Journal of the American Pharmacists Association 57 (2017) 395–401

Contents lists available at ScienceDirect

Journal of the American Pharmacists Association

journal homepage: www.japha.org

RESEARCH NOTES

Pharmacist contributions to the ten essential services of public health in three National Association of Boards of Pharmacy regions

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ARTICLE INFO

Article history:
Received 16 August 2016
Accepted 10 February 2017

ABSTRACT

Background: Pharmacists have contributed to improved population health through the delivery of public health services, but their contributions often go unrecognized within the larger health care system.

Objectives: To determine pharmacist perceptions of their contributions to the 10 essential services of public health and to compare those contributions among pharmacists in Iowa, North Dakota, and Manitoba.

Methods: Licensed pharmacists in Iowa, North Dakota, and Manitoba were sent an online survey of their perceived level of achievement of the 10 essential services of public health.

Results: A total of 649 pharmacists completed the survey. The 3 essential services that scored the highest overall were enforce laws and regulations that protect health and ensure safety, inform and educate people about health issues, and participate in ongoing training beyond continuing education requirements. Contributions of pharmacists to the 10 essential services of public health were previously evaluated by frequency of citation in the published literature. There was relative agreement between what was reported in the literature and what was determined by survey. One exception was "enforce laws and regulations that protect health and ensure safety," which was rarely reported in the literature but was reported in the survey to be the most frequently delivered service.

Conclusion: Pharmacist contributions to improved population health should be reported with the use of the 10 essential services of public health. This will increase recognition of pharmacist contributions and better align the disciplines of pharmacy and public health. In particular, pharmacists should consider ways to increase their level of involvement in the community and in partnership with other health care professionals.

The role of public health to improve the health and well-being of a population through disease prevention and health promotion is described by the 10 essential services of public health.[1] These 10 essential services are both a directive to public health agencies regarding the work they are responsible for and a framework by which other health care organizations wishing to contribute to improved public health might organize their contributions. One way to conceptualize the contributions of pharmacy to improved population health is for the profession of pharmacy to contribute directly to these 10 essential services of public health.[2-5] Truong et al. have previously used the 10 essential services of public health as a framework by which to design health promotion programs to be delivered by pharmacists and pharmacy students.[6]

Pharmacists actively contribute to improved population health through many services, such as delivering vaccinations, conducting screenings for various acute and chronic disease states, promoting proper drug use, and serving as patient and health educators in a variety of clinical and community settings.[7-10] Until now, these contributions have not been

Disclosure: The authors declare that they have no conflicts of interest to disclose.

Funding: American Association of Colleges of Pharmacy, National Association of Boards of Pharmacy District V grant, and North Dakota Board of Pharmacy.

Previous presentation: Portions of this paper were presented at the National Association of Boards of Pharmacy District V annual conference, Lincoln, NE, August 6, 2016; and the American Public Health Association Annual Conference, Denver, CO, November 3, 2016.

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http://dx.doi.org/10.1016/j.japh.2017.02.021
1544-3191/

extensively reported to the wider health care community as distinct public health contributions, thus understating the importance of pharmacy in the health care system.[11-13]

The research reported in the present paper surveyed practicing pharmacists in Iowa, North Dakota, and Manitoba—regions of the National Association of Boards of Pharmacy (NABP) District V. The purpose of this survey was to determine by self-report the extent of pharmacist involvement in delivering the 10 essential services of public health. This paper also provides guidance for pharmacists to identify opportunities for increasing contribution to the 10 essential services.

Methods

Study population

Iowa, North Dakota, and Manitoba had estimated 2015 populations of 3,123,899, 756,927, and 1,293,378, respectively. North Dakota has more than 50% (27 of 53) of its counties categorized by the U.S. Health Resources and Services Administration as "frontier counties" (6 persons or fewer per square mile). Rural pharmacists (nonmetropolitan) were defined in this study as those working in areas with populations of less than 50,000.

The 3 regions selected for this study have distinct pharmacy environments. North Dakota has a state law that requires each community pharmacy to have an ND-licensed pharmacist owning 51% of the pharmacy assets, which has restricted the number of chain stores and is an advantage to independent community pharmacy owners.[9,14] Iowa is a state open to chain pharmacies. Manitoba is a province in Canada, with a health care system that is primarily public funded. Given this unique situation, there is a need to collect pharmacist workforce activities in public health as well as patient care information in Iowa, North Dakota, and Manitoba to compare pharmacists' contributions in these 3 different contexts.

Survey design

The present survey was designed with the North Dakota Pharmaceutical Care Survey as a template and with the use of standard survey research criteria.[14-16] The survey collected data from practicing pharmacists regarding their perception of their contributions to the 10 essential services of public health and barriers to delivering public health services.

Pharmacists were surveyed regarding the extent to which they were contributing to the 10 essential services of public health. The Public Health Essential Service Delivery items were created by the research team, in consultation with the Assessment, Development, Assurance Pharmacist's Tool, which is used by pharmacists to design health promotion activities.[6] The items included:

- Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
- Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
- Inform, educate, and empower people about health issues.
- Research new insights and innovative solutions to health problems.
- Diagnose and investigate health problems and health hazards in the community.
- Monitor health status to identify and solve community health problems.
- Develop policies and plans that support individual and community health efforts.
- Mobilize community partnerships and actions to identify and solve health problems.
- Enforce laws and regulations that protect health and ensure safety.
- Assure competent public and personal health care workforce.

Response options used a Likert-type scale from 0 to 5, representing "never" to "always."

Survey administration

The study protocol and procedures were reviewed and approved by the ND State University Institutional Review Board. For data analysis purposes, the respondents were not to be identified by the researchers in the analysis or reports, but respondents wishing to participate in the raffle for an iPad Mini could opt in by providing their e-mail address.

This study was performed among pharmacists in District V of the NABP and the American Association of Colleges of Pharmacy who met eligibility criteria. Administrators from the Boards of Pharmacy in Iowa and Manitoba distributed the survey link to all of their licensed pharmacists. The ND Board of Pharmacy provided a list of e-mail addresses, which the research team used to distribute the survey link. The investigators used a modified total design method which has been used successfully in mail surveys to obtain a sound response rate.[17]

In September 2015, the survey was e-mailed to all pharmacists registered and living in Iowa, North Dakota, and Manitoba. The survey was redistributed by e-mail 2 more times after 2 and 4 weeks. Respondents had an unlimited amount of time to complete the survey, but could only respond 1 time. Returned e-mails were deleted from the list for ensuing distributions.

Data analysis

Qualtrics (Provo, UT) was used to compile the data collected from the online survey. The survey was open during September and October 2015. The final sample analyzed was 649 individuals. Respondent characteristics and differences between the 3 respondent groups were compared with the use of the chi-square test and the analysis of variance F test, with an alpha level of 0.05 used for all tests of significance. All data were analyzed with the use of SAS version 9.4 (SAS Institute, Cary, NC).[17]

Results

Response rate was 13.9% in Iowa and 17.3% in North Dakota and could not be determined for Manitoba because of the inability to access the complete roster of Manitoba pharmacists. In all 3 regions, women made up 68% to 70% of the pharmacy workforce (Table 1). Iowa pharmacists were older on average than those in North Dakota, and Manitoba