



STRENGTHENING ACCESS TO HIGH QUALITY CARE FOR COMPLEX PATIENTS

Consensus Statement from the 2017 Mayo Clinic-
Arizona State University Summit on Payment Reform

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BACKGROUND: RATIONALE FOR A PAYMENT REFORM SUMMIT FOCUSING ON ACCESS FOR COMPLEX PATIENTS

Health care reform has dominated the national conversation since the passage of the Patient Protection and Affordable Care Act (ACA) in 2010. With that legislation, and subsequently with the passage of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), policymakers have signaled a clear intent to reshape the incentives in our health care system to pay for value of care rather than simply volume of care.

As value-based care is enacted into policy by public and private payers, it is critical that we consider the impact of current and proposed policy measures on all segments of the diverse population of patients cared for in our system. Therefore, on January 13th and 14th, 2017, the Mayo Clinic Arizona and Arizona State

University (ASU) Alliance for Health Care convened a Payment Reform Summit in Phoenix, AZ. At this Summit, twenty-five national thought leaders came together to identify important principles for health care reform and data-driven solutions that promote access to high value care for complex patients. This paper serves as a summary and consensus statement of the participants of the Summit, who are listed at the end of the manuscript.

Complexity can be broadly considered to reflect a confluence of high cost and medical, behavioral, and socioeconomic factors

BACKGROUND: RATIONALE FOR A PAYMENT REFORM SUMMIT FOCUSING ON ACCESS FOR COMPLEX PATIENTS

It has long been recognized that just 5% of patients comprise approximately 50% of the total health care expenditures in the US.¹ Traditionally serving as the denominator in the value equation, health care costs have continued to rise in the US, to a projected \$3.5 trillion in 2017.² Complex patients are also recognized as the largest constituency of high-cost patients, and any policy remedy addressing system costs must consider this group of patients.

Prevalent payment models do not adequately account for the needs of the complex patient

In the setting of unadjusted fee-for-service payment, complex patients are at risk for receiving more unnecessary services than other patients. Complex patients remain at risk in value-based care models when technical factors do not adequately account for their unique characteristics. For example, if quality and cost measures do not adequately adjust for the different outcomes that can be expected in complex patients, those patients are at risk for limited access to care resulting from adverse selection. Providers are at risk for measures beyond their control when attribution methods do not accurately assign complex patient outcomes to the most appropriate entity. To be effective, current and emerging payment models must serve the needs of complex patients.

Health care delivery reform is responsive to incentives and disincentives inherent in payment models

Economic incentives to providers, payers, patients, and other stakeholders are effective tools that can encourage development of new and better systems of care. However, non-financial incentives ranging from regulatory frameworks to community resources to patient education programs must be deployed to tackle the challenging scope of providing the highest value care possible for our most complex patients.

Complex patients are among the most vulnerable in our health care system, and may have the greatest potential to benefit from data-driven improvements in care delivery

We have an intuitive opportunity to improve the value equation for high complexity patients: they are at significant risk of poor outcomes and are prone to receive high-cost, inefficient care. However, at the doorstep of widespread adoption of value-based systems of care, we must move past broad, conceptual pronouncements toward clear, specific policies based on strong evidence. In this manuscript, we summarize the principles and recommendations that emerged from the Mayo Clinic-ASU Payment Reform Summit and seek to answer these fundamental questions: Who is the complex patient? What are the ideal systems of care for complex patients? How should incentives be designed to ensure that complex patients have access to high value care?

WHO IS THE COMPLEX PATIENT?

The transition to value-based care systems has required a shift from qualitative definitions of value to more robust, quantitative definitions of the cost and quality elements of the value equation. Similarly, to develop systems of care to best serve complex patients, we require robust, standardized definitions of patient complexity.

The Commonwealth Fund identifies “High Needs, High Cost” patients as having:

- **Three or more chronic conditions and**
- **A functional limitation**

Rigorous studies of patient complexity have generally relied on complexity case definitions derived from claims-based data. It is therefore unsurprising that number of diagnoses and types of diagnoses (especially chronic conditions) have become the primary criteria for the complexity definition. Numerous sources acknowledge the importance of other traits. Most medically complex patients tend to generate higher costs, and most have other characteristics that contribute to their higher resource use such as functional limitation or disability.³

What does the complex patient look like?

- **Patients with major complex chronic conditions in multiple organ systems**
- **The nonelderly disabled**
- **Frail elders**
- **Children with complex special health care needs**

We must understand who our complex patients are to identify and characterize their distinct needs. Further, from the perspective of system sustainability, the disproportionate contribution by complex patients to costs in the US health care system highlights the need to better understand this group.

While complex patients may share important traits, we should not assume the group is homogeneous in its composition or is static in its constituents. In fact, the evidence suggests there are many counterintuitive characteristics of the complex patient population:

What is the relationship between patient complexity and cost of care?

- **Among people whose annual total health care expenditures were in the top 10% of spending for all adults, 94% had three or more chronic conditions (Hayes, et al, 2016).**
- **5% of patients generate 50% of system costs¹**

Not all complex patients have unmet social needs. Small studies reveal:

- **In a population of potentially high need patients, 78% had one or more unmet social needs**
- **In a general population, 46% have unmet social needs**

Many complex patients are not “frequent fliers”

- **About two-thirds (65%) of high-need adults had no ED visits in a year**
- **About 3% of high-need adults visited the ED four or more times during the year**

WHO IS THE COMPLEX PATIENT?

Patients who are complex or high cost in one year may not be so the next. Among a large group of publicly insured or uninsured patients, hospitalized more than three times during a 12-month period:

- Fewer than half of the super-utilizers were in the category seven months later
- 28% were in the category 12 months later
- 14% were in the category after two years

Considering all of these factors we will use the following definition of patient complexity:

Patient complexity reflects a confluence of high cost and medical, behavioral, and socioeconomic factors and comorbidities.

This operational definition notwithstanding, it is clear that a standardized and rigorous definition of patient complexity will be required to facilitate systematic study of complex patients and their care needs.

We need a robust, well-defined common taxonomy and process for defining patient complexity

- There is a large but incomplete overlap between complexity and cost
- An accepted taxonomy will facilitate further research and policymaking for this group

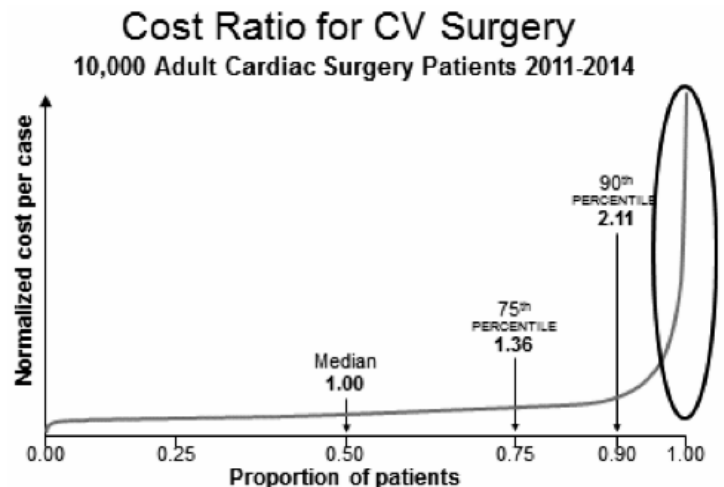
In addition to defining and organizing our understanding of the complex patient, we need to be able to study potential predictors of complexity, particularly with the knowledge that patients may be complex one year but not the next. This fluctuation over time, paired with changes in insurance provider,

makes longitudinal patient-level claims based studies difficult to perform. While most high-cost high-needs patients have insurance coverage, and indeed approximately 80% are covered by public payers, a means of tracking patients across providers would facilitate health services research into predictors of high-cost high-need status.

We need a secure mechanism to follow patients over time in the medical marketplace.

When considered as a group, there are other insights that arise from examination of complex patients. While it is clearly recognized that complex patients contribute disproportionately to system utilization and costs, it is less clear what comprises those costs and how to predict them. For the majority of patients, costs and complexity possess a relatively linear relationship, but for the most complex patients, costs escalate rapidly in a fashion not addressed by current predictive models (see Figure).

We understand the flat part of the cost curve, but not the top 10% where costs escalate rapidly.



Among patients undergoing cardiovascular surgery, costs per case remain linear and predictable for most patients, but escalate rapidly in the top decile.

CURRENT STATE OF CARE FOR COMPLEX PATIENTS

Unsurprisingly, the high costs associated with caring for complex patients in our current health care system are associated with high levels of utilization of ambulatory and hospital based services and procedures, as well as medication use. A consistent critique of unadjusted fee-for-service payment models has been the implied incentive to provide higher volumes of services, to which complex patients are especially prone. When it occurs, overutilization leads not only to significant system costs but also important individual economic costs and unmeasured psychosocial harm of “overtreatment.”

Complex care delivery typically comprises services from multiple providers, who may not be able to coordinate their efforts. Care delivered in multiple settings by various providers raises the risk of fractured and often counterproductive care for the complex patient. The promise of electronic health records as a solution to cross-provider care

coordination has yet to be realized in the setting of persistent inter-operability concerns. Policy elements within the ACA and MACRA encourage innovation of coordinated services in new care delivery models that has only been partially achieved for complex patients.

While the ongoing transition to value-based care systems has generally incorporated incentives to provide high value, coordinated care, there remain several shortcomings in current models. Social and behavioral determinants of high utilization are not routinely included in predictive models of cost or quality of care despite their significant contribution to these outcomes. Further, current methods of risk adjustment and patient attribution do not adequately predict or assign outcomes of care in the population of complex patients.



ONE-SIZE-FITS-ALL APPROACHES WILL NOT IMPROVE COSTS OR OUTCOMES IN THE POPULATION OF COMPLEX PATIENTS.”

DESIGNING BETTER SYSTEMS OF CARE FOR COMPLEX PATIENTS

The population of complex patients is distinctive in its needs, characteristics, and contributions to utilization and cost. However, a clear theme emerges that all stakeholders in our health care system – policymakers, payers, and providers – need a better understanding of this vulnerable group of patients in order to design effective, thoughtful systems of care.

We need to study, inventory, and then apply high quality delivery models in the care of patients with complex needs

Innovation in care delivery for complex patients is already happening at multiple levels, but the successes, failures, and useful insights from these initiatives are not always widely disseminated. Developing an inventory of these models would be helpful, and should include models developed by payers, provider-driven models, and community-based models. Importantly, successful models are needed in both the public and private domains.

Data from systems and providers with experience in integrated community care delivery should be shared with others for analysis, development, and deployment of new models of care

In addition to developing an inventory of new models, insights from experienced integrated care delivery systems would be helpful in informing newer models as they're created. Further, policy incentives should be created to encourage collection and sharing of aggregate data from new delivery models so their successes and lessons-learned can inform the broader community.

While dissemination of outcomes – favorable and unfavorable – from novel complex care delivery models has clear appeal, many providers participating in these

models may not be equipped to gather the requisite data. In this setting, support and assistance from third parties may be required.

The presumption in learning from current and emerging models of care is that we can expand on our successes and avoid prior failures. This principle should be emphasized:

Interventions in complex patient coverage, care delivery, and payment systems must be data-driven

Further, with the growing understanding that predictors of outcomes and costs are determined by factors outside the conventional clinical setting, ideal system design must be informed by a diverse, complete dataset that includes social and behavioral predictors.

We need more data from nonclinical and clinical sources to fully inform new care models

Systems will need timely access to data at the population level as well as at the individual level not only to determine optimal model design, but to assess performance in real-time and improve on measures of quality and cost. These data should include measures of complex patients' experience of care as a critically important variable.

There is much yet to be done to understand the needs of complex patients, how current and prior care delivery models have performed for this population, and what form future models should take. However, there are clear fundamental principles that can be carried forward and applied. Coordination of care, as exemplified in integrated delivery systems, is critically important for complex patients. Further, the needs of these patients include services not historically provided in the health care setting.

DESIGNING BETTER SYSTEMS OF CARE FOR COMPLEX PATIENTS

The needs of the complex patient extend beyond conventional clinical care and include service needs historically delivered by behavioral health and social services

As a corollary to the need for integrated clinical services, all services necessary to provide high value care to complex patients should be delivered in as coordinated a fashion as possible. This will require partnerships between clinical providers and behavioral and social services, which in many settings may not yet exist. While under recognized, the need for these relationships is intuitive for patients who are already complex. Further, these partnerships may also help to

identify patients who possess behavioral or social risk factors that predict future complexity and associated costs, and by extension help prevent or manage the transition to complex care.

Indeed, the promise of optimal care systems for complex patients includes the aspirational goal of predicting, delaying, or perhaps preventing the need for complex care in the first place.

Prevention efforts, ranging from primary to quaternary, must continue to promote health and reduce the risk of illness

CREATING INCENTIVES FOR HIGH QUALITY COMPLEX CARE THROUGH PAYMENT REFORM

Once optimal care delivery systems for complex patients are identified, there will be a need to encourage adoption of best practices by all stakeholders in the health care system. While the focus of this Summit was payment reform as an effector of change, payment is not the only tool available to encourage delivery reform.

Financial incentives comprise one important strand of a complicated web that gets us to better outcomes for complex patients

When considering economic incentives to payers, providers, and patients, the form and mechanism of the incentive should consider patient complexity. As referenced above, costs for the top decile of patients escalate in a non-linear fashion. The cost volatility among the most complex patients demonstrates a need to consider the distinctive features of this group when crafting economic incentives for their care.

Payment mechanisms should be tailored to the relevant segment of the cost curve

Whatever form incentives take, they must function within the construct of emerging value-based care payment models. In the context of the risk transfer to provider organizations that occurs in value-based care, complex patients are at risk for a variety of concerns include loss of access to care due to adverse selection (i.e., providers avoiding care of complex patients given their likelihood of having comparatively poorer outcomes and generating higher costs). Among the various technical solutions to this problem discussed below, it is important that the risk transfer is made to systems and organizations that are equipped to manage it.

CREATING INCENTIVES FOR HIGH QUALITY COMPLEX CARE THROUGH PAYMENT REFORM

Health systems are better equipped than individual providers to assess and assume risk

There are a number of potential care delivery model solutions to deliver optimal care to complex patients, and correspondingly there may be a variety of payment models that could be designed to encourage adoption of those models. Regardless of the specific form of the incentives, it is important that incentives are well-defined, transparent, and encourage improved outcomes in this vulnerable group of patients.

Novel payment models should include clear incentives and accountability for improved outcomes in complex patients

Tools to ensure appropriate incentives

Public and private payment models that have been developed at the vanguard of value-based care have had to navigate a variety of technical challenges to ensure high value care for complex patients. Foremost among these difficulties has been determining predictive models of quality outcomes and costs among patients and adjusting incentives accordingly (risk adjustment), and how to attribute patient-level cost and quality outcomes for patients, many of whom (especially complex patients) may receive care from multiple providers. The twin problems of risk adjustment and patient attribution merit specific discussion, as both are particularly relevant for the complex patient population and must be resolved for new care models to succeed in the care of these patients.

Patient Attribution

Patients with complex health care needs typically interact with numerous providers within and between episodes of care, resulting in challenges to attribution methodologies designed for general population models. To encourage interdisciplinary and interspecialty coordination of care for complex patients, attribution should be made to systems or clearly identified groups (such as integrated practices or virtual groups) rather than individuals. Group accountability supports the shared goal of delivering high value care, and avoids the inevitable inaccuracies or unintended consequences of attributing multi-party complex care to a single provider. Value-based systems should identify attribution, and ideally pay for attributed care, in a prospective fashion. Retrospective attribution of cost or quality outcomes to providers results in frustration and a missed opportunity for the delivery system to design high value approaches to complex patient care.

Value-based payment for care of the complex patient should be based on prospective attribution to delivery systems (not individual clinicians), and should be paid prospectively based on measures that are relevant to complex care

Even when complex patient attribution is assigned to groups or systems, there remains the potential for these patients to receive care from multiple geographically distinct or otherwise unrelated groups, raising once again the specter of inaccurate attribution of outcomes. More work is needed to improve methods of patient attribution.

There is a need to develop, test, and inventory patient attribution methodologies (for example, through an “attribution laboratory”)

CREATING INCENTIVES FOR HIGH QUALITY COMPLEX CARE THROUGH PAYMENT REFORM

Risk Adjustment

While current risk adjustment techniques can work well for large unselected populations of patients, predicting and by extension adjusting expected costs and outcomes in the most complex patients is difficult. Methods of risk adjustment in common use now such as the hierarchical condition category codes employed by the Centers for Medicare and Medicaid Services (CMS) rely largely on underlying data and methodologies that may not accurately predict and adjust for risk,⁴ especially among complex patients.

Current risk adjustment techniques may not adequately predict cost or quality outcomes for complex patients, and other mechanisms of payment adjustment will be needed

With the known limitations of current risk adjustment methods and the likelihood that techniques will not adequately predict cost or quality outcomes for complex patients at the individual level in the near term, our system must identify mechanisms of payment adjustment to complement or replace current approaches.

Better risk adjustment techniques should be pursued to ensure access to care for complex patients

Payment Model Principles for Care of the Complex Patient

Even though currently available payment adjustment tools are lacking, the value-based payment shift to newly risk-bearing provider organizations has already begun. When considering optimal novel payment systems, intermediate and long-term states must be considered. As better tools are being developed to ensure appropriate attribution of care and risk adjustment for complex patients, payment models that are currently being deployed will need to consider alternative payment mechanisms to ensure access to care for complex patients.

Bundled payment models must be carefully designed to account for the needs of complex patients with multiple coexisting conditions

Bundled payment for procedural services or other episodes of care can be a very effective tool to encourage high value care, but given the unpredictable nature of utilization and costs for complex patients, these should be carefully implemented for complex patients. The potential for adverse selection is particularly high if provider organizations are incentivized to avoid providing access to patients who are perceived to be complex and therefore more likely to incur costs beyond the payment provided in the bundle. Payment alternatives for providers are needed, not only for bundled services (which can be viewed as capitation for a specific condition or procedure) but also for other prospective value-based models.



IT'S A FOOL'S ERRAND TO PRESUME WE CAN COME UP WITH ACCURATE PROSPECTIVE RISK ADJUSTMENT BY THE TIME WE'LL NEED THEM IN THE NEXT 2-3 YEARS. WHAT DO WE DO IN THE MEANTIME?"

CREATING INCENTIVES FOR HIGH QUALITY COMPLEX CARE THROUGH PAYMENT REFORM

To provide reassurances to providers, other payment mechanisms must be considered for complex patients, even if those mechanisms stray from the conventional risk-transfer architecture of value-based systems.

Population-based prospective reimbursement payment models (such as capitation or bundled payments) for those patients who have, or unexpectedly develop, extremely complex problems may need to include other mechanisms to protect providers from actuarial risk, such as re-insurance, stop-loss arrangements, or a fee-for-service option for super-utilizers

An approach that has gained some popularity is the use of reference pricing by payers to establish a standard allowed payment, which in many circumstances may result in increased risk-bearing by patients. Notwithstanding its appeal in certain circumstances, reference pricing may have a disproportionate effect on complex patients and by extension the providers who care for them. When considering pricing levels, the quality of the care provided should be considered rather than just the cost.

Reference pricing models should be based on the actual costs incurred by the highest value providers, and pricing could be performed separately for complex patient populations

The proliferation of more fully capitated payment mechanisms, such as NextGen ACOs and Medicare Advantage plans, offers an opportunity for health care organizations to develop innovative models of care delivery, including for complex patients. These opportunities should be highlighted, and as described above, successful innovative approaches to delivering high value care to complex patients should be shared to ensure broad benefit for this vulnerable group of patients.

Advanced risk-based payment models, such the capitated approaches seen in NextGen ACO and Medicare Advantage programs, could serve as innovation platforms for novel care delivery systems for complex patients

CONCLUSION

There is much to be done to design and deploy care delivery and payment models that best support high value care for complex patients. The proceedings and recommendations of this Summit, summarized here, serve not only as an accounting of risks and unknowns for complex patient care in the value-based era, but also as a call to action for stakeholders in our health care system to seek, develop, and deploy evidence-based solutions for our most complex patients.



“WE NEED TO CONSIDER THE RELATIONSHIP BETWEEN RISK ADJUSTMENT AND VARIATION IN CARE PROCESSES; THE INTRINSIC PATIENT VARIABLES ARE ONLY ONE SIDE OF THE EQUATION.”

SUMMARY OF RECOMMENDATIONS FROM THE MAYO CLINIC-ASU PAYMENT REFORM SUMMIT

To better serve patients with complex needs...

We call on researchers to:

- Define a robust taxonomy of patient complexity to facilitate further research and policy-making for this population.
- Develop meaningful metrics that capture complex patients' experience of care.
- Inventory and apply models for high-quality care that meets the needs of complex patients. Models should be peer-driven, delivery-driven, community-oriented, and work both in the public and private sectors.
- Develop, test, and inventory risk adjustment and patient attribution methods.

We call on health systems and individual providers to:

- Acknowledge the needs of the complex patient beyond conventional clinical care and engage with organizations outside of the traditional health care environment (including social service agencies and behavioral health providers) to meet those needs.
- Leverage data from non-clinical and clinical sources in developing data-driven interventions, care delivery, and payment systems that support new models of care. To serve the care needs of complex patients, health systems will require timely access to population-level as well as individual-level data.
- Assess and respond to meaningful metrics of the complex patient's experience of care.
- Accelerate investment in prevention programs, ranging from primary to quaternary preventive care, to promote health and reduce risk of illness.

We call on payers and policymakers to:

- Recognize our limited understanding of costs for our most complex patients. Less complex patients typically have lower costs in comparison to costs for patients in the top decile of complexity, where costs escalate rapidly and are more erratic.
- Develop secure mechanisms to track the complex patient over time, recognizing that patients who are complex or high-cost one year may not be so in subsequent years.
- Align financial incentives to produce better outcomes for complex patients. While provider payment creates powerful incentives, attention should be paid to other elements of delivery system reform such as patient attribution and program enrollment.
- Integrate payment for care of the complex patient into a population-based approach that includes prospective attribution of patients to delivery systems (not individual clinicians). Furthermore, we should apply prospective payment based on measures that apply to complex care.
- Ensure that novel payment models include clear incentives and accountability for improved outcomes for all patients, including those with complex needs.
- Identify mechanisms of payment adjustment other than conventional risk adjustment, as current risk adjustment techniques may not adequately predict cost or quality outcomes for complex patients at the individual level.
- Continue developing risk-based payment models such as shared savings and capitation in the ACO and Medicare Advantage programs, to spur the development of innovative models of care for complex patients. Non-risk-based models should be considered as well.

SUMMARY OF RECOMMENDATIONS FROM THE MAYO CLINIC-ASU PAYMENT REFORM SUMMIT

- Bundled payment tools must be carefully developed to account for the needs of complex patients with multiple coexisting conditions.
- Implement reference pricing models based on the actual costs incurred by the highest value providers, and pricing services separately for complex patient populations.
- To avoid disincentives when caring for patients with extremely complex needs, population-based prospective reimbursement models (capitation or bundled payments) may need to include other mechanisms to protect providers from actuarial risk, such as re-insurance or stop-loss.

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PARTICIPANTS

Ms. Anne Barry, J.D.
Senior Lecturer
University of Minnesota

Dr. Leonard Berry
University Distinguished
Professor of Marketing
Regents Professor, Mays
Business School
Senior Fellow, Institute for
Healthcare Improvement
Texas A&M University

Mr. Thomas Betlach
Director
Arizona Health Care Cost
Containment System

Dr. Helen Burstin
Chief Scientific Officer
National Quality Forum

Dr. Richard Butler
Martha Jane Knowlton Coray
Professor
Brigham Young University

Dr. Denis Cortese
Director, Healthcare Delivery
and Policy Program
Arizona State University
Emeritus President and Chief
Executive Officer, Mayo Clinic

Dr. Derek Feeley
President and Chief Executive
Officer
Institute for Healthcare
Improvement

Dr. Elliott Fisher
Director, The Dartmouth
Institute for Health Policy &
Clinical Practice

Dr. John E. Wennberg
Distinguished Professor,
Geisel School of Medicine at
Dartmouth
The Dartmouth Institute for
Health Policy & Clinical
Practice

Dr. Clifford Goodman
Summit Moderator
Senior Vice President
The Lewin Group

Ms. Mary Grealy, J.D.
President
Healthcare Leadership
Council

Mr. George Halvorson
Chair and Chief Executive
Officer
Institute for InterGroup
Understanding
Trustee, Mayo Clinic

Dr. Brent James
Chief Quality Officer and
Executive Director, Institute
for Health Care Delivery
Research

Intermountain Healthcare

Dr. William Johnson
Professor, Biomedical
Informatics
Arizona State University

Dr. Robert Kuramoto
Healthcare Strategist, Arizona
State University
Managing Partner, Quick
Leonard Kieffer

Dr. Lewis Sandy
Executive Vice President
Clinical Advancement
UnitedHealth Group

Dr. James Naessens
Scientific Director, Value
Analysis Program, Mayo Clinic
Robert D. and Patricia E. Kern
Center for the Science of
Health Care Delivery

Dr. Robert Nesse
Senior Director of Payment
Reform
Mayo Clinic

Ms. Lynn Quincy
Director
Healthcare Value Hub
Consumers Union

Dr. William Riley
Professor and Director
School for the Science of
Health Care Delivery, Arizona
State University

Dr. Veronique Roger
Inaugural Director, Mayo
Clinic Robert D. and Patricia E.
Kern Center for the Science of
Health Care Delivery

Dr. Darshak Sanghavi
Chief Medical Officer and
Sr. Vice President, Translation
OptumLabs

Dr. Nilay Shah
Deputy Director for Research
Mayo Clinic Robert D. and
Patricia E. Kern Center for the
Science of Health Care
Delivery

Mr. Robert Smoldt
Associate Director, Healthcare
Delivery and Policy Program,
Arizona State University
Emeritus Chief Administrative
Officer, Mayo Clinic

Ms. Diane Stewart
Senior Director
Pacific Business Group on
Health

Dr. John Swagert
Chief Executive Officer
Mountain Park Health Center

Ms. Lisa Weiss
Chief Executive Officer
High Value Healthcare
Collaborative

ADDITIONAL ATTENDEES/EX-OFFICIOS

Dr. Michael Crow
President
Arizona State University

Dr. Wyatt Decker
Chief Executive Officer
Mayo Clinic in Arizona

Dr. Jack Gilbert
Clinical Associate Professor,
School for the Science of
Health Care Delivery, College
of Health Solutions
Arizona State University

Ms. Kathleen Harrington
Division Chair, Policy and
Government Relations
Mayo Clinic

Mr. Christopher Hasse
Operations Administrator
Mayo Clinic

Dr. Lyell Jones
Associate Professor of
Neurology
Chair, Payment Model
Operations
Mayo Clinic

Dr. Lois Krahn
Professor of Psychiatry
Mayo Clinic in Arizona
Deputy Director for Education,
Mayo Clinic Robert D. and
Patricia E. Kern Center for the
Science of Health Care
Delivery

Dr. Mac McCullough
Assistant Professor
Arizona State University

Ms. Paula Menkosky
Chief Administrative Officer
Mayo Clinic in Arizona

Ms. Grace O'Sullivan
Director of Strategic
Partnerships
Arizona State University

Dr. Lindsey Philpot
Director of Practice Analytics,
Mayo Clinic Robert D. and
Patricia E. Kern Center for the
Science of Health Care
Delivery

Dr. Aaron Spaulding
Associate Consultant
Division of Health Care Policy
and Research
Mayo Clinic

Dr. Victor Trastek
Director, School for the
Science of Health Care
Delivery
Arizona State University

Dr. Ryan Uitti
Professor of Neurology,
Medical Director in Florida,
Mayo Clinic Robert D. and
Patricia E. Kern Center for the
Science of Health Care
Delivery
Medical Director of Provider
Relations

CONVENER'S STATEMENT:

MAYO CLINIC AND ARIZONA STATE UNIVERSITY ALLIANCE FOR HEALTH CARE

The Mayo Clinic and Arizona State University (ASU) Alliance for Health Care is developing comprehensive improvements in the science of health care delivery and practice, all toward one goal: advancing patient care. The ASU School for the Science of Health Care Delivery focuses on the health care workforce, current

and future, providing education about an array of programs, and tools that prepare them to meet the needs of patients. The Mayo Clinic Robert D. and Patricia E. Kern Center for the Science of Health Care Delivery studies the "Science of Best Practice" to deliver ever-improving health care.

DISCLOSURE STATEMENT Participants in the Summit contributed in their individual capacity. The contents of this document reflect a group consensus assembled under the Chatham House rule, not an individual endorsement of all items or an endorsement from the participants' respective organizations.

