


# The virtual 4Ms: A novel curriculum for first year health professional students during COVID-19

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## INTRODUCTION

The COVID-19 pandemic posed significant challenges for institutions of health professional education,<sup>1-3</sup> including the Yale Schools of Medicine and Nursing, which were forced to transition in-person learning assignments to a virtual environment. Developed in 2016 as a required course for entering medical, graduate entry pre-specialty in nursing (GEPN), and physician assistant (PA) students, the Yale Interprofessional Longitudinal Clinical Experience (ILCE) rose to the challenge of innovating curriculum delivery during this time.

The learning objectives of the ILCE address interprofessional education and clinical skills (history-taking, physical examination, oral presentation, and clinical reasoning). Pre-COVID-19, the ILCE curriculum utilized in-person workshops, simulation, and clinical skills practice with patients to teach clinical and interprofessional teamwork skills to over 230 students. In 2019, the ILCE leaders recognized the need to add geriatrics competencies to the curriculum and partnered with Yale's Geriatrics Workforce Enhancement Program (GWEP) to integrate a 4Ms-based approach<sup>4</sup> to history-taking for the older adult. When COVID-19

restrictions resulted in the exclusion of first year students from both the simulation center and clinical sites, 4Ms skills practice was converted to a virtual format. We describe the development and implementation of this virtual 4Ms curriculum using volunteer older adults.

## METHODS

The goals of the virtual session were to provide students their first interviewing practice and to familiarize them with the 4Ms of the older adult history. We asked students to identify a volunteer (i.e., acquaintance, friend, or family member) aged 65 years or older who agreed to be interviewed by a first-year health professional student for approximately 30 minutes by Zoom or FaceTime. If a student was unable to identify a volunteer, ILCE faculty recruited volunteers among their family and friends. Volunteers were informed that the interview would not be recorded, and that information obtained would be de-identified. To simulate a realistic interview, we paired students with volunteers not known by them.

TABLE 1 Script and sample questions for 4Ms virtual interview

Sample introduction statement	“Hello Mr./Ms. XX, thank you so much for agreeing to answer some questions today about your health. My name is XX and I am a first-year XX student at Yale School of XX. How would you like me to address you during our time together? Before we begin, I want to remind you that this interview will last no more than 30 minutes. Please note that I am not a licensed healthcare provider nor a member of your personal healthcare team. This activity is for educational purposes only. This interview is not being recorded and none of your identifying information will be shared. Any notes I take will be destroyed. If at any time, you are uncomfortable and would like to end the interview or if there are questions you prefer not to answer, that is absolutely okay so please let me know. And once again, thank you for agreeing to help me as I begin the path of becoming a XX.”
1. What Matters Most	<p>“When you think about your health, given everything that is going on right now, if I was your provider, what would you want me to focus on for your health?”</p> <p>“What concerns you most when you think about your health and healthcare?”</p> <p>“What fears and worries do you have about your health and healthcare?”</p> <p>“What about your health is most important to you?”</p>
2. Medication	<p>“What medications do you currently take (name, dose, times per day)?”</p> <p>“What other inhalers, drops, creams or injections do you take regularly?”</p> <p>“What medications do you buy in the drug store, pharmacy or online?”</p> <p>“What herbal or vitamin products do you take regularly?”</p> <p>“Do you ever forget to take a medication, if so what do you do?”</p> <p>“Are there any of your medications that you think have bad effects for you?”</p> <p>“Does any of the medications you take get in the way of what is important to you?”</p>
3. Mentation	<p>“Have you noticed any changes to your memory, thinking, or alertness?”</p> <p>“How would you describe your mood or feelings?”</p> <p>“Are you ever affected with feelings of sadness? What helps you?”</p>
4. Mobility	<p>“How would you describe your ability to walk around?”</p> <p>“Do you have any difficulty with walking, gait, or balance?”</p> <p>“Do you use a cane or walker or other device to get around?”</p> <p>“Have you had more than 2 falls over the past year or any falls with a serious injury?”</p> <p>“What kind of exercise do you do?”</p>
Sample closing statement	“Thank you very much for allowing me to ask you these questions. Do you have any advice for me as I begin my professional career? I appreciate so much that you took the time out of your day to help me.”
Reflective questions	<p>What went well during the interview?</p> <p>What was most challenging during the interview?</p> <p>What will you do differently in future interviews?</p>

To prepare students, we created a brief introductory video on the 4Ms (<https://youtu.be/zFvWnQ4i-4>). We also provided students the Institute of Healthcare Improvement’s *Age-Friendly Health Systems: Guide to Using the 4Ms in the Care of the Older Adult*.<sup>4</sup> We asked students to dress professionally in a white coat with their ID badge visible. As this was their first practice interview, we provided them a sample introduction script, suggested questions, and closing statements (Table 1). Students informed volunteers that they were unable to provide healthcare advice. Students were encouraged to contact their faculty coach if any problems arose during the interview. Within 2 weeks of their interviews, students debriefed virtually in small groups with faculty.

To evaluate the session, an anonymous online survey was sent to all students as part of curriculum evaluation. Volunteers provided spontaneous comments to the faculty members who recruited them via email.

## RESULTS

A total of 235 first-year health professional students (101 medical, 98 GEPN and 36 PA students) participated in the session. Students recruited 102 volunteers; ILCE faculty identified 133. While no formal qualitative analysis was performed on the volunteer feedback, representative statements to ILCE leadership included:

Exercises like the one I participated in will help future medical professionals deliver services to patients that do not just address their physical issues, but also address the patient’s emotional issues.

I wanted to share my information so that others in my age group might benefit in the

future with increased quality age-related health services.

Following the session, several volunteers expressed desire to participate in future teaching opportunities.

All 235 students completed the session evaluation; 94.8% of students reported feeling very or somewhat equipped to interview older adults after the session, compared to 60.5% prior to the session. The following comments are representative of common student feedback themes:

I enjoyed starting off the interview with asking the patient their values and what was most important to them. It is important to put what matters most to a patient at the center of decision-making and all discussions.

I found this to be really helpful, especially before starting clinicals. I would love to have more experiences like this. It was great because it was virtual, so was something we could do in COVID and was great both for the volunteer and for my learning experience as well.

Although I was initially anxious for the interview, most of the anxiety went away as I started talking. I thought it was a really great way to get my toes wet in patient interviewing.

## DISCUSSION

The COVID-19 pandemic presented both challenges and opportunities for medical educators. We were able to effectively adapt a 4Ms-based interview from an in-person learning experience to a virtual one using Zoom or FaceTime to connect learners to older adult volunteers. Conducting the interviews virtually, students were still able to utilize the 4Ms framework to glean essential information that is often not taught in the traditional health history. Students recognized the older adult volunteers as teachers and acknowledged the importance of addressing the emotional concerns of patients. Volunteers expressed comfort with the virtual visit and expressed gratitude for the opportunity to influence the next generation of health

professionals. Furthermore, this learning session during COVID-19 was an unexpected means for a younger generation to connect with older adults impacted by social isolation.

Limitations of this session included students' difficulty recruiting older adult volunteers. Some older adults would not answer the phone if they did not recognize the phone number, while some volunteers were unavailable due to illness, hospital stay, or death in the family. Fortunately, the ILCE and GWEP leadership identified additional volunteers.

The 4Ms framework provided an opportunity to introduce clinical skills practice using a holistic approach to history-taking. While more detailed analysis of student feedback is needed, we anticipate that this innovative educational intervention will continue post-pandemic. Our 4Ms-based virtual interview may be adaptable to other health professional training programs.

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### CONFLICT OF INTEREST

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### AUTHOR CONTRIBUTIONS

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