

PROJECT FIRSTLINE: Infection prevention education for frontline healthcare workers

The COVID-19 pandemic highlighted long-standing gaps in infection prevention and control (IPC) knowledge and practice. In response, the Centers for Disease Control and Prevention (CDC) established Project Firstline to provide innovative IPC education for frontline U.S. healthcare providers (HCP).¹ The Project Firstline approach departs from traditional IPC language of standard and transmission-based precautions and focuses on developing a foundational understanding of how to recognize risk of infectious disease spread. The Oregon Health Authority (OHA) has partnered with CDC to promote Project Firstline materials and connect with Oregon’s local public health authorities (LPHAs) and other healthcare partners.²

LEARNING NEEDS ASSESSMENT

Introduction and Methods

OHA’s Healthcare-Associated Infections (HAI) Program staff conducted a learning needs assessment (LNA) to (1) analyze IPC educational needs and (2) to understand preferred methods and formats of training across Oregon HCP roles. This web-based survey was distributed via partner organizations’ email listservs and newsletters targeting HCP, and assessed respondents’ IPC knowledge and online and in-person training preferences. We collected survey responses from September to December 2021.

Results

Of 6,382 LNA responses, 4,822 (75.6%) were complete. Of these, registered nurses (RNs) were the largest group (n=2,240, 46.4%), followed by certified nursing assistants

Table. Clinical roles of respondents

CLINICAL ROLE	RESPONSES	
	FREQUENCY	PERCENT
Registered nurse (RN)	2,240	46.4
Certified nursing assistant (CNA)	432	9.0
Non-specified healthcare professional	366	7.6
Pharmacist	277	5.7
Physician (MD, DO, MBBS)	252	5.2
Licensed practical nurse (LPN)	226	4.7
Technician	204	4.2
Nurse practitioner (NP)	171	3.5
Healthcare administrator	140	2.9
Acupuncturist	83	1.7

(CNAs; n=432, 9.0%) and non-specified healthcare professionals (n=366, 7.6%; see Table). The most common primary workplaces amongst LNA respondents were acute-care hospitals (n=1,524), long-term care facilities (n=458), and other healthcare facilities (n=918).

Respondents self-reported competency in various IPC topics. We defined a “competent” respondent as one who both understands and can teach others the topic. The highest competencies were seen with hand hygiene/handwashing, source control, and personal protection equipment (PPE; Figure 1, *infra*). The lowest were respiratory protection programs (inclusive of N95 respirator fit testing). Respondents also reported low competency scores in triage practices for isolating contagious patients and environmental cleaning and disinfection.

We also evaluated which IPC topics were most requested among respondents. These were how to teach others about IPC topics, triage

and isolating contagious patients, COVID-19 infection control, and respiratory protection programs (Figure 2, *infra*).

Respondents reported that the most useful training formats for IPC education were education webinars (n=2579), emails containing IPC education (n=2579) and printed pocket cards or pamphlets (n=2,193).

Discussion

The LNA findings regarding Oregon HCP population distribution, IPC topic competency, and preferred training formats provide several key insights into IPC knowledge gaps. Not only can we prioritize HCP groups for IPC trainings based on participation in our LNA, but we can also identify potentially underrepresented HCP groups whose learning needs may need to be assessed by other means.

Depth of understanding varies by IPC topic (Figure 1, *infra*). Fit testing, triaging contagious patients, and environmental disinfection appear to be the least-understood IPC topics.

FIGURE 1. Self-assessment of understanding IPC topics

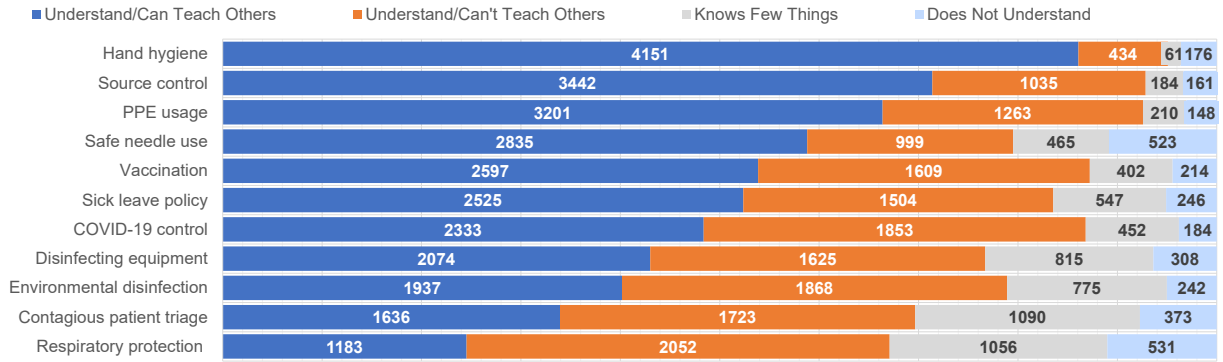
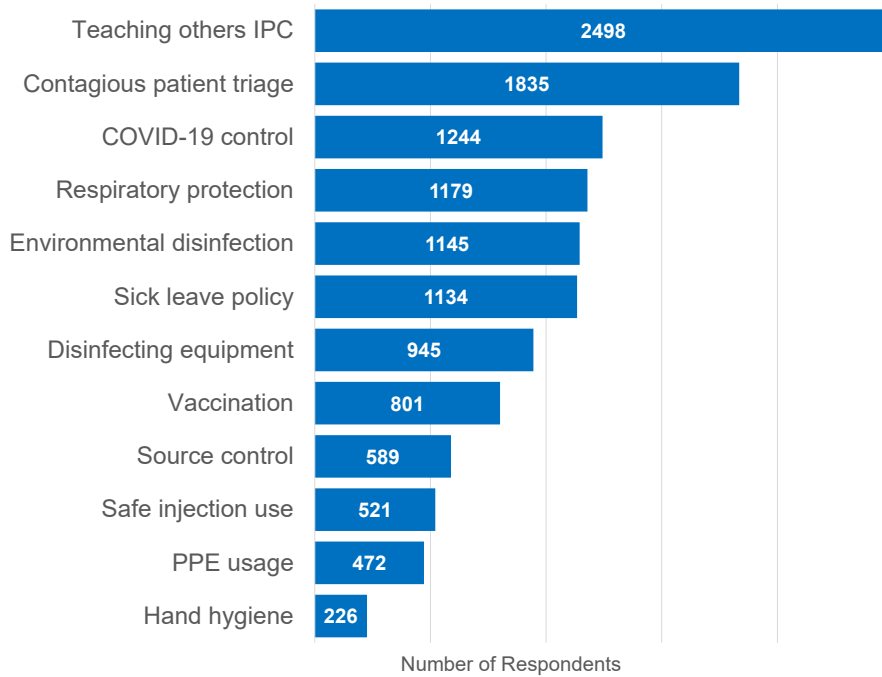


FIGURE 2. Most requested IPC topics among total population



These knowledge gaps aligned with highly requested training topics (Figure 2, *infra*). LNA data allow us to prioritize developing trainings for IPC topics that are both poorly understood and highly requested. They also allow us to maximize accessibility: we can develop trainings in webinars and emails, for which users have expressed a preference (Figure 3, *infra*). By applying findings from the LNA to IPC educational offerings, we are expanding opportunities for HCP to strengthen their IPC background across Oregon.

ONGOING PROGRAMS AND PROJECTS

As of Fall 2023, the Project Firstline team offers several concurrent IPC education projects.

Infection Prevention (IP) Champions Program

Oregon comprises 36 diverse counties; IPC resource needs vary across the state, and IPC-trained public health professionals are needed at both OHA and Oregon’s LPHAs. To increase IPC capacity and knowledge in Oregon’s LPHAs, the Project Firstline team established the IP Champions Program in May 2023. The primary goal is to build expertise and capacity by offering education and IPC resources to a designated IPC lead from each of Oregon’s LPHAs, with a focus on emerging IPC topics — ideally culminating in a Certification in Infection Control (CIC*). The Project Firstline team began providing monthly

trainings to IP Champions in June 2023, and the sessions will continue until June 2024.

Text Campaign

OHA has collaborated with Comagine Health to create the [Project Firstline text campaign](#), distributing Project Firstline material on a bi-monthly basis to subscribers.

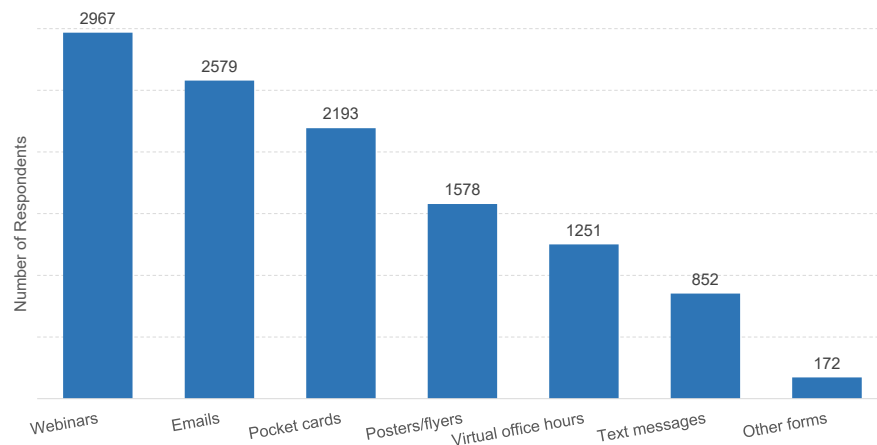
To subscribe to the text campaign, HCP text “JoinORIPC” to 50309 and will receive fast facts and timely IPC updates by phone.

Collaboration with Professional Associations

OHA has partnered with several Oregon healthcare associations, including the Oregon Medical Association (OMA), Oregon Nursing Association (ONA), the Oregon Office of Rural Health, and the Oregon Pediatrics Society (OPS). OHA is working to build partnerships with ambulatory surgical centers and geriatrics societies. These relationships create opportunities for in-person and online IPC resource distribution, including Project Firstline materials, and helps ensure healthcare resources are available to HCP across Oregon.

Through their newsletters and listservs, these partners highlight new Project Firstline resources (e.g., [infographics](#), [“micro-learns,”](#) and [YouTube videos](#)), as well as upcoming OHA offerings such as IPC training events. The Oregon Project Firstline team recently provided an IPC [“Lunch and Learn” webinar series](#) focused on isolating and containing contagious patients, identifying infectious disease reservoirs and multidrug-resistant organisms. The Project Firstline team also attends

FIGURE 3. Most useful form of IPC training among total population



outreach events in person around the region to provide information about OHA's Project Firstline offerings and promote IPC education, including at the Society for Healthcare Epidemiologists of America (SHEA) Spring 2023 conference and OPS's Annual Conference.

Want us to provide IPC resources at your upcoming event? Reach out to us at projectfirstline.oregon@odhsoha.oregon.gov.

MOVING FORWARD Community College Collaborations

With the 2023–2024 school year approaching, the Project Firstline team is connecting with Oregon's community colleges and technical programs in nursing, medical assisting and other healthcare occupations to ensure they are familiar with Project Firstline offerings. By supplying these schools and programs with updated, easy-to-use [IPC resources](#), we can help ensure that Oregon's future HCP have a solid foundation in IPC practices and are well-prepared to respond to, and prevent, infectious disease threats.

Infection Prevention Training Request Portal

Over the past few years, the Project Firstline team has delivered many IPC trainings to a wide range of HCP. Our [IP Training Request Portal](#) is currently available on the Oregon Project Firstline website and enables Oregon healthcare facilities to request trainings tailored to their audience of learners based on their current level of expertise and desired topic. We can be flexible in terms of format, location, and length of

trainings. IPC trainings requested via the portal will be coordinated by the Oregon Project Firstline Team, and will be provided by an LPHA IP Champion, a member of the OHA Project Firstline Team itself, or a member of our Project Firstline Faculty Roster, a small group of practicing subject-matter experts who have contracted with OHA to provide this education.

CONCLUSION

Project Firstline is a public health initiative seeking to lay a strong foundation in IPC education for healthcare systems nationwide. In Oregon, OHA is building county- and provider-level IPC capacity to address the ongoing threat of HAIs, which affect nearly one in 31 hospitalized patients in the United States.³ By fostering statewide partnerships, OHA is creating pathways to provide high-quality foundational IPC education, including Project Firstline resources, to Oregon's HCP, systems and educational programs. Providing IPC education that addresses identified knowledge gaps, in learner-preferred formats, that evolves to encompass emergent HAI and antimicrobial resistance threats, the OHA Project Firstline Team expects to increase the ability of Oregon's HCP and public health workforce to respond to all types of healthcare-related infectious disease threats.

FOR MORE INFORMATION

- CDC Project Firstline Website: www.cdc.gov/infectioncontrol/projectfirstline/index.html

- Oregon Project Firstline Website: www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/HAI/PREVENTION/Pages/ProjectFirstline.aspx
- Oregon Project Firstline Infection Prevention Training Request Portal: https://epiweb.oha.state.or.us/fmi/webd/PFL_requests?homeurl=https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/HAI/PREVENTION/Pages/ProjectFirstline.aspx
- With questions about Oregon Project Firstline, email ProjectFirstline.Oregon@ODHSOHA.oregon.gov

REFERENCES

1. CDC. Project Firstline (last updated: January 30, 2023). Available at: www.cdc.gov/infectioncontrol/projectfirstline/index.html. Accessed 6 Oct 2023.
2. Oregon Health Authority. Oregon Project Firstline (last updated: August 24, 2023). Available at: www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/HAI/PREVENTION/Pages/ProjectFirstline.aspx. Accessed 6 Oct 2023.
3. Magill SS, O'Leary E, Janelle SJ, et al. Changes in prevalence of health care-associated infections in U.S. hospitals. *NEJM* 2018; 379:1732–44. Doi:10.1056/NEJMoa1801550.



Providence Portland Medical Center designates this enduring material for a maximum of .5 *AMA PRA Category 1 credit™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity. Portland Providence Medical Center is accredited by the Oregon Medical Association to sponsor continuing medical education of physicians.

You can get this document in other languages, large print, braille or a format you prefer. Contact the Public Health Division at 971-673-1222. We accept all relay calls or you can dial 711. for TTY.