Promoting the Appropriate Use of Health Care Services: Research and Policy Priorities

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Executive Summary

Improving quality and enhancing value in U.S. health care delivery is a national priority. Many public and private sector initiatives, including the ABIM Foundation *Choosing Wisely*® campaign among others, are developing, testing, and deploying strategies to reduce overuse and promote the appropriate use of health care services.

The ABIM Foundation and AcademyHealth are interested in identifying, stimulating and disseminating health services research to support these and other initiatives focused on health care resource utilization. The two organizations partnered to assess, and then convene a small invitational meeting to discuss, the current landscape and opportunities, priorities, and challenges related to sponsoring, conducting, and disseminating this research. This report summarizes findings from the partnership activities and presents a framework for prioritizing future research related to health care resource utilization.

To understand the current landscape, Health Services Research Projects in Progress (HSRProj), a National Library of Medicine database that contains descriptions of research funded by federal and private grants and contracts, was used to conduct a horizon scan of recently completed and ongoing projects related to health care resource utilization. We found the majority of recently completed and ongoing work has utilized secondary data analysis to examine providers' and patients' use of prescription drugs. The HSRProj review was supplemented with a brief survey to selectively identified national experts who are conducting or supporting work related to health care resource utilization. In the survey, experts were asked to list the three highest-priority areas for improving the feasibility of conducting this research as well as to identify the top five priority research and/or policy questions.

Survey responses indicated that a shortage of sufficiently detailed, reliable, actionable and accessible data as well as limited available funding challenge the feasibility of health care resource utilization research. Survey respondents also identified research and policy questions in the following four priority areas: 1) definitions and methods; 2) measurement; 3) effective models to reduce low-value care; and 4) payer/health care system strategies. Specifically, consensus-building is needed around key definitions, including appropriateness, cost, and value, so that accurate and comparable measurement and analysis can take place. Measurement should begin with a clear purpose, since appropriate measures may differ for quality, accountability and/or research purposes. Additional work is needed to develop a multi-stakeholder, vetted and nuanced approach to measurement that captures the full story of health services utilization, including both overuse and underuse.

Finally, the survey identified a need for clear definitions and thoughtful and purposeful measurement to assess the effectiveness of models to reduce low-value care. Respondents felt future research should examine which health care system stakeholders have the greatest influence on low-value care use as well as effective "de-implementation" strategies to eradicate existing processes that have been determined to be low-value. Similarly, recommendations to inform physicians' and patients' behavior may not readily scale for use in public reporting and value-based payment strategies, which both require great precision. Research is needed to understand when variation in clinical practice signals low-value care as well as what health care system features facilitate or hinder high-value care.

The HSRProj review and survey formed the basis of the moderated discussion at the ABIM Foundation and AcademyHealth meeting in February 2014. Throughout the moderated discussion, consistent themes emerged regarding how to prioritize health care resource utilization research and the need for research that:

- Utilizes clear definitions of research terms that are developed through a multi-stakeholder process;
- Targets tests and treatments with a high level of evidence that they cause harm (considering both physical and financial harm);
- Identifies both direct and indirect cost implications of inappropriate care; and
- Specifies the purpose of measurement as well as the level of precision needed to be actionable in policy and practice.

Given the range of stakeholders involved in or affected by eradicating low-value care and promoting the appropriate use of health care services, multi-stakeholder collaboration will be needed throughout defining, measuring, analyzing and disseminating research on health care resource use and in designing and implementing effective policy.

Background

The 2012 *Choosing Wisely* initiative, a partnership of the ABIM Foundation, medical specialty societies and *Consumer Reports*, has gained significant national attention.[1] The initiative focuses on encouraging clinicians, patients and other health care stakeholders to have conversations about medical tests and procedures that may be unnecessary and, in some instances, cause harm. More than 60 specialty societies have now joined the campaign (as of May 21, 2014). Each society has provided at least one list of five evidence-based recommendations of tests and treatments that physicians and patients should question, with the goal of improving care and eliminating unnecessary tests/procedures and their downstream consequences. This is the first time specialty societies have banded together in the United States to address the overuse of health care services. The movement has continued to swell, with specific sections in *JAMA Internal Medicine*,

the *Annals of Internal Medicine,* and the *British Medical Journal* devoted to topics of overuse and low-value care.

Improving quality and enhancing value in health care delivery is a national priority, and many public and private sector initiatives are developing, testing, and deploying strategies to reduce overuse and promote appropriate use, quality and optimal health outcomes. Research and interventions related to overuse are dynamic and growing rapidly; however, research in this area, and in health care resource utilization more broadly, faces significant challenges due to funding lags and the traditional timeline for disseminating scientific findings.

The ABIM Foundation and AcademyHealth are interested in identifying, stimulating and disseminating health services research (HSR) in the area of health care resource utilization. The two organizations partnered to convene a small invitational meeting to discuss the current landscape, opportunities, priorities, and challenges in sponsoring, conducting, and disseminating research to inform health care resource use strategies. This report summarizes the findings from the partnership activities and presents a framework for prioritizing future research related to health care resource utilization.

Methods

Three sources of information were used to develop this report and recommendations:

- A review of HSR projects funded by public and private sector organizations since 2005;
- A brief survey of leading experts in the field of health resource utilization; and
- A moderated discussion among researchers, research funders, and stakeholders in health care resource use held in conjunction with the 2014 AcademyHealth National Health Policy Conference.

In preparation for the invitational meeting, AcademyHealth staff used the Health Services Research Projects in Progress (HSRProj) database to identify and categorize completed and current research projects (from January 2005 – October 2013) related to health care resource utilization.[2] The search strategy included the following terms (number of projects found): unnecessary (68), health services utilization (54), overuse (36), *Choosing Wisely* (1) and health services misuse (0). Numbers of projects identified were not mutually exclusive by search term. The search results were combined and de-duplicated, and irrelevant entries were removed through an abstract review.

The HSRProj database is updated biannually. To address potential lags, we also conducted a brief survey with selectively identified national experts to identify other currently-funded projects in the area of health care resource use. Unique research projects identified from the survey responses were combined with results from the HSRProj scan. Together, these projects form the basis of the summary and graphic depictions of current and recently funded research on health care resource utilization. According to this review, the Agency for Healthcare Research and Quality (AHRQ) and the Robert Wood Johnson Foundation have funded the greatest number of grants in these areas, 20 and 18 projects respectively, since 2005; however, the number of grants is not necessarily tied to the level of financial investment. Other prominent funders included the National Cancer Institute, the National Institute on Aging, and the U.S. Department of Veterans Affairs. This review represents a preliminary evaluation of recently completed and ongoing projects related to health care resource use. It is not intended to be exhaustive and likely excludes organizations' internally funded initiatives.

The projects identified in the review were coded by study focus (**Figure 1**), study design (**Figure 2**) and the primary disease or condition of interest (**Figure 3**). Providers and patients represent the focus of the majority of the completed and ongoing studies. Less well-represented are studies focused on resource use related to payment, health care reform, patient-centered care and strategies to address resource use such as telemedicine and shared decision making. (**Figure 1**)

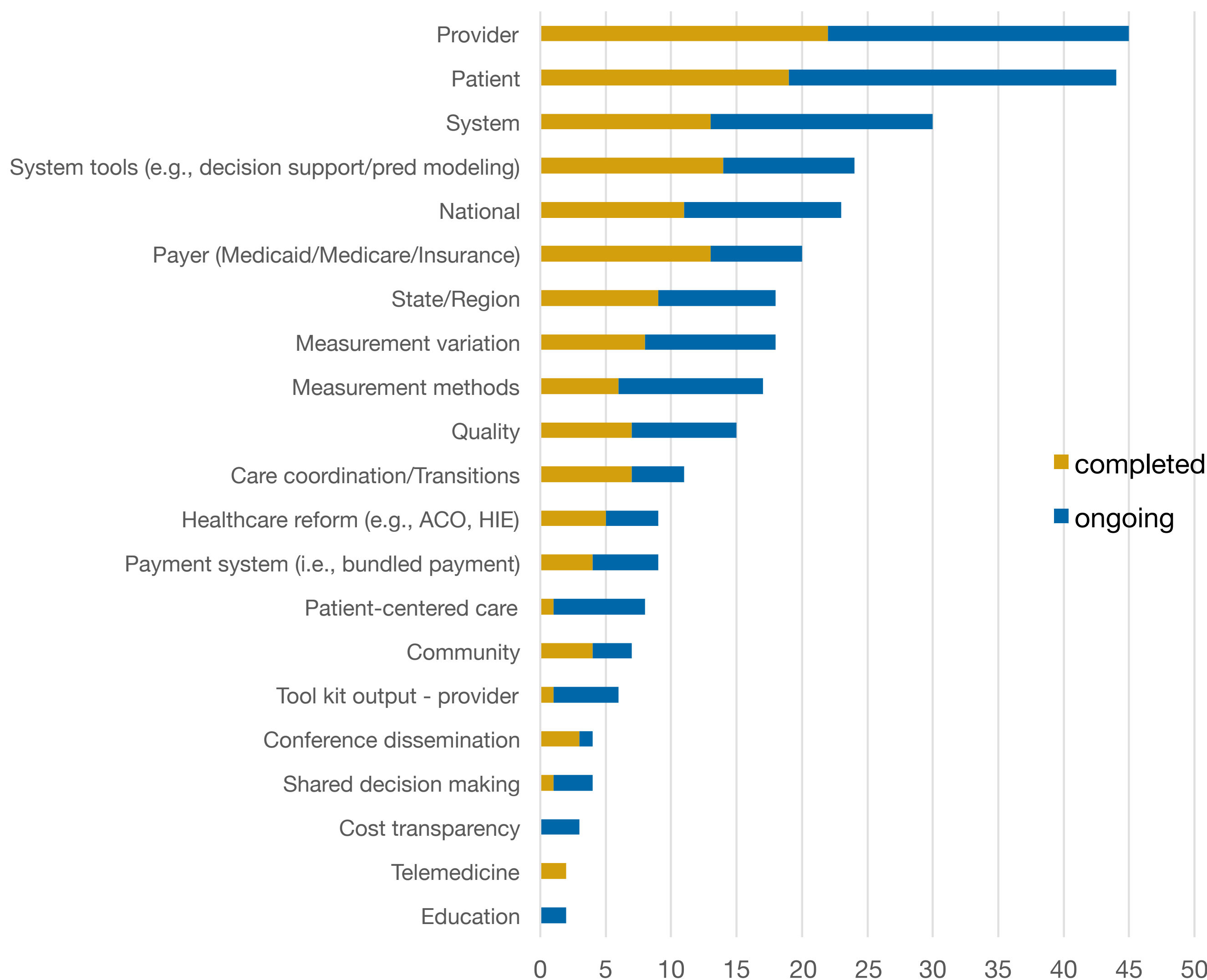
In terms of study design, the majority of studies have used secondary data analysis (**Figure 2**). Sources of secondary data were not systematically captured. There are several randomized controlled trials and interventional studies on health care resource utilization currently underway.

A majority of completed studies examined prescription drugs (**Figure 3**). More recent, ongoing health care resource utilization studies focus on cancer, home health or long-term care, hospital admissions, discharge and re-admissions, cardiovascular disease, and back, hip and knee procedures.

Research Feasibility

In the survey sent to selectively identified national experts, open-ended questions asked individuals to list the three highest-priority areas for improving the feasibility of conducting research on health care resource utilization. Responses were assessed through a two-level coded review (**Figure 4**). Notably, there were few differences between the barriers suggested with regard to research on resource

Figure 1. Study focus for completed and ongoing studies. Categories are not mutually exclusive.



use and the barriers present for most of health services research – namely the need for data that are detailed, valid, reliable, actionable and readily available. Many respondents also identified challenges related to funding for research in health care resource utilization, coupled with the need for academic and stakeholder collaboration.

Research and Policy Priorities

The survey also asked national experts to identify the top five priority research and/or policy questions in health care resource utilization. Responses were similarly assessed through a two-level coded review, which identified four priority areas: 1) definitions and methods; 2) measurement; 3) effective models to reduce low-value care; and 4) payer/health care system strategies. The expert survey informed the moderated discussion held in conjunction with AcademyHealth's National Health Policy Conference in February 2014. The discussion and key points are detailed below. A summary of the research and policy priorities identified is outlined in **Table 1**.

Definitions and Methods

Key Points:

- Consensus-building is needed around the definitions for appropriateness; costs (to whom); value (what constitutes value across individuals and settings and how can it be measured); overuse; misuse; and underuse so that accurate measurement and analysis can take place.
- Translation and communication of key terms around health care resource utilization are needed to effectively communicate with patients, physicians, health care organizations and payers.

Definitions and methods emerged as a research and policy priority for work related to health care resource utilization, in particular the need to define several terms more clearly: utilization, variation, and appropriateness. While utilization and variation are relatively straightforward to define, appropriateness proves more challenging because it requires measuring the harms and benefits for a given person with a specific risk/benefit profile.

Figure 2. Study design for completed and ongoing studies. Categories are not necessarily mutually exclusive if multi-modal.

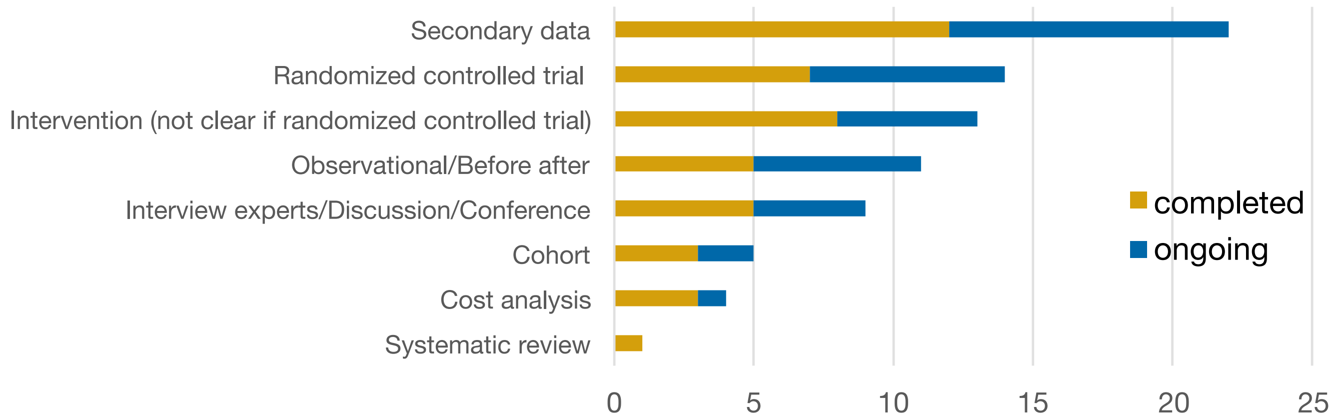
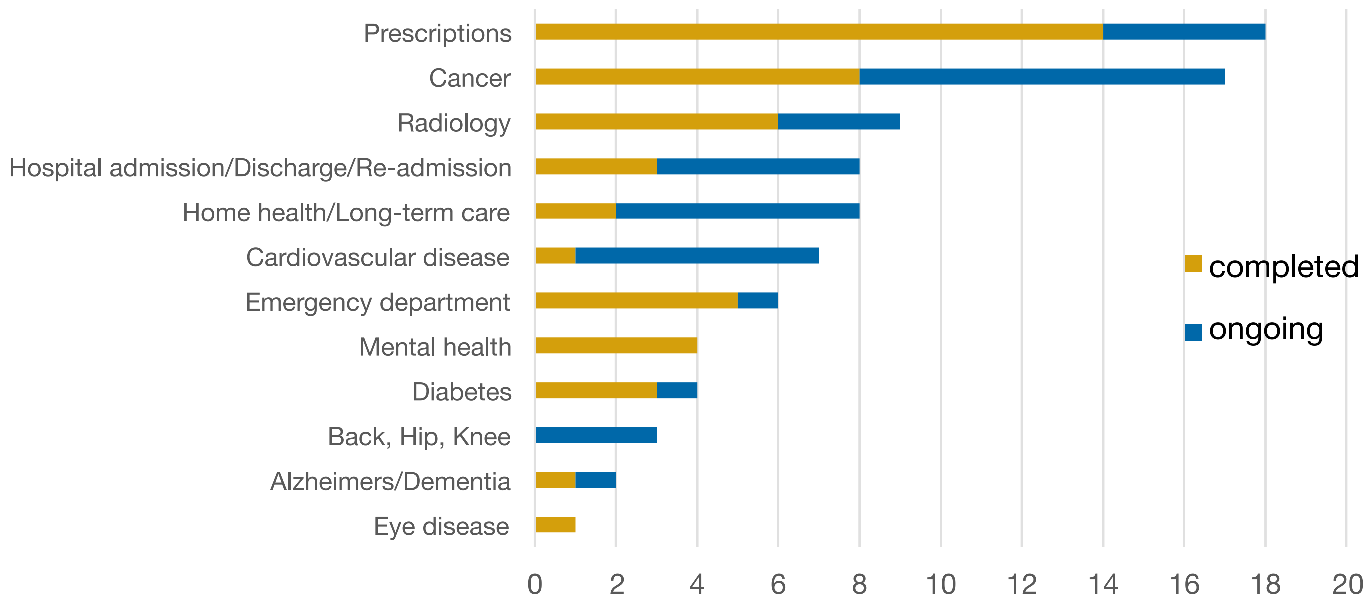


Figure 3. Diseases and conditions of interest in completed and ongoing studies.



Additional terms in need of clearer definitions include: costs (to whom); value (what constitutes value and how can it be measured); overuse; misuse; and underuse. There was significant discussion about the need to define value and how it can be measured when there are different definitions that will apply across individuals, situations or settings. A recent brief produced by the Robert Wood Johnson Foundation's State Health and Value Strategies program notes that the Institute of Medicine prescribes unique definitions for overuse and misuse, yet the distinctions between these terms are often lost in practice.[3] Consensus-building is needed around the definitions for these and the other identified terms so that accurate measurement and analysis can take place.

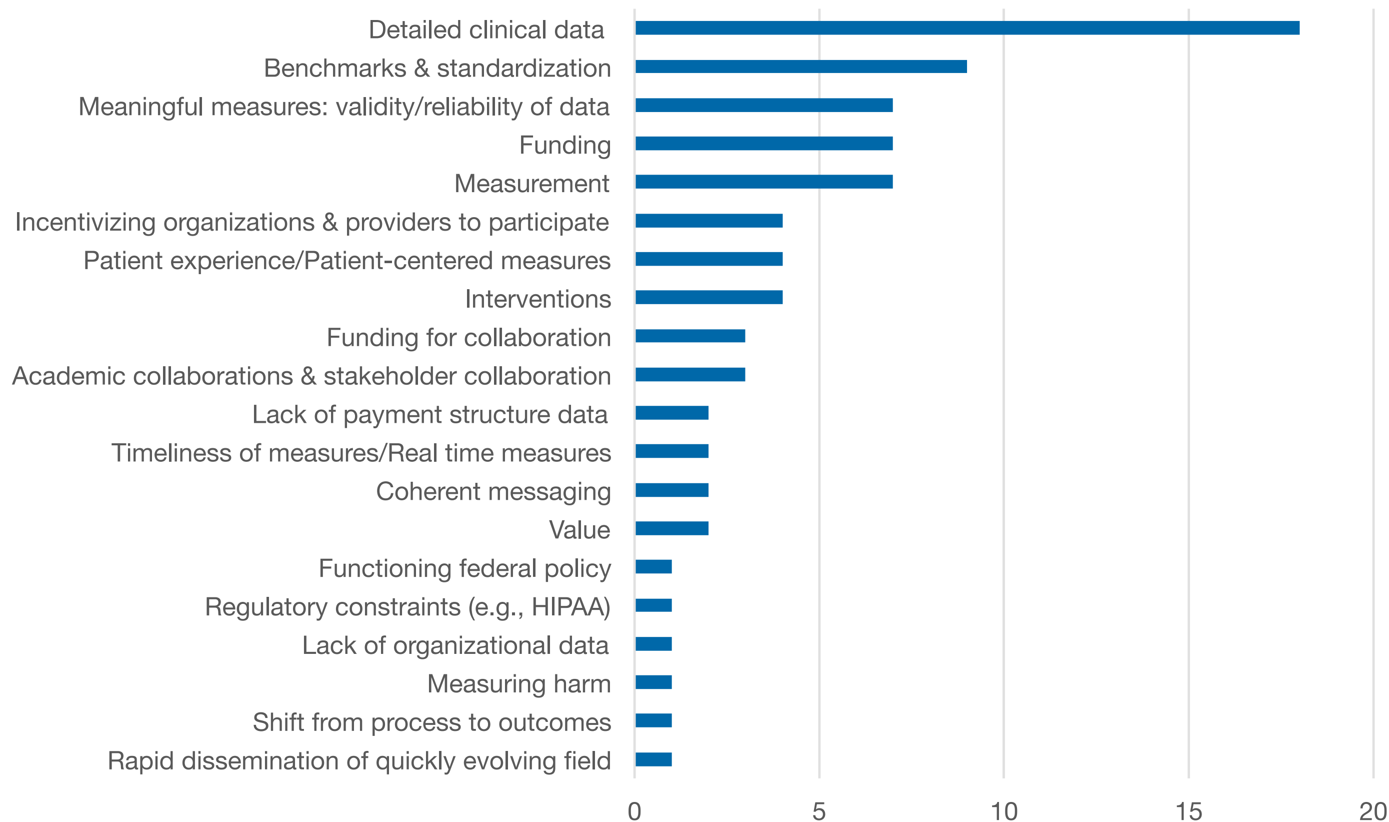
Once clear definitions are developed, these terms will likely need to be translated into readily understandable words that can be used to communicate with and inform the public. Many terms do not resonate with physicians or patients, including, for example, stewardship or marginal risk/benefit. Communicating these and other complex and often loaded terms to patients, in particular, is and will remain a challenge.

Measurement

Key Points:

- Additional work is needed to develop a balanced and nuanced approach to measurement that captures overuse and underuse.
- Recommendations to inform physicians' and patients' behavior may not readily scale for use in public reporting and value-based payment strategies, which both require great precision.
- A multi-stakeholder developed and vetted framework for crafting appropriate measures is needed to minimize unintended consequences.

Figure 4. Top feasibility issues identified through expert survey



Clear definitions are a critical first step for measurement. While much work has focused on overuse of health care services, misuse and underuse were identified as key areas in need of definitions, measurement, and research. Measurement should begin with a clear purpose, since appropriate measures may differ for quality improvement, accountability and/or research purposes. If the intent of measurement is to provide physicians with information and to encourage physician and/or patient behavior change, a more micro-level analysis of the relative risk/benefit of a test or treatment could be informative. While measures like unit and total costs may be of more interest to payers and health care systems, they may not be appropriate for promoting behavior change at the physician- or patient-level.

Given these considerations, measures developed to inform physicians and patients may not readily scale for use in pay-for-performance or other value-based payment strategies. Publicly reported measures and measures used in value-based payment strategies require great precision—this is an area for research and collaboration. Measurement is currently limited by the availability of nuanced data to accurately measure overuse, misuse, and underuse, and so caution is needed in developing operational measures.

Given the lack of precise data available, measurement developers must anticipate and address potential unintended consequences of measurement before widespread use. There is a need to develop a multi-stakeholder vetted methodology and framework for crafting appropriate measures to assess inappropriate care that considers: 1) Harm; 2) Quality of care and other health outcomes; 3) Cost (both to the health care system and for patients); 4) Downstream events, and 5) Patient and provider time and opportunity costs.

The *Choosing Wisely* campaign spurred a national conversation about reducing unnecessary care. This has been an important step forward, but additional work is needed to develop a balanced and nuanced approach to measurement that captures the full story of health services utilization. This might include the development of paired measures that address both overuse and underuse of select services, or continuous measures that provide an evidence-based continuum for what a physician should and should not do, depending on a patient's condition. Anecdotal evidence suggests that physicians are concerned that "doing nothing" leaves them vulnerable to malpractice claims; paired or continuous measures may alleviate some of these fears by substituting non-recommended care with an evidence-based alternative.

Table 1: Health Care Resource Utilization Research and Policy Priorities

Themes	Priority Areas
Definitions and Methods	Multi-stakeholder developed definitions for: appropriateness, cost, value, overuse, misuse, underuse
	Translating key terms to communicate with and inform the public
Measurement	Balanced and nuanced measurement to address the full spectrum of utilization: from underuse to overuse
	Development of measures that can scale from the clinical interaction to pay-for-performance and public reporting efforts
	A multi-stakeholder developed and vetted framework for developing appropriate measures to minimize unintended consequences
Effective Models/Interventions to Reduce Low-Value Care	Research assessing key drivers, stakeholders, behavioral factors, and social norms that affect decisions to use resources
	Identification of effective "de-implementation" strategies to eradicate low-value practices currently in place
Payer and Health Care System Strategies	Strategies that target tests and treatments known to cause harm, followed by strategies to target costly, unnecessary services
	Translating evidence on treatment effectiveness into payment policy
	Research to understand dispersion of payer strategies and when variation in clinical practice signals low-value care
	Health care systems analysis to examine features that effectively promote the appropriate use of health care services

Effective Models/Interventions to Reduce Low-Value Care

Key Points:

- Future research efforts should examine effective "de-implementation" strategies to eradicate practices that have been determined to be low-value.
- Significant research opportunities exist to examine effective models and interventions, such as medical education, quality improvement science, and physician/patient communication and shared decision making, to reduce low-value and inappropriate care.
- Researching and understanding key drivers and stakeholders that affect decisions to use resources, including behavioral and marketing factors driving social norms at the community, individual and provider level, will be critical for developing and testing interventions.
- Additional evaluation of shared and informed decision making tools in the area of low-value care may be worth rapid attention.

There is a significant literature devoted to improving the quality of care through audit/feedback, system changes and incentives; however, less has been done in terms of studying how to "de-adopt" or "de-implement" care that has rapidly diffused, and which subsequently is determined to be of low value. Many areas of low-value care result from rapid diffusion of medical innovations. Significant challenges exist in de-implementing innovations and communicating the harms associated with their use vs. older technology, interventions and/or drugs. Researchers could examine high reliability organizations or industries, such as the aviation industry, to learn about effective de-implementation strategies.

A range of models exist with the potential to impact health care resource utilization. Research should focus on identifying system changes that can make it easy for patients and providers to do the right thing. There are attributes of stakeholders throughout the health care system that influence overuse, such as the cultural norms and attitudes of patients, providers, systems and payers, and social influence among providers and community and national standards of care. Profiling and analyzing patterns of low-value care to examine which stakeholders have the greatest influence on its use will be critical for developing and testing appropriately directed interventions to reduce overuse.

There is a need to have specific language that can distinguish services that should never be ordered in specific situations from preference-sensitive events where patient choice and value can and should be considered. Services delivered could be high- or low-value depending on the individual patient involved, making it a real challenge to measure value with precision using existing data, which lacks the granularity needed to provide insights into the decision-making process.

Another critical research area is understanding behavioral and marketing factors that drive social norms at the community, individual and provider level – such as the prevalent view that "more is better." This, too, may benefit from a review of the literature on marketing for the adoption of new services. Researching and understanding key drivers (at the micro-, meso- and macro-level) that affect decisions to use resources will be critical for developing and testing interventions.

Medical education is an area that may be primed for intervention. For example, when attending physicians round at the hospital, residents are questioned much more frequently about why they did not order additional tests or procedures, rather than why they did order a series of low-value tests. Opportunities also exist for

enhancing communication strategies for providers to learn how to communicate the balance of harms and benefits, why more testing can lead to more harm, and concerns around uncertainty.

Little is known about the downstream cascade of unnecessary care, such as harms (broadly defined at the patient-, provider- and system-level) including financial harm (such as out-of-pocket expenses for patients), opportunity costs (for patients and providers), receipt of unnecessary invasive procedures, and use of resources that were thus unavailable for other patients. The downstream financial and opportunity costs associated with unnecessary care are areas in particular need of additional focus. Financial harm should be included as a measured "harm" of overuse.

Developing a tool kit for delivery systems and provider groups might be useful. These resources could address communication skills through learning modules for providers, health system infrastructure suggestions for addressing overuse, overuse measurement strategies with different available data resources, and suggested interventions such as clinical decision support and feedback.

Shared decision making literature strongly supports the value of decision aids for improving patient satisfaction and reducing the intensity of services, and there is a need for shared decision making tools in the area of inappropriate care. *Consumer Reports Health* has created patient materials about the *Choosing Wisely* recommendations, and the patient experience with the materials has reportedly been overwhelmingly positive. Additional evaluation of shared and informed decision making tools made available through different interfaces and at different points in the health care process (e.g., point of service, before a visit, after a visit), and with increasingly complex foci, may be worth rapid attention.

Payer and Health Care System Strategies

Key Points

- Payer and health care system strategies to reduce low-value care should begin by targeting tests and treatments known to cause harm before developing strategies to target other costly, unnecessary services.
- Additional work is needed to translate evidence on treatment effectiveness into payment policy.
- Payer strategies to promote appropriate use of health care services may diffuse differently across treatment settings, medical specialties, and geographic regions.
- Health care systems analysis could examine system features that have proven effective in promoting the appropriate use of health care services.

Much of the preceding discussion focused on interventions that target overuse or appropriate use and involve some level of clinical decision-making, rather than interventions that address system-level inefficiency and cost control. Work by Howard Beckman, M.D., and others suggests that physicians withdraw from cost-control conversations because they are unwilling to "prioritize dollars over patients." Beckman determined that a focus on appropriateness of tests and treatments, rather than costs, better engages physicians.[4] Yet, this more narrow focus on appropriateness may be of less interest to payers and health care systems concerned with unit and total costs of care. Focusing research on harmful services is necessary to address patient safety; however, harmful services may not represent the bulk of services driving inappropriate care or escalating health care costs. The tension between focusing on inappropriate/harmful services and focusing on costly, unnecessary services will continue to be an important consideration for health care resource utilization research.

Given the tension and controversy around targeting high-cost tests and treatments, payer and health care system strategies to reduce low-value care should begin by targeting tests and treatments known to cause harm before developing strategies to target costly, unnecessary services. More research is needed to clarify the strength of evidence for low-value services as well as how to communicate evidence and uncertainty to patients; this is well aligned with measurement priorities. Additional work is also needed to translate evidence into payment policy. For example, although U.S. Preventive Services Task Force Grade D level recommendations discourage the use of such services, payers continue to pay for these services even though there is "moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits."[5] Grade D recommendations may be an appropriate starting place for payer and system strategies, but they represent the tip of the iceberg for inappropriate care. Many of the bigger cost drivers are in areas that are more preference-sensitive and fall in the realm of specialty care. One example of efforts underway to realign financial incentives to improve value is Medicare's Hospital Value-Based Purchasing program (HVBP), which incentivizes certain clinical processes and patient experience measures to transform the quality of hospital care delivered to Medicare beneficiaries.[6] Yet, emerging evidence suggests that in the first year of HVBP implementation, hospitals serving more disadvantaged patients fared worse, raising concerns that the program may increase disparities in care.[7] This example illustrates that realigning financial incentives, like measurement, requires a careful consideration of possible unintended consequences.

Many factors influence clinical decision making, and given the level of clinical nuance, payer and health care system strategies to promote appropriate use of health care services may diffuse differently across treatment settings, medical specialties, and regions. For example, different incentives may be required for the safety net, where physicians are typically underpaid, versus in for-profit hospitals. Research is needed to understand when variation in clinical decision making and practice patterns signals low-value care, rather than underlying differences in the patient population and patient preferences. Examining peer-to-peer variation in decision making within the same medical specialty might be particularly informative. The Affordable Care Act has created a number of natural experiments prime for testing and evaluating payer strategies to decrease variability and to shift providers and health systems to promote high quality of care; these should be considered high priority for rapid funding and rapid evaluation and translation.

There is great potential for systems analysis to examine system features that make it easier or harder to provide low-value care. Acknowledging the uniqueness of treatment settings, more research is needed to isolate system features in particular settings that have proven to be effective in promoting the appropriate use of health care services.

Conclusion

The partnership activities between the ABIM Foundation and AcademyHealth highlighted the breadth of opportunities for research and collaboration to advance the evidence base on health care resource utilization. While research and interventions on the overuse of health care services have garnered national attention, additional focus is needed to assess not just overuse, but underuse and misuse as well. Multi-stakeholder collaboratives are needed to define key research terms and to set the stage for balanced and thoughtful measurement and analysis. The feasibility of these research efforts could be improved through better data, available funding, and academic and stakeholder collaboration.

Research opportunities abound to improve measurement of health care resource utilization and to assess the effectiveness of different models, interventions, and payer and health care system strategies designed to enhance value. Clear definitions for research terms and focused measurement efforts are paramount, and a multi-stakeholder developed and vetted framework for developing appropriate measures is needed to minimize unintended consequences. Additional work is needed to develop measures that can scale from the clinical interaction to payment policy and public reporting.

A range of models exist with the potential to impact health care resource utilization, including medical education, quality improvement science, and shared decision making within the physician/patient interaction. Research to understand these and other key drivers that affect decisions to use resources, including behavioral and marketing factors, will be essential to promoting the appropriate use of health care services.

While payers and health care systems may be very interested in understanding the impact of interventions to promote appropriate use of health care services on total costs, such measures lack the granularity needed at the clinical level to influence behavior. To promote physician support of these efforts, payer and health care system strategies to reduce low-value care should begin by targeting tests and treatments known to cause harm before developing strategies to target costly, unnecessary services. Additional work is needed to translate this evidence on treatment effectiveness into payment policy.

In terms of prioritizing future research efforts to advance the evidence base on health care resource utilization, the key points raised in this report suggest prioritizing projects that:

- Utilize clear definitions of research terms that are developed through a multi-stakeholder process;
- Target tests and treatments with a high level of evidence that they cause harm (considering both physical and financial harm);
- Identify both direct and indirect cost implications of inappropriate care; and
- Specify the purpose of measurement as well as the level of precision needed to be actionable in policy and practice.

The most effective research will involve multiple stakeholders throughout definition, measurement analysis, and dissemination activities in order to inform the development of effective policy around appropriate health care resource utilization.

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Endnotes

1. For more information on the Choosing Wisely initiative, see: http://www.choosingwisely.org/

2. HSRProj is a database, funded by the National Library of Medicine and managed by AcademyHealth, that includes information about grants and contracts in health services research. It is available here: http://wwwcf.nlm.nih.gov/hsr_project/home_proj.cfm

3. The RWJF brief, "Reducing Overuse and Misuse: State Strategies to Improve Quality and Cost of Health Care" is available here: http://www.rwjf.org/en/research-publications/find-rwjf-research/2014/01/reducing-overuse-and-misuse--state-strategies-to-improve-quality.html?cid=xem_QE-2-4-14

4. H. B. Beckman, "Lost in Translation: Physicians' Struggle with Cost-Reduction Programs," Annals of Internal Medicine, March 15, 2011 154(6):430–33. Available here: http://annals.org/article.aspx?articleid=746889

5. USPSTF grade definitions are available here: http://www.uspreventiveservicestaskforce.org/uspstf/grades.htm

6. For more on the Hospital Value-Based Purchasing Program, see: http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/hospital-value-based-purchasing/index.html?redirect=/hospital-value-based-purchasing/

7. Ryan, AM. Will Value-Based Purchasing Increase Disparities in Care? NEJM 2014; 369(26): 2472-2474. http://www.nejm.org/doi/full/10.1056/NEJMp1312654 (accessed 21 May 2014).