Feasibility and Effectiveness of a Mnemonic Approach to Teach Residents How to Assess Goals of Care

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Abstract

Background: Shared decision making is a collaborative process that allows patients, or their surrogates, and clinicians to make health care decisions together. There is an imperative to teach young physicians early in their training the importance of engaging in a shared decision-making process to define overall goals of care (GOC). The PERSON mnemonic proposes a structured format that allows providers to evaluate GOC across the spectrum of serious illnesses, outside of breaking bad news or end-of-life planning.

Objectives: This study evaluated the utility of the PERSON mnemonic in training residents to have GOC with their patients, and investigated if these skills translated to the bedside with real patient encounters.

Methods: First-year residents were divided into groups to participate in an in-depth education session. A pre-/postbaseline survey was administered immediately after the education intervention and approximately seven months later to assess retention and utility.

Results: Thirty first-year residents were eligible for this study; 30 attended the educational sessions and completed the immediate baseline pre-/postsurvey and the seven-month follow-up survey, resulting in 100% retention rate throughout study. Residents found sustained utility in the mnemonic. It was significantly successful in increasing the knowledge and confidence level in exploring GOC. Patient-centered outcomes could not be analyzed due to low response rates and limited granularity of hospital-level data.

Conclusion: The PERSON mnemonic is a feasible and useful format for teaching residents how to have a GOC discussion.

Keywords: communication; goals of care; graduate medical education; medical education; palliative; serious illness

Introduction

SHARED DECISION MAKING is a collaborative process that allows patients, or their surrogates, and clinicians to make health care decisions together, taking into account the best scientific evidence available, as well as the patient's values, goals, and preferences.¹ There is an imperative to teach physicians early in training the importance of engaging in a shared decision-making process to define overall goals of care (GOC).^{2,3} Although recommendations for patient-centered GOC communication go back as far as 1996,¹ there is no consensus on how to approach these conversations, and the majority of these conversations still occur close to end of life.⁴

The PERSON mnemonic proposes a structured stepwise format that allows providers to evaluate GOC across the

spectrum of serious illnesses and, in particular, outside of breaking bad news or end-of-life planning (Table 1, details in Appendix A1).⁵ This model functions as both an inquiry and an advocacy tool while possessing utility for assessing both implicit and explicit GOC. We are aware of only one other tool that approaches this conversation from a similar framework.⁶

Models currently exist and have been studied for "Breaking Bad News,"⁷⁻¹¹ or having GOC discussions when a patient is in the terminal stage of their disease.¹²⁻¹⁵ Education surrounding how to deliver bad news is integral to medical training; however, this skill set, in which one party is the "giver" of information and the other a "receiver," is very different from a shared decision-making process making treatment decisions that are affected by personal values, goals, and preferences. This type of bidirectional conversation is

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Accepted December 21, 2018.

TABLE 1. THE PERSON MNEMONIC IN BRIEF

Perception	...understand the patient and family perception of current health status
Explore	...the patient's life before present illness
Relate	...the patient's story to medical reality; tie medical information to the patient's world
Sources of worry	...explore the patient's fears using future-oriented statements while sharing your own fears
Outline the plan	...using simple declarative sentences, including any time-limited trials
Notify	...those who need to know

Adapted from Edmonds et al. (2014).

arguably the type that clinicians spend most of their time having, but receive the least amount of training in.

This study focused on studying the feasibility of providing resident trainees a structured framework to have these conversations with standardized patients.

Methods

Participants

The entire class of 30 first-year residents preparing to start postgraduate year one in July of 2016 were eligible and recruited to participate in the study. The Internal Medicine Graduate Medical Education department made the training a required educational activity for eligible participants. Informed consent was waived for this study.

Educational intervention

During their orientation week, all internal medicine residents received a general introduction to GOC discussions, and the difference between conducting a GOC conversation and breaking bad news as a part of their regular didactics.

During September–November of the same academic year, the intern class was divided into groups of four to five to participate in a 90-minute session, which was protected time and conducted outside of the hospital setting.

Each of these sessions was led by one of the Palliative Medicine Fellowship faculty. The education sessions were composed of a short overview of the PERSON mnemonic and the core principles of GOC discussions, introduction to the case study, and a simulated GOC discussion with two standardized patients (Appendix A2). Standardized patients are actors trained in improvisation and coached to respond differently depending on the resident's communication skills. Education sessions were replicated with the same case, facilitators, and standardized patients until all eligible residents completed the training.

During the sessions, one resident would start the encounter with the beginning of the mnemonic with opportunities for "time outs" to allow the rest of the group and the facilitator to provide constructive feedback on the resident's communication skills and help brainstorm alternative communication strategies where the resident felt stuck. The resident would then call a "time in" so that they could immediately implement the feedback by "rewinding" the simulated encounter to the "stuck-point" and using the new communication skill. This was repeated for each intern using different sections of the mnemonic so that each group, as a team, went through the entire mnemonic once, learning from each other along the

way. Once each resident had their turn, the standardized patients and facilitator provided detailed overall feedback.

Measurements and outcomes

A pre-/postbaseline survey evaluating the understanding of GOC, barriers toward having a GOC discussion and utility of the PERSON mnemonic was administered immediately after the education intervention and then a separate postintervention survey was administered approximately seven months later to assess retention and utility.

A question regarding prior structured educational experiences related to having or leading GOC discussions, to which few residents were expected to have been exposed, served as a measure of internal validity.

The primary outcome of the study was change in perceived utility of the PERSON mnemonic. This was measured by the change in the response to the following questions: "Do you feel that the PERSON mnemonic is practical and can be used in your clinical practice?"; "Did the PERSON mnemonic make sense to you," which were asked at both the baseline survey and the postintervention survey. Percentage of residents who remembered what the letters of the mnemonic stood for was assessed at the postintervention survey and represented an additional primary outcome measure. Secondary outcomes included change in resident confidence and knowledge regarding aspects of the GOC discussion, assessment of individual

TABLE 2. DEMOGRAPHICS (N=30)

Characteristic	No. (%)
Age	
20–25	0
26–30	29 (96.67)
Greater than 31	1 (3.33)
Gender	
Male	21 (70)
Female	9 (30)
Transgender	0
Medical school region	
Northeastern United States	7 (23.33)
Southern United States	11 (36.67)
Midwestern United States	4 (13.33)
Western United States	8 (26.67)
Outside the United States	0
Did medical school have palliative medicine team?	
Yes	20 (66.67)
No	7 (23.33)
Unsure	3 (10)
Participation in palliative medicine rotation in medical school	
Yes	6 (20)
No	24 (80)
Prior education regarding GOC	
Yes—formal training	6 (20)
Yes—sat in with experienced clinician	8 (26.67)
Yes—all of the above	4 (13.33)
No	12 (40)
Residency track	
Transitional resident	18 (60)
Categorical resident	12 (40)

GOC, goals of care.

TABLE 3. UTILITY OF PERSON, N (%)

No. of GOC discussions	Preintervention	Seven-month post
<5	2	17 (56.7)
5–10	2 (75.8)	9 (30.0)
10–20	7 (24.1)	3 (10.0)
>20	0	1 (3.33)
<i>Do you remember what PERSON stands for?</i>		
Yes		4 (13.3)
No		12 (40.0)
Parts of it		14 (46.7)
<i>Does the PERSON mnemonic make sense to you?</i>		
Yes	Immediate post	Seven-month post
No	29 (96.7)	28 (93.3)
	1 (3.3)	2 (6.67)
<i>Do you feel that the PERSON mnemonic is practical and can be used in your clinical practice?</i>		
Yes	Immediate post	Seven-month post
No	28 (93.3)	26 (86.67)
Unsure	2 (6.7)	4 (13.33)

aspects of the PERSON mnemonic, and impact of the educational intervention on patient-centered outcomes.

Data and analysis

Descriptive statistics were used to analyze demographic information. The Fisher exact test and chi-square test of proportions were used to compare results of the assessments. All analyses were performed using R Studio2 version 1.0.136 (RStudio Boston, MA). Data were deidentified after comple-

tion of all analyses; No identifiable participant data were shared with residents' supervisors.

Results

Of the 30 internal medicine first-year residents eligible for this study, 30 attended the educational sessions and all completed the immediate baseline pre-/postsurvey; all also completed the seven-month follow-up survey, making retention through the study 100% (Table 2).

Most interns did not have experience with palliative teams, although about half reported previous training in how to lead or participate in a GOC discussion (Table 2).

Changes in participant confidence, knowledge, and practice

The PERSON mnemonic was viewed as understandable and memorable (Table 3). Immediately after the intervention, 29 of 30 residents felt that they understood the mnemonic. This comprehension was maintained as, at the seven-month postintervention survey, 28 of 30 residents felt that the mnemonic made sense to them ($p=1$). Seven months after the intervention, 13.33% ($n=4/30$) residents remembered what each component of the mnemonic represented, whereas 40% ($n=12/30$) did not remember what the mnemonic stood for and 46.67% ($n=14/30$) remembered parts of the mnemonic but not each of the components.

Residents found utility in the mnemonic that was sustained at seven months. Immediately after the intervention, 28 of 30 residents felt that the PERSON mnemonic was practical and could be used in their clinical practice. At the seven-month postintervention survey, 26 of 30 residents felt that the mnemonic was practical and could be used in their clinical practice ($p=0.67$).

In the immediate postintervention survey, there was an increase in the knowledge in all the variables of the mnemonic with 60% of residents reporting poor-to-fair knowledge of the mnemonic as a whole before the intervention and 100% in the good/excellent portion after the intervention $p<0.01$ (Fig. 1). At seven months postintervention, residents

FIG. 1. Change in knowledge before and after intervention.

FIG. 2. Change in confidence before and after intervention.

indicated a sustained knowledge in all components of the mnemonic; interestingly, more residents reported knowledge of the perception aspect of the mnemonic than in the immediate postintervention survey ($p < 0.01$).

The intervention produced an increase in confidence in all the variables of the PERSON mnemonic with 63% indicating low confidence levels before the intervention and 93% ($p < 0.01$) indicating higher level of confidence immediately after the education (Fig. 2). At the seven-month post-intervention survey, 97% ($p < 0.01$) indicated sustained increases in their confidence levels with this method.

Discussion

This was a prospective multimodal experiential feasibility study of an educational intervention for internal medicine first-year residents at a single academic medical center. The aim of this study was to investigate the PERSON mnemonic as an effective tool to train residents to be prepared to have a GOC discussion during any stage of illness with measurable improvements in patient perception of their care. Specifically, we wanted to first evaluate the utility of the PERSON mnemonic in preparing residents to have a GOC discussion regardless of the stage of illness.

We were able to show that despite the majority of residents not remembering what each of the letters of the PERSON mnemonic stood for, they reported that the mnemonic made sense and was clinically applicable even seven months after they completed their training. We also showed that the increase in knowledge behind the meaning of each of the variables remained high over time, as did their self-rated confidence in being able to carry out these tasks.

A defined and standardized approach to teaching these conversations is increasingly important given the growing consensus that the concordance of GOC to outcomes of care is a critical missing quality measure.¹⁶ The results of this study represent a first step toward an agreed-upon method for defining the content of these conversations. A GOC conversation is best characterized as a shared decision-making process¹⁷ between two experts; one an expert in their personhood and the other an expert in available medical options, with the goal of

negotiating a rational and effective plan of care. That care goals are often implicit and default in a health system³ results in many of the tools currently available to discuss “goals of care” being framed either around a need to change the plan of care or anticipate an approaching death, which limits their utility for those with chronic serious illness.^{18–20} Further, this idea of changing a plan of care or anticipating bad news creates a sense of anxiety from both parties that can make having these conversations more daunting.

This framework highlights and teaches how to engage in that bidirectional conversation that allows both parties to communicate their specific expertise and truly develop a plan of care together rather than changing a theoretical one.

This study was not without its limitations. Residents were required by the Graduate Medical Education office to participate in this training, which could have several consequences related to generalizability or reproducibility of these results. Reporting is also limited by the fact that the residents were not asked at their postsession follow-up survey whether they continued to formally use the mnemonic. We were, however, able to collect unstructured feedback with regard to what residents found to be the biggest challenge to using the PERSON mnemonic (Appendix A3). Attempts to collect patient-reported outcomes were stymied by process barriers.

Finally, this was a physician-centric educational intervention without the multidisciplinary team participation, which would be the gold standard among expert palliative teams.

Conclusion

Educating internal medicine residents using the PERSON mnemonic approach to GOC conversations is a feasible and effective intervention to improve the knowledge and confidence of residents in ascertaining patient GOC.

Acknowledgments

This project could have been completed without the help and extensive support of our standardized patients and UCSD School of Medicine Simulation Training Center. It is with the greatest of gratitude that we acknowledge the Scripps Mercy Hospital Graduate Medical Education office in helping to

schedule these educational sessions. Funding: This study was also supported in part by the National Institutes of Health (NIH)/National Center for Advancing Translational Sciences grant UL1TR001114.

Author Disclosure Statement

No competing financial interests exist.

References

1. Ptacek J, Eberhardt TL: Breaking bad news. A review of the literature. *JAMA* 1996;276:496–502.
2. Kon AA, Davidson JE, Morrison W, et al.: Shared decision making in ICUs: An American College of Critical Care Medicine and American Thoracic Society Policy Statement. *Crit Care Med* 2016;44:188–201.
3. Stanek S: Goals of care: A concept clarification. *J Adv Nurs* 2017;73:1302–1314.
4. Robinson CA, Fyles G, McKenzie M: Oncologist experience implementing goals of care discussions in everyday ambulatory oncology practice: Implications for education. *J Cancer Educ* 2017;32:301–307.
5. Edmonds KP, Ajayi TA, Cain J, et al.: Establishing goals of care at any stage of illness: The PERSON mnemonic. *J Palliat Med* 2014;17:1087.
6. Haley EM, Meisel D, Gitelman Y, et al.: Electronic goals of care alerts: An innovative strategy to promote primary palliative care. *J Pain Symptom Manage* 2017;53:932–937.
7. Seifart C, Hofmann M, Bär T, et al.: Breaking bad news—what patients want and what they get: Evaluating the SPIKES protocol in Germany. *Ann Oncol* 2014;25:707–711.
8. Konstantis A, Exiara T: Breaking bad news in cancer patients. *Indian J Palliat Care* 2015;21:35–38.
9. Dunning R, Laidlaw A: The application of the Practitioners in Applied Practice Model during breaking bad news communication training for medical students: A case study. *Scott Med J* 2015;60:170–175.
10. Park I, Gupta A, Mandani K, et al.: Breaking bad news education for emergency medicine residents: A novel training module using simulation with the SPIKES protocol. *J Emerg Trauma Shock* 2010;3:385–388.
11. Wolfe AD, Friedrich SA, Wish J, et al.: Sharing life-altering information: Development of pediatric hospital guidelines and team training. *J Palliat Med* 2014;17:1011–1018.
12. Alexander SC, Keitz SA, Sloane R, Tulsy JA: A controlled trial of a short course to improve residents' communication with patients at the end of life. *Acad Med* 2006;81:1008–1012.
13. Han PK, Keranen LB, Lescisin DA, Arnold RM: The palliative care clinical evaluation exercise (CEX): An experience-based intervention for teaching end-of-life communication skills. *Acad Med* 2005;80:669–676.
14. Hales BM, Hawryluck L: An interactive educational workshop to improve end of life communication skills. *J Contin Educ Health Prof* 2008;28:241–248; quiz 249–255.
15. Markin A, Cabrera-Fernandez DF, Bajoka RM, et al.: Impact of a simulation-based communication workshop on resident preparedness for end-of-life communication in the intensive care unit. *Crit Care Res Pract* 2015;2015:534879.
16. Khandelwal N, Curtis JR, Freedman VA, et al.: How often is end-of-life care in the United States inconsistent with patients' goals of care? *J Palliat Med* 2017;20:1400–1404.
17. Wu KL, Reinemann JM, Lapid MI: Addressing goals of care in the never-competent patient. *J Intellect Dev Disabil* 2017; 1–5.
18. Back AL: What enables oncologists to discuss goals of care with their patients? Practical ways toward a culture of kindness, transparency, and responsibility. *J Oncol Pract* 2017;13:591–593.
19. Bernacki RE, Block SD; American College of Physicians High Value Care Task: Communication about serious illness care goals: A review and synthesis of best practices. *JAMA Intern Med* 2014;174:1994–2003.
20. Bekelman DB, Johnson-Koenke R, Ahluwalia SC, et al.: Development and feasibility of a structured goals of care communication guide. *J Palliat Med* 2017;20:1004–1012.

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APPENDIX

Appendix A1. Establishing Goals of Care

Like all other important conversations, setting is important: as personal and quiet as possible. Ideally, all interested parties should be together and in-person.

Remember, before you can make important medical decisions, you need to know the **PERSON**.

P = Perception

(Patient/family perception of current health status)

Use **open-ended questions** with no assumption of what they know. “What have the doctors told you”? Note the level of **comprehension** and the specific words they use. Listen for **value** statements and use **reflection** statements: “I hear you saying...”

E = Explore

(Explore the person's life before illness)

“What was your life like before you got sick”? “What is a typical day like for you when you're not in the hospital”? “What brings you joy”? Use **reflection** statements: “It sounds like you are a person who...” **Align** with the patient/family by acknowledging their sources of hope, “You're hoping to be able to...again.”

R = Relate

(Relate patient story to medicine)

Connect the patient/family story, using their words and phrases, to the current medical situation (this may involve breaking bad news). “It sounds like, before you got sick, you liked to...but it's been a long time since you've been able to

do that.” **Tie medical info to their world** using their words and phrases; gently correct medical misunderstandings. “I hear that if you were never able to...again, you’d want the doctors to tell you that, is that true?”

S = Sources of worry (Concerns for the future)

Use **future-oriented** statements: “What’s important to you now that you know you’re life will be shorter than you’d hoped?” “As you look to the future, what worries you the most?” Use **reflection** statements: “You’re worried about...” **Normalize** concerns: “Many patients tell me they are worried about...is that true for you? If you have concerns, share them using **hope/worry statements**: “Like you, I hope that...but, I’m worried that you may not and I’d like to plan for that.”

O = Outline

(Outline the plan for going forward)

This is not a time for more questions; provide a **simple summary** of what you have learned and the medical treatment plan based on their goals. Set up any appropriate **time-limited trials** of interventions based on the goals.

N = Notify

(Notify those who need to know)

This includes important friends/family who are not present as well as other involved teams, nursing, social work, or case managers. Document conversation in chart, including who was involved and decisions reached.

Appendix A2. Alexa and Ted Bailey

Version 2.0 8/01/2016

Presenting Situation and Instructions to the Trainee

Alexandra Bailey, who is accompanied by her husband Ted, is a 37-year-old woman who was first diagnosed with breast cancer five years ago. At that time she received surgical removal of the lump and localized radiation therapy. Nine months ago, her doctors discovered that the cancer had metastasized to her bones. She went through one round of chemotherapy, which she tolerated fairly well; however, a computed tomography scan after this initial chemotherapy revealed that the cancer had also spread to her liver.

A second more aggressive type of chemotherapy was started. This time, Alexa had numerous side effects—hair loss, painful ulcers in her mouth, nausea and vomiting, vaginal burning, and fatigue. One week ago, she saw her primary care physician for the results of her blood tests, and was given the bad news that her disease has spread, and there were no more curative chemotherapy options available.

Alexa started this round of palliative chemotherapy, developed extreme pain, nausea and needed to be hospitalized yet again.

This encounter starts with Ted visiting Alexa in the hospital, anxiously waiting to hear from a doctor.

You have to

- have a goals of care discussion with Alexa and her Husband Ted, using the PERSON mnemonic.

After the training session, you will

- fill out the survey e-mailed to your Scripps e-mail account.

P (Perception) What do they know?

E (Explore) Who are they as a person?

R (Relate) Connect who they are to the illness at hand.

S (Sources of worry) What concerns them most right now?

O (Outline next steps) What is going to happen now?

N (Notify) Who else needs to know next steps?

Appendix A3. Sample Response to the Question “What is the Biggest Challenge to Using This Protocol on a Regular Basis”

Every patient scenario is so different, and any protocol such as this is inherently very broad and difficult to apply it to a given situation

If it is not used frequently it can be easily forgotten.

It is intuitive enough that if used can be a help but I am not sure I will have these discussions often enough to retain the protocol.

Avoiding having to go in order and being able to use the protocol in various ways. Great protocol that is very useful but using it in your own style I think is very helpful

Time in the inpatient setting and coordinating with the team.

Not this mnemonic specifically but mnemonics in general are hard to adhere to or even use as a guideline for me personally. Certainly getting the sense of it and reviewing it beforehand will help in future encounters.

- Finding the time to use it.
- Finding appropriate time to start a conversation.
- Time.

Finding patients as knowledgeable about their disease and timeline as the actors.

- As a resident, allowing appropriate time for these discussions to be as thorough as possible and without being rushed.

- Remembering the mnemonic.
- Lack of experience.
- Remembering the approach for each word in the mnemonic.
- Probably time.