

Using the Emma Stracener Case Study to Examine Technology Support Options for Caregivers of Older Adults

Overview of Teaching Strategy

This teaching strategy uses a case study approach to engage students to think through a complex situation involving an older adult who is starting to decline and a concerned family member who is becoming a caregiver. The use of technology to assist the aging adult to live safely at home, commonly referred to as aging in place, is emphasized.

The teaching strategy will assist students to experience the [core values of the National League for Nursing](#), which are caring, integrity, diversity & inclusion, and excellence. The learning activities can be used for undergraduate or graduate students, separately or together. The teaching strategy can also be used for interprofessional activities, to engage students from nursing, medicine, social work, physical therapy, and pharmacy as they brainstorm solutions and learn about, from, and with each other. The learning activities can be used in class or online.

Download All Files for This Teaching Strategy

- [Sample concept map](#)

Learning Objectives

Students will:

- Describe different technologies to improve the safety of older adults in the home setting.
- Analyze a case study for opportunities to support aging in place.
- Develop a plan for caregivers to incorporate relevant technologies to provide a safe home environment for older adults.

Learner Prework

Students should read *The Topol Review* report (2019): Preparing the healthcare workforce to deliver the digital future: An independent report on behalf of the Secretary of State for Health and Social Care. National Health Services. <https://topol.hee.nhs.uk/>

Suggested Learning Activities

This teaching strategy focuses on the caregiver and the client. It brings into focus the utility of technology to support independent living of older adults who might otherwise live in institutional settings. The teaching strategy can be completed as a whole module or broken into parts for specific courses including pharmacology, research, health care policy, and theory.

Case Study: Emma Stracener

Emma Stracener, age 40, is the only child of Ms. Amelia Arlington, who is 75 years old. Emma is married and has three children ages 5, 7, and 10. She works full time and volunteers at the elementary school her children attend. Her husband works full time and coaches the oldest child's soccer team.

Emma lives 30 minutes away from her mother and typically visits every other Tuesday evening. Ms. Arlington called Emma on the morning of August 20 to ask her to come over because she had slipped in the bathroom but was okay. Emma changed her plans for the day and arrived just before lunch. As she was preparing the noon meal, Emma noticed her mother's refrigerator had spoiled food. She also noticed clutter in many of the rooms. Emma became concerned because her mother had always kept her house tidy and clean. Emma also noticed her mother slurred some words during their conversation. She asked her mother how she was feeling. Her mother responded that her hips and back hurt from arthritis but she was taking a new medication prescribed by her primary care provider.

Emma asked to see the new medication; the label said tramadol hydrochloride (Ultram) 25 mg one tablet every 6 hours as needed. She noticed the date on the bottle was August 1, but only eight pills remained in the bottle on the day of her visit. When Emma asked her mother about the number of pills that were missing from the bottle, her mother replied, "I am taking the medication my doctor prescribed. He says it's a low dose." Emma knows her mother is acting differently than the last time she saw her and decides to take her to the primary care office for an examination and to discuss her concerns. Ms. Arlington is reluctant to go because she feels fine and doesn't want to bother anyone at the office, but Emma insists. Emma takes her mother to the primary care office after lunch.

1. Pharmacology activity

- a. Look up the medication, tramadol hydrochloride, for its purpose, side effects, and contraindications.
- b. Develop a teaching plan for individuals who are prescribed tramadol hydrochloride.
- c. Look up tramadol hydrochloride on the Beers List <https://www.pharmacist.com/beers-revised-drugs-not-use-older-adults> and then discuss the appropriateness of prescribing it for older adults.
- d. Draw a concept map showing other interrelated concepts based on the case study.

- e. Create groups of no more than six students and ask them to find one technology solution to assist in medication adherence. The group should describe the way the technology works and the pros and cons of the technology for older adults.

Emma and Ms. Arlington are sitting in the examination room when the nurse practitioner enters. She asks Ms. Arlington how she has been feeling and the reason for the visit. Ms. Arlington tells her about her hip and back pain, which were getting better with the pain medication. Then Emma tells the nurse practitioner the rest of the story...

Based on the situation, the NP understands there are multiple problems: (1) physical pain from arthritis, (2) possible cognitive impairment, (3) unintentional nonadherence to a habit-forming narcotic, and (4) high risk of fall. The NP also finds strengths in the situation, including a concerned daughter, a cooperative mother, and a willingness to seek help. The NP addresses the immediate problem, which is the tramadol hydrochloride. She develops a weaning schedule and substitutes acetaminophen for the narcotic. She asks Ms. Arlington if she would like to receive physical therapy to help the arthritis. Ms. Arlington agrees. Then the NP asks Emma if she could return next week to discuss ways Emma can help her mother with assistive technology. Emma agrees immediately.

2. Interprofessional activity

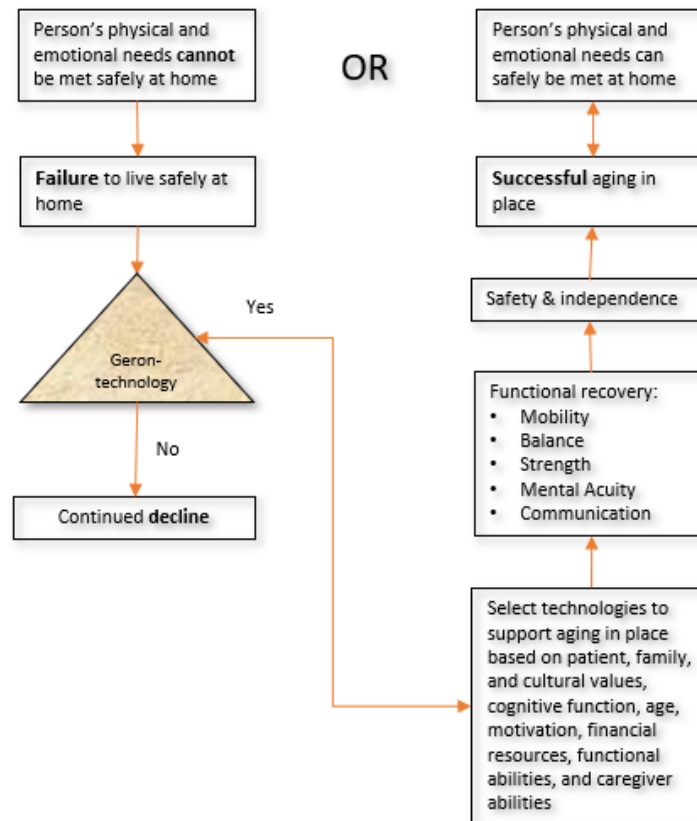
- a. Ask students to search the Internet for the latest technologies that could help older adults. Use search terms such as *aging in place*, *assistive technology*, *gerontology*, and *caregivers*. Create groups of no more than six students. Have groups work collaboratively and then report to the entire class. Ask one student to record all technologies cited by the groups and later, provide the list to the entire class.
 - Search for at least five technologies that could improve Ms. Arlington's situation.
 - Search the AARP website for "technology for seniors" that could support aging in place.
 - Brainstorm how health care professionals from different disciplines can work together to assist older adults and their caregivers.

3. Theory activity

- a. Study Figure 1 below.
- b. Think of ways this model could guide nursing practice.
 - Consider Ms. Arlington's needs and the role a nurse or nurse practitioner can have on Ms. Arlington's health.
 - What might the expected outcomes be after implementing appropriate gerontechnology?
 - What considerations should a nurse or nurse practitioner have when working with Emma, who wants to help her mother?

- Describe how to improve Ms. Arlington’s acceptance of assistive technologies.

Figure 1. Aging in Place with Gerontechnology.



Adapted with permission from Routledge, Taylor and Francis: Atiya Mahmood, Toshiko Yamamoto, Megan Lee, & Carmen Steggell (2008). Perceptions and use of gerotechnology: Implications for aging in place, *Journal of Housing for the Elderly*, 22,1-2, 104-126, doi: 10.1080/02763890802097144

Suggested Reading

Chau, D., & Osborne, T. (2018). Using technology to improve care of older adults (Critical Topics in an Aging Society). New York: NY: Springer.

Demiris, G., & Hensel, B. (2009). "Smart homes" for patients at the end of life. *Journal of Housing for the Elderly*, 23(1-2), 106-115. <https://doi.org/10.1080/02763890802665049>

Hargreaves, T., Wilson, C., & Hauxwell-Baldwin, R. (2018). Learning to live in a smart home. *Building Research & Information*, 46(1), 127-139.
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Majumder, S., Aghayi, E., Noferesti, M., Memarzadeh-Tehran, H., Mondal, T., Pang, Z., & Deen, M.J. (2017). Smart homes for elderly healthcare—recent advances and research challenges. *Sensors*, 17(11). <https://doi.org/10.3390/s17112496>

Author Information

Karen H. Frith, PhD, RN, NEA-BC, CNE
Professor and Associate Dean for Graduate Programs
The University of Alabama in Huntsville
Huntsville, AL