organized on behavior change, health, and health disparities. This is a topic of fundamental importance to improving population health in the U.S. and other industrialized countries that are trying to more effectively manage chronic health conditions. There is broad scientific consensus that personal behavior patterns such as cigarette smoking, other substance abuse, and physical inactivity/obesity are among the most important modifiable causes of chronic disease and its adverse impacts on population health. As such behavior change needs to be a key component of improving population health. There is also broad agreement that while these problems extend across socioeconomic strata, they are overrepresented among more economically disadvantaged populations and contribute directly to the growing problem of health disparities. Hence, behavior change represents an essential step in curtailing that unsettling problem as well. In this 2nd Special Issue, we devote considerable space to the current U.S. prescription opioid addiction epidemic, a crisis that was not addressed in the prior Special Issue. We also continue to devote attention to the two largest contributors to preventable disease and premature death, cigarette smoking and physical inactivity/obesity as well as risks of co-occurrence of these unhealthy behavior patterns. Across each of these topics we included contributions from highly accomplished policy makers and scientists to acquaint readers with recent accomplishments as well as remaining knowledge gaps and challenges to effectively managing these important chronic health problems.

Introduction

This Special Issue of *Preventive Medicine (PM)* is the 2nd in a series that focuses on behavior change, health, and health disparities. The first Special Issue appeared in November 2014 (http://www.sciencedirect.com/science/journal/00917435/68/supp/C). Each of the contributors to these Special Issues is an accomplished contributor to the general topic area of behavior and health. Contributors for these Special Issues are selected from among participants in the Annual Conference on Behavior Change, Health, and Health Disparities that is organized by the Vermont Center on Behavior and Health, a National Institutes of Health (NIH) and Food and Drug Administration (FDA) supported research center located at the University of Vermont (http://www.uvm.edu/medicine/behaviorandhealth/). Each contribution undergoes thorough peer-review overseen by the Editor-in-Chief in coordination with the Guest Editor. Below I comment briefly on the rationale for organizing these annual conferences and associated publications as well each of the excellent individual contributions to this 2nd Special Issue.

Behavior change, health, and health disparities

The U.S. and other industrialized countries are in the process of adapting their health care systems to accommodate the increasing impact of chronic health conditions. As was discussed in the Introduction to the prior Special Issue (Higgins, 2014), these health systems evolved largely to manage infectious disease and acute illnesses. While those earlier foci remain important, the mission has had to broaden considerably to accommodate the growing influence of chronic health conditions, especially those where personal behavior is a proximal cause. This broadening of aims is illustrated well by the NIH's newly established Science of Behavior Change initiative (https://commonfund.nih.gov/behaviorchange/index), which identifies behavior change as an institutes-wide priority. This growing recognition of the scope of the adverse impact of behavior on health is also reflected in passage of the Family Smoking Prevention and Tobacco Control Act (https://www.govtrack.us/congress/bills/111/hr1256), which for the first time gives the U.S. FDA the power to regulate tobacco manufacturers (Family Smoking Prevention and Tobacco Control Act, 2009). While there has been tremendous progress in reducing cigarette smoking, it remains the single most preventable cause of chronic disease and premature death in the U.S. and other developed countries (Henningfield, 2014). Cigarette

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smoking is responsible for almost five hundred thousand premature deaths annually in the U.S. and five million globally. It is also a problem that is becoming entrenched within more socioeconomically disadvantaged populations and a substantive contributor to health disparities (e.g., Chilcoat, 2009; Higgins and Chilcoat, 2009).

The problem of physical inactivity and obesity is a more recent epidemic that is also having substantial adverse impacts on population health in the U.S. and internationally, with estimates indicating that it contributes to approximately three hundred thousand premature deaths annually in the U.S. and three million globally (Finkelstein et al., 2009; Trogdon et al., 2008). This problem too is coming to be overrepresented among more socioeconomically disadvantaged populations, especially women (Vurbic et al., 2015–in this issue).

A final example is the growing problem of prescription drug abuse in the U.S. and internationally (Kuehn, 2007). In the U.S., abuse of prescription opioid analgesics has reached epidemic proportions, with almost two million individuals meeting diagnostic criteria for opioid analgesic abuse/dependence and rates of overdose death exceeding rates seen with illicit drugs (Compton et al., 2015–in this issue). Prescription opioid addiction has come to represent a more substantial problem in the U.S. than globally, although it is certainly an area of concern in many developed countries (Fischer et al., 2014). As with tobacco use and obesity, the overrepresentation of prescription opioid addiction in socioeconomically disadvantaged populations is less discussed but a problem nevertheless. Disadvantaged populations are more likely to be prescribed opioid analgesics, to be prescribed them at higher doses and for longer time-periods, and are more likely to experience an overdose death (U.S. Department of Health and Services, 2013).

This Special Issue includes contributions that address tobacco use, obesity, and prescription opioid addiction. However, because the first Special Issue devoted considerable space to the topic of cigarette smoking and other tobacco use, some space to obesity and related problems, and none to the U.S. prescription opioid addiction epidemic, we made the latter a primary focus of the conference and this 2nd Special Issue, while continuing to include contributions on obesity and tobacco.

Prescription opioid addiction

The contributions on the prescription opioid addiction epidemic begin with a commentary from Dr. Wilson Compton and colleagues (Compton et al., 2015–in this issue). In his role as Deputy Director of the NIH's National Institute on Drug Abuse, Dr. Compton is directly or indirectly involved in many of the federal efforts underway to curtail this U.S. epidemic. The Compton et al. commentary provides important insights into the conditions that led to this epidemic, while also detailing important federal initiatives that have been implemented to curtail it and reduce adverse impacts; their table outlining evidence-based interventions is especially helpful for those seeking practical information.

To illustrate efforts occurring at the state level, we focus on efforts in Vermont. That choice was driven in part by convenience as the conference from which the contributions to this Special Issue were invited was held in Vermont, but also for more substantive reasons. Vermont has been impacted by this opioid addiction epidemic so substantially that the governor, Peter Shumlin, devoted his entire 2014 State of the State Address to this problem (Vermont Public Radio, http://digital.vpr.net/post/full-audio-and-text-gov-shumlins-2014-state-state-address). That bold action was part of a state-wide effort to confront the epidemic, an effort that contains elements with the potential to be helpful to other states confronting this same challenge. This is especially the case for rural states that often lack the infrastructure for managing opioid addiction, which heretofore had been mostly an urban problem. The commentary from Simpatico (2015–in this issue), Chief Medical Officer responsible for coordinating Vermont's Medicaid and other public health coverage programs, thoughtfully details the basic structure of Vermont's effort (Patient-Centered Primary Care Collaborative, https://www.pcpcc.org/initiative/vermont-hub-and-spokes-health-homes).

We invited two contributions on the important topic of managing opioid-dependent pregnant women and their drug-exposed neonates. The contribution of Jones and Fielder (2015–in this issue) provides detailed current and historical information on the neonatal abstinence syndrome, including the need for proper screening, assessment and clinical management, and capacity to manage complications related to co-morbid substance abuse (cocaine, tobacco) common in treating this population. The contribution from Meyer and Phillips (2015–in this issue), obstetricians at the University of Vermont Medical Center, details how Vermont surmounted the many challenges involved in developing the professional expertise and infrastructure to effectively treat opioid-dependent mothers and neonates. Their report too is crafted with the goal of being helpful to other states currently grappling with similar challenges.

The contribution of Terplan et al. (2015–in this issue) draws attention to the point that most pregnancies among opioid-dependent women are unplanned. They review the literature on contraceptive use among opioid-dependent women with an eye towards reducing unplanned pregnancies by assisting opioid-dependent women in obtaining and using medically recommended contraceptives, especially long acting, reversible, contraceptives. This is a topic that has been grossly understudied among women with substance use disorders and has the potential for enormous positive impacts (Heil et al., 2011).

Another area where there is a striking need for improvements is the provision of medication-assisted treatment for opioid addiction. The contribution from Dr Sigmon (2015–in this issue) reviews the small but impressive literature on interim medication treatment as a method for reducing the adverse impacts of inadequate treatment services for opioid addiction. This strategy has tremendous potential for improving care in rural states and other regions where services are inadequate to meet demand leaving addicted patients on waitlists for months or even years increasing their risk for infectious diseases, overdose, and death (Sigmon, 2014; Sigmon et al., 2015).

One of the most unsettling aspects of this opioid addiction epidemic is the striking increase in overdose deaths to a level where overdose is now the leading cause of death by injury in the U.S. (Trust for America's Health and Robert Wood Johnson Foundation, 2015). The commentary by Walley (2015–in this issue) makes a compelling case for extending knowledge acquired in successful efforts to curtail the HIV epidemic to this more recent epidemic, especially with regard to borrowing the multi-faceted harm-reduction model that was so important to curtailing HIV infection among injection drug abusers. Walley identifies eight specific strategies helpful in curtailing HIV infection that have potential close parallels that could be adapted in efforts to curtail opioid addiction. They each merit consideration, but one in particular, the naloxone rescue kit, is gaining considerable recognition. Naloxone injection has been approved by FDA and used for more than 40 years by emergency medical services personnel to reverse opioid overdose (U.S. Substance Abuse and Mental Health Services Administration, https://store.samhsa.gov/shin/content/SMA14-4742/Toolkit_FirstResponders.pdf). This effort looks to make this same medication available to opioid users, their social networks and families, and across criminal justice, public safety, public health, and health care systems. As Walley notes, overdoses are estimated to cost approximately $37, 724/incident (2009 dollars) in direct medical costs and lost productivity. When considered against the cost of overdose, there is considerable room for a policy of broad distribution of naloxone rescue kits to be cost-effective.

In a well-crafted accompanying essay, Coe and Walsh (2015–in this issue) make a sound argument for extending use of naloxone rescue kits into routine care for chronic pain patients. They also provide important details on development of more user-friendly devices for administering naloxone, associated costs, and FDA approval status. Chronic pain patients are at risk for overdose, with risk increasing as an orderly function of the opioid dose prescribed (Dunn et al., 2010). Considering the efficacy of naloxone and rapid development of user-friendly devices, their recommendation seems prudent.