

# Decision Making for Older Adults With Multiple Chronic Conditions: Executive Summary for the American Geriatrics Society Guiding Principles on the Care of Older Adults With Multimorbidity

Cynthia Boyd, MD, MPH,\* Cynthia Daisy Smith, MD,<sup>†</sup> Frederick A. Masoudi, MD, MSPH,<sup>‡</sup> Caroline S. Blaum, MD, MS,<sup>§</sup> John A. Dodson, MD, MPH,<sup>§</sup> Ariel R. Green, MD, MPH,\* Amy Kelley, MD, MSHS,<sup>¶</sup> Daniel Matlock, MD, MPH,<sup>||</sup> Jennifer Ouellet, MD,\* \* Michael W. Rich, MD,<sup>††</sup> Nancy L. Schoenborn, MD,\* and Mary E. Tinetti, MD\*\*

Caring for older adults with multiple chronic conditions (MCCs) is challenging. The American Geriatrics Society (AGS) previously developed The AGS Guiding Principles for the Care of Older Adults With Multimorbidity using a systematic review of the literature and consensus. The objective of the current work was to translate these principles into a framework of Actions and accompanying Action Steps for decision making for clinicians who provide both primary and specialty care to older people with MCCs. A work group of geriatricians, cardiologists, and generalists: (1) articulated the core MCC Actions and the Action Steps needed to carry out the Actions; (2) provided decisional tips and communication scripts for implementing the Actions and Action Steps, using commonly encountered situations; (3) performed a scoping review to

identify evidence-based, validated tools for carrying out the MCC Actions and Action Steps; and (4) identified potential barriers to, and mitigating factors for, implementing the MCC Actions. The recommended MCC Actions include: (1) identify and communicate patients' health priorities and health trajectory; (2) stop, start, or continue care based on health priorities, potential benefit vs harm and burden, and health trajectory; and (3) align decisions and care among patients, caregivers, and other clinicians with patients' health priorities and health trajectory. The tips and scripts for carrying out these Actions are included in the full MCC Action Framework available in the supplement ([www.GeriatricsCareOnline.org](http://www.GeriatricsCareOnline.org)). *J Am Geriatr Soc* 67:665–673, 2019.

**Key words:** multiple chronic conditions; multimorbidity; AGS guiding principles

From the \*Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland; <sup>†</sup>American College of Physicians, Philadelphia, Pennsylvania; <sup>‡</sup>Department of Medicine (Cardiology), University of Colorado Anschutz Medical Campus, Aurora, Colorado; <sup>§</sup>Department of Medicine, New York University School of Medicine, New York, New York; <sup>¶</sup>Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, New York; <sup>||</sup>Department of Medicine (General Internal Medicine), University of Colorado School of Medicine, Denver, Colorado; \*\*Department of Internal Medicine, Yale School of Medicine, Yale School of Public Health, New Haven, Connecticut; and the <sup>††</sup>Department of Internal Medicine, Washington University School of Medicine, St Louis, Missouri.

Address correspondence to Mary E. Tinetti, MD, Yale School of Medicine, 333 Cedar St, PO Box 208025, New Haven, CT 06520. E-mail: [mary.tinetti@yale.edu](mailto:mary.tinetti@yale.edu)

This framework is approved and endorsed by the American Geriatrics Society.

The American College of Physicians (ACP) endorses this article, affirming the value of the framework to the practice of internal medicine. This article is not considered ACP policy.

The American College of Cardiology supports the general principles in the document and believes it is of general benefit to its membership.

DOI: 10.1111/jgs.15809

## BACKGROUND

### Why MCC Guiding Principles and Action Framework Are Needed

Caring for older adults with multiple chronic conditions (MCCs) is challenging.<sup>1–3</sup> In 2010, the American Geriatrics Society (AGS) convened an expert panel to address how to provide patient-centered care for this growing population. The AGS Guiding Principles for the Care of Older Adults With Multimorbidity (hereafter referred to as MCC Guiding Principles) were developed using a systematic review of the literature and consensus.<sup>4</sup> The five MCC Guiding Principles are listed in Table 1.

Current care for older adults with MCCs can be burdensome, can be of uncertain benefit and potential harm,

Table 1. AGS Guiding Principles for Care of Older Adults With Multimorbidity and Definitions of Terms Used in the Multiple Chronic Conditions Action Framework

<b>Guiding Principles</b>
<ul style="list-style-type: none"><li>• Elicit and incorporate patient (and family/caregiver) preferences into medical decision making.</li><li>• Recognize the limitations of the evidence base, and interpret and apply the medical literature specifically for this population.</li><li>• Frame clinical management decisions within the context of harms, burdens, benefits, and prognosis (eg, remaining life expectancy, functional status, and quality of life).</li><li>• Consider treatment complexity and feasibility when making clinical management decisions.</li><li>• Use strategies for choosing therapies that optimize benefit, minimize harm, and enhance quality of life.</li></ul>
<b>Definition of Terms</b>
<b>Health outcome goals:</b> The activities most important to the individual. The more specific, actionable, and reliable, the better the health outcome goals can inform decision making (eg, “ <i>I want to be less tired so that I can babysit two mornings a week.</i> ”)
<b>Health trajectory:</b> The likelihood of death (prognosis), as well as likely patterns of change in function, health status, and quality of life, over a defined period.
<b>Care (or treatment) burden:</b> The workload imposed by healthcare on patients and the effect this workload has on quality of life. Categories include medications and their effects; self-management tasks; procedures; testing; and healthcare utilization, including clinician visits and hospitalization. <sup>5</sup>
<b>Healthcare (or treatment) preferences:</b> The healthcare workload that patients are willing and able (or not willing or able) to do or receive.
<b>Health priorities:</b> The health outcome goals patients most desire within the context of their healthcare preferences (ie, what health outcome goals they most desire given what they are willing and able to do to achieve them).

Abbreviation: AGS, American Geriatrics Society.

includes conflicting recommendations, and is not always focused on what matters most to these individuals.<sup>5–14</sup> The objective of the current work was to translate the MCC Guiding Principles (Table 1) into a framework for decision making for clinicians who provide both primary and specialty care to older people with MCCs<sup>4,15</sup> (Figure 1).

Variable Health Priorities, Tradeoffs, and Treatment Burden

Older adults with MCCs vary in their health outcome goals and care preferences, particularly when faced with trade-offs.<sup>6,7</sup> Furthermore, the accumulated effect of preventing or treating each disease, risk factor, and health complaint often results in treatment burden.<sup>5,8–13</sup> Decision making for individuals with MCCs should involve explicit consideration of a variety of care options according to the tradeoffs among potential benefits, burden, and harms, with the optimal choice determined by individuals’ specific health outcome goals and healthcare preferences.<sup>7,14,16–18</sup>

Uncertainty of Disease-Specific Guidelines

Decision making is more uncertain for older adults with MCCs than for other populations due to lack of applicable evidence and limitations of disease-based decision making:

*Lack of evidence applicable to older people with MCCs.* Older adults with MCCs are excluded from randomized controlled trials that generate evidence or are not enrolled in representative numbers.<sup>19–24</sup> Most trials focus on survival or specific disease measures or events.<sup>13</sup> These trials may not include function, symptom relief, or quality of life, outcomes important to older persons with MCCs.<sup>7</sup> There is also uncertainty as to whether benefits exceed harms or whether the often-modest benefits offset the burden in the face of multiple other important outcomes, conditions, and treatments.<sup>25</sup>

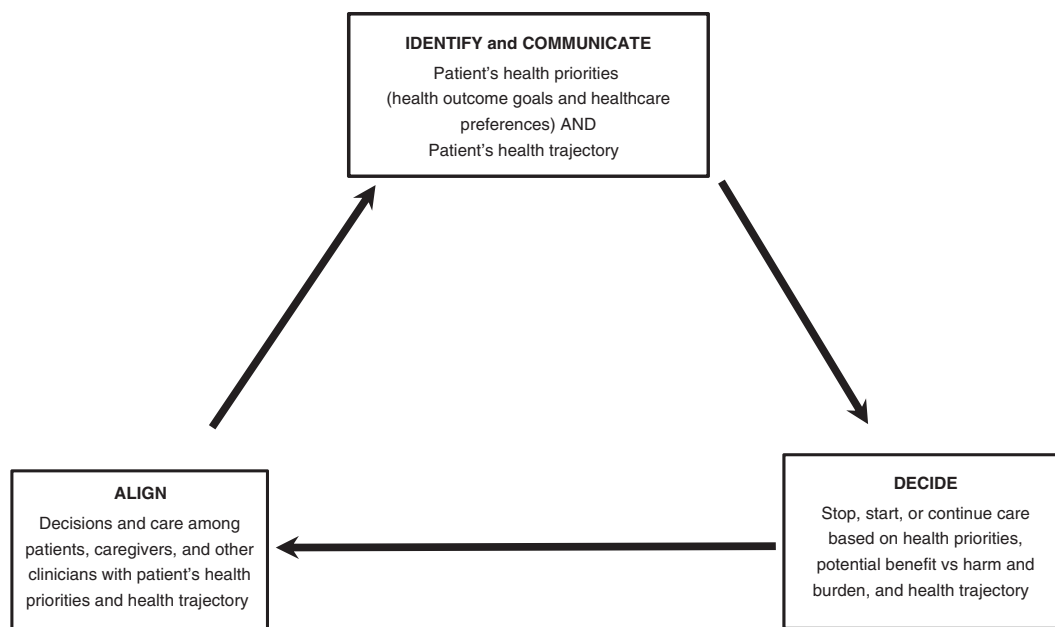
*Limitations of disease-based decision making in persons with MCCs.* Current approaches to guideline development and implementation usually focus on single diseases, which may have limited relevance to those with MCCs.<sup>13,26–29</sup> It is often unclear which condition(s) contribute to an individual’s function, symptoms, quality of life, or survival, and consequently, which conditions should be the main treatment targets.<sup>30</sup> Interventions that benefit one condition may worsen or complicate treatment of another condition.<sup>31</sup>

MCC Action Framework as a means for addressing uncertainty

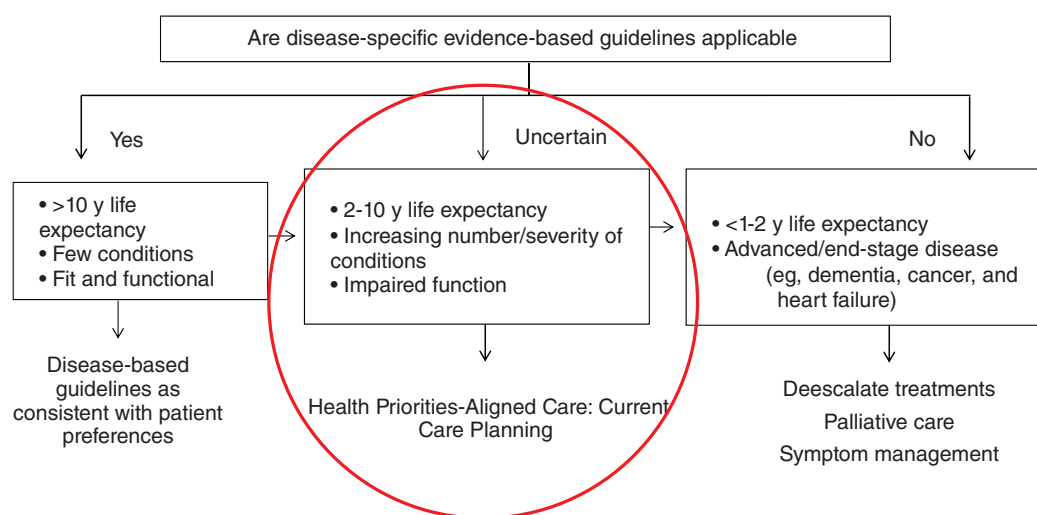
Decisions based on disease-specific guidelines are usually appropriate for older adults with few conditions or functional limitations. Conversely, most clinicians acknowledge that care should focus on symptom management and palliation for individuals with advanced illness and limited life expectancy. While appropriate for all ages, the MCC Action Steps were created to facilitate decision making in the face of uncertainty for the large segment of older adults with increasing numbers of chronic conditions and functional limitations (Figure 2). The framework filters care options through the lens of patients’ health outcome goals, healthcare preferences, and likely health trajectory, while minimizing harm and burden.

METHODS

The MCC Actions and Action Steps were developed through an iterative process with input, and ultimate agreement, from a work group that included clinicians representing geriatrics (including the cochair of the AGS expert panel that had developed the MCC Guiding Principles), cardiology, general internal medicine, and primary care. Cardiologists were included because they are responsible for much of the decision making for this population. The work group began with the existing MCC Guiding Principles, which were extensively researched and vetted.<sup>15</sup> The work group translated these principles into actions that are feasible in current clinical practice. To create



**Figure 1.** Patient priorities-aligned decision making for older adults with multiple chronic conditions.



**Figure 2.** Decision making and care of older adults with multiple chronic conditions. The Multiple Chronic Conditions Action Steps facilitate decision making in the face of uncertainty of disease guideline-driven decision making for the large segment of older adults with increasing numbers of chronic conditions and functional limitations.

Reproduced with permission from the *Journal of the American Geriatrics Society*. © 2018, The American Geriatrics Society.<sup>32</sup>

the MCC Action Framework, the work group: (1) articulated the core MCC Actions and the Action Steps needed to carry out the Actions; (2) provided decisional tips and communication scripts for implementing the Actions and Action Steps, using commonly encountered situations; (3) performed a scoping review to identify evidence-based, validated tools for carrying out the MCC Actions and Action Steps; and (4) identified potential barriers to, and mitigating factors for, implementing the MCC Actions. The tools and clinical scenarios are illustrative and not meant to be an exhaustive listing. Components of the Actions were applied in a pilot project during which they were modified based on clinician feedback and experience.<sup>32,33</sup> The work group provided iterative feedback during the development of the Framework and voted

unanimous agreement on the Actions, Action Steps, and final version of the article.

## RATIONALE FOR THE MCC STEPS

### Identify and Incorporate Patients' Health Priorities Into Decision Making

Respecting patients' goals and preferences is a tenet of patient-centered care for everyone,<sup>34</sup> but is perhaps particularly relevant for older adults with MCCs because of variability in conditions, health priorities, and life context.<sup>4,6</sup> Patients' specific health priorities give clinicians an anchor for decision making and communication in the face of uncertainty and

variability.<sup>35,36</sup> Furthermore, decisions based on patients' healthcare preferences improve adherence.<sup>18</sup> Even persons who desire clinicians to make most decisions want their preferences considered.<sup>37,38</sup> Aligning care (treatment) options with patients' health priorities also lessens the likelihood of conflicting recommendations and treatment burden if all clinicians focus on the same priorities.

Assess and Incorporate Patients' Health Trajectory Into Decision Making

Health trajectory includes likelihood of death in the next few years, as well as likely patterns of change in function, health status, and quality of life, which older adults with MCCs often prioritize.<sup>4,15</sup> While there are few predictive tools to address prognosis for such outcomes, health trajectory for these outcomes may be more important than quantity of life for many older adults with MCCs.<sup>39,40</sup>

Many preventive interventions, and some chronic disease treatments, offer no immediate benefit to symptoms, function, or quality of life and have a long lag time to benefit. Such interventions may cause harm or burden to persons unlikely to live long enough or be functional enough to experience future benefit. Persons vary in the priority they place on preventing a future bad event vs the priority they

place on their current function, symptoms, and treatment burden.<sup>16</sup>

Avoid Use of Harmful Treatments

Avoiding harm is a core precept of healthcare for all patients. People with MCCs are particularly likely to experience harms because of the effects of multiple interventions, conditions that pose potential interactions, and physiological changes with aging. Harm greater than benefit may occur because benefits are modest in the face of multiple coexisting conditions, or because of the high risk of harm or competing event before the intended benefits can accrue.<sup>19</sup> The higher baseline risk of some outcomes may not translate into greater net benefit when all outcomes are considered for older adults with MCCs.

Ensure Use of Beneficial Treatments

Potentially beneficial interventions may be neglected due to clinical inertia or concern about overburdening patients.<sup>41</sup> Potentially beneficial interventions may be preventive, diagnostic, treatment, palliative, rehabilitative, or supportive. A caveat to interpreting evidence of underuse of disease-specific and preventive interventions is that many studies did not include older adults with MCCs or address outcomes of importance to this population.<sup>13,19-24</sup>

Table 2. MCCs: Decisional Actions and Action Steps

<b>MCC ACTION: IDENTIFY AND COMMUNICATE PATIENTS' HEALTH PRIORITIES AND HEALTH TRAJECTORY</b>
<ul style="list-style-type: none"><li>• Identify and communicate patients' health priorities<ul style="list-style-type: none"><li>◦ Use a validated approach to identifying patients' health priorities</li><li>◦ Transmit patients' health priorities</li></ul></li><li>• Assess and communicate patients' health trajectory<ul style="list-style-type: none"><li>◦ Estimate life expectancy, trajectory, and lag time (time horizon) to benefit</li><li>◦ Determine patients' readiness to discuss their trajectory or prognosis</li><li>◦ Assess patients' perceptions of their prognosis and trajectory</li></ul></li></ul>
<b>MCC ACTION: STOP, START, OR CONTINUE CARE BASED ON HEALTH PRIORITIES, POTENTIAL BENEFIT VS HARM AND BURDEN, AND HEALTH TRAJECTORY</b>
<ul style="list-style-type: none"><li>• Acknowledge uncertainty and variable health priorities in decision making and communication</li><li>• Stop or do not start medications for which harm or burden may outweigh benefit<ul style="list-style-type: none"><li>◦ Stop medications deemed inappropriate in older adults</li><li>◦ Avoid medication cascades</li><li>◦ Perform serial trials if treatments may be contributing to bothersome symptoms</li><li>◦ Discontinue treatments no longer indicated or needed</li><li>◦ Review and adjust self-management tasks</li></ul></li><li>• Consider whether the patient has advanced illness or limited life expectancy that affects benefits and harms of treatments<ul style="list-style-type: none"><li>◦ Consider health trajectory and time to benefit for preventive interventions</li><li>◦ Explain cessation of screening and prevention as a shift in priorities and use positive messaging</li></ul></li></ul>
<b>MCC ACTION: ALIGN DECISIONS AND CARE AMONG PATIENTS, CAREGIVERS, AND OTHER CLINICIANS WITH PATIENTS' HEALTH PRIORITIES AND HEALTH TRAJECTORY</b>
<ul style="list-style-type: none"><li>• Affirm shared understanding of patients' health priorities and the information that informs decision making<ul style="list-style-type: none"><li>◦ Agree on the factors and information that will inform decision making and care</li><li>◦ Encourage patients and family/caregivers to participate in decision making</li></ul></li><li>• Align decisions when patient and clinician have different perspectives<ul style="list-style-type: none"><li>◦ Link decision to something meaningful to the patient</li><li>◦ Ensure that patients' health outcome goals are consistent with their healthcare preferences</li><li>◦ Identify and change bothersome aspects of treatment</li><li>◦ Accept patients' decisions</li></ul></li><li>• Align decisions when clinicians have different perspectives or recommendations<ul style="list-style-type: none"><li>◦ Focus discussion on patients' health priorities, not only on diseases</li><li>◦ Acknowledge absence of one "right answer" for patients with MCCs</li><li>◦ Use collaborative negotiation to arrive at shared recommendations</li></ul></li></ul>

Abbreviation: MCC, multiple chronic condition.

## Minimize Treatment Burden

Minimizing treatment burden and complexity is an increasingly recognized need for persons with MCCs.<sup>5,8–14</sup> These patients and their caregivers spend an average of 2 hours a day on healthcare-related activities and 2 hours on each of their many healthcare visits.<sup>8</sup> More than 40% of older adults acknowledge some degree of treatment burden that represents an underappreciated yet modifiable source of nonadherence.<sup>17,18</sup> Removing healthcare that is burdensome and not beneficial creates opportunity to start care that is beneficial and consistent with the patient's health priorities.

## Align Care Decisions Among Patients, Family/Caregivers, and Clinicians

Healthcare in which each clinician focuses only on his/her own domain and condition-specific outcomes leads to fragmentation, conflicting recommendations, treatment burden, and care that is not always focused on what matters most to patients. Decision making and communication aligned with patients' priorities puts everyone on the same page, thus minimizing these problems.<sup>42</sup> Communication and aligned decision making among patients, family/caregivers, and clinicians are key to implementation of the MCC Action Steps.

## ACTIONS AND ACTION STEPS FOR CARE OF OLDER ADULTS WITH MCCS

These MCC Actions and Action Steps provide a continuous process for decision making. Follow the MCC Actions and Action Step(s) relevant to each patient's situation (Table 2). Tips and scripts that support the Action Steps are included in the supplement ([www.GeriatricsCareOnline.org](http://www.GeriatricsCareOnline.org)).

### MCC ACTION: IDENTIFY AND COMMUNICATE PATIENTS' HEALTH PRIORITIES AND HEALTH TRAJECTORY

- **Identify and communicate patients' health priorities**
  - *Use a validated approach to identifying patient's health priorities*  
Clinically feasible approaches for identifying patients' health priorities are emerging.<sup>33,43–50</sup> Some approaches are appropriate for all older adults with MCCs; others are focused on persons with advanced illness or facing major decisions. Examples include:
    - For all older adults with MCCs:
      - Patient Priorities Identification<sup>33</sup> ([patientprioritiescare.org](http://patientprioritiescare.org)).
      - Validated questions for exploring patients' health priorities ([GeriatricsCareOnline.org](http://GeriatricsCareOnline.org)).
    - For persons with advanced illness:
      - VITALtalk<sup>48</sup> ([vitaltalk.org](http://vitaltalk.org)).
      - Prepare for your care<sup>49</sup> ([prepare.org](http://prepare.org)).
    - For major decisions:
      - Best-case and worst-case likely case scenarios.<sup>50</sup>
  - *Communicate patients' health priorities*  
Patient priorities, goals, and preferences should be documented in a site accessible by all clinicians and healthcare team members. All clinicians should be aware of patients' priorities, goals, and preferences and use them in communications with patients and other clinicians and in decision making, as described below.
- **Assess patients' health trajectory**
  - *Estimate life expectancy, health trajectory, and lag time (time horizon) to benefit:*

- Estimate life expectancy:
  - ePrognosis is a repository of evidence-based prognostic indices for older adults and includes a calculator for translating mortality risk into median life expectancy.<sup>51,52</sup>
- Consider patients' health trajectory:
  - While there are few predictive tools to address prognosis for outcomes such as function or quality of life, consider likely changes over 1 to 2 years.
  - Lack of return to prehospital function predicts poor health trajectory.<sup>40</sup>
- Estimate lag time (time horizon) to benefit:
  - Time to benefit for treatments (lag time) may be longer than the individual's projected life span,<sup>53,54</sup> and varies for different interventions.<sup>55</sup>
  - Consider time frames of 1 to 2, 2 to 5, 6 to 10, and 10 or more years.<sup>56,57</sup>
- *Determine patients' readiness to discuss their trajectory or prognosis*  
Patients vary in how much and how they wish to discuss health trajectory and prognosis.<sup>58–61</sup> Explore what information the patient is interested in discussing (eg, how long he/she may live or be able to live independently, or whether he/she will likely need frequent hospitalizations).
- Assess patients' perceptions of their prognosis and trajectory
  - Use questions such as, "What is your understanding of how your illnesses will affect your day-to-day life, and your health?"
  - Or How do you think the next 6 months or year or few years will be for you in terms of your health and function?

### MCC ACTION: STOP, START, OR CONTINUE CARE BASED ON HEALTH PRIORITIES, POTENTIAL BENEFIT VS HARM AND BURDEN, AND HEALTH TRAJECTORY

Healthcare activities, including medications, healthcare visits, testing, and self-management tasks, accumulate while patient's health status and health priorities change over time. Tradeoffs between benefit and harm/burden vary, depending on individuals' health outcome goals, healthcare preferences, and health trajectory. Eliminate harmful, inappropriate, or overly burdensome treatments unless there is clear evidence of benefits greater than harm in an individual. For primary care providers, this should include a comprehensive review of medications and self-management tasks. Specialists should review and address all treatments under their purview and be attuned to potential interactions or treatments that worsen other conditions.

Considerations on starting, continuing, or stopping all aspects of care should occur continuously based on whether the care remains indicated, whether the benefits—as defined by patients' health priorities—outweigh harms, and whether there are additional healthcare activities that would enhance achievement of patient's goals and be consistent with healthcare preferences. Strategies for aligning decisions with patients' priorities can be found at [patientprioritiescare.org/resources](http://patientprioritiescare.org/resources).

The aim of decision making should be to:

**STOP CARE** that is harmful, inconsistent with the patient's *health priorities, too burdensome, or inappropriate based on health trajectory if stopping is consistent with the patient's care preferences.*

**START OR CONTINUE CARE** that is *beneficial and consistent with the patient's health priorities and not too burdensome.*



Table 3. Barriers and Mitigating Factors to Implementing an MCC Framework

Barrier	Mitigating Factors	Potential Solutions
Lack of evidence for some MCC Action Steps	The MCC Action Steps Framework provides an effective and efficient patient-centered strategy for persons for whom disease-specific evidence does not exist, for whom there is much uncertainty, and for whom trying to follow guidelines is problematic.	Large-scale clinical trials of older adults with MCCs, evaluating intervention effects using universal, cross-disease outcomes.
Disease-based quality measures discourage care following MCC guiding principles and Action Steps	<ul style="list-style-type: none"> <li>• Documentation of reasons for care decisions satisfies performance requirements.</li> <li>• Patient satisfaction and adherence metrics will likely improve.</li> <li>• MACRA, and the move to value-based reimbursement can support patient priorities-aligned care if informed by patient-centered metrics.</li> <li>• There is increasing recognition on part of payers and regulators that disease- and event-based metrics have unintended adverse consequences, particularly for older adults with MCCs.<sup>83</sup></li> </ul>	Patient-centered metrics are in existence or under development that support patient priorities-aligned decision making.
Lack of infrastructure to identify and communicate patients' health priorities and concerns	Patients or their families/caregivers with Internet access should be encouraged to use the Patient EHR portal to transmit changing health priorities and concerns, monitor responses to treatment changes, and engage in the communication needed for decision making.	Self-directed approaches for patients to identify their health priorities are being developed, precluding need for clinician or staff time while fostering patient and caregiver engagement and partnership.
Lack of clinical workflow, infrastructure, and incentives for ascertaining and communicating patients' health priorities and aligning decisions among clinicians with these priorities	<ul style="list-style-type: none"> <li>• EHR can support messaging sites where clinicians can asynchronously discuss and negotiate shared decisions.</li> <li>• For sites without a shared EHR, secure text or fax messaging can support asynchronous clinician-clinician communication, with telephone or face to face reserved for the most complex situations.</li> </ul>	<ul style="list-style-type: none"> <li>• An integrated care plan, including input from relevant clinicians and residing in a shared EHR, is ideal for those health systems that can implement them.</li> <li>• Telehealth and platforms that support secure messaging and virtual communication between clinicians are increasingly available to clinicians.<sup>84,85</sup></li> <li>• Clinicians who feel connected with other clinicians have improved professional satisfaction and patient outcomes.<sup>86</sup></li> </ul>
Lack of accountability or no mechanism for assigning responsibility; clinicians often do not know each other		Identifying and agreeing on a primary clinical decision maker (primary care or specialist) for complex patients is time-saving.
Lack of dedicated or reimbursed time and resources to implement these actions	<ul style="list-style-type: none"> <li>• Proficiency in MCC Action Steps will increase with experience. Once mastered, this approach will be as, or more, time efficient than current disease-by-disease approach.</li> <li>• This is a continuous approach to decision making and not a task that needs to be completed during a single visit.</li> </ul>	<ul style="list-style-type: none"> <li>• Financial incentives in integrated, capitated, or risk sharing systems favor MCC Action Steps.</li> <li>• Chronic care management and care coordination E and M codes allow clinicians to be reimbursed for this work in fee-for-service settings.<sup>87</sup></li> <li>• A library of standard documentation for use in EHRs for documenting and communicating decisions and their rationales would ease workflow.</li> </ul>

Abbreviations: EHR, electronic health record; MACRA, Medicare Access and CHIP Reauthorization Act; MCC, multiple chronic condition.

• **Acknowledge and communicate uncertainty to patients and other clinicians**<sup>19–21,34–36</sup>

Acknowledging and communicating uncertainty to patients and other clinicians supports discussion of patient's priorities and the use of other information in decision making.

◦ *Use patients' priorities as the focus of decision making and communication*

- Frame the pros and cons of treatment and care options around each patient's priorities, not just disease-based tradeoffs.<sup>47,62</sup>
- Discuss treatments in the context of helping patients do what is important to them.

• **Stop or do not start medications for whom harm or burden may outweigh benefit for older adults**

◦ *Stop medications deemed inappropriate in older adults*<sup>63,64</sup>

◦ *Avoid medication cascades*<sup>65</sup>

◦ *Consider whether treatments may be contributing to symptoms and perform serial trials of discontinuing possible contributing treatments*

◦ *Discontinue or decrease treatments no longer indicated or needed*<sup>66–75</sup>

◦ *Review and adjust self-management tasks*<sup>72,76</sup>

• **Consider whether the patient has advanced illness or limited life expectancy that affects benefits and harms of treatments**

◦ *Consider health trajectory and time to benefit for preventive interventions*

◦ *Explain cessation of screening and prevention as a shift in priorities and use positive messaging*<sup>52,59,77</sup>

## MCC ACTION: ALIGN DECISIONS AND CARE AMONG PATIENTS, CAREGIVERS, AND OTHER CLINICIANS WITH PATIENTS' HEALTH PRIORITIES AND HEALTH TRAJECTORY

- **Affirm shared understanding of patients' health priorities and the information that informs decision making**
  - *Agree on the factors and information that will inform decision making and care*  
Everyone should use the same information to inform decisions, including:
    - Patient's health priorities, health trajectory, amount of benefit for outcomes that matter to the patient, and likelihood of adverse effects (eg, falls with antihypertensive medications,<sup>78</sup> bleeding from anticoagulation).
    - Family perspectives and concerns.<sup>79,80</sup>
    - Life context and stresses that affect outcomes and help or hinder adherence to treatments.<sup>81</sup>
    - Competing conditions that affect outcomes, response to interventions, and patients' priorities.<sup>9,25,30</sup>
  - *Encourage patients and family/caregivers to participate in decision making*
    - Encourage patients to discuss their health priorities and inquire about ways in which their healthcare may help them accomplish these health priorities.
    - Engage family members and companions, particularly those who regularly accompany the patient, to participate to the extent desired by the patient.<sup>79–82</sup>
- **Align decisions when patient and clinician have different perspectives**  
Patients and clinicians may differ in their perspectives or priorities, such as when a patient prioritizes avoiding adverse treatment effects or burden while the clinician is most concerned about risk of future health event or survival.
  - *Link decisions to something meaningful to the patient*<sup>50</sup>
  - *Ensure that patients' health outcome goals are consistent with their healthcare preferences*
    - Patients may be nonadherent because they do not know that there is a disconnect between their goals and what they are willing to do (their healthcare preferences).
  - *Identify and change bothersome aspects of treatment*
  - *Accept patient's decision*  
Accepting a patient's decision becomes easier when considering the often small absolute treatment benefits of individual treatments in the context of MCCs and that older adults may appropriately be more focused on current than future health and function.<sup>56</sup>
- **Align decisions when clinicians have different perspectives or recommendations**  
Clinicians caring for the same patient may reasonably differ about treatments, often because they vary in the information used to make decisions or in the importance they place on pieces of information. They may have different interpretations of the patient's priorities or how best to align treatment with these priorities. Resolving differences across clinicians is essential to avoiding conflicting recommendations.
  - *Focus discussion on patients' health priorities, not only on diseases*
  - *Acknowledge absence of one "right answer" for patients with MCCs*
  - *Use collaborative negotiation to arrive at shared recommendations when there are conflicting perspectives*
    - Define the issue in such a way that it becomes a common goal (ie, how best to help the patient achieve his/her health priorities)
    - Make sure everyone is using the same factors and information when considering and discussing treatment options

- Identify sources of differing recommendations (eg, one clinician feels disease-specific guidelines do not apply; another clinician may feel benefit is greater than harm)
- Brainstorm therapeutic alternatives (mutual problem solving).

Often, a compromise solution or planned trials for effects of changes can be agreed upon.

## BARRIERS AND MITIGATING FACTORS TO IMPLEMENTING MCC ACTION STEPS

Barriers and challenges face clinicians attempting to follow these MCC guiding principles and Action Steps. Some challenges arise from a healthcare culture and evidence base entrenched in managing individual conditions that may not be appropriate for persons with MCCs. Other challenges arise from health system fragmentation and lack of organizational, communication, and workflow structures to support integrated decision making and care. Anticipated barriers with possible mitigating factors to, as well as possible solutions for, implementing the MCC Action Steps are displayed in Table 3. Some solutions are more immediately implementable than others. Some require a national commitment of resources, while others can be done at the health system, clinical practice, or clinician level. All are feasible.

These MCC Action Steps provide a continuous process for decision making that is tailored to each patient's outcome goals, health trajectory, and healthcare preferences. If implemented, outcomes desired by patients with MCC will likely improve while burden and fragmentation will decrease.

## ACKNOWLEDGMENTS

**Financial Disclosure:** Supported in part by the John A. Hartford Foundation, the Robert Wood Johnson Foundation, and the Gordon and Betty Moore Foundation. We affirm that everyone who has contributed significantly to the work has been acknowledged.

**Conflicts of Interest:** Cynthia Boyd, MD, MPH: She received a royalty for coauthoring an article on multimorbidity for UpToDate.

Cynthia Daisy Smith, MD: Her spouse is employed by Merck and Company, and they own stock and stock options in the company; she is employed by the American College of Physicians.

Fred Masoudi, MD: He has a contract through the University of Colorado with the American College of Cardiology for his role as Chief Science Officer of the National Cardiovascular Data Registry.

Caroline S. Blaum, MD, MS: She has nothing to disclose.

John Dodson, MD, MPH: He has no relationships with industry.

Ariel R. Green, MD, MPH: She has nothing to disclose.

Amy Kelley, MD, MSHS: She has nothing to disclose.

Daniel Matlock, MD: He has nothing to disclose.

Jennifer Ouellet, MD: She has nothing to disclose.

Michael W. Rich, MD: He has nothing to disclose.

Nancy L. Schoenborn, MD: She has nothing to disclose.

Mary E. Tinetti, MD: She has nothing to disclose.

**Author Contributions:** Cynthia Boyd, MD, MPH: concept and design, interpretation, preparation of manuscript.

Cynthia Daisy Smith, MD: concept and design, interpretation.

Fred Masoudi, MD: concept and design, interpretation.

Caroline S. Blaum, MD, MS: concept and design, interpretation.

John Dodson, MD, MPH: concept and design, interpretation.

Ariel R. Green, MD, MPH: concept and design, interpretation.

Amy Kelley, MD, MSHS: concept and design, interpretation.

Daniel Matlock, MD: concept and design, interpretation.

Jennifer Ouellet, MD: concept and design, interpretation.

Michael W. Rich, MD: concept and design, interpretation.

Nancy L. Schoenborn, MD: concept and design, interpretation.

Mary E. Tinetti, MD: concept and design, analysis, preparation of manuscript.

**Sponsor's Role:** The sponsor had no role in the design, methods, or preparation of this manuscript.

## REFERENCES

1. Tinetti ME, Fried TR, Boyd CM. Designing health care for the most common chronic condition—multimorbidity. *JAMA*. 2012;307(23):2493-2494.
2. Sorace J, Wong HH, Worrall C, Kelman J, Saneinejad S, MaCurdy T. The complexity of disease combinations in the Medicare population. *Popul Health Manag*. 2011;14(4):161-166.
3. Quiñones AR, Markwardt S, Botosaneanu A. Multimorbidity combinations and disability in older adults. *J Gerontol A Biol Sci Med Sci*. 2016;71(6):823-830.
4. American Geriatrics Society Expert Panel on the Care of Older Adults With Multimorbidity. Guiding principles for the care of older adults with multimorbidity: an approach for clinicians. *J Am Geriatr Soc*. 2012;60(10):E1-E25.
5. Tran VT, Harrington M, Montori VM, Barnes C, Wicks P, Ravaud P. Adaptation and validation of the Treatment Burden Questionnaire (TBQ) in English using an internet platform. *BMC Med*. 2014;12:109.
6. Fried TR, McGraw S, Agostini JV, Tinetti ME. Views of older persons with multiple morbidities on competing outcomes and clinical decision-making. *J Am Geriatr Soc*. 2008;56(10):1839-1844.
7. Case SM, O'Leary J, Kim N, Tinetti ME, Fried TR. Older adults' recognition of trade-offs in healthcare decision-making. *J Am Geriatr Soc*. 2015;63(8):1658-1662.
8. Jowsey T, Yen L, Mathews P. Time spent on health related activities associated with chronic illness: a scoping literature review. *BMC Public Health*. 2012;12(1):1044.
9. Tran VT, Barnes C, Montori VM, Falissard B, Ravaud P. Taxonomy of the burden of treatment: a multi-country web-based qualitative study of patients with chronic conditions. *BMC Med*. 2015;13:115.
10. Boyd CM, Wolff JL, Giovannetti E, et al. Healthcare task difficulty among older adults with multimorbidity. *Med Care*. 2014;52(suppl 3):S118-S125.
11. Weiss JW, Boyd CM. Managing complexity in older patients with CKD. *Clin J Am Soc Nephrol*. 2017;12(4):559-561.
12. Bowling CB, Vandenberg AE, Phillips LS, McClellan WM, Johnson TM, Echt KV. Older patients' perspectives on managing complexity in CKD self-management. *Clin J Am Soc Nephrol*. 2017;12(4):635-643.
13. Boyd CM, Darer J, Boulton C, Fried LP, Boulton L, Wu AW. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: implications for pay for performance. *JAMA*. 2005;294(6):716-724.
14. Tinetti ME, Esterson J, Ferris R, Posner P, Blaum CS. Patient priority-directed decision making and care for older adults with multiple chronic conditions. *Clin Geriatr Med*. 2016;32(2):261-275.
15. American Geriatrics Society Expert Panel on the Care of Older Adults With Multimorbidity. Patient-centered care for older adults with multiple chronic conditions: a stepwise approach from the American Geriatrics Society. *J Am Geriatr Soc*. 2012;60(10):1957-1968.
16. Fried TR, Tinetti ME, Towle V, O'Leary JR, Iannone L. Effects of benefits and harms on older persons' willingness to take medication for primary cardiovascular prevention. *Arch Intern Med*. 2011;171(10):923-928.
17. Wolff JL, Boyd CM. A look at person- and family-centered care among older adults: results from a national survey [corrected]. *J Gen Intern Med*. 2015;30(10):1497-1504.
18. Naik AD, Dyer CB, Kunik ME, McCullough LB. Patient autonomy for the management of chronic conditions: a two-component re-conceptualization. *Am J Bioeth*. 2009;9(2):23-30.
19. Boyd CM, Kent DM. Evidence-based medicine and the hard problem of multimorbidity. *J Gen Intern Med*. 2014;29(4):552-553.
20. Uhlig K, Leff B, Kent D, et al. A framework for crafting clinical practice guidelines that are relevant to the care and management of people with multimorbidity. *J Gen Intern Med*. 2014;29(4):670-679.
21. Weiss CO, Varadhan R, Puhon MA, et al. Multimorbidity and evidence generation. *J Gen Intern Med*. 2014;29(4):653-660.
22. Boyd CM, Vollenweider D, Puhon MA. Informing evidence-based decision-making for patients with comorbidity: availability of necessary information in clinical trials for chronic diseases. *PLoS One*. 2012;7(8):e41601.
23. Navar AM, Pencina MJ, Peterson ED. Assessing cardiovascular risk to guide hypertension diagnosis and treatment. *JAMA Cardiol*. 2016;1(8):864-871.
24. O'Hare AM, Hotchkiss JR, Kurella Tamura M, et al. Interpreting treatment effects from clinical trials in the context of real-world risk information: end-stage renal disease prevention in older adults. *JAMA Intern Med*. 2014;174(3):391-397.
25. Tinetti ME, McAvay GJ, Fried TR, et al. Health outcome priorities among competing cardiovascular, fall injury, and medication-related symptom outcomes. *J Am Geriatr Soc*. 2008;56(8):1409-1416.
26. Fortin M, Contant E, Savard C, Hudon C, Poitras ME, Almirall J. Canadian guidelines for clinical practice: an analysis of their quality and relevance to the care of adults with comorbidity. *BMC Fam Pract*. 2011;12:74.
27. Lugtenberg M, Burgers JS, Clancy C, Westert GP, Schneider EC. Current guidelines have limited applicability to patients with comorbid conditions: a systematic analysis of evidence-based guidelines. *PLoS One*. 2011;6(10):e25987.
28. Fabbri LM, Boyd C, Boschetto P, et al. How to integrate multiple comorbidities in guideline development: article 10 in integrating and coordinating efforts in COPD guideline development: an official ATS/ERS workshop report. *Proc Am Thorac Soc*. 2012;9(5):274-281.
29. Trikalinos TA, Segal JB, Boyd CM. Addressing multimorbidity in evidence integration and synthesis. *J Gen Intern Med*. 2014;29(4):661-669.
30. Tinetti ME, McAvay GJ, Chang SS, et al. Contribution of multiple chronic conditions to universal health outcomes. *J Am Geriatr Soc*. 2011;59(9):1686-1691.
31. Lorgunpai SJ, Grammas M, Lee DSH, McAvay G, Charpentier P, Tinetti ME. Potential therapeutic competition in community-living older adults in the U.S.: use of medications that may adversely affect a coexisting condition. *PLoS One*. 2014;9(2):e89447.
32. Blaum C, Rosen J, Naik AD, et al. Feasibility of implementing patient priorities care for patients with multiple chronic conditions. *J Am Geriatr Soc*. 2018;66(10):2009-2016.
33. Naik AD, Dindo L, Van Liew J, et al. Development of a clinically-feasible process for identifying patient health priorities. *J Am Geriatr Soc*. 2018;66(10):1872-1879.
34. Institute of Medicine (IOM). *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press; 2001.
35. Ledford CJ, Cafferty LA, Seehusen DA. Socializing identity through practice: a mixed methods approach to family medicine resident perspectives on uncertainty. *Fam Med*. 2015;47(7):549-553.
36. Ledford CJ, Seehusen DA, Chessman AW, Shokar NK. How we teach U.S. medical students to negotiate uncertainty in clinical care: a CERA study. *Fam Med*. 2015;47(1):31-36.
37. Fried TR. Shared decision making-finding the sweet spot. *N Engl J Med*. 2016;374:104-106.
38. Chi WC, Wolff J, Greer R, Dy S. Multimorbidity and decision-making preferences among older adults. *Ann Fam Med*. 2017;15:546-551.
39. Gill TM, Allore HG, Holford TR, Guo Z. Hospitalization, restricted activity, and the development of disability among older persons. *JAMA*. 2004;292(17):2115-2124.
40. Boyd CM, Landefeld CS, Counsell SR, et al. Recovery of activities of daily living in older adults after hospitalization for acute medical illness. *J Am Geriatr Soc*. 2008;56(12):2171-2179.
41. Narayan V, Jiang S, Warlick CA. Early stage cancer in older adults: prostate-avoiding overtreatment and undertreatment. *Cancer J*. 2017;23(4):238-241.
42. Coulter A, Entwistle VA, Eccles A, Ryan S, Shepperd S, Perera R. Personalised care planning for adults with chronic or long-term health conditions. *Cochrane Database Syst Rev*. 2015;3:CD010523.



43. Naik AD, Palmer N, Petersen NJ, et al. Comparative effectiveness of goal setting in diabetes mellitus group clinics: randomized clinical trial. *Arch Intern Med.* 2011;171(5):453-459.
44. Naik AD, Martin LA, Moyer J, Karel MJ. Health values and treatment goals of older, multimorbid adults facing life-threatening illness. *J Am Geriatr Soc.* 2016;64(3):625-631.
45. Brown VA, Bartholomew LK, Naik AD. Management of chronic hypertension in older men: an exploration of patient goal-setting. *Patient Educ Couns.* 2007;69(1):93-99.
46. Kelley AS, Back AL, Arnold RM, et al. Geritalk: communication skills training for geriatric and palliative medicine fellows. *J Am Geriatr Soc.* 2012;60(2):332-337.
47. Patient Priorities Care Specific Ask Conversation Guide (online). <https://patientprioritiescare.org>. Accessed January 16, 2019.
48. VitalTalk (online). <http://vitaltalk.org/>. Accessed January 16, 2019.
49. Prepare for your care (online). The Regents of the University of California. c2012-2018. [www.prepareforyourcare.org](http://www.prepareforyourcare.org). Accessed January 16, 2019.
50. Kruser JM, Nabozny MJ, Steffens NM, et al. "best case/worst case": qualitative evaluation of a novel communication tool for difficult in-the-moment surgical decisions. *J Am Geriatr Soc.* 2015;63(9):1805-1811.
51. Pollack CE, Blackford AL, Schoenborn NL, Boyd CM, Peairs KS, DuGoff EH. Comparing prognostic tools for cancer screening: considerations for clinical practice and performance assessment. *J Am Geriatr Soc.* 2016;64(5):1032-1038.
52. ePrognosis (online). University of California. <https://eprognosis.ucsf.edu>. Accessed January 16, 2019.
53. Holmes HM, Cox Hayley D, Alexander CB, Sachs GA. Reconsidering medication appropriateness for patients late in life. *Arch Intern Med.* 2006;166:605-609.
54. Lee SJ, Leipzig RM, Walters L. Incorporating lag time to benefit into prevention decisions for older adults. *JAMA.* 2013;310(24):2609-2610.
55. Lee SJ, Kim CM. Individualizing prevention for older adults. *J Am Geriatr Soc.* 2018;66(2):229-234.
56. Reuben DB. Medical care for the final years of life: "when you're 83, it's not going to be 20 years." *JAMA.* 2009;302(24):2686-2694.
57. Lewis CL, Esserman D, DeLeon C, Pignone MP, Pathman DE, Golin C. Physician decision making for colorectal cancer screening in the elderly. *J Gen Intern Med.* 2013;28(9):1202-1207.
58. Ahalt C, Walter LC, Yourman L, Eng C, Pérez-Stable EJ, Smith AK. "Knowing is better": preferences of diverse older adults for discussing prognosis. *J Gen Intern Med.* 2012;27(5):568-575.
59. Schoenborn NL, Lee K, Pollack CE, et al. Older adults' views and communication preferences about cancer screening cessation. *JAMA Intern Med.* 2017;177(8):1121-1128.
60. Schoenborn NL, Lee K, Pollack CE, et al. Older adults preferences for when and how to discuss life expectancy in primary care. *J Am Board Fam Med.* 2017;30(6):813-815.
61. Fried TR, Bradley EH, O'Leary J. Prognosis communication in serious illness: perceptions of older patients, caregivers, and clinicians. *J Am Geriatr Soc.* 2003;51(10):1398-1403.
62. Childers JW, Back AL, Tulskey JA, Arnold RM. REMAP: a framework for goals of care conversations. *J Oncol Pract.* 2017;13(10):e844-e850.
63. The 2019 American Geriatrics Society Beers Criteria® Update Expert Panel. The 2019 American Geriatrics Society Beers Criteria® for potentially inappropriate medication use in older adults. *J Am Geriatr Soc.* 2019; <https://doi.org/10.1111/jgs.15767>. [Epub ahead of print].
64. O'Mahony D, O'Sullivan D, Byrne S, O'Connor MN, Ryan C, Gallagher P. STOPP/START criteria for potentially inappropriate prescribing in older people: version 2. *Age Ageing.* 2015;44(2):213-218.
65. Rochon PA, Gurwitz JH. The prescribing cascade revisited. *Lancet.* 2017;389(10081):1778-1780.
66. Kutner JS, Blatchford PJ, Taylor DH Jr, et al. Safety and benefit of discontinuing statin therapy in the setting of advanced, life-limiting illness: a randomized clinical trial. *JAMA Intern Med.* 2015;175(5):691-700.
67. Tjia J, Kutner JS, Ritchie CS, et al. Perceptions of statin discontinuation among patients with life-limiting illness. *J Palliat Med.* 2017;20(10):1098-1103.
68. Garfinkel D, Mangin D. Feasibility study of a systematic approach for discontinuation of multiple medications in older adults: addressing polypharmacy. *Arch Intern Med.* 2010;170(18):1648-1654.
69. Haastrup P, Paulsen MS, Begtrup LM, Hansen JM, Jarbøl DE. Strategies for discontinuation of proton pump inhibitors: a systematic review. *Fam Pract.* 2014;31(6):625-630.
70. Black DM, Rosen CJ. Clinical practice: postmenopausal osteoporosis. *N Engl J Med.* 2016;374(3):254-262.
71. Graves T, Hanlon JT, Schumacher KE, et al. Adverse events after discontinuing medications in elderly outpatients. *Arch Intern Med.* 1997;157(19):2205-2210.
72. American Geriatrics Society Expert Panel on the Care of Older Adults With Diabetes Mellitus. Guidelines for improving the care of older adults with diabetes mellitus: 2013 update. *J Am Geriatr Soc.* 2013;61(11):2020-2026.
73. Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APHA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Hypertension.* 2018;71(6):e133115.
74. Qaseem A, Wilt TJ, Rich R, et al. Pharmacologic treatment of hypertension in adults aged 60 years or older to higher versus lower blood pressure targets: a clinical practice guideline from the American College of Physicians and the American Academy of Family Physicians. *Ann Intern Med.* 2017;166(6):430-437.
75. Deprescribing Guidelines and Algorithms (online). Ottawa, ON, Canada: Bruyere Research Institute. 2018. <https://deprescribing.org/resources/deprescribing-guidelines-algorithms>. Accessed January 16, 2019.
76. Choosing Wisely (online). Philadelphia, PA: ABIM Foundation. 2018. <http://www.choosingwisely.org/patient-resources/>. Accessed January 16, 2019.
77. Schoenborn NL, Bowman TL 2nd, Cayea D, Boyd C, Feaser S, Pollack CE. Discussion strategies that primary care clinicians use when stopping cancer screening in older adults. *J Am Geriatr Soc.* 2016;64(11):e221-e223.
78. Tinetti ME, Han L, Lee DS, et al. Anti-hypertensive medications and serious fall injuries in a nationally representative sample of older adults. *JAMA Intern Med.* 2014;174(4):588-595.
79. Scholle SH, Torda P, Peikes D, Han E, Genevro J. Engaging Patients and Families in the Medical Home. (Prepared by Mathematica Policy Research under Contract No. HHS2902009000191 TO2.) AHRQ Publication No. 10-0083-EF. Agency for Healthcare Research and Quality: Rockville, MD; 2010.
80. Wolff JL, Roter DL, Boyd CM, et al. Patient-family agenda setting for primary care patients with cognitive impairment: the SAME page trial. *J Gen Intern Med.* 2018;33(9):1478-1486.
81. Bayliss EA, Bonds DE, Boyd CM, et al. Understanding the context of health for persons with multiple chronic conditions: moving from what is the matter to what matters. *Ann Fam Med.* 2014;12(3):260-269.
82. Wolff JL, Roter DL, Barron J, et al. A tool to strengthen the older patient-companion partnership in primary care: results from a pilot study. *J Am Geriatr Soc.* 2014;62(2):312-319.
83. CMS Administrator Verma Announces New Meaningful Measures Initiative and Addresses Regulatory Reform: Promotes Innovation at LAN Summit (online). Baltimore, MD: CMS. 2017. <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2017-Press-releases-items/2017-10-30.html>. Accessed January 16, 2019.
84. Wechsler LR, Demaerschalk BM, Schwamm LH, et al. Telemedicine quality and outcomes in stroke: a scientific statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke.* 2017;48(1):e3-e25.
85. State Telehealth Laws and Reimbursement Policies: A Comprehensive Scan of the 50 States and District of Columbia. Center for Connected Health Policy. [https://www.cchpca.org/sites/default/files/2018-10/CCHP\\_50\\_State\\_Report\\_Fall\\_2018.pdf](https://www.cchpca.org/sites/default/files/2018-10/CCHP_50_State_Report_Fall_2018.pdf). Accessed January 16, 2019.
86. Welp A, Manser T. Integrating teamwork, clinician occupational well-being and patient safety: development of a conceptual framework based on a systematic review. *BMC Health Serv Res.* 2016;16:281.
87. Chronic Care Management Services Changes for 2017 (online). CMS. <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/Downloads/ChronicCareManagementServicesChanges2017.pdf>. Accessed January 16, 2019.