

Assessing the Impact of Complex Care Models: Opportunities to Fill in the Gaps

By Karla Silverman, Center for Health Care Strategies, and Tamara Dumanovsky, Joslyn Levy & Associates

IN BRIEF

High-quality complex care models are responsive to the needs and desires of patients and families, while also prioritizing provider and staff well-being. Quality measures that capture both patient perspectives on the care they receive, as well as staff assessments on the care they provide, can help us better understand the impact of complex care models. Through the *Advancing Integrated Models (AIM)* initiative, made possible by the Robert Wood Johnson Foundation, eight pilot sites are implementing approaches that seek to improve integrated, person-centered care models for adults and children with complex health and social needs. This brief describes a process used to identify a set of patient- and staff-reported measures for the AIM pilot sites. These measures, detailed in the brief, can supplement traditional utilization, outcomes, and cost measures and support complex care programs interested in expanding their capacity to evaluate care delivery innovations.

As the field of complex care evolves to employ more integrated, person-centered care approaches, organizations implementing complex care programs need tools to assess the precise factors that differentiate successful strategies from less successful ones. High-quality complex care models seek to support equity and well-being for patients, provide care that is responsive to what patients and families want, and prioritize staff and provider well-being. Identifying a more robust set of measures can help highlight how care is being transformed, including the specific methods for improving care delivery and their impact on the health and well-being of patients and staff.

Because complex care is an emerging sector of health care that is still being shaped, clear measures of what constitutes high-quality care have been one of the more pressing needs of the field. The *Blueprint for Complex Care*¹ — a 2018 report by the National Center for Complex Health and Social Needs (the National Center), the Center for Health Care Strategies (CHCS), and the Institute for Healthcare Improvement (IHI) — identified the need for a uniform set of quality measures beyond utilization, standard clinical outcomes (e.g., blood pressure, hemoglobin A1C), and cost, to better assess complex care program processes and outcomes. Randomized controlled trials from early 2020 of two programs serving patients with complex needs reported conflicting results on cost and utilization, causing the field to reflect² on the nuance that is not captured by these traditional measures. A recent report³ from the National Center and IHI describes the evolving landscape of complex care measurement and proposes next steps for the field in developing a standard set of quality measures.

This brief describes the development of a [limited set of measures](#) for use in *Advancing Integrated Models* (AIM), an initiative funded by the Robert Wood Johnson Foundation and led by CHCS. AIM provides support to eight pilot sites across the country — ranging from small Federally Qualified Health Centers to outpatient practices at large academic medical centers and one statewide, all payer ACO — for implementing integrated, person-centered strategies for people with complex health and social needs (see **Exhibit 1**). The AIM sites are piloting strategies that include one or more of the following approaches: (1) complex care management; (2) integrated physical and behavioral health; (3) integrated social services and health care; and (4) trauma-informed care.

Exhibit 1. AIM Pilot Sites and Populations

Pilot Site	Population of Interest	Insurance Coverage
Boston Medical Center: Center for the Urban Child and Healthy Family	<ul style="list-style-type: none"> Children and families in a pediatric primary care setting 	<ul style="list-style-type: none"> Primarily Medicaid and enrolled in Boston Accountable Care Organization
Johns Hopkins HealthCare	<ul style="list-style-type: none"> Children with sickle cell disease receiving care in the pediatric hematology clinic Children receiving care in the pediatric primary care clinic with asthma and mothers with maternal/postpartum depression 	<ul style="list-style-type: none"> Medicaid + Private/Other (pediatric hematology) Medicaid (for primary care)
Maimonides Medical Center	<ul style="list-style-type: none"> Adults who qualify for care management: NYS Health Home: two or more chronic conditions, behavioral health condition or HIV+ Other care management programs community-based health and social services 	<ul style="list-style-type: none"> Medicaid Medicare Private
Denver Health	<ul style="list-style-type: none"> Adults seen in high-risk clinic: Adults living with HIV Adults with recent criminal justice involvement Adults with complex health and social needs 	<ul style="list-style-type: none"> Medicaid
Hill Country Health and Wellness Center	<ul style="list-style-type: none"> Adults with substance use disorder diagnoses receiving primary care 	<ul style="list-style-type: none"> Medicaid
OneCare Vermont	<ul style="list-style-type: none"> Adults with social risk factors and needs, plus risk determined by having a medical condition/multiple chronic conditions 	<ul style="list-style-type: none"> All payer ACO
Bread for the City	<ul style="list-style-type: none"> Adults who qualify for My Health GPS (Health Homes) program and who also have food insecurity 	<ul style="list-style-type: none"> Medicaid Dual Eligible (Medicare and Medicaid)
Stephen and Sandra Sheller 11th Street Family Health Services	<ul style="list-style-type: none"> Adults with a diagnosis of hypertension Staff who deliver primary care and other services at the health center 	<ul style="list-style-type: none"> Commercial insurance (staff) Medicaid (patients)

The “[AIM Measures Library](#),” developed in partnership with CHCS, Joslyn Levy & Associates (JLA), and an expert advisory committee (see **Exhibit 2**), builds on the significant work undertaken by others in the field to identify complex care measures. It is shared in this brief to:

1. Demonstrate how the AIM pilot sites are thinking about the implementation and impact of their interventions through the lens of patient and staff experience; and
2. Advance the field of complex care measurement by offering a limited set of quality measures that others can consider for use in their own programs.

Exhibit 2. Expert Advisory Committee

Name	Organization
Stacey Johnson	Bread for the City ^a
Susie Foster	Hill Country Health and Wellness Center ^a
Eliza Hallett	Boston Medical Center, Center for Urban Child and Healthy Family ^a
Diana Hartley-Kim	11 th Street Family Health Services ^a
Rachel Everhart	Denver Health ^a
Ken Epstein	East Bay Agency for Children ^a
Therese Wetterman	Health Leads ^a
Renee Boynton Jarrett	Boston Medical Center ^a
Parinda Khatri	Cherokee Health Systems ^a
Mark Humowiecki	National Center for Complex Health and Social Needs ^a
David Labby	Health Share of Oregon ^a
Mohini Venkatesh	National Council for Mental Wellbeing ^a
Tanya Tucker	Full Frame Initiative ^a
Danica Richards	CHCS ^c
Meryl Schulman	CHCS ^c
Karla Silverman	CHCS ^c

Key: a = pilot site member; b = initiative advisor; c = CHCS program team

Gaps in Complex Care Measurement: Patient and Staff Perceptions

Traditional health care measures of cost, utilization, and standard clinical outcomes are necessary but insufficient⁴ for fully capturing how improvement efforts influence some of the most fundamental aspects of complex care. In their comprehensive inventory⁵ of existing measures for complex care, the National Center and IHI highlighted the need for measures that more directly address equity and well-being. Their review also identified few existing measures that capture care integration and care coordination. Furthermore, measures to assess community partnerships with health care organizations are also lacking.

As part of their evaluation, the AIM pilot sites are asking the following questions to assess whether their efforts have achieved the core goals of complex care:

- *Do our patients feel supported by our care team?*
- *Do our patients believe we are adequately addressing their defined goals and needs?*
- *Do patients report fewer unmet needs?*
- *Do clinical teams feel adequately supported when providing care to high-risk patients?*
- *Do members of the care team believe there are systems in place to provide a safe environment for patients and staff?*
- *Have our efforts improved health equity?*
- *What is the impact of integrating health and social care?*

Using patient-reported and staff-reported measures provides an opportunity to answer these questions and capture if care is perceived as integrated and person-centered by patients and staff, whether the staff feel that the care is meaningful and brings value to the patients, and whether patients feel respected, engaged in care, and trust their providers. Combined with established measures, the answers to these questions can provide a more nuanced and comprehensive assessment of the true impact of complex care models.

Building the AIM Measures Library

Convening an Advisory Committee

CHCS and JLA convened an evaluation advisory committee comprised of 16 members including representatives from the AIM pilot sites, nationally recognized experts in complex care and integrated care, as well as CHCS and JLA staff (see **Exhibit 2**, previous page) to [identify a set of measures](#) that the AIM sites could consider using for aligning evaluation work with AIM initiative objectives. Using a modified Delphi process (see sidebar), committee members rated individual measures to achieve consensus on which should be included in the final AIM Measures Library.

Proposing Measures for Review

JLA compiled an initial list of 38 patient-reported measures and 42 staff-reported measures for the committee to review. Measures were drawn from the National Center and IHI *Measuring Complexity* report⁶ and from survey instruments or measure sets from governmental, national, and regional organizations working in the fields of complex care, public health, health equity, behavioral health, and health-related social needs.

What is the Delphi method?

The Delphi method builds consensus around a specific topic by soliciting the judgments of subject matter experts to reach a convergence of opinion. It uses survey rounds to gather insights from the group. Responses are compiled from each round and shared with the group before the next round begins. A key advantage of this process is that it can accommodate a diverse panel of participants while ensuring anonymity and equal consideration to all in the review process.

To create the AIM Measures Library, we used a modified Delphi process, supplementing the three survey rounds with two virtual group convenings to discuss areas where there was a divergence in opinions, to review new measures that were proposed during the survey rounds, and to review the final AIM Measures Library with the Delphi panel.



The measures reviewed by the committee addressed the following domains:

Dimensions for Patient-Reported Measures	Dimensions for Staff-Reported Measures
<p>Measuring patient perceptions of:</p> <ul style="list-style-type: none"> ✓ Patient-centered quality of care ✓ Services provided to meet health-related social needs ✓ Integrated care (medical, physical, emotional, psychological) ✓ Equitable, respectful, and supportive care ✓ Coordination with other services and providers ✓ Patient well-being 	<p>Measuring staff perceptions of:</p> <ul style="list-style-type: none"> ✓ Equity as a primary organizational commitment ✓ Care integration (behavioral health, trauma-informed care, and health-related social needs) ✓ Supporting medical, physical, psychological, emotional, and social needs of clients ✓ Partnerships with outside service organizations ✓ Staff well-being

Rating and Revising Measures

Committee members rated measures using four criteria:

- **Sensitivity to change:** This measure can show change over 12 months.
- **Clarity of language:** The language is clear and unambiguous.
- **Applicability:** This measure applies across settings, situations, and populations.
- **Advancing the field:** This measure adds value.

Committee members were also encouraged to suggest revisions to measures and propose new measures if they felt the available measures missed an important concept.

Each round of review reduced the number of measures and identified the need to revise the language in several of the existing measures to align them with complex care practices. For example, there was consensus that measures asking about experiences with “providers” be broadened to ask about experiences with “care teams and care partners,” and measures focused on “patients’ deficits” be revised to focus on “patients’ assets.” New measures were proposed across domains, with most focusing on equity, well-being, and care integration to fill the measurement gaps that currently exist in the field. Committee discussions underscored the difficulty of measuring concepts, such as equity and well-being, that are very broad in scope and for which there are divergent perspectives on what aspects of these concepts should be addressed. As such, further definition to address local circumstances may be required when using these measures.

Piloting Finalized Measures

[Appendices A](#) and [B](#) list the 26 patient-reported and 32 staff-reported measures selected, modified, or created through the Delphi process that comprise the full AIM Measures Library. The measures are organized by domain. Half were drawn from existing sources, as referenced in the tables, and the remainder were either modifications of existing measures or newly created for AIM. The measures are in the form of survey questions. Pilot sites could select all or a subset of the measures and incorporate into their quality improvement and evaluation strategies to capture the AIM domains of interest more fully through the patient and staff lens.

Measurement Considerations for Complex Care Programs

Complex care programs and care teams can adopt or adapt these patient- and staff-reported measures to augment their current improvement and evaluation data to understand impact beyond cost, clinical outcomes, and utilization. When thinking about which measures to use, consideration should be given to the type of intervention, population of interest, care setting, improvement questions, and evaluation objectives.

Following are broad considerations for implementing these or similar measures at your organization:

- **Align and adjust definitions.** Clearly defining concepts allows for standardization of measures across the field. However, it is important to allow for some flexibility to reflect the culture and practices of your specific setting and population. For example, while there is a general understanding of the meaning of promoting a “culture of equity,” you might want to provide a definition or tailor the wording of a measure to reflect the specific priorities or activities at your organization. Similarly, you may want to customize terminology for the people receiving care and the people providing care to reflect your own setting.


- **Develop a realistic plan for data collection.** You will need to be clear about which staff and patients to target, the workflow for administering patient and staff surveys, the number of patients and staff needed to participate to ensure a meaningful sample, and the frequency at which you will gather these data. How much data you need will depend on whether you will be using the data for improvement or evaluation. Gathering patient and staff data requires effort and you want to be sure that your plan yields the information you are seeking. Consider a range of ways to capture data: self-administered paper or electronic surveys, staff administered surveys or interviews, or focus groups.


- **Encourage payer participation.** Involving payers and health plans in measure selection, particularly as they are formulating approaches to value based payment, will help to facilitate alignment around how value is being defined and how patient and staff-reported measures can be used alongside cost, utilization, and patient outcomes data to assess the impact of your complex care program.


- **Involve patients.** Understanding what care experiences, processes, and outcomes are most important to your patients will ensure you are measuring what matters. Formally involving patient representatives in measurement plan design and review of data collected will provide a valuable means of engaging patients in your improvement and evaluation efforts.


- **Bring a range of staff and community voices into the conversation.** Providers and other care team members, patients, administrators, and community partners all bring different perspectives on complex care design and delivery. Bringing all parties together into the measurement discussion will enrich your understanding of measurement needs and assist you in designing an evaluation that will address the interests of key stakeholders.



Moving Forward

All AIM sites were encouraged to pilot a subset of the measures, selected by the evaluation advisory committee as ‘core measures’, to assess the value of these metrics for improvement and evaluation purposes. CHCS and JLA will be monitoring the experience of the pilot sites that are using these measures and will share insights from this process publicly at the end of the AIM initiative. This library of measures was developed for the AIM initiative and can help inform other complex care programs across the country interested in improving care for people with complex health and social needs.

ACKNOWLEDGEMENTS

CHCS thanks Joslyn Levy and Nicole Filion from Joslyn Levy & Associates for their assistance in preparing this brief.

ABOUT THE CENTER FOR HEALTH CARE STRATEGIES

The Center for Health Care Strategies (CHCS) is a nonprofit policy center dedicated to improving the health of people with low-income. It works with state and federal agencies, health plans, providers, and community-based organizations to develop innovative programs that better serve people with complex and high-cost health care needs. For more information, visit www.chcs.org.

ABOUT JOSLYN LEVY & ASSOCIATES

Joslyn Levy & Associates (JLA) is a consulting firm with expertise in quality improvement, evaluation and strategic planning that moves health and social service organizations from ideas to action. JLA’s mission is to support healthcare, public health, and social service organizations achieve their goals for service excellence and breakthrough results. For more information visit www.joslynlevyassociates.com.

ENDNOTES

¹ M. Humowiecki, T. Kuruna, R. Sax, M. Hawthorne, A. Hamblin, S. Turner, et al. *Blueprint for Complex Care: Advancing the Field of Care for Individuals with Complex Health and Social Needs*. National Center for Complex Health and Social Needs, Center Health Care Strategies, and Institute for Healthcare Improvement, December 2018. Available at: www.nationalcomplex.care/blueprint

² A. Hamblin and R. Davis. *From Camden to Memphis: Recent Complex Care Randomized Controlled Trials Present a Call to Action*. Center for Health Care Strategies blog, February 2020. Available at: <https://www.chcs.org/from-camden-to-memphis-recent-complex-care-randomized-controlled-trials-present-a-call-to-action/>

³ H. Bossley and K. Imbeah. *Measuring Complexity: Moving Toward Standardized Quality Measures for the Field of Complex Care*. The National Center for Complex Health and Social Needs and the Institute for Healthcare Improvement, May 2020. Available at: <https://www.nationalcomplex.care/research-policy/resources/publications-reports/measuring-complexity-moving-toward-standardized-quality-measures-for-the-field-of-complex-care/>

⁴ R. Davis and I. Romm. *Using a Cost and Utilization Lens to Evaluate Programs Serving Complex Populations: Benefits and Limitations*. Center for Health Care Strategies, March 2017. Available at: <https://www.chcs.org/resource/using-cost-utilization-lens-evaluate-programs-serving-complex-populations-benefits-limitations/>

⁵ H. Bossley and K. Imbeah, op. cit.

⁶ Ibid.

Appendix A. AIM Measures Library: Patient-Reported Measures*

Response Key

- a. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree
- b. None of the things that are important to you; Some of the things that are important to you; Most of the things that are important to you; All of the things that are important to you
- c. No effort was made; A little effort was made; Some effort was made; A lot of effort was made; Every effort was made
- d. Very confident; Somewhat confident; Not that confident; Not at all confident
- e. Much better; A little better; About the same; A little worse; Much worse
- f. Never; Rarely; Sometimes; Often; Very often

Measure	Response Options	Source/Adapted From
GOALS OF AND EXPERIENCE WITH CARE		
My care team and I regularly review my care plan so it reflects my preferences and current circumstances.†	a.	Created for AIM
I am encouraged to express my honest opinions about the program including my dissatisfactions and disagreements.	a.	National Council for Mental Wellbeing Client Feedback Survey (NCMW-CFS)
My care team helps to reduce barriers when connecting me to other services.	a.	Created for AIM
Members of my care team know what’s on my care plan, including the things that are important to me.	a.	Created for AIM
My care plan includes all of the things that are important to me.	a.	Consumer Assessment of Healthcare Providers and Systems Home and Community-Based Survey (HCBS CAHPS)
Does your care plan include:	b.	HCBS CAHPS , with minor language edits based on AIM EAC
Thinking about the care you received [in the last # months], how much effort was made to listen to the things that matter most to you about your health issues?	c.	CollaboRATE
Thinking about the care your received [in the last # months], how much effort was made to help you understand your health issues?	c.	CollaboRATE
EQUITY		
I believe my care team feels comfortable around people who look like me and/or sound like me.†	a.	Created for AIM
At times I feel I am treated differently here based on my race, ethnicity and/or gender identity.†	a.	Created for AIM
When I come here I feel like they care about me as a person.	a.	Created for AIM
At times, I feel judged and criticized by the people who work in this program.	a.	Created for AIM
My care team thinks about my values and my traditions when they recommended treatments and services to me.	a.	Created for AIM

*These measures have not been formally validated.

†Indicates core measures recommended by the Evaluation Advisory Committee for piloting at all AIM sites.

Measure	Response Options	Source/Adapted From
HEALTH AND WELL-BEING		
The services I receive here help me live a better life.†	a.	National Core Indicators – Aging and Disabilities Adult Consumer Survey
The staff truly believe in me – that I can achieve my goals.†	a.	NCMW-CFS
How confident are you that you can manage most of your health problems?	d.	Created for AIM
Compared to 3 months ago, how would you rate your problems or symptoms now?	e.	CAHPS Experience of Care and Health Outcomes (ECHO) Survey
Compared to 3 months ago, how would you rate your ability to deal with daily problems now?	e.	CAHPS ECHO Survey
I feel safe in this program.	a.	NCMW-CFS
I trust the staff in this program.	a.	NCMW-CFS
CARE INTEGRATION		
My care team considers other aspects of my life when helping me make health care decisions.†	a.	Created for AIM
The staff here try to help me with things I might need right away, like food, shelter, or clothing.	a.	Created for AIM
My care team helps coordinate all the services I receive.	a.	HCBS CAHPS , with minor language edits based on AIM EAC
The staff here work together and coordinate with my other service providers to come up with a plan that meets my needs.	a.	Created for AIM
I am asked about any stressful life experiences that may harm my health and emotional well-being.	a.	NCMW-CFS
I am given information about how my stressful life experiences may affect my overall health.	a.	NCMW-CFS

†Indicates core measures recommended by the Evaluation Advisory Committee for piloting at all AIM sites.

Appendix B. AIM Measures Library: Staff-Reported Measures*

Response Key

- a. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree
- b. None of the things that are important to you; Some of the things that are important to you; Most of the things that are important to you; All of the things that are important to you
- c. No effort was made; A little effort was made; Some effort was made; A lot of effort was made; Every effort was made
- d. Very confident; Somewhat confident; Not that confident; Not at all confident
- e. Much better; A little better; About the same; A little worse; Much worse
- f. Never; Rarely; Sometimes; Often; Very often

Measure	Response Options	Source/Adapted From
GOALS FOR AND QUALITY OF CARE		
When developing care plans, the care team here routinely collaborates with patients to co-create goals.†	a.	Created for AIM
The health and wellness goals and objectives in the client’s service plan are worded in a way that is client-centered and reflects the client’s expressed goals in his/her own words.	a.	Culture of Wellness Organizational Self-Assessment (COW-OSA)
Our organization has an effective system in place for soliciting and documenting patient goals and we regularly review those goals with patients.	a.	Created for AIM
Care is designed to meet the preferences of patients. [for adult settings] OR Care is designed to meet the preferences of patients and their families. [for pediatric settings]	a.	Provider and Staff Perceptions of Integrated Care (PSPIC)
Providers and staff view patients as equal partners in their care.	a.	PSPIC
Our clinical documentation system is set up to support and reinforce the importance of staff assessing and addressing both health and wellness needs as a routine part of an integrated care plan.	a.	Created for AIM
EQUITY		
Our organization ensures a safe and accessible environment (physical, emotional, and cultural) for all individuals, regardless of gender, sexual orientation, race, ethnicity, socioeconomic status, disability status, and language.†	a.	Created for AIM
Our organization's mission, vision and policies clearly state that equity is a high priority.	a.	NQF Environmental Scan
Our organization's leadership are committed to equity as a high priority.	a.	NQF Environmental Scan
Our organization is responsive to individual patient preferences, needs, and values.	a.	Medical Office Survey on Patient Safety Culture
Our organization makes accommodations in how we practice in order to respond to the needs of patients that may have difficulty with things such as keeping appointments, or following treatment plans.	a.	Created for AIM
To ensure care is equitable, our organization identifies the needs of diverse populations and implements steps to help meet those needs.	a.	Created for AIM
We regularly use feedback from patients and families to improve services.	a.	PSPIC

*These measures have not been formally validated.

†Indicates core measures recommended by the Evaluation Advisory Committee for piloting at all AIM sites.

Measure	Response Options	Source/Adapted From
DATA COLLECTION AND MONITORING		
Our organization breaks down regularly reported programmatic and improvement data by social risk factors, race/ethnicity, and gender to identify and address disparities.†	a.	Created for AIM
Our organization has data collection and monitoring systems in place that systematically identify patients' social risk factors.	a.	Created for AIM
We train staff on how to collect accurate data on race and ethnicity.	a.	Created for AIM
We routinely collect and update data on preferred language, housing status, food security and other social risk factors.	a.	Created for AIM
We routinely collect and update data on social risk factors that are a priority to the communities we serve.	a.	Created for AIM
HEALTH AND WELL-BEING		
I feel respected and included by the other members of our care team.†	a.	Created for AIM
Providers and staff routinely help patients to develop strategies and skills for managing their health and well-being.	a.	Created for AIM
My work makes me feel satisfied.	f.	Professional Quality of Life Scale (ProQOL)
I believe I can make a difference through my work.	f.	ProQOL
Our organization has a system in place to identify, review, address and evaluate the social and emotional experience of clients and staff to ensure that policies and practices promote emotional safety and respect.	a.	Created for AIM
CARE INTEGRATION		
We develop treatment plans that are based in an integrated approach to patients' physical, behavioral, and emotional health, and health-related social needs.†	a.	Created for AIM
There is one integrated treatment plan for each patient and the plan is available to all members of the care team that need to access it.	a.	Created for AIM
Providers and staff are well-informed about patients' current social needs (e.g., housing, transportation).	a.	PSPIC
All patient information is equally accessible and used by all providers to inform care.	a.	Integrated Practice Assessment Tool
COMMUNITY PARTNERSHIPS		
Patient care is well coordinated with community resources (e.g., support groups, food pantries, shelters).†	a.	PSPIC
Partnerships with community organizations are actively sought to develop formal supportive programs and policies across the entire system.	a.	Assessment of Chronic Illness Care (ACIC)
We have established relationships with community agencies to facilitate our referrals to them.	a.	PSPIC
Linking patients to outside resources is accomplished through active coordination between the provider practice, community service agencies and patients.	a.	ACIC
Community programs provide regular feedback about patients' progress that is used to modify programs to better meet the needs of patients.	a.	ACIC

†Indicates core measures recommended by the Evaluation Advisory Committee for piloting at all AIM sites.