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Incorporating the “4Ms” framework to improve outpatient geriatric dermatology care

Abbreviations: IPDAS, international patient decision aids standards; PDA, patient decision aids.

According to the United States National Ambulatory Medical Care Survey (1993–2010), the majority of dermatology visits occurred in patients ≥ 55 years of age. Yet,

geriatric dermatology is not currently part of the post-graduate core curriculum in the United States. Hence, practicing dermatologists may benefit from an evidence-based and easy to remember approach for older adult patients in the outpatient setting.

Fortunately, an evidence-based framework, termed the 4Ms model,¹ has been developed by the Institute of Healthcare Improvement in 2017 to improve care of geriatric patients and multiple non-dermatology fields of medicine have adopted it successfully. We believe this approach can be readily adapted to improve care of seniors in outpatient dermatology.

The four basic elements of the 4Ms model are: what matters, medication, mentation, and mobility. Table 1 summarizes the definitions and provides dermatology-specific examples, with evidence from the medical literature when available. The 4Ms model is applicable regardless of ethnicity, gender, or co-morbidities,¹ and easy to remember in the clinical setting.

What Matters: This element of the 4Ms model ensures that older adults articulate their goals of care and participate in shared decision-making when possible. In addition to the dermatology-related issues (Table 1), considerations in geriatric dermatology include maintenance of function and potential decreased benefit from preventative interventions (due to lag time to benefit

exceeding estimated remaining lifespan).² Patient decision aids (PDA) that follow the international patient decision aids standards (IPDAS) can assist in these conversations. Currently, a PDA which follows IPDAS exists for adults ≥ 85 years with superficial basal cell carcinoma but not for other dermatological diseases.³

Medications: This component of the 4Ms model supports using medications that are necessary, align with older patients' care goals, and do not adversely impact other 4Ms elements. Many medications used in dermatology are found in the American Geriatrics Society 2019 Beers Criteria for potentially inappropriate medication use in older adults (Table 1), including certain anti-histamines that increase fall risk due to excessive drowsiness (thereby impacting Mentation and Mobility as well). Principles include avoiding polypharmacy (often defined as ≥ 4 medications) which can increase the risk of drug interactions and reduce adherence. Polypharmacy may be minimized by removing medications with duplicate mechanisms of action. On a systems level, increased inclusion of older adults in dermatologic drug trials is critical as physiologic differences with age could alter the risk/benefit profile. This need is underscored in a recent review that found that randomized controlled trials between 2003 and 2018 for systemic treatments of psoriasis generally excluded patients ≥ 65 years.⁴

TABLE 1 Incorporating the 4Ms age-friendly model to outpatient geriatric dermatology

	What Matters	Medication	Mentation	Mobility
4Ms definition ¹	<ul style="list-style-type: none"> Align with older adult's specific care goals. 	<ul style="list-style-type: none"> Use only necessary medications Medications do not adversely affect other 4Ms elements. 	<ul style="list-style-type: none"> Prevent, identify, treat, and manage dementia, depression, and delirium. 	<ul style="list-style-type: none"> Ensure older adults move safely in order to maintain function and What Matters.
Examples of dermatology-related issues	<ul style="list-style-type: none"> Avoiding disfigurement,² pain, bleeding, itch 	<ul style="list-style-type: none"> Anti-histamines can increase fall risk^{5,6} Systemic steroid side effect risks can increase 	<ul style="list-style-type: none"> Depression and anxiety due to dermatoses^{7,8} Inability to consent due to impaired cognition⁹ 	<ul style="list-style-type: none"> Unable to travel safely to clinic visits Inability to maneuver for skin exam and procedures
Examples of specific interventions	<ul style="list-style-type: none"> Use patient decision aids^a (printed) during shared decision-making^{3,4} 	<ul style="list-style-type: none"> Minimize mentation- and mobility-altering medications⁶ 	<ul style="list-style-type: none"> Use Skindex-16 to assess skin disease impact on mental health^{10,11} 	<ul style="list-style-type: none"> Tele-dermatology¹² Safety equipment in clinics: railing, wheelchairs Caregiver assistance
Examples of system level changes	<ul style="list-style-type: none"> Use the 4Ms elements to categorize and assess unmet needs to improve dermatologic practice Include 4Ms principles in dermatology residency training Embed 4Ms best practices in dermatologic electronic medical records Expand research funds on improving management of older adults with skin disease Advocate for expansion of tele-dermatology reimbursement to expand dermatologic access 			

Note: This table summarizes the 4Ms elements, gives the relevance to dermatology, demonstrates examples of implementation, and suggests larger system level changes that can assist with efficacy and sustainability. References cited here are available in Data S1.

^aResearch gap, as the only patient decision aid currently available is for low-risk basal cell carcinoma. A psoriasis PDA exists, and includes, but is not specific to geriatric patients.

Mentation: This 4Ms component focuses on depression and dementia and these issues occur frequently in dermatology. An example of the literature linking bullous dermatoses with depression in the geriatric population is shown in Table 1. Dermatologists following chronic skin diseases at regular time intervals are in a unique position to screen for and refer patients with signs of depression. Recent evidence links dementia with adult atopic eczema though effect of age remains to be determined.⁵ In dementia patients, ensuring consent for procedures and treatment are obtained from legally authorized representatives when necessary, and enlisting caregivers to assist with treatment plans are essential.

Mobility: The coronavirus pandemic of 2019 accelerated the use of teledermatology, and geriatric patients with mobility limitations may be able to access care if smartphones or internet connections are available. Special dermatology considerations in patients with mobility issues include reduced ability to access phototherapy due to the need to travel to clinic frequently and stand in the booth. Utilizing treatments that do not involve office visits, such as topical medications, rather than liquid nitrogen for actinic keratoses may also be considered. Other considerations in dermatology clinic include stocking canes and walkers, using low exam tables with wide-based step-platforms, and attaching railing on exam tables and clinic walls.

We encourage geriatricians to increase collaboration with dermatologists to implement the 4Ms model to specific patients and to help promote system level changes (Table 1). Beyond the 4Ms model, geriatricians can recruit dermatologists into collaborative groups focusing on older adults' needs such as the American Geriatrics Society's Geriatrics for Specialists Initiative. The American Academy of Dermatology Geriatric Expert Resource Group could be a good source of interested dermatologists. Geriatricians have successfully partnered with physicians in other medical fields to launch training initiatives such as the American College of Emergency Physicians' (ACEP) Geriatric Emergency Department accreditation,⁶ and they could do the same with dermatologists. Research collaborations between geriatricians and dermatologists could identify knowledge gaps, improve evidence-based care, and increase awareness among dermatologists through peer-reviewed publications.

AUTHORS CONTRIBUTIONS


Warren M. Perry: conceptualization, writing- original draft, writing- review & editing, visualization, project administration. **Paayal Vora:** visualization. **Gabriel Oh:** visualization. **Caroline Park:** visualization. **Anne Lynn S. Chang:** conceptualization, writing- review & editing, visualization.

CONFLICT OF INTEREST

The authors of this manuscript have no conflict of interests to declare.

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None.

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PREPARE for your care and easy-to-read advance directives increase real-time goal concordant care

INTRODUCTION

Advance care planning (ACP) has evolved from a focus on end-of-life-procedures to preparation for medical decision making.^{1,2} The literature is mixed about whether ACP increases care consistent with patients' preferences, also known as goal concordant care (GCC).² Prior studies often use retrospective chart review, which is subject to bias.^{1,3} The PREPARE for Your Care ACP program includes a website with video stories (PREPARE) and easy-to-read advance directives (ADs) that both focus on quality of life and preparation for communication and medical decision making. In trials, PREPARE plus the easy-to-read ADs increased ACP discussions and documentation up to 98%.⁴ Here, we assess whether the PREPARE website and ADs were associated with real-time, patient-reported GCC.

METHODS

This is a sub-analysis of the PREPARE trial where participants were randomized to the PREPARE website plus the easy-to-read AD versus the AD alone. The methods have been previously published.⁵ We included English-and-Spanish speaking patients from four San Francisco Public Health network primary care clinics who were ≥ 55 years of age with 2 or more chronic or serious illnesses.

After randomization and prior to the intervention, we conducted surveys by phone or in study offices to collect participant demographics and patient-reported GCC.⁶ We conducted follow-up GCC assessments at 6 and 12 months. We defined GCC as concordance between self-reported preferences for care and receipt of care. Staff asked, "If you had to make a choice today, would you prefer (a) medical

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

Data S1. Full list of journal articles cited in Table 1.

care that focuses on extending your life as much as possible, even if it means having more pain/discomfort (b) medical care that focuses on relieving your pain and discomfort as much as possible, even if it means not living as long or (c) I am not sure." Staff then asked, "Which of the following best describes the type of medical care you are getting from your doctors right now," with the same response options. Unsure responses were defined as discordant.

Analysis

We excluded participants who had missing GCC data at baseline or follow-up. We used descriptive statistics and compared the percent of participants with GCC at baseline to 6- and 12-month timepoints, combined and separately, and stratified by arm using mixed effects logistic regression adjusted for baseline ACP and clinician. We stratified our analysis by health literacy, language, patient-reported ACP discussions, and ACP documentation by chart review using adjusted mixed effects logistic models.⁴

RESULTS

Of 986 trial participants, 798 (81%) had complete GCC data: 47.6% were Spanish-speaking and 39.4% had limited health literacy (Table 1). There were no demographic differences by arm. GCC increased from baseline to 6 or 12-months overall (adjusted 32.8% vs 59.3%), $p < 0.001$; with similar increases for both study arms and separate timepoints (Figure 1). GCC did not differ by limited versus adequate health literacy or English versus Spanish language ($p > 0.05$). GCC was more likely among individuals who, at 12 months, reported talking with surrogates (adjusted 66.1% vs 42.0%), talking with clinicians (72.5% vs 47.8%), $p < 0.001$ and whose chart included documented ACP versus not (66.7% vs 54.9%), $p = 0.002$.