Improving Health Literacy With Inmates

Health literacy is defined as the capacity to obtain, process, communicate and understand basic health information and services needed to make appropriate health decisions.

By David Young and Clarann Weinert

t is well-documented that inmates have a disproportionately higher incidence of chronic health conditions and poorer health outcomes compared to the general population.¹ It is also well-documented that poor health literacy is associated with frequent hospitalizations, high health care costs, poor health outcomes and premature deaths.² In 1999, the American Medical Association identified poor health literacy as a stronger predictor of a person's health outcome than age, income, employment status, education level and race.³ Poor health literacy is estimated to cost the nation between \$106 billion and \$238 billion per year.⁴

Health literacy is defined as the capacity to obtain, process, communicate and understand basic health information and services needed to make appropriate health decisions.⁵ In 2010, improving health literacy became a public health goal of the federal government as part of the following three national initiatives: the Patient Protection and Affordable Care Act (PPACA);⁶ the National Action Plan to Improve Health Literacy;⁷ and *Healthy People 2020* — a national initiative of health promotion and disease prevention launched by the U.S. surgeon general in 1979, setting national goals and objectives which are updated every 10 years.⁸

Inmate health care costs are primary drivers of state and local corrections budgets, with 9 to 30 percent of corrections costs associated with health care.⁹ Since launching PPACA in March 2010, considerable attention has been focused on how health reform will impact correctional health care costs and uninsured offenders upon release into their communities.¹⁰ Improving health literacy is a critical element of PPACA and is designed to help reduce health care costs, improve health outcomes, reduce health disparities and achieve health equity.¹¹ According to the act, incarcerated individuals are not eligible to enroll in the new health insurance marketplaces while incarcerated; however, there are no restrictions on educating inmates on the health enrollment process and health insurance marketplaces during incarceration. Implementation of a health education program for inmates with a focus on health literacy would serve to aid them in the selection of appropriate health insurance coverage upon release. Accordingly, jails and prisons are strategically positioned to become actively engaged in implementing the health reform law and improving public health.

Project Design and Methods

The Improving Health Literacy with Inmates project was designed to improve health literacy, self-care management and health care decision-making by working with inmates in a county jail. The project was designed, developed and implemented as a communitybased collaborative effort working with inmates housed at the Gallatin County Detention Center (GCDC) in Bozeman, Mont. The following institutions, organizations and partners participated in the project: GCDC; Gallatin Mental Health Center; Montana State University (MSU) Extension Service; MSU College of Nursing; MSU Library; MSU Department of Sociology and Anthropology; Bozeman Public Library; Healthy Roads Media; and the National Network of Libraries of Medicine, Pacific Northwest Region. The project was funded for 11 months (Oct. 1, 2011-Aug. 31, 2012).

The target population for the project was adult male inmates housed in the GCDC for more than 21 days. The participants were recruited for this project by a jail staff member who agreed to participate in the project. The recruitment approach involved announcing

		~
Title	Description	Source and Availability
My Health	A low-tech personal health record that can	College of Nursing, Montana State University
Companion ©	be used to enhance self-care management	http://www.msucommunityresources.org/MHC/default.cfm.
	and maintain good health	
Staying Healthy – An	A guide to enhance understanding of	Florida Literacy Coalition, Florida's Adult and Family Literacy Resource Center
English Learner's	health information about how to take care	http://www.floridaliteracy.org/FLCHLP/files/SE%20Files/CompleteSEbook.pdf.
Guide to Health Care	of your health consisting of six chapters on	
and Healthy Living	important health topics	
Coping with Stress – A	A guide to help individuals understand	Florida Literacy Coalition, Florida's Adult and Family Literacy Resource Center
Special Addition to	different stressors and good ways and bad	http://www.floridaliteracy.org/books/stressse.pdf.
Staving Healthy	ways to cope with stress	
,,		
Talking with Your	A guide designed to improve	National Institute on Aging, National Institutes of Health (NIH)
Doctor: A Guide for	communication between patients and their	http://www.nia.nih.gov/health/publication/talking-your-doctor-guide-older-people.
Older People	health care provider	
	-	
Seeking Drug Abuse	A brief guide containing five questions to	National Institute on Drug Abuse, National Institutes of Health (NIH)
Treatment: Know	ask when searching for a drug abuse	http://www.drugabuse.gov/publications/seeking-drug-abuse-treatment.
What to Ask	treatment program	
The List – Community	A brochure listing community resources of	Gallatin County Reentry Task Force, Gallatin County Criminal Justice Coordinating
Resources for Gallatin	potential interest to inmates as they are	Council
County	released into the community	http://www.gallatin.mt.gov/Public Documents/gallatincomt detention/the list0513a.pdf.

and explaining the project to inmates with an emphasis on the intended outcome of improved health literacy, health care decision-making, self-care management and better health outcomes. Prospective inmates were informed that their participation in the project would include filling out pre- and post-questionnaires. It was estimated that the questionnaires would take approximately 30 minutes to complete. Inmates were informed that participation or nonparticipation would not impact or affect any aspect of their case, court appearance,

adjudication and/or classification status in the GCDC. Before officially enrolling in the project, prospective inmates were presented with a consent form approved by the MSU institutional review board. Ample time was provided for inmates to read the consent form and ask questions before making a decision to sign. Those who signed were enrolled in the project and provided with a pre-survey questionnaire to complete.

The project was designed to reach 70 inmates during a period of five months, working with seven inmates at a time (as only seven computers were available in the computer lab in the GCDC). The project involved a threefold intervention: distribution of six health information handouts (see Table 1); viewing 12 computer-based health education modules; and searching for health information on a specially-designed "Internet-in-abox offline system." Since inmates in the GCDC were not allowed access to the Internet, it was necessary to custom design and build

a health-based "Internet-like" offline system with a series of navigation links packaged onto a CD that would mimic searching for health information on the Internet. On day one of each start-up session, six health information handouts were distributed to participants for them to keep as their personal property for reading and review during the two-week period between preand post-questionnaires.



Table 2. Demographics

Variable	Range	Mean (sd)	
Age	19-69	35.38 (12.7)	
Marital status			Married=5 (12.8%)
			Divorced=16 (41%)
			Widowed=1 (2.6%)
			Never married=15 (38.5%)
			Common law=2 (5.1%)
Education	8-16	12.03 (2.14)	
Employment			Full-time=24 (61.5%)
			Part-time=2 (5.1%)
			Unemployed=12 (30.8%)
			Retired=1 (2.6%)
			Bozeman=14 (35.9%)
Reside			Gallatin County=15 (38.5%)
			Montana (other than Gallatin County or
			Bozeman)=4 (10.2%)
			Outside Montana= 6(15.4%)

The 12 computer-based health education modules consisted of PowerPoint presentations and corresponding health information videos to enhance each topic. The modules addressed the following topics:

- Computer basics;
- What is health literacy?;
- My Health Companion[©] a 19-page personal health record guide suitable for a three-ring notebook, available to the public on the MSU website (http://www.msucommunityresources. org/MHC/default.cfm);
- Advocacy and self-care;
- Prevention and screening;
- Sexually transmitted and infectious diseases;
- Tobacco epidemic the term "tobacco epidemic" was coined by the U.S. government in the 2010 U.S. Department of Health and Human Services tobacco control strategic action plan;
- Mental illness;
- The science of addiction;
- Nutrition;
- Oral health; and
- Library resources.

Because inmates were not allowed Internet access in the GCDC, a major part of this project involved designing and constructing a health-based "Internet-ina-box offline system." The content of the "Internet-ina-box offline system" included access to Medline Plus basic information; the National Library of Medicine; Plain Language Medical Dictionary widget; the University of Michigan Taubman Health Sciences Library; "SuperTracker;" the U.S. Department of Agriculture; and selected videos on relevant health topics from Healthy Roads Media. The 12 health education modules and the "Internet-in-a-box offline system" were placed on a single CD and loaded onto the computers in the lab at the GCDC.

Education sessions were held in the computer lab and were designed to be self-paced, with instruction

provided as needed by a jail staff person and a MSU nursing student. Participants proceeded from one topic or segment of the education program to the next on the computers based on individual learning levels, computer skills and response speed. A total of five education sessions were held Mondays through Fridays, averaging 2.5 hours per day, for a total of approximately 12 contact hours per participant per week to complete the project. Each computer station had a set of headphones allowing participants to listen to videos on specific health topics contained on the CD without disturbing other class participants.

The evaluation process was designed to assess whether the project enhanced the capacity of inmates to understand, locate, evaluate, communicate and use basic health information - and to determine whether it motivated them to take more responsibility for their own health and self-care management. The questionnaires were comprised of scales and questions, primarily developed by the co-authors, to assess the participant's level of knowledge and understanding of health literacy issues that were addressed in modules of the health education program. These included areas such as reliability of Internet health information, overthe-counter medications, sexually-transmitted diseases and smoking. There were 11 multiple-choice questions that touched upon areas related to routine health care, medications, correctly reading the label on a medicine bottle and understanding the nutritional facts on a food package label. Basic demographic information - age, education, employment and place of residence - were collected in the post-survey questionnaire. One week after completion of the five education sessions, which allowed ample time to review what was covered in the sessions as well as the handout materials, inmates were asked to fill out a postsurvey questionnaire. The concluding section of the questionnaire provided the participant the opportunity to share the strengths/weaknesses of the program and to offer suggestions.

Results

Inmate participation was projected to be about 70 inmates during a five-month period. However, due to a number of unplanned and unexpected circumstances, only 39 completed the 12 hours of education sessions and both pre- and post-questionnaires. In spite of careful scheduling of the education sessions around meals and lockdowns each day, there were a number of unexpected and unscheduled interruptions that prevented inmates from continuing with the sessions. The most frequent interruptions were: meeting with family members/friends; meeting with an attorney or public defender; meeting with mental health/addiction counselors: being transferred to another jail or prison: being reclassified and transferred to another pod without access to computers; being locked down in a high-security pod because of behavioral issues; being reclassified and assigned to work detail that prevented their attendance at class sessions; and being discharged from GCDC, either via bail or on one's own recognizance. Compounding this scheduling challenge was the fact that it was difficult to project the length of an inmate's stay in GCDC after being selected for the program. A minimum of a 14-day stay in GCDC was required to allow time for completion of 12 hours of education sessions and completion of the pre- and post-questionnaires. The average length of stay in the GCDC is 10.18 days; however, a majority of inmates (77 percent) have a length of stay from one week to six months, which was the target population for this project.

Of the 39 participants completing the program, 13 percent were married, 41 percent were divorced and 39 percent had never been married (see Table 2). At the time of arrest, 62 percent were employed full-time, 5 percent part-time, 31 percent were unemployed and 2 percent were retired. Evaluation of pre- and post-questionnaires revealed that participants had significant increases in the following: basic computer skills; confidence in seeking health care and understanding the health care system; knowledge of the information provided in the 12 health education modules; knowledge of information provided in *My Health Companion*©; and knowledge of information provided in *Staying Healthy: An English Learner's Guide to Health Care and Healthy Living*.

Ratings of each of the 12 health education modules regarding how likely participants planned to use the information were positive. "The List," which is composite information on community resources in Gallatin County, was rated most strongly of the six handout materials. "The List" contains more than 55 community and faith-based resources and services of interest to exoffenders. Participants' responses when asked what they thought were strengths of the project included: "good, strong information for the future," "computer class was excellent," "liked the videos" and "it was all great." Weaknesses cited included: "need more worksheets during class," "videos could be more informative," "no access to the Internet," "class time too long" and "need more time to watch videos." Other comments from participants expressed that they had a fun time, enjoyed the program and that it was very informative. Some participants suggested that there should be a test after each module and one final at the end of class. Also, there were suggestions for an outline with a few quick quizzes after each topic.

Discussion and Conclusion

Participants in this study showed significant improvement in all six parameters related to computer skills and understanding of health conditions between pre- and post-questionnaires. This finding is most encouraging with respect to equipping and empowering inmates with knowledge, skills and abilities to better understand the U.S. health care delivery system and advancing health care reform. The 12 health education modules with accompanying videos on specific health topics were well-received with positive results. Participants indicated a high likelihood that the information gained would be used in the future. Of the six hard copy handouts, "The List" was rated as the most likely one to be used.

The threefold intervention design of the project — to improve the health literacy, self-care management skills and personal health care decision-making of participating inmates proved to be a useful approach with inmates.

The threefold intervention design of the project to improve the health literacy, self-care management skills and personal health care decision-making of participating inmates — proved to be a useful approach with inmates. With the 12 health education modules and the "Internet-in-a-box offline system" on a single CD, the project has the potential for replication in other detention centers and facilities without Internet access. The project can be replicated easily with minimal funding since the six hard-copy handouts are readily available online. For replication, the following key elements are recommended:

- A one-page fact sheet about the program should be provided to eligible inmates at the time of booking into a facility;
- One staff person in the facility should be designated as the contact person for the program to answer questions, administer the program, and

explain and oversee filling out and collection of the consent forms and pre- and post-survey questionnaires;

- The one designated staff person should work with the administration of the facility to select participants for the program who are expected to have a length of stay of more than 21 days;
- Inmates discharged from the facility into the community should be provided with a list of services and resources in the community that will help facilitate reentry, reduce recidivism and increase public safety; and
- If there is no access to the Internet in a facility, consideration should be given to using the "Internet-in-a-box offline system" developed through this project.

Improving health literacy is a top national initiative because it is fundamental to improving health outcomes, reducing health care costs, achieving health equity and reducing health disparities. Improving health literacy with inmates is important because of the high incidence of chronic health conditions, substance abuse, mental illness, sexually transmitted diseases, poor health management and unhealthy lifestyles - all of which have significant public health implications as they return to families and communities.¹² Since the majority of inmates released into our communities are uninsured and most have a continuing need for health services, being proficient in health literacy will aid them in securing health insurance coverage under the health reform law. Although jails and prisons are not designed to be health education institutions, they are in a strategic location to improve the health of our nation by educating and assimilating a needy population into the new health care delivery system.

ENDNOTES

¹ Binswanger, I.A., P.M. Krueger and J.F. Steiner. 2009. Prevalence of chronic medical conditions among jail and prison inmates in the USA compared to the general population. *Journal of Epidemiology and Community Health*, 63(11):912-919. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/19648129.

² Berkman, N.D., S.L. Sheridan, K.E. Donahue, D.J. Halpern and K.Crotty. 2011. Low health literacy and health outcomes: An updated systematic review. *Annals of Internal Medicine*, 155(2):97-107. Retrieved from http://annals.org/article.aspx? articleid=747040&atab=10.

³ Weiss, B. 2007. *Health literacy and patient safety: Help patients understand*. Chicago: American Medical Association. Retrieved from http://www.ama-assn.org/ama1/pub/upload/mm/367/ healthlitclinicians.pdf.

⁴ Vernon, J.A., A. Trujillo, S. Rosenbaum and B. DeBuono. 2007. *Low health literacy: Implications for national health policy*. Retrieved from http://sphhs.gwu.edu/departments/health policy/CHPR/downloads/LowHealthLiteracyReport10_4_07.pdf. ⁵ Koh, H.K, C. Brach, L.M. Harris and M.L. Parchman. 2013. A proposed 'health literate care model' would constitute a systems approach to improving patients' engagement in care. *Health Affairs*, 32(2):357-367.

⁶ Affordable Care Act, Public Law 111-148. 2010. Retrieved from http://www.healthcare.gov/law/full/index.html.

⁷ U.S. Department of Health and Human Services. 2010. *National action plan to improve health literacy*. Washington, D.C.: Author.

⁸ U.S. Department of Health and Human Services. 2010. *Healthy People 2020*. Washington, D.C.: Author. Retrieved from http://www.healthypeople.gov/2020/default.aspx.

⁹ Schaenman, P., E. Davies, R. Jordan and R. Chakraborty. 2013. *Opportunities for cost savings in corrections without sacrificing service quality: Inmate health care*. Washington, D.C.: The Urban Institute. Retrieved from http://www.urban.org/Uploaded PDF/412754-Inmate-Health-Care.pdf.

¹⁰ National Association of Counties. 2012. *County jails and the Affordable Care Act: Enrolling eligible individuals in health coverage*. Washington, D.C.: Author. Retrieved from http://nicic.gov/Library/026253.

¹¹ Somers, S.A. and R. Mahadevan. 2010. *Health literacy implications of the Affordable Care Act*. Hamilton, N.J.:Center for Health Care Strategies. Retrieved from http://www.iom.edu/~/ media/Files/Activity%20Files/PublicHealth/HealthLiteracy/ Commissioned%20Papers/Health%20Literacy%20Implications %20of%20Health%20Care%20Reform.pdf.

¹² Smith, A. 2013. *Health and incarceration: A workshop summary*. Washington, D.C.: The National Academies Press. Retrieved from http://www.nap.edu/catalog.php?record_id =18372.

David Young, DVM, MS, Ph.D., CRC, is professor and community resource specialist, Montana State University, and a volunteer chaplain at the Gallatin County Detention Center. Clarann Weinert, SC, Ph.D., RN, FAAN, is professor emerita, College of Nursing, Montana State University. This project would not have been possible without the assistance, promotion, facilitation and support of the following individuals: Jackie Keery-Lemon, BS, MPA, program director, Gallatin County Detention Center, Bozeman, Mont.; Ian Frye, BA, BS, M.Ed., AmeriCorps VISTA member, Gallatin County Detention Center, Bozeman, Mont.; Nic Richardson, IT technician, Extension Service, Montana State University; and Gail Kouame, MLIS, public health outreach coordinator, National Network of Libraries of Medicine (NN/LM), Pacific Northwest Region (PNR), in Seattle. This project was funded in part by the NN/LM, PNR.