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Medication Adherence is a Partnership, Medication Compliance is Not

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Medication adherence is a complex phenomenon. As individuals assume greater responsibility for, and participation in, decisions about their health care, teaching and supporting adherence behaviors that reflect a person's unique lifestyle are the essence of a clinician-patient partnership—and it is a perfect fit with assisted living communities and nursing practice. The notion of compliance is an outdated concept and should be abandoned as a clinical practice/goal in the medical management of patient and illness. It connotes dependence and blame and does not move the patient forward on a pathway of better clinical outcomes. This article discusses the differences between compliance and adherence, identifies purposeful and unintentional reasons for nonadherence, and describes assessment tools for adherence, medication effect, and self-management capacity. Drawing on the scholarly work of others, we introduce a model for medication adherence, the ACE-ME Model: assessment, collaboration, education, monitoring, and evaluation. This model draws on the strengths and science of nursing and engages nursing participation in the continuing evolution of adherence strategies. For purposes of clarity in discussing these concepts, we use the word *patient* in this article rather than the word *resident*—that is, the older adult living in an assisted living community. (*Geriatr Nurs* 2010;31:290-298)

How frustrating it is for you to give an older adult your best clinical advice about a medication, only to find that she does not heed it and take her medications as prescribed. To make matters worse, she says she will follow your directions,

but she does not. This is a common scenario. In fact, more than 50% of Medicare beneficiaries do not take their medications as prescribed.¹ Your frustration can be substantially reduced, however, if you change your perspective from one of *compliance* to that of *adherence*.

Many older adults are labeled noncompliant. Compliance is associated with the medical model of health care. It connotes a 1-way relationship with a provider and implies a judgment about the patient. The clinician dictates the medical regimen; the patient is expected to comply.² The concept of noncompliance has generated considerable discussion about the need for clinician-directed medication management as 1 way to increase an older adult's level of "doing what she is told" to achieve better health outcomes. However, promoting good health outcomes for older adults is not about the clinician. It is about the older adult. It is about being patient-centered and nonjudgmental. The provider frustration just noted, however well intentioned, is inappropriate and ultimately unhelpful.

"Acknowledging the individual's ability to choose [his or her] own health outcome allows providers to accept the role of a skilled and knowledgeable health advisor, rather than omnipotent provider" (p. 14).³

This is why we recommend moving beyond the concept of compliance to the concept of adherence. Adherence is defined as the extent to which health behavior reflects a health plan constructed and agreed to by the patient as a partner with a clinician in health care decision making.⁴

The difference between compliance and adherence is not merely one of semantics. Rather, the difference is one of perspective—and it is crucial. Compliance puts nurses at odds with patients. Adherence puts us in partnership with them.

Table 1.
Comparing Compliance and Adherence

Compliance	Adherence
Clinician-centered	Patient-centered
Clinician dominance	Clinician–patient collaboration
Information is dictated	Information is exchanged
Goal: patient obedience	Goal: patient self-mastery
Activities are dictated	Activities are negotiated
Rules are dictated	Rules matched to lifestyle
Persuade, coerce	Discuss, negotiate, motivate
Resistance is not tolerated	Resistance provides information for adaptation

Table 1 clearly delineates the differences in these 2 concepts.

From the adherence perspective, the notion of partnership offers a broader view in promoting positive health outcomes. Adherence requires that we look to develop overall care plans in partnership with the older adult and his or her family. Because so many older adults have chronic diseases that require that they take many medications, medication management is an important component of the health care plan.

Medication Management

The difference in perspective between compliance and adherence is important to the principles and practices of medication management. When clinicians look to a medication management system or set of behaviors to increase compliance, medications are their chief focus, and they look for activities that will help patients follow a regimen. However, when clinicians look to medication management to increase adherence, their chief focus is on activities that will promote trust in a partnership, maintain collaboration, enhance readiness, motivate, and improve the patient’s capability to adhere to a plan to which both parties agree is doable—and medically helpful. Medication management is 1 significant part of the total health care plan; it is not *the* plan.

Because the compliance perspective is clinician-centered, the occurrence of noncompliance is often seen as resistance in a “me-versus-you” scenario. Clinicians trying to achieve compliance tend not to ask the “why” question. They look for ways to “convince” and persuade the patient of the correctness of the clinician’s approach. In contrast, using the adherence perspective,

nonadherence is seen as an opportunity for an exchange of information, for the clinician to get information that could be useful to making midcourse corrections to the agreed-on plan. Understanding resistance to a medication regimen or plan is the most important information and analysis necessary for effective medication management.

It is important to understand why some older patients are not adherent in taking their medications. Most people do things for reasons, and clinicians and older adults often see (and perceive) compliance differently.⁵ Blaming the patient for not being “obedient” is counterproductive and detrimental to fostering positive outcomes. The reasons for medication nonadherence can be either *purposeful* or *unintentional*.⁶ Purposeful nonadherence occurs when a medication, in the patient’s opinion, is ineffective, not necessary, or unsafe. Unintentional nonadherence might be associated with barriers that are not in the patient’s ability to surmount or correct, such as not having appropriate reminders, forgetting (i.e., cognitive changes), and unplanned change in routine. “What may seem an irrational act to the provider is in fact a rational act for the client” (p. 174).⁶

Purposeful Reasons for Nonadherence

- *Mistrusting the clinician’s judgment.* Notions of self-efficacy and autonomy do not diminish with aging or in old age. These personal characteristics and values are as vital for baby boomers as for older adults. A sign of maturity, one could argue, is the need to be convinced of the value or worthwhileness of a viewpoint.

Many older adults or their children will no longer take advice on its face value. Many will seek a second opinion and look to other sources for corroboration of the advice. In addition, cultural and religious belief systems may lead to questioning a clinician's judgment.⁶

- *Questioning the effectiveness of a medication.* Older adults or their families read conflicting evidence about a drug effect on the Internet and hear conflicting views from people they trust. Patients may misunderstand the purpose of the drug or misunderstand the nature of their illness. In addition, patients may intentionally stop medications because they do not want to experience or manage unpleasant side effects or think that the side effect outweighs the benefit of the drug. Or they might stop taking a medication because they are feeling better and do not understand the concept of a "therapeutic dose."
- *Doing a benefit-burden analysis of whether to follow the medical regimen.* Whereas Bergman-Evans⁶ construed this as a "cost-benefit" analysis, we feel that the nomenclature of "benefit-burden" is more understandable. Not taking advice at face value leads many older adults and their families to do a benefit-burden analysis of any advice they receive. They factor in such elements as lifestyle, cost, and family role/responsibility for the medical regimen.

Unintentional Reasons for Nonadherence

We created 5 domains of barriers that create unintentional nonadherence: physical, cognitive, psychological, sociocultural, and economic. The assisted living nurse can explore these barriers with the resident to find ways to ease them in their mutual quest for better adherence.

- *Physical reasons for nonadherence.* Many older adults have sensory losses that exacerbate their difficulties in adhering to medication regimens. Hearing or vision loss or loss of dexterity can make it difficult to open a medication container, read labels, and understand directions.
- *Cognitive reasons for nonadherence.* Cognitive reasons often surface when the patient says, "I forget to take it." This forgetfulness

may be due to deterioration of executive functioning, increasing cognitive impairment, or dementia, all of which make it difficult to self-administer a complicated drug regimen. Use of multiple pharmacies, whether by design or simply mismanagement, further complicates adherence. An emergency department visit or hospitalization associated with medication mismanagement may be an indicator of dementia.

- *Psychological reasons for nonadherence.* Feeling vulnerable, wanting to deny chronicity every time a medication is taken, depression, or anxiety can all lead to poor medication adherence. Listen for these phrases commonly heard from older adults: "I'm feeling really good now" or "It's all just too complicated."
- *Sociocultural reasons for nonadherence.* Cultures differ regarding how they show respect to people in power (e.g., physician) or how they perceive autonomy and family responsibilities. They differ regarding the nature of pain and suffering and the causes and management of illness. Older adults may value and record time differently. Some older adults like to be prompted and will take medication at the exact time designated. Others are more approximate about time and are lax in their timing of medication doses. There are even some cultures that do not understand the idea of a clock. Many older adults have only elementary school-level literacy in their native language or in English. They may not have science or health literacy in understanding how their bodies work, the importance of a therapeutic dose, or how the drug works. All of these factors make for practical difficulties in reading medication labels, following directions, and adhering to complex regimens.
- *Economic reasons for nonadherence.* Low income, poor insurance coverage, and the high cost of medications can certainly contribute to poor medication adherence. In 2006, enrollees in the Medicare Part D drug benefit had greater out-of-pocket expenses and cost-related nonadherence compared with those with better coverage by the Veterans Administration or an employer plan.⁷ Economic factors force some older adults to choose between medication and food, or they cut their prescribed dose in half.

Conciliatory resistance is a related patient-resistance response when confronted with

provider compliance demands. The patient says “Yes, yes,” nods in agreement, then goes home and does not follow directions or the agreed-on plan. Conciliatory resistance can be purposeful or unintentional. Despite a well-intentioned deference to the clinician, the patient disagrees with the advice or plan. The problem is that the patient fails to say so in order to avoid confrontation or disagreement. This behavior can also arise from patients’ embarrassment about the many barriers they face such as hearing loss, language and understanding, cognitive deficits, and financial hardship. No matter what the root cause of conciliatory resistance, such patient response can lead clinicians astray if they fail to question *why* there is a discrepancy between the patient’s words, actions, and the clinical picture.

Fostering Good Medication Adherence

The Harm Reduction Model is consistent with the notion of adherence. It is used to help patients with addictions. “Harm Reduction interventions are facilitative rather than coercive, and are grounded in the needs of individuals. As such, harm reduction services are designed to meet people’s needs where they currently are in their lives.... Harm reduction practitioners accept people as they are and avoid being judgmental” (p. 8).⁸

More specifically regarding medication management for older adults, Bergman-Evans outlined 4 outcomes that are desirable for high-quality medication management: Outcome 1: reduce inappropriate prescribing; Outcome 2: decrease polypharmacy; Outcome 3: avoid adverse events; Outcome 4: maintain functional status.⁶ Moreover, she proposed a useful framework of strategies to improve and maintain medication adherence. The AIDES Model is an acronym for 5 activities: assessment, individuation, documentation, education, and supervision.⁶ It is patient-focused, nonjudgmental, and fosters partnerships among providers, patients, and their families.

The ACE-ME Model

Wanting to emphasize more directly the partnering, collaborative nature of medication adherence and the need for medication adherence management to be a flexible, ongoing process, we built on the work of Bergman-Evans et al.⁹

to propose a new model, ACE-ME: *assessment, collaboration, education-monitoring, and evaluation*. These 5 spheres of activity are in a nurse’s scope of practice and are activities in which nurses can take a leadership role. The ACE-ME Model, consisting of 2 parts (I and II) is described in this section.

Part I: Establishing a Plan: Assessment, Collaboration, Education (ACE)

The first part of achieving medication adherence is ACE—assessment, collaboration, and education—the elements necessary to establish a plan that is genuinely agreed to by all parties as both clinically effective and doable.

Assessment. Nurses are attuned to recognize changes in status. Assessment is one of the fundamental functions of nursing. Medication adherence assessment focuses on 2 areas:

1. Assessing medication management capacity (MMC) of the older client;
2. Assessing medication effect.

Assessing MMC. Adherence assessment is not usually an aspect of ongoing, chronic illness management among “independent” older adults. However, to begin to create a collaborative medication management plan, it is important to assess the patient’s capacity or ability to adhere—the cognitive and functional skills necessary to self-administer prescribed medications safely.¹⁰ In addition, it is important to ascertain which of the purposeful or unintentional reasons for nonadherence are applicable to the patient. Several assessment instruments that focus on MMC are discussed here.

Literacy assessment tools: research findings describe the relationship between low literacy and inadequate MMC, particularly with regard to challenges in understanding how to time when to take a medication such as on an empty stomach.¹⁰ A 2008 article in *Geriatric Nursing* discussed health literacy and suggests several health care literacy assessment tools and methods.¹¹

Drug Regimen Unassisted Grading Scale (DRUGS): DRUGS is an individualized performance measure consisting of 4 sequential steps: 1) identification, 2) access, 3) dosage, and 4) timing.¹² Using the person’s current medications, he or she is asked to identify each of them visually, open the container(s), remove the correct number (i.e., dose) of capsules or tablets, and indicate

on a grid marked with specific times of day when the medication would be taken.¹³ A higher score indicates higher adherence capability.

The DRUGS tool was developed for, and validated by, testing among high-functioning older adults living in a continuing care retirement community (CCRC) and in an assisted living community (ALC) in an urban area.¹² ALC residents had lower DRUGS scores than CCRC residents. The DRUGS score was highly associated with self-report of medication management capacity and with the Mini-Mental Status Examination (MMSE).¹² High-functioning older adults in an early stage of cognitive decline might be targeted for intervention to improve or maintain their self-medicating activities.¹²

Medication Management Ability Assessment (MMAA): The MMAA presents the older adult with 4 labeled prescription containers containing differently colored beans as surrogate capsules and tablets.¹³ In a fictitious scenario, the person is given information about the number of medications needed per dose, the time(s) of day to take the medication(s), and whether the medication(s) is to be taken with food. After approximately 45 minutes to 1 hour, the person is asked about the medication regimen previously described. Scoring is based on ability to read the label, open the various kinds of containers and remove the “meds,” understand the instructions, and differentiate between the different colors of the “meds.” A maximum score of 25 is achieved with successful (correct) enactment of each step.

The DRUGS and the MMAA are useful adherence assessment tools with respective advantages. The DRUGS takes 5 to 15 minutes to administer but is dependent on the person’s prescribed medication regimen. In contrast, the MMAA is not dependent on a current medication regimen and could arguably be used prospectively with regard to estimating a person’s likely adherence behavior. The drawback to the MMAA is that although it takes only 15 minutes to administer, it requires time for presentation of the bogus medications and the wait period before actual administration.¹³ Investigators recommend ongoing research particularly with regard to using the MMSE to indicate a “break-point” score at or below which medication administration should be assumed by a caregiver.¹³

Mini-Mental Status Exam: Although an MMSE score is not a definitive indication that a person

can or cannot self-administer medications, it can indicate whether an intervention might have some usefulness in maintaining adherence at least for the mildly cognitively impaired person. Guidelines for a general cognitive screen are available at www.ConsultGeriatrRN.org. Oral or written instructions will have limited usefulness for a cognitively or language-challenged person. Medication trays, verbal (or voice-activated) reminders, and prefilled pill boxes can be effective.

A small pilot study (52 participants) reported a statistically significant association among the DRUGS, MMAA, and MMSE.¹³ Only 3 participants had low MMSE scores indicative of possible dementia, yet almost half of participants (42%) reported during an interview that they had memory problems. Participants reported missing doses on occasion, deciding to take the medication differently or at a different time, or taking an additional dose because they forgot they had taken the medication earlier. These data appear to indicate that medication management capacity is lost relatively early with the onset of cognitive impairment.¹³

Brown Bag Interview: Patients are instructed to bring *all* their medications—prescription, over-the-counter, herbal, and so on—to a provider’s office, clinic, or pharmacy. Three questions are asked of the patient:

1. What do you take each medication for?
2. How and when do you take it?
3. What kind of problems are you having?” (p. 147).¹³

Additional questions that might uncover problems not unearthed by the brown bag visual inspection begin with “In the past 3 months ...” and probe for the following:

- Missed medications: “How often did you miss taking one of your medications?” (p. 147).¹³
- Altered procedures for taking medication: “Some people decide to take medications differently than the doctor prescribed them—without telling the doctor? Have you ever done that?” (p. 147).¹³
- Forgot that the medication was taken: “How often did you forget ... and took it again?” (p. 147).¹³
- Adverse effects: “Did you experience a problem or side effect that you thought was because of ...” one of the medications you take? (p. 147).¹³

- Perception of medication ineffectiveness: “Do you think that one of your medications had quit working like it should?” (p. 147).¹³

The Brown Bag Interview can be conducted with ALC residents and may, in fact, provide a family with the “evidence” that their loved one is no longer safe – and is at risk – with regard to continuing to self-administer their medications. In those ALCs where medication management by staff incurs additional cost for the resident or family, this kind of assessment and subsequent discussion with the concerned parties contributes to a trusting respectful relationship among all concerned.

Assessing Medication Effect. Ascertaining that there is no misuse of medications (i.e., adherence issues: over- or underdosing) is as important as assessing capacity for taking medications.

Beers List of Inappropriate Medications for Older Adults: The Beers List is a useful reference tool of about 48 medications or classes of medications that should not be prescribed for older adults. There are 2 lists: 1 is independent of diagnoses and conditions and 1 is dependent on diagnoses and conditions.^{14,15} It is suggested that the findings of the Brown Bag Assessment should be compared with the Beers List.⁶

Adverse Drug Events and Objective Data: Although adverse drug events may occur even in patients who adhere well to drug regimens, changes in metabolic or renal function or hospitalization for an “unexplained” exacerbation of an illness might initiate a medication adherence assessment. While in the hospital, blood chemistries can be useful to provide evidence of too much or too little circulating medication. One of the first signs of problems with medication adherence might be the presence of objective signs or subjectively reported symptoms that are unusual or unexpected with regard to the therapeutic dose.

Collaboration. The second component of Part I of the ACE-ME Model to enhance medication adherence is collaboration. It is essential to the patient-centered perspective. This component seeks to create and maintain a person-specific set of adherence behaviors. This concept looks to the root cause of nonadherence so that the plan, developed as a partnership between provider and patient, reflects the realities of the individual patient in a nonjudgmental way. It looks carefully at the purposeful and unintentional

barriers to adherence, such as cost, unpleasant side effects, inability to open the medication container, complicated dosing schedule, and cultural and literacy issues. After some of the root causes are identified in a nonjudgmental environment, trust is established, and collaboration with the patient can be genuine.

In addition to collaboration with the patient, collaboration with all other care providers involved in the care of the older patient should be part of the medication adherence process as well. This includes not only professional health care providers but family members and cultural and religious healers as well. It is in this sense of collaboration that we are reminded of medication reconciliation, particularly relevant when a resident is moving between different levels or locales of care. Medication lists of pre- and post-location change (e.g., community-based residence to ALC) are compared. It is altogether possible that a resident who self-administered her medication in the previous location will be following the medication management plan designed for her in that location. The problem is that the in the new location is not the same as the plan in the previous location. Authentic collaboration and communication can minimize some of the adverse non-adherence situations that result from “the left hand not talking to the right.”

Education. Education, the third component of Part I of the ACE-ME Model, is about the effect of medications and why a particular kind of regimen is important. It has to be person-specific and respectful of the patient’s health care literacy level and ability to understand and manipulate information. An organizational schema of medication information designed specifically for older adults begins with the trade and generic name of the medication, followed by its purpose, dose, schedule, duration, warnings, mild side effects, severe side effects, prescriber’s name, and what to do in an emergency.⁶ Printed in clear type, a 14-point font size, and for a 5th-grade reading level, this approach improved older adults’ knowledge of their medication regimen.⁶

Adults have different learning styles. Moreover, there are effective and ineffective teaching and learning moments that must be considered. When anxiety is present, such as transitions between settings, education is not optimal. Yet it often occurs at those times with little or no follow-up. “Our [nurses] role as teachers who

help to translate the mysteries of medicine to patients must go beyond mere patient education regarding how a medication works and its potential side effects, to incorporate a deeper understanding of an individual's desired outcomes of care."³

Part II: Monitoring and Evaluation

The second part of the ACE-ME Model ensures that, as an older adult's status changes over time, the medication adherence management plan will change as well. This is accomplished through monitoring and evaluation.

Monitoring. Monitoring refers to actually seeing how well the plan is being implemented and documenting it. Its purpose is to recognize non-adherence and signs of changes in patient behavior or clinical status to help anticipate when medications are no longer efficacious. Monitoring requires frequent updating of lists of medications and distribution to all parties who need them—the patient, the family, and clinicians. Periodic systematic holistic reassessment shapes the monitoring activities so that status changes can be recognized and dealt with. Looking at objective data and eliciting feedback from the patient, staff, and family members are part of monitoring as well.

Evaluation. The last activity, evaluation, addresses the need to recognize when a medication adherence plan is going off track, why this is happening, and initiating the beginning of a new cycle of the ACE-ME Model, Part I—assessment, collaboration, and education. Working within a collaborative environment, trust is maintained, and important information about changes in ability surface through ongoing dialogue among patient, family, and providers. Follow-up and feedback are as essential to the medication adherence management process as they are to any quality improvement process.

Responsibility

Whose responsibility is it to help older adults achieve the best medical outcomes possible and use recommended medications to their optimal advantage?

Because medication nonadherence is associated with hospitalization, emergency room visits, and nursing home admission¹³—all of which add to the high cost of health care for older adults—it is important that clinicians help their patients

achieve their best possible health outcomes. However, it needs to be within the context of harm reduction with clinicians taking the role of trusted advisors, not dictators. Medication management is a joint responsibility shared not only by the patient/resident but by all who intersect with her. Taking an adherence perspective of partnership will help get us there.

Researchers studying medication management among community-living older adults ($N = 52$) heard various interpretations of “responsibility” for taking medicine.¹³ Approximately 10% to 15% of study participants received various kinds of assistance with their medication regimen: dispensing, preparation, and so forth. However, they regarded themselves as independent and solely responsible for their medication management. This raises the question of whether the newly admitted ALC resident was really self-medicating at home before coming to the ALC, and whether the person who assisted the resident might be an unknown but contributing factor in medication nonadherence. The interview part of the study also elicited information specifically about nonadherence: almost 25% of participants said that they did not take their medications as prescribed. Reasons given for altering a medication regimen were drug ineffectiveness and a wide range of adverse effects, including interrupted sleep or drowsiness, gastrointestinal complaints, headaches, and dry mouth.

It is interesting to note that there are blogs on the Internet that vehemently discuss the differences between compliance and adherence and the “War of Words” that has ensued.¹⁶ These blogs point out that health care professionals have struggled for countless years over the issue of whose responsibility it is to help achieve positive outcomes for patients. Initially, the prevailing view was that if “providers” imparted their best clinical judgment, their job was done; if the patient was not obedient, it was the patient's personal failing. Thankfully, over time, health care has evolved toward a more patient-centered, non-judgmental approach in which responsibility for health care outcomes is a shared responsibility of a team of clinicians, patient, and family.

Historically, physicians used words such as *untrustworthy*, *uncooperative*, and *faithless* to describe patients who did not follow their directions.¹⁷ Then, in the 1970s, those harsh words were replaced by “compliant” and “noncompliant.” This was an improvement, yes, but still too

clinician-focused and judgmental. Now, 40 years later, the notion of shared responsibility is moving us toward a vocabulary that connotes positive outcomes rather than blaming—to words such as *adherence* and an even newer word in medical parlance, *concordance*.

The simplicity of the ACE-ME Model should not blind us to the fact that developing adherence behaviors is not straightforward, let alone easy. A meta-review of the research about interventions to enhance medication adherence revealed that, for short-term treatments or medication courses, simple interventions such as telephone reminding, counseling, and written instructions were effective, but not consistently across studies.¹⁸ For long-term or chronic health care management, the interventions are multifactorial (including psychotherapy) and complex but not consistently effective in improving adherence of health care outcomes.¹⁶ Interestingly, educating patients about the adverse effect of their medications did not improve appropriate management.¹⁸

Conclusion

Medication adherence is a complex phenomenon. Patient behaviors draw on a range of perceptions, experiences, accommodations (coping), and lifestyles. The frustrations that nurses face when their efforts at medication management are not followed can be ameliorated if they reorient their medication management effort to one that encourages patient-centered, nonjudgmental, collaborative adherence. Given the movement toward self-management of chronic illness (in partnership with a clinician), the notion of compliance is not appropriate. Older adults who self-manage incorporate their medications and treatments into their lifestyle; they make reasoned decisions regarding what works best for them and for the medication to do its intended thing. To accomplish this with the patient/resident, we must listen to what patients tell us about their experiences with their various medications, provide relevant education to support their self-management decisions, expect some medication and treatment mismanagement, and discuss specific strategies with the patient to avoid problems, including disease exacerbation related to improper self-medication practices.⁵ Remembering that medication adherence is a partnership but that medication compliance is

not can be a mantra for developing and supporting adherence activities.

Nurses and nurse care managers in assisted living facilities and ambulatory care settings could be very instrumental in coordination of care and subsequent reduction of both purposeful and unintentional nonadherent behaviors.¹⁹ Moreover, nurses have a unique opportunity to participate in the continuing evolution of health care, not only to foster adherence (rather than compliance) behaviors but also to contribute an enlightened vocabulary to the dialogue. By doing so, we can better describe but also better deliver the kind of compassionate and individualized care we all want for our patients/residents.

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