Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers

Request for Input (RFI) Responses

The Physician-Focused Payment Model Technical Advisory Committee (PTAC) requested input from the public on information that could describe current perspectives on using data and health information technology to transparently empower consumers and support providers.

Prior to PTAC's September 8-9, 2025 public meeting on this topic, PTAC received six responses from the following stakeholders listed below:

1. Cadence
2. Remote Monitoring Leadership Council
3. American College of Lifestyle Medicine
4. Innovaccer
5. Accountable for Health
6. NAACOS

For additional information about PTAC's request, see PTAC's solicitation of public input.

CADENCE

September 5, 2025

Terry Mills and Soujanya Pulluru
Co-Chairs
Physician-Focused Payment Model Technical Advisory Committee (PTAC)
U.S. Department of Health and Human Services
200 Independence Avenue SW
Washington, DC 20201

Via email: PTAC@HHS.gov

Re: Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers — Public Input

Dear Dr. Mills, Dr. Pulluru, and Members of the Committee:

Cadence appreciates the opportunity to submit comments in response to the Committee's RFI on Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers. We're at the front lines of a new era for health care where personalized, technology-driven care empowers patients to take control of their health and dramatically reduce costs for Medicare.

Cadence delivers RPM, APCM, and Chronic Care Management (CCM) to over 50,000 patients nationwide, many of whom live in rural and underserved areas. Our focus is on using cutting-edge technology to manage and treat chronic conditions such as congestive heart failure, hypertension, and type 2 diabetes. We work alongside the most innovative health systems to give patients 24/7 access to our clinical team, identifying and treating issues before they escalate.

Technology-enabled care is working by improving outcomes, lowering costs, and expanding access for the seniors who need it most. Peer-reviewed analysis of Cadence's RPM program demonstrates significant improvement in clinical outcomes alongside substantial cost savings in the form of reduced hospital and post-hospital discharge spending. For heart failure patients, adoption of RPM plus medication optimization boosted uptake of guideline-directed medical therapy (up to 23% from 7%) and resulted in average monthly savings of over $1,000 per patient.[1]

To accelerate this transformation, we encourage the Committee to work with CMS to:

- Unleash patient-centered innovation by (a) creating flexibility within time-based requirements that limit the appropriate use of RPM and artificial intelligence (AI) enabled care and (b) expanding access to technology-driven services like APCM.

[1] David I. Feldman et.al., *A Nationwide Telehealth Heart Failure Program: Can Remote Patient Monitoring And Guideline Directed Treatment Protocols Help Bridge The Gaps In Heart Failure Management*, 29 J. of Cardiac Failure 4 (April 2023), https://www.onlinejcf.com/article/S1071-9164(22)00760-6/fulltext.

- Ensure new payment models support outcome-based RPM reimbursement and waivers of copayments and consent barriers that constrain high-value care. Current fee-for-service structures hinder the capabilities of RPM to create actionable, interoperable data, improve clinician workflows, and better engage patients.

A more detailed response can be found below.

Empower Patients Through Chronic Condition Management

Cadence's recent innovations showcase what's possible when you empower patients with technology-enabled care:

- **AI-Assisted Coaching Delivers Highly Personalized Care at Scale**. Our clinical team conducts over 12,000 lifestyle and wellness coaching visits per month. An AI-powered coaching co-pilot provides enhanced personalization, surfacing insights from the patient's medical and social history, and supports clinicians in crafting actionable goals that motivate and inspire patients. This blend of human judgment and AI insight transforms the patient experience, delivering tailored, high-touch care at scale without compromising safety or quality, thanks to human-in-the-loop oversight from our clinical team.
- **Patient Coordinator Agent Enables Consistency in Workflows and Dramatic Time Savings.** To facilitate seamless support for thousands of sites of care, our Patient Coordinator Agent automates daily administrative tasks in multiple electronic medical records (EMRs), eliminating work previously managed by humans (2-5 minutes per task). Scheduling follow-ups, sending lab reminders, and the coordination of work among providers is now handled through automation.
- **Proactive Titrations via RPM Permit Faster, More Targeted Interventions**. Cadence's Proactive Titrations engine scans patients' charts in between in-office visits to surface patients that meet criteria for a medication titration algorithmically and automatically creates a list for consideration by Cadence nurse practitioners. This asynchronous model enables faster, more targeted interventions, which recent data show has resulted in an additional 4,170 (23%) Cadence patients achieving hypertension control (<130/80 mmHg) at 6 months following enrollment.
- **Proactive Care via APCM Continuously Assesses Gaps and Prompts the Next Best Action Across 30+ Longitudinal Care Goals**. What if your doctor could watch you every day, not every six months? Cadence's Proactive Care Model surfaces timely check-in tasks and reminders to reduce gaps in care, such as scheduling breast cancer screenings and colonoscopies. The program prompts patients as they progress toward achieving personalized care goals, including by encouraging healthy eating and connecting patients to community resources for social needs.

Improve Data Infrastructure and Interoperability

It is extremely resource intensive to create and maintain a high-quality, technology-driven remote care delivery system. For example, Cadence syncs patient data from its software to the EMR to ensure information is captured in the patient's chart and available at the point of care. We also staff a team to improve EMR integrations, which are far from standardized in the U.S. today, and employ full-time software engineers who design and engineer improvements, address software issues, and ensure the security of patient information. Cadence ensures the uptime of services,

including connectivity of tens of thousands of cellular-enabled devices, to Cadence's software platform, and to dozens of EMRs, 24 hours a day, seven days a week.

To fully empower seniors to overcome their chronic disease, CMS should consider requiring technology-enabled services like RPM and APCM to fully integrate into the ordering provider's EMR. Monitoring alone is no longer enough; the health care needs of Medicare beneficiaries require that this monitoring be tied to specific actions regarding usage of patient data (e.g., providing 24/7 clinical support) and AI capabilities such as development and tracking of highly personalized care goals.

Equip Patients with Information About Their Care Using Digital Tools

Cadence's "nurse in your pocket" assistant keeps patients healthy, at home, through day-to-day support, easily accessible lifestyle coaching, and timely interventions. Real-world case studies demonstrate the crucial role Cadence's technology platform plays in empowering patients to follow their care plan and access needed resources: Patients are improving their medication adherence through better understanding of each prescription and its purpose, scheduling screenings timely to catch issues before they become severe, and more seamlessly coordinating care day-to-day with caregivers. Core capabilities include:

- A personalized care plan built in partnership with the patient's existing PCP
- On-demand health coaching
- Timeline reminders and notifications to drive accountability and adherence
- Remote monitoring of patient vitals
- Care navigation services, to ensure timely access to providers, specialists, and community resources
- Tracking of health gaps and closures, such as completion of any ordered screenings, tests, and/or vaccinations
- Connectivity to the full EMR

Patients are getting better through Cadence's RPM and APCM programs. Peer-reviewed analysis of Cadence's remote care program demonstrates significant improvement in clinical outcomes alongside substantial cost savings in the form of reduced hospital and post-hospital discharge spending. For heart failure patients, adoption of Cadence's RPM plus medication optimization program led to three times more patients taking guideline-directed medical therapy and resulted in monthly savings on average of over $1,000 per patient.[2] Published data also show that the Cadence program led to two times more patients achieving blood pressure goals as compared to patients not on the program.[3] These positive clinical outcomes extend, and apply equally, to patients in rural and non-rural areas.[4]

---

[2] Feldman, D., et al. Leveraging Remote Patient Monitoring to Effectively Put the Heart Failure Guidelines to Practice. Journal of Cardiac Failure. Sept. 2024; Vol. 30 (Issue 9, pp. 1166-1169). https://doi.org/10.1016/j.cardfail.2024.04.018.

[3] Feldman D., Fudim M., et al. Abstract 12950: A nationwide remote patient intervention hypertension program: Can remote patient monitoring and a multi-disciplinary team of clinicians improve blood pressure control? Circulation. 2023;148 (Supp. 1): 12950. doi:10.1161/circ.148.suppl_1.12950. (Goal defined as <130/80 mmHg).

[4] Emma Beavins, "Cadence and Lifepoint: Remote monitoring shows promise to deliver better health for rural patients," Fierce Healthcare (Sept. 11, 2024), https://www.fiercehealthcare.com/digital-health/cadence-and-lifepointrural-patients-surpass-urban-outcomes-through-rpm. (Note: Peer-reviewed publication demonstrating

Enhance Payment Models to Empower Patients

Enabling this solution at scale within Medicare requires steps to encourage technology-enabled care such as RPM and APCM services. Steps that would encourage the industry to fully meet patient needs include:

1. **Eliminating time-based requirements for team-based care management services like RPM**. The requirement of a minimum of 20 minutes of clinical staff time to provide the service restricts the use of (and willingness of companies and providers to invest in) technology that would deliver more personalized and efficient care. These services save money for the Medicare program, and it is in Medicare's interest to encourage wider availability.
2. **Expanding access to APCM services by removing the requirement that they be offered only by providers participating in an ACO or specified value pathway**. The APCM approach is a critical downpayment on the vision of moving beyond time-based care requirements. This vision can be more fully realized by expanding access beyond providers participating in a Shared Savings Program ACO or certain Innovation Center models (ACO REACH, Making Care Primary, etc.). This requirement limits the ability for APCM to be transformational and artificially restricts patients from accessing services where their provider cannot participate in such models. At a minimum, to eliminate uncertainty, CMS should allow providers to continue to provide APCM services for an extended period even if a particular value-based model in which they are participating is eliminated and thereby expand eligibility for APCM.
3. **Simplifying consent requirements across care management programs**. Patients should be able to consent just once to an overarching care management program that encompasses potentially overlapping services such as Principal Care Management, CCM, APCM, and RPM. Providers need the flexibility to meet a patient's needs via modular services without the administrative burden of obtaining consent multiple times.
4. **Consider opportunities to waive requirements for patient copays for RPM and APCM services under any demonstration model authorities**. Any waiver of patient financial obligations will appropriately incentive patient participation in RPM/APCM and help participating providers succeed under this new care model.

Thank you for your consideration. Providing American seniors with access to world-class digital tools aimed at prevention and management of chronic disease is a national imperative. We welcome the opportunity to engage with you in greater depth on the feedback presented above. Should you have any questions, require additional information, or wish to meet to review data supporting our comments, please contact me at meryl@cadencerpm.com.

Sincerely,

Meryl Holt
Head of Legal, Cadence

similarly positive clinical outcomes for rural and non-rural patients participating in RPM services is forthcoming, expected late June 2025.)

REMOTE MONITORING LEADERSHIP COUNCIL

September 4, 2025

Terry Mills and Soujanya Pulluru
Co-Chairs
Physician-Focused Payment Model Technical Advisory Committee (PTAC)
U.S. Department of Health and Human Services
200 Independence Avenue SW
Washington, DC 20201

Via email: PTAC@HHS.gov

Re: Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers — Public Input

Dear Dr. Mills, Dr. Pulluru, and Members of the Committee:

The Remote Monitoring Leadership Council (the Council) welcomes the opportunity to provide comments on the PTAC's *Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers Request for Information*. We welcome the opportunity to inform the Committee about how connected health technologies can generate and leverage data to deliver meaningful results for patients and providers in value-based payment arrangements.

The Council is a collaborative of innovative companies operating across all 50 states and collectively offering a significant percentage of all remote monitoring and care management services being delivered to Medicare beneficiaries. In addition to advancing patient access to these important tools, we have agreed to promote best practices and standards for the delivery of remote patient monitoring (RPM) services.

Since 2019, RPM has shown strong clinical outcomes for many Medicare beneficiaries in need of interventions to prevent unnecessary and costly emergency department (ED) and hospitalization episodes. Patients, practitioners, and health payers see the value in broad adoption of these services to revolutionize chronic care management. As an example of the clinical and cost-saving potential of RPM, one of our members recently completed a cost and utilization analysis, which included 5,872 patients enrolled in an RPM program compared against 11,449 patients in a propensity-score matched control group. The RPM program resulted in annual total savings of $1,308 per patient across three chronic disease programs (heart failure, hypertension, and type 2 diabetes). Cost savings were primarily driven by a 27% reduction in hospital admissions – specifically, reductions in hospitalizations for heart failure and stroke.

Given our specific area of focus, we are well-positioned to offer comments and work with you to educate the use of RPM to empower patients while improving health outcomes and lowering costs.

Background

RPM, as defined by the Centers for Medicare and Medicaid Services (CMS), involves the collection and analysis of patient physiologic data that are used to develop and manage a treatment plan

related to a chronic and/or acute health illness or condition. By transmitting physiologic data from a patient's home to a care team in near real time, RPM gives clinicians the actionable insights they need to intervene early, adjust treatment plans promptly, and prevent avoidable hospitalizations. RPM supports both chronic and acute conditions across short- and long-term episodes of care, and is also used in inpatient settings to assist with caring for patients in the hospital. The workflow is straightforward:

1. Onboarding and education. Patients receive connected devices (e.g., blood-pressure cuffs, glucose meters, pulse oximeters) and training on their proper use.
2. Ongoing data capture. Devices automatically transmit readings, often multiple times per day, to a secure platform synced with the patient's electronic medical record.
3. Clinical review and action. Physicians or other qualified clinicians interpret the incoming data, identify trends, and modify therapy or outreach in real time, whether the patient is at home or recently discharged from the hospital.

Patient Empowerment Through Chronic Condition Management

RPM allows patients with multiple chronic conditions to take control of their own health care by changing how patients interact with their health care information. Because of the capacity of RPM to collect and communicate patient data with providers, RPM creates a transparent way for patients to see how their chronic conditions are progressing. In turn, this technology allows patients and providers to work together to manage chronic conditions through clinical and lifestyle interventions.

A 2025 retrospective clinical outcomes analysis showed that RPM hypertension programs can help rural seniors reduce their blood pressure levels, empowering them to focus on their health goals. Additionally, an RPM program at Geisinger health system demonstrated hypertension control and reduced hospitalizations through RPM, as well as greater access to pharmacists and blood pressure medication management leading to $216 per member per month savings.

Patients and providers benefit from better outcomes and lower costs when patients have the tools to manage their chronic conditions appropriately. RPM provides an opportunity to empower patients to take control of their care and encourage clinicians to provide high-value care to patients with multiple chronic conditions.

Approaches for Improving Data Infrastructure and Interoperability

Data infrastructure is key to harnessing RPM to support patient empowerment. RPM relies on the collection, transfer, and interpretation of data from the patient to the provider. Effective monitoring means using reliable and interoperable systems to ensure that patients and providers can see and use the RPM data. When data systems are functional, patients can feel confident that they can engage in shared decision-making with their providers using the data from their remote monitoring device.

The biometric data collected through RPM requires clinical and technical expertise to make sense of for practitioners and the health system. Data systems must be built to capture and interpret data, generate reports, send alerts, and transmit data to appropriate electronic health records (EHR) and partners – which can be an expensive and challenging task. Support staff must be

available to troubleshoot device and software issues for patients, engage patients and encourage data submission, and provide other sorts of assistance.

Typical patients utilizing RPM are usually either facing complex conditions in the post-acute space, or a senior at home managing multiple chronic conditions concurrently. A remote monitoring provider who has taken responsibility for a patient's chronic condition becomes the de facto manager of all of that patient's urgent and chronic conditions – as we have a responsibility to track and respond to any change in vital readings that we see. This means that we often go above and beyond in serving patients who are experiencing symptoms of a different condition than the one we are explicitly monitoring for.

Payment Models to Enhance Patient Empowerment

Your leadership in transforming care delivery through more outcome-based models is crucial to our future in leveraging tools like RPM that can create cost saving through better health outcomes and quality of care. RPM has proven to reduce costs of services by preventing rehospitalization and unnecessary utilization. In addition to the studies above, the US Military Health System found that when a remote care program including RPM is present, there are facility-level cost savings and also benefits to the inpatient cohort not enrolled in the program. The analysis showed that, with the program, there was a 12% lower length of stay averaged across all patients, saving the U.S. $2,047 per patient without affecting clinical outcomes.

As PTAC explores alternative payment models, we encourage it to consider options to remove or mitigate cost sharing for high-value services that lower total healthcare spending, like RPM. Cost-sharing requirements can be a significant barrier to patient participation in care management programs like RPM. Even when relatively low, a monthly cost adds up to create a significant disincentive for a senior with complex medical conditions, on a fixed budget, to participate in a remote monitoring program. As demonstrated above, these programs are generally a good investment for the federal government – particularly for highly vulnerable populations with multiple chronic conditions and a risk of hospitalization/readmission. We have encouraged CMS and the Centers for Medicare and Medicaid Innovation to explore the development of models that encourage the adoption of high-value remote monitoring services through the waiver of Medicare Part B cost-sharing requirements.

Sustainable reimbursement for RPM is closely linked to our broader drive for digital health innovation, data-driven patient empowerment, and value-based care delivery. RPM benefits both patients and providers and should be considered a valuable tool in high-quality low-cost care strategies.

Thank you for the opportunity to submit these comments. Please reach out to Rikki Cheung at rcheung@sironastrategies.com with any additional questions.

Respectfully,

Remote Monitoring Leadership Council

American College of Lifestyle Medicine's Response to: *Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers Request for Input (RFI)*

On behalf of the over 14,500 physician and health professional members of the American College of Lifestyle Medicine (ACLM), we appreciate the opportunity to weigh in on the Physician-Focused Payment Model Technical Advisory Committee's (PTAC) Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers Request for Input (RFI). The input outlined in below can meaningfully address the rising epidemic of preventable and reversable chronic disease through lifestyle medicine approaches to care that increases patient empowerment and leverages data infrastructure and technology, which are vital to any strategy that hopes to be successful in achieving a healthier America.

Founded in 2004, the not-for-profit American College of Lifestyle Medicine is the nation's only physician-led, interprofessional, multispecialty medical professional association dedicated to educating, equipping and empowering physicians and health professionals to address root causes of chronic disease through evidence-based therapeutic lifestyle interventions—including optimal nutrition, physical activity, restorative sleep, stress management, connectedness, and the avoidance of risky substances—**to prevent, treat and even reverse chronic diseases**.

For over 20 years, clinician members of ACLM have been promoting a transformed healthcare system with a focus on root-cause lifestyle medicine as a first-treatment approach. ACLM's vision is a world wherein lifestyle medicine is the foundation of health and all healthcare. The efficacy of lifestyle medicine (LM) transcends all healthcare specialties as we see examples of implementation in nearly every area of healthcare across the entire care continuum.

We are happy to share feedback with PTAC on, *Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers Request for Input (RFI).* Our responses are below.

What are best practices for encouraging shared decision-making between clinicians and patients?

While prevention of lifestyle-related chronic diseases is ideal, 60% of U.S. adults have already been diagnosed with one or more chronic disease,[1,2] that percentage is even higher among seniors and growing in children**.** Unhealthy lifestyle behaviors are continuing to escalate the unsustainable upward trajectory of U.S. healthcare spending, driving as much as 90% of the healthcare dollars and putting our nation at severe economic risk.[3,4]

Most chronic diseases are caused by a short list of risk factors: smoking, poor nutrition, physical inactivity, and excessive alcohol use.[5] Lifestyle-related chronic conditions are not properly addressed within our healthcare education system, nor are there proper payment or quality measure systems to address their root causes. The current healthcare ecosystem emphasizes and incentivizes disease and **symptom management** through increasing quantities of pills and procedures instead of acknowledging and rewarding achievement of health restoration, disease remission, medication de-escalation and chronic disease prevention through **root-cause treatment approaches**.

When you look at chronic disease clinical practice guidelines (CPGs) for hypertension,[6,7] type 2 diabetes,[8,9] cardiovascular disease,[10] obesity,[11] and cognitive decline,[12] you'll see lifestyle interventions listed as the first treatment approach. Most pharmaceutical drug guidance, including the new GLP- 1 medications, also lists diet and exercise as crucial elements to successful long-term outcomes. Research demonstrates improved surgical outcomes with lifestyle interventions pre- and postoperatively. [13] Health restoration and disease remission for a variety of chronic diseases are also possible. Studies demonstrate that the same modifiable unhealthy lifestyle factors, when dosed therapeutically, can be used to treat and reverse[15]existing chronic diseases and prevent future disease.[16-24]

If we know that 90% of healthcare dollars and 80% of chronic conditions are associated with lifestyle factors, our healthcare system should be designed to address those root-cause lifestyle factors versus only managing symptoms. Patients should be aware of the most efficacious treatment options for their conditions and have access to them. The reality is that lifestyle-related chronic conditions are not properly addressed in medical and health professional education, which often leaves discussions and properly dosed therapeutic lifestyle interventions very limited. Because of our fragmented, one-to-one, episodic short visit approaches to care delivery, there is often not enough time or resources to properly address lifestyle in clinical care settings. The focus remains on disease and symptom management instead of root cause treatment through lifestyle. This is reinforced by the lack of sustainable payment, reward systems and quality measure misalignments that unintentionally penalize health restoration, disease remission and medication de-escalation. This leaves a huge opportunity to recalibrate current practices to better align care models, payment, incentives, and rewards toward a patient-empowered lifestyle medicine framework that supports health restoration, disease remission and prevention.

Imagine a healthcare system where you go to a clinical care team who offers treatment approaches that effectively incorporate structured, evidence-based lifestyle interventions either as a first treatment approach or alongside medications or surgical procedures to truly address the root causes of chronic diseases. Not only is lifestyle medicine a way **to bring full informed consent of all treatment options into healthcare, it also empowers patients to engage in their own health journeys.**

The American College of Lifestyle Medicine believes that effectively addressing chronic conditions will only be successful if care delivery includes an emphasis on evidence-based, interprofessional-team led lifestyle approaches that empower patients to take action to prevent, treat and even remit chronic conditions. Payment must be designed to ensure that providers are able to deliver these high-value services and that beneficiaries can access them. Technology and data collection play a significant role in advancing lifestyle-based interventions in the United States.

What role can health system level incentives and organizational culture play in influencing shared decision-making?

Currently, health system and organizational incentives may not fully align with chronic disease prevention, treatment or remission using a root-cause lifestyle medicine approach. Barriers and misaligned incentives unintentionally penalize clinicians for achieving better health outcomes.

Two quick examples of misaligned incentives include medication adherence quality measures and risk scoring. When clinicians can achieve health restoration through lifestyle interventions alone, they may get penalized on quality measure ratings due to lack of medication adherence (even if a medication

wasn't used or needed). In the risk scoring model, when a clinician can support a patient into diabetes remission, the risk score for the patient goes down and the payment for the clinician also goes down. There is no incentive or reward for achieving better health outcomes in this model.

Payment models and incentives for health systems should support and reward evidence-based interventions that address root causes of disease to engage and empower patients to take control of their own health destinies **if they choose to do so.**

Organizational culture can be a powerful reinforcement for patient empowerment and self-care through recognizing the impact that lifestyle has on health outcomes, frequently reminding both employees and patients how much of a role each of us plays in our own health outcomes, and offering resources/support to make healthier choices easier for all who spend time in their organizational environment.

In addition to creating environments that make healthy choices easier to make, culture can also reinforce better health behaviors through policies and processes. Lifestyle medicine offers a great framework to guide organizational culture toward better health and fully informed shared-decision making.

How can providers help to engage patients and promote patient empowerment?
Adjustments in the approach to chronic disease care, where the patient is an active partner in their own health outcomes and feels empowered with education, support, tools, and resources - and where the stated goal of the intervention is disease prevention, treatment and remission, are essential for effectively addressing the underlying causes of disease and empowering/equipping patients to take action.

Clinicians who are trained in lifestyle medicine use evidence-based, guideline-driven, behavior change approaches to empower patients to engage in healthy lifestyle changes to prevent, treat and even remit chronic diseases.

The table below highlights the reframing of a traditional approach to chronic disease care versus a lifestyle medicine approach.

Table 1. Traditional Versus Lifestyle Medicine Approaches To Care[25]

Traditional Approach to Care	Lifestyle Medicine Approach to Care
Heavy focus on individual risk factors	Focuses on lifestyle causes
Patient is a more passive recipient of care	Patient is an active partner in care
Patient is not required to make big changes	Patient is often required to make big changes
Treatment can be fragmented	Treatment is often team-based, integrated and coordinated
Responsibility is on the clinician	Responsibility is shared with the patient
Medication is the first line of treatment	Medication may be necessary, but emphasis on LM
Emphasis on diagnosis and prescription	Emphasis is on education, motivation and support
Goal is disease management	Goal is treatment, remission and prevention

What are effective care delivery models to increase the engagement of patients with chronic conditions?

The traditional one-to-one patient appointments in which physicians and healthcare professionals tell people to eat better and exercise have proven not to be sufficient to support patients in making lasting health behavior changes that impact health outcomes. We need care delivery models that empower patients to understand the role that their daily choices have on their health and provide them with adequately dosed interventions and support systems to take or maintain steps in the right direction. We need care models that scale to reach the growing populations who are experiencing chronic disease in the communities where they live and work, and we need to employ digital solutions that can offer asynchronous monitoring, education, support, and follow-up with these patients. These care models will need to include interprofessional team members to address necessary lifestyle and behavior changes for which they are uniquely trained to support. Care models that have the flexibility and resources to address upstream drivers are also a necessary and important aspect for all of healthcare.

Currently the average time a doctor spends with a patient per year is very limited; standard doctor's office visits do not allow for the type of time-intensive, interprofessional support needed to deliver intensive or non-intensive therapeutic lifestyle change interventions, especially for patients with multiple co-morbidities. One scalable care model that can support the level of intensity described in the ITLC definition and defined by the USPSTF, and that was also the foundation of the innovation models put forward by ACLM, is the shared medical appointment (SMA) or group medical visit model.

These interventions, which offer frequent and regular social connection with patients who are on similar health journeys as well as clinicians who can support their health goals, address social isolation in addition to chronic conditions and lifestyle changes.

In Lifestyle Medicine Shared Medical Appointments (LMSMAs) patients receive both individual care and group education by a team of clinicians about therapeutic lifestyle changes that can treat or reverse their chronic disease(s) and prevent future ones. LMSMAs have proven to be effective, efficient, and accessible for patients, providers, and systems.

The implementation of LMSMAs across the country has led to a wide range of practices. For example, ACLM members have run LMSMAs with ranges of 5-15 patients. They can range from one-off group visits to a 24-part series. Visits typically range from 60-90 minutes, however 120–150-minute LMSMAs have also been run, often combined with experiential learning such as Culinary Medicine training.

Based on guidance from the American Academy of Family Physicians and the American College of Physicians on SMA billing, LMSMAs are often billed using E&M codes 99213 or 99214 based on medical decision making.

LMSMAs are a powerful vehicle to increase access to care and drive better health outcomes for the most common chronic diseases in a scalable, efficient, financially sustainable, and equitable manner within primary care delivery settings.

To better support patient engagement of patients with chronic disease, we should also prioritize and expand support for interprofessional team-led, evidence-based therapeutic and intensive therapeutic lifestyle interventions, ideally through the use of LMSMAs and wrap around services. These interventions address the root causes of chronic disease across the continuum of care through therapeutic lifestyle changes in nutrition, physical activity, sleep, stress management, connectedness, and avoidance of risky substances. They have proven to have a lasting impact on health outcomes and cost savings over time and are essential for unlocking patient empowerment and self-management of chronic conditions.

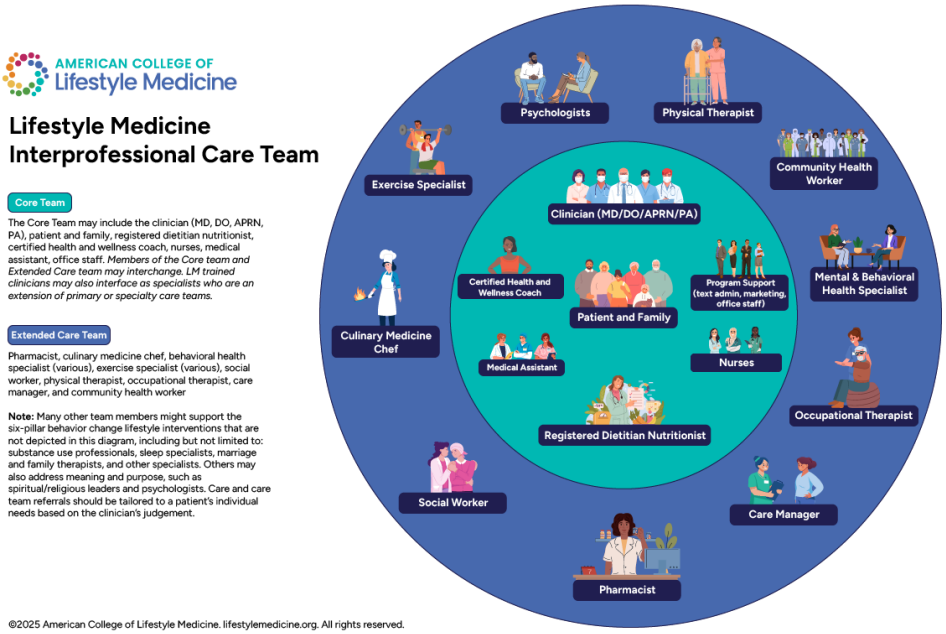
What role can ancillary providers (e.g., nurses, nutritionists, community health workers, pharmacists, behavioral health providers) play in promoting shared decision-making and patient empowerment?

One very important aspect of scaling chronic disease interventions is the effective use of the primary clinician (MD/DO/NP/PA)-led interprofessional care team, which allows a primary clinician to refer, initiate, and oversee appropriately dosed therapeutic lifestyle interventions and closely monitor and de-escalate medications as needed. Various other health professionals on an LM care team can support health behavior changes or address barriers to applying them. LM care teams can look different based on resources available and location. Payment models that cover provider-led (MD/DO/NP/PA) lifestyle-centered team-based care interventions should cover members of the interprofessional care team. Current fragmented FFS models may leave beneficiaries without options to see the providers who would be most helpful to them and leave practices needing to cover salaries for these clinician types with limited funding. Flexible payment models that cover team-based care, especially delivered in groups or virtually should be considered to better promote shared decision-making and patient empowerment.

Figure 1 below depicts an example of what an LM interprofessional care team might look like, with many variations possible.

Figure 2 Lifestyle Medicine Interprofessional Care Team

AMERICAN COLLEGE OF Lifestyle Medicine



How can patients with chronic diseases be empowered to make healthy choices about nutrition and other factors that affect their health?

It is essential that a critical mass of the healthcare workforce is trained in evidence-based lifestyle interventions for chronic conditions so they are better able to support their patients in making healthier lifestyle choices.

We need **aligned payment, incentives and quality measures** that reward evidence-based **root-cause approaches** to achieving better health outcomes across the spectrum of chronic disease, along with a removal of penalties and barriers that providers who deliver better health outcomes using these approaches currently experience. Payment models **should support and reward evidence-based interventions** that address root causes of disease to engage and empower patients to take control of their own health destinies.

While payment, incentives and quality measures are necessary for clinicians to support their patients to make healthier decisions, we also need to design benefits to better support patients in engaging with these interventions.

A vision for empowering patients includes benefit design that enables patient's awareness, empowerment and control of health where trained clinical teams lead and support care delivery that reinforces lifestyle changes to prevent, treat and remit chronic diseases.

- **Patient activation/engagement:** benefit design enables patient awareness and control of lifestyle change
- **Therapeutic Alliance:** clinical care teams and patients are allies in health behavior change

- **Shared Decision-Making:** patient education, awareness and empowerment

What kinds of benefit design changes can help to incentivize patient empowerment?

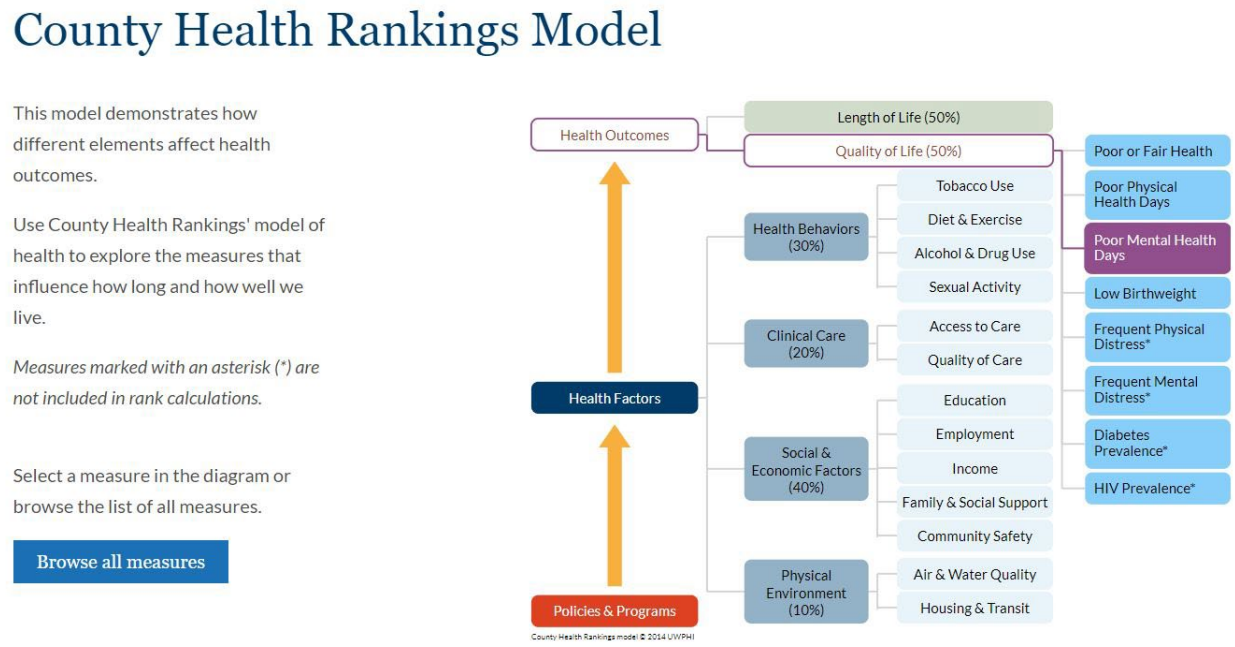
A few ideas for benefit design that might help in making this cultural shift for patient-informed and empowered care include

- Expanded coverage of therapeutic and intensive therapeutic lifestyle interventions delivered by trained clinical care teams
- Eliminating or limiting copays for high-value lifestyle services that address root-causes of disease
- Covering lifestyle interventions beyond clinic walls where people live and work
- Covering engagement with all qualified team members who deliver evidence-based lifestyle intervention
- Covering tools that allow for asynchronous follow-up to support behavior change and health engagement
- Covering services that address barriers to applying lifestyle change: i.e. nutritious food access, supervised exercise
- Removal of one-time beneficiary rules for lifestyle interventions

How can patient outcomes (e.g., quality, patient experience, clinical outcomes, total cost of care) be improved by empowering patients through the use of health data and digital health tools?

If we desire to address factors that have the biggest impact on health outcomes, addressing root-cause lifestyle and social factors offers that opportunity. According to County Health Ranking models, clinical care currently has 20% impact on health outcomes, while lifestyle and social factors have and additional

70% impact.



Comprehensive assessment of root-cause lifestyle risk factors and upstream drivers of health are foundational to a culture of patient-empowered, high-value care delivery. Along with evidence-based therapeutic lifestyle change interventions, lifestyle assessment that takes social and environmental drivers into account should be woven into all care models and quality measure frameworks.

Lifestyle-based Data Collection in Healthcare

The full potential of lifestyle intervention has yet to be realized within the healthcare mainstream, hindered, in part, by the lack of systematic data collection focused on modifiable lifestyle factors that influence chronic disease. This lack of standardized data capture in clinical informatics is highlighted in a comprehensive review of the biomedical literature titled: Lifestyle factors in the biomedical literature: an ontology and comprehensive resources for named entity recognition - PubMed.[26]

While most chronic diseases are caused by a short list of risk factors, root-cause lifestyle assessment and intervention are not yet mainstream or widespread for the prevention, treatment and remission of chronic conditions.

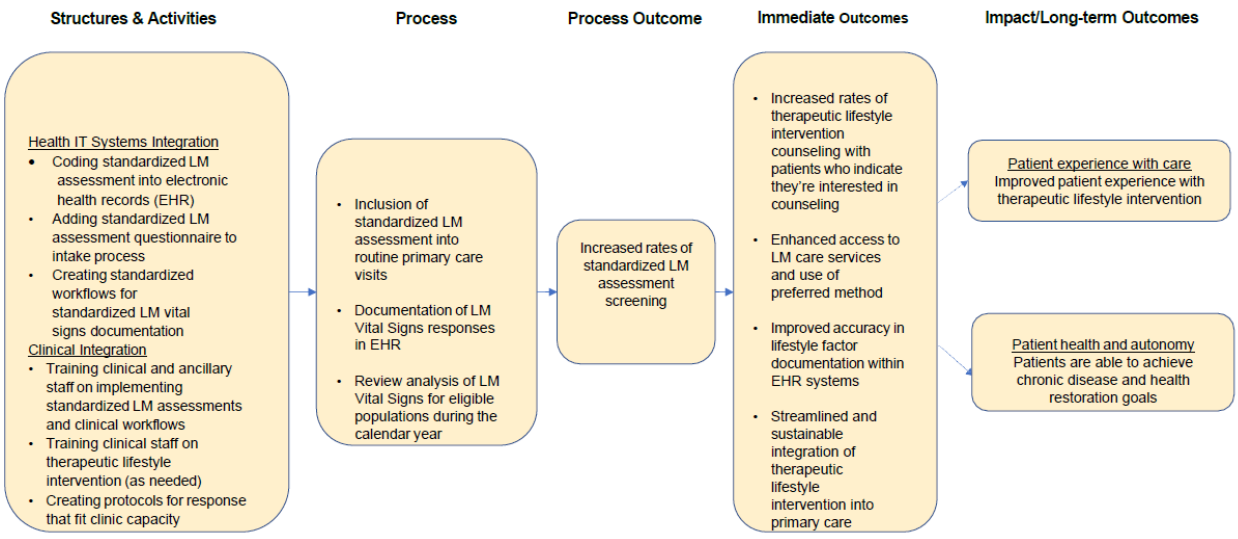
Lifestyle medicine clinicians are trained to use lifestyle assessment. The Lifestyle Medicine Short Form assessment tool (Appendix A) has been developed to support the intake of lifestyle behaviors and was built into the foundational Epic system in May of 2025. The comprehensive tool includes readiness to change and motivation assessments, as well as assessments for each pillar of lifestyle medicine, including nutrition, physical activity, social connection and meaning/purpose, substance use, stress, and sleep. Each assessment can also be used individually if a clinician is wanting to follow-up on a single lifestyle factor at subsequent follow-up visits.

ACLM is also working on a position paper to recommend standardized data collection for the field of lifestyle medicine. In this publication, we will acknowledge previously published performance measures for lifestyle medicine clinicians[27] that support the capture of quality-of-life information (using the SF-12 or SF-36 assessment tool). The paper will also recommend collecting information on upstream drivers of health that hinder a patient's ability to apply behavior change interventions, such as those recommended in The AHC Health-Related Social Needs Screening Tool.[28] Patient satisfaction and engagement are also part of recommended assessment for the field.

The integration of standardized lifestyle assessment tools into electronic health records (EHRs) enables clinicians to systematically screen for lifestyle risk factors, start conversations about lifestyle approaches/interventions, monitor progress, compare intervention effectiveness, improve quality of care, and coordinate care. This structured data collected supports personalized care and reinforces the importance of lifestyle behaviors as clinical vital signs to patients and clinicians. Lifestyle assessment is one step in the direction of a transformed culture of chronic disease care that educates patients about the importance of their own behaviors on their health outcomes and begins to empower them to engage in their own more healthful journeys.

Figure 1 depicts a logic model for the collection of lifestyle data at the point of care to support long-term patient health outcome improvements and autonomy.

Figure 1: Logic Model for Data Collection in Lifestyle Medicine at Point of Care



In regard to data collection for lifestyle in healthcare, it is the position of ACLM that:

(1) current data collection practices at point of care are typically inconsistent across practice settings, electronic health records (EHRs) environments, and specialties, limiting usability of data collected

(2) optimal data collection across all settings will enable the demonstration of the effectiveness of lifestyle medicine (LM) for patient health improvements, enhance patient care, identify preventive and treatment strategies, illustrate cost-effectiveness, and establish performance measure standards for consistent evaluation, and supplement our national surveillance systems
(3) standardized data collection in the field of lifestyle medicine can include but is not limited to patient visit information, lifestyle-specific biometrics, anthropometrics, self-reported lifestyle behavior assessments, lifestyle interventions, patient goals, and when possible, reimbursement/healthcare claims data and patient experience/engagement
(4) widespread adoption of optimal lifestyle-related data collection in EHRs presents an opportunity to facilitate meaningful improvements in clinical outcomes, surveillance, health equity, reporting, evaluation, research, quality measures, and reimbursement models for lifestyle-based services. All of these depend on new terminological codes for data capture and interoperability from existing biomedical terminologies such as SNOMED-CT, LOINC, CPT, among many other terminologies and standards. The ultimate goal is a national health digital infrastructure to support lifestyle medicine practice that complements a long- time existing one for standard healthcare practice

In addition to the Lifestyle Medicine Short form assessment tool, ACLM has collated a list of validated short and in-depth follow-up assessment tools for each pillar of lifestyle medicine, which are available in Appendix B. Some of these tools are incorporated into the LM short form already. Some are also mapped in the existing clinical informatics databases such as LOINC and SNOMED, which is important in the movement toward interoperability. A list of tools mapped to both LOINC and SNOMED for each pillar of lifestyle medicine as well as for quality of life has been generated and can be found in Appendix C.

Self-Reported Data Versus Real-Time Data Collection
While self-reported health behavior, well-being, and quality of life data are valuable for clinicians to collect and incorporate into clinical care, new tools like wearables and remote monitoring devices also offer an opportunity to assess certain lifestyle factors, such as physical activity, stress, and sleep, as well as outcome measures like blood glucose or blood pressure in real time. Many companies have formed healthcare partnerships to leverage this data to improve quality of care. This rapidly evolving landscape offers an abundance of data for both patients and clinicians. Supporting efficient and meaningful evaluation and connecting evidence-based recommendations to all of this collected data is an essential and necessary step in the evolution of high- quality healthcare.

In summary, lifestyle, social, and well-being data collection and evaluation will strengthen the implementation of root-cause lifestyle interventions and facilitate the delivery of personalized, evidence-based, and effective interventions that lead to health restoration, well-being, and overall quality of life. Several tools exist and are already in use by many in the field and outside of the field of lifestyle medicine. The optimal collection of lifestyle data at the point of care will require embracing the past and new contributions of biomedical informatics: utilizing and extending standard terminologies (SNOMED CT, LOINC, etc.), integrating domain-specific ontologies like Lifestyle Factors Ontology (LSFO), and committing to interoperability standards (HL7 FHIR) for data exchange. By doing so, we ensure a learning health system, where each patient encounter contributes to a robust, sharable knowledge base that can improve care and well-being for all.

What are the most effective approaches for empowering patients with multiple chronic diseases to help improve quality, outcomes, and TCOC?

Using the assumption that patients want to feel healthy and have a great quality of life, effective approaches to doing so need to include lifestyle behavior change approaches and environmental/policy shifts that can support making healthier choices easier for all people. Economic modeling of lifestyle interventions estimate large cost-savings potential. [29-30]

Additionally, a variety of healthcare delivery models have shown success in operationalizing lifestyle interventions in primary care, using approaches including shared medical appointments, in-person versus virtual engagements, and synchronized versus asynchronous evaluations (patient interactions occurring in a face-to-face or virtual appointment versus care delivered via email or capturing health data that is transmitted/uploaded and viewed/addressed later by a clinician who then responds with assessment and treatment, or medical record review).[31]

Examples of Economic Benefits

A 2020 publication reported significant clinical effectiveness and long-term healthcare cost savings after analyzing data from the DiRECT Trial, a two-year intensive lifestyle intervention program in the United Kingdom that produced diabetes net remission at two years in 32.3% of the participants who were randomized into the lifestyle weight management program compared to only 3.4% of those in the control group. The intervention group had significantly less use of oral glucose-lowering and anti-hypertensive medications, as well as fewer healthcare contacts for diabetes. Lifetime costs were estimated and modeled per quality-adjusted life-year (QALY) including projected relapse rates, with the intervention modeled to achieve a QALY gain and mean total lifetime cost savings per participant of £1337, significantly outperforming the standard of care and becoming cost-saving within six years.[32]

Total procedure costs for coronary artery bypass grafting (CABG) or percutaneous transluminal coronary angioplasty (PTCA) for patients with known coronary artery disease who were enrolled in the Ornish Intensive Cardiac Rehabilitation (ICR) program required only one-third of the cardiac procedures (a cost savings of almost $30,000 per patient over a three-year period), compared to those in a control group, resulting in almost 80% of people being able to safely avoid surgical interventions. Overall patient adherence with wellness program interventions after one year was 88%.[33]

Comprehensive lifestyle changes occurring over a three-year period using the Ornish ICR program resulted in an estimated cost savings of $17,687 per patient based on their expected rate of required cardiac procedures. Additionally, analysis of claims data showed significant reductions in both emergency department (ED) visits (19.3% reduction in ED visits for chest pain and 55.4% reduction in ED visits for all causes) and hospital admissions (89.4% reduction in hospital admissions for chest pain/angina and 84.1% reduction in hospital admissions for all causes) for patients who participated in the Ornish ICR program.[34]

Self-insured health plan members with hypertension, hyperlipidemia, diabetes, or a combination of these conditions met with a pharmacist regularly over the course of five years to implement LM interventions and to optimize medication therapy. The combined healthcare and productivity ROI for

the program at five years was $9.64 for every $1 invested, attributable to significant improvements in patient biometrics and less need for pharmaceuticals, procedures, and specialty referrals.[35]

Pivio, previously known as the Complete Health Improvement Program (CHIP), is a "lifestyle enrichment program designed to reduce disease risk factors through the adoption of better health habits and appropriate lifestyle modifications." It serves as a reproducible model for LM. A case report from Vanderbilt University describes an intervention which offered CHIP free of charge to employees utilizing the employee health plan with a "clinical diagnosis of type 2 diabetes (T2D) while having at least two consecutive years of coverage under the plan." Reductions occurred in medications and medical claims, improvements in biomarkers, as well as survey responses related to life evaluation, physical health, emotional health, healthy behaviors, work environment, basic access, and a well-being index. Approximately 23.8% of study participants eliminated one or more of their medications. Reduction in healthcare cost to the system equated to a net savings of $67,582, showing the feasibility of LM education to a member population.[36]

A five-year observational study by the University of Pittsburgh Medical Center initiating a comprehensive wellness, prevention, and chronic disease management program for 13,627 participants that tied achievement of health and wellness requirements to receipt of an annual credit on participants' health insurance deductible showed significant improvements in health-risk status and increases in use of preventive and chronic disease management services in the intervention group. Although total healthcare costs increased, reductions in costs were significant for those who moved from the higher-risk levels to the lowest-risk levels.[37]

An initiative spearheaded by Carmel Clay School in partnership with Ascension St. Vincent Health, Carmel, Indiana, offered wellness center services at no cost to employees. Over a four-year period, they showed engagement of 49% of the 2,077 total employees, chronic disease risk reduction in multiple health risk categories, and reduction in medications for diabetics. Additionally, they showed an average cost decrease of 36% for individuals who were engaged in the onsite clinic and a savings of $5 million dollars in 2017, even after accounting for the cost of the clinic to thoseutilizing the services (non-peer reviewed publication).[38]

A 12-week wellness initiative utilizing a nutrient dense, plant-rich dietary protocol involving 77 employees resulted in a 41% reduction in monthly healthcare costs and a financial savings of more than $232,000 over a 16-month period, in addition to significant improvements in employee biometrics, depressive symptoms and quality of life measures (non-peer reviewed publication).[39]
A 2019 article highlighted the medical and financial benefits to be incurred by self-funded employers who embrace a LM-focused business model, specifically by using plan designs which leverage requirements for education and behavior change therapies for patients with lifestyle-associated chronic diseases. It reported significant positive outcomes and performance guarantees which are uncommon in conventional designs.[40]

Conclusion
It is recognized that some of the above illustrations are limited by small sample size, lack of long-term outcomes data and design type, however, their results show impressive ROI trends. While more studies will provide additional ROI clarity, these examples serve as a solid threshold for continued advocacy of

LM integration, especially for value-based organizations and self-insured employers who stand to benefit significantly from improved employee health, risk reduction and cost savings.

The American College of Lifestyle Medicine believes that effectively addressing chronic conditions will only be successful if care delivery includes an emphasis on evidence-based, interprofessional-team led lifestyle approaches that empower patients to take action to prevent, treat and even remit chronic conditions. Payment must be designed to ensure that providers are able to deliver these high-value services and that beneficiaries can access them. Technology and data collection play a significant role in advancing lifestyle-based interventions in the United States. Thank you for the opportunity to weigh in on this important topic. If you have any questions about these responses, please contact ACLM's Chief Integration Officer, Kaitlyn Pauly at kpauly@lifestylemedicine.org

References:

1. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. About chronic diseases. https://www.cdc.gov/chronicdisease/about/ index.htm. Accessed June 14, 2024
2. National Survey of Children's Health. NSCH 2019 20: Number of Current or Lifelong Health Conditions, Nationwide,
3. Age in 3 Groups website. childhealthdata.org. Accessed June 14, 2024 Buttorff C, Ruder T, Bauman M. Multiple Chronic Conditions in the United States. Rand Corp.; 2017.
4. National health expenditure data: historical. Center for Medicare & Medicaid Services. Updated December 13, 2023. Accessed February 6, 2024. https://www.cms.gov/data-research/statistics-trends-and- reports/national-health- expenditure-data/historical
5. Centers for Disease Control and Prevention. Chronic Disease. About Chronic Diseases | Chronic Disease | CDC Accessed June 14, 2024
6. Unger T, Borghi C, Charchar F, Khan NA, Poulter NR, Prabhakaran D, Ramirez A, Schlaich M, Stergiou GS, Tomaszewski M, Wainford RD, Williams B, Schutte AE. 2020 International Society of Hypertension Global Hypertension Practice Guidelines. Hypertension. 2020 Jun;75(6):1334-1357. doi: 10.1161/HYPERTENSIONAHA.120.15026. Epub 2020 May 6. PMID: 32370572.
7. James PA, Oparil S, Carter BL, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the eighth Joint National Committee (JNC 8) [published online December 18, 2013]. JAMA. doi:10.1001/jama.2013.284427
8. Garber AJ, Handelsman Y, Grunberger G, Einhorn D, Abrahamson MJ, Barzilay JI, Blonde L, Bush MA, DeFronzo RA, Garber JR, Garvey WT, Hirsch IB, Jellinger PS, McGill JB, Mechanick JI, Perreault L, Rosenblit PD, Samson S, Umpierrez GE. CONSENSUS STATEMENT BY THE AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS AND AMERICAN COLLEGE OF ENDOCRINOLOGY ON THE COMPREHENSIVE TYPE 2 DIABETES MANAGEMENT ALGORITHM - 2020 EXECUTIVE SUMMARY. Endocr Pract. 2020 Jan;26(1):107-139. doi: 10.4158/CS- 2019-0472. PMID: 32022600.
9. Nuha A. ElSayed, Grazia Aleppo, Vanita R. Aroda, Raveendhara R. Bannuru, Florence M. Brown, Dennis Bruemmer, Billy S. Collins, Marisa E. Hilliard, Diana Isaacs, Eric L. Johnson, Scott

Kahan, Kamlesh Khunti, Jose Leon, Sarah K. Lyons, Mary Lou Perry, Priya Prahalad, Richard E. Pratley, Jane Jeffrie Seley, Robert C. Stanton, Robert A. Gabbay; on behalf of the American Diabetes Association, 3. Prevention or Delay of Type 2 Diabetes and Associated Comorbidities: Standards of Care in Diabetes—2023. Diabetes Care 1 January 2023; 46 (Supplement_1): S41–S48. https://doi.org/10.2337/dc23-S003

10. Arnett DK, Blumenthal RS, Albert MA, Buroker AB, Goldberger ZD, Hahn EJ, Himmelfarb CD, Khera A, Lloyd-Jones D, McEvoy JW, Michos ED, Miedema MD, Muñoz D, Smith SC Jr, Virani SS, Williams KA Sr, Yeboah J, Ziaeian B. 2019
11. Ornish D, Scherwitz LW, Billings JH, et al. Intensive Lifestyle Changes for Reversal of Coronary Heart Disease. JAMA.
    a. 1998;280(23):2001–2007. doi:10.1001/jama.280.23.2001
12. Rehackova L, Taylor R, Lean M, et al. Delivering the Diabetes Remission Clinical Trial (DiRECT) in primary care: Experiences of healthcare professionals. Diabet Med. 2022;39(3):e14752. doi:10.1111/dme.14752
13. Panigrahi G, Goodwin SM, Staffier KL, Karlsen M. Remission of Type 2 Diabetes After Treatment With a High-Fiber, Low-Fat, Plant-Predominant Diet Intervention: A Case Series. Am J Lifestyle Med. 2023;17(6). https://doi.org/10.1177/15598276231181574
14. Wright, N., Wilson, L., Smith, M. et al. The BROAD study: A randomised controlled trial using a whole food plant-based diet in the community for obesity, ischaemic heart disease or diabetes. Nutr & Diabetes 7, e256 (2017). HYPERLINK https://doi.org/10.1038/nutd.2017.3
15. Look AHEAD Research Group, Wing RR, Bolin P, et al. Cardiovascular effects of intensive lifestyle intervention in type 2 diabetes [published correction appears in N Engl J Med. 2014 May 8;370(19):1866]. N Engl J Med. 2013;369(2):145-
    a. 154. doi:10.1056/NEJMoa1212914
16. Morris MC, Tangney CC, Wang Y, et al. MIND diet slows cognitive decline with aging. Alzheimers Dement. 2015;11(9):1015-1022. doi:10.1016/j.jalz.2015.04.011
17. Yoshioka, N., Ishigami, M., Watanabe, Y. et al. Effect of weight change and lifestyle modifications on the development or remission of nonalcoholic fatty liver disease: sex-specific analysis. Sci Rep 10, 481 (2020). https://doi.org/10.1038/s41598-019-57369-9
18. Oakes-Cornellissen A, Morton D, Rankin P, Renfrew M. Efficacy of a multimodal lifestyle intervention (The Lift Project) for improving the mental health of individuals with an affective mood disorder living in South Africa. Front Psychol. 2023;14:1127068. Published 2023 Jan 25. doi:10.3389/fpsyg.2023.1127068
19. Morton D, Rankin P, Kent L, Dysinger W. The Complete Health Improvement Program (CHIP): History, Evaluation, and Outcomes. Am J Lifestyle Med. 2014 Apr 22;10(1):64-73. doi: 10.1177/1559827614531391. PMID: 30202259; PMCID: PMC6124862.
20. ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Circulation. 2019 Sep 10;140(11):e596-e646. doi: 10.1161/CIR.0000000000000678. Epub 2019 Mar 17. Erratum in: Circulation. 2019 Sep 10;140(11):e649-e650. Erratum in: Circulation. 2020 Jan 28;141(4):e60. Erratum in: Circulation. 2020 Apr 21;141(16):e774. PMID: 30879355; PMCID: PMC7734661.
21. Cornier MA. A review of current guidelines for the treatment of obesity. Am J Manag Care. 2022;28(15 Suppl):S288- S296. doi:10.37765/ajmc.2022.89292

22. Risk reduction of cognitive decline and dementia: WHO guidelines. Geneva: World Health Organization; 2019. Licence: CC BY-NC-SA 3.0 IGO.
23. Punnoose A, Claydon-Mueller LS, Weiss O, Zhang J, Rushton A, Khanduja V. Prehabilitation for Patients Undergoing Orthopedic Surgery: A Systematic Review and Meta-analysis. JAMA Netw Open. 2023 Apr 3;6(4):e238050. doi: 10.1001/jamanetworkopen.2023.8050. PMID: 37052919; PMCID: PMC10102876.
24. Briss PA. Exploring Better Links Between Clinics and Communities to Improve Population Health. Prev Chronic Dis 2015;12:140568. DOI: http://dx.doi.org/10.5888/pcd12.140568
25. Egger G. Lifestyle Medicine.; 2011.
26. Nourani E, Koutrouli M, Xie Y, et al. Lifestyle factors in the biomedical literature: an ontology and comprehensive resources for named entity recognition. Bioinformatics (Oxford, England). 2024;40(11):btae613. doi:https://doi.org/10.1093/bioinformatics/btae613
27. Kelly JH, Lianov L, Shurney D, et al. Lifestyle Medicine Performance Measures: An Expert Consensus Statement Defining Metrics to Identify Remission or Long-Term Progress Following Lifestyle Medicine Treatment. American Journal of Lifestyle Medicine. Published online February 20, 2024. doi:https://doi.org/10.1177/15598276241230237
28. Centers for Medicare and Medicaid Services. The Accountable Health Communities Health-Related Social Needs Screening Tool.; 2017. https://www.cms.gov/priorities/innovation/files/worksheets/ahcm-screeningtool.pdf
29. Guo X, Tysinger B, Wee HL, et al. Disease burden, lifetime healthcare cost and long-term intervention impact projections among older adults in Singapore. Nature Aging. Published online July 15, 2025. doi:https://doi.org/10.1038/s43587-025-00915-0
30. Herman PM, Pitcher MH, Langevin HM. Making a Case for Whole Person Health. Global Advances in Integrative Medicine and Health. 2024;13. doi:https://doi.org/10.1177/27536130241293642
31. Pauly K. Delivering High-Value, Whole-Person Care in Current Payment Models. American College of Lifestyle Medicine. lifestylemedicine.org. January 6, 2024. Accessed August 8, 2024, 2024. https://lifestylemedicine.org/articles/lifestyle-medicine-payment-models/#:~:text=Opportunities%20for%20Lifestyle%20Medicine&text=These%20models%20allow%20interdisciplinary%20care,as%20intensively%20or%20non%2Dintensively.
32. Xin Y, Davies A, Briggs A, et al. Type 2 diabetes remission: 2 year within-trial and lifetime-horizon cost-effectiveness of the Diabetes Remission Clinical Trial (DiRECT)/Counterweight-Plus weight management programme. Diabetologia. 2020;63(10):2112-2122. http://doi.org/10.1007/s00125-020-05224-2
33. Ornish D. Avoiding revascularization with lifestyle changes: The Multicenter Lifestyle Demonstration Project. Am J Cardiol. 1998;82(10b):72t-76t. http://doi.org/10.1016/s0002-9149(98)00744-9
34. Highmark Cost Analysis. Dean Ornish Program for Reversing Heart Disease Cost Effectiveness Summary. www.ornish.com. Updated June 12, 2000. Accessed August 8, 2024 https://www.ornish.com/wp-content/uploads/Highmark-cost-analysis-2.pdf
35. White ND, Lenz TL, Skrabal MZ, Skradski JJ, Lipari L. Long-Term Outcomes of a Cardiovascular and Diabetes Risk-Reduction Program Initiated by a Self-Insured Employer. Am Health Drug Benefits. 2018;11(4):177-183.

36. Pivio Lifestyle Medicine Institute. Piviohealth.com. Accessed August 8, 2024, https://piviohealth.com/
37. Parkinson MD, Peele PB, Keyser DJ, Liu Y, Doyle S. UPMC MyHealth: managing the health and costs of U.S. healthcare workers. Am J Prev Med. 2014;47(4):403-410. http://doi.org/10.1016/j.amepre.2014.03.013
38. Vital Inccite Population Health Solutions. Employee Wellness Center Delivers Exceptional Outcomes for School System. Employersolutions.ascension.org. Accessed August 8, 2024, https://employersolutions.ascension.org/-/media/project/ascension/employersolutions/pdfs/carmel_clay_schools_case_study-final.pdf
39. Sutliffe J, Scheid J, Gorman M, et al. Worksite Nutrition: Is a Nutrient-Dense Diet the Answer for a Healthier Workforce? Am J Lifestyle Med. 2018;12(5):419-424. http://doi.org/10.1177/1559827618766485
40. Gulati M, Delaney M. The Lifestyle Medicine Physician's Case to Self-Insured Employers: A Business Model for Physicians, a Bargain for Companies. Am J Lifestyle Med. 2019;13(5):462-469. http://doi.org/10.1177/1559827619843882

Appendix A. Lifestyle Medicine Short Form

AMERICAN COLLEGE OF Lifestyle Medicine

Lifestyle Medicine Short Assessment Form

AMERICAN COLLEGE OF Lifestyle Medicine

The following questions comprise the core metrics we propose using to capture readiness, willingness and confidence to change, as well as health behaviors that are aligned with the six pillars of lifestyle medicine. This assessment tool was adapted from the original Loma Linda University/American College of Lifestyle Medicine short form published in 2019 and updated in 2024.

Readiness to Change

On a scale of 0-10, with 0 being least and 10 being most, how important is it that you make or maintain lifestyle changes to improve your health?

0 1 2 3 4 5 6 7 8 9 10

Not Ready — Somewhat Ready — Very Ready

On a scale of 0-10, with 0 being least and 10 being most, how confident are you to make or maintain lifestyle changes to improve your health?

0 1 2 3 4 5 6 7 8 9 10

Not Confident — Somewhat Confident — Very Confident

Motivation

Please rank the top 3 areas you are most motivated to change in order to improve your current overall LEVEL OF HEALTH (1 being most motivated).

___ Avoidance of Risky Substances
___ Nutrition
___ Physical Activity
___ Sleep
___ Social Connectedness
___ Stress Management

Nutrition: ACLM Diet Screener 9

This brief questionnaire will ask about your usual diet over the last 4 weeks. Please try to answer as accurately as possible – there are no right or wrong answers. Your best guess is better than leaving a blank. It's ok if something that you eat falls into more than one category.

Over the last 4 weeks, how often did you eat or drink the following items?

	Never	Less than 1x/week	1-3x/ week	4-6x/ week	1-2x/ day	More than 3x/day
Fruit (Apples, bananas, oranges, melon, berries, or any other fruit)						

AMERICAN COLLEGE OF Lifestyle Medicine

Nutrition: ACLM Diet Screener 9

	Never	Less than 1x/week	1-3x/ week	4-6x/ week	1-2x/ day	More than 3x/day
Vegetables (Cooked and raw leafy greens, tomatoes, carrots, potatoes, peas, or any other vegetables or dishes that are mostly made from vegetables)						
Whole Grains (Oats, brown rice, whole grain bread or whole grain cereal, or any other 100% whole grain products)						
Refined Grains or Refined Grain Products (Any items made from white flour or white rice, like bread, tortillas, baked goods or snacks, pasta, or other foods)						
Packaged/Prepared, Restaurant, Takeout, or Fast Food Meals (Any store-bought dishes or meals, refrigerated or frozen, or any kind of ready-to-eat meals or dishes, take-out, or meals from a restaurant)						
Sugary Foods and Beverages (Sweetened (sugar added) breakfast cereals, sweetened yogurts, candy, other desserts, or other foods with added sugar, or any sweetened beverages including soda/pop, sweetened tea or coffee drinks, energy drinks, etc.)						
Salty Foods (Chips, crackers, or other salty snacks; canned soups, sauces, salad dressings, or other foods with added salt)						
Fried Foods (Fried foods such as French fries, onion rings, fried chicken or other meat, fried potatoes, fry bread, tempura, or other fried foods)						

AMERICAN COLLEGE OF Lifestyle Medicine

Nutrition: ACLM Diet Screener 9

Which sources of protein do you eat frequently (at least a few times a week)?

Please select all that apply.

___ Beef, pork, or lamb

___ Lunchmeat, bacon, or sausage

___ Poultry or poultry-based dishes

___ Wild game (venison, elk)

___ Nuts and seeds

___ Fish or shellfish or seafood-based dishes

___ Beans/legumes, or products made from them

___ Dairy and dairy products

___ Eggs or egg-based dishes

Physical Activity: Physical Activity Vital Sign[1]

For an average week in the last 30 days, how many days per week did you engage in moderate to vigorous physical activity (like walking fast, running, jogging, dancing, swimming, biking, or other activities that cause a light or heavy sweat)? ____ days

On those days that you engage in moderate to vigorous physical activity, how many minutes, on average, do you exercise? ____ minutes

During the past month, how many times per week did you do physical activities or exercises to strengthen your muscles? ____ times per week

Sleep

Over the last 2 weeks, how many hours of sleep did you average in a 24-hour period?

Less than 4 hrs	4-5 hrs	5-6 hrs	6-7 hrs	7-8 hrs	8-9 hrs	9 or more hrs

Over the last 2 weeks, how often did you feel tired or have difficulty staying awake during routine tasks in the day?

Not at all	Several days	More than half the days	Nearly every day

Mood - PHQ-2[2] *(if not already present in electronic health record)*

Over the last 2 weeks, how often have you been bothered by the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Little interest or pleasure in doing things				
Feeling down, depressed, or hopelesss				

*Note that a recent study was done on accuracy of using the PHQ-2 for detecting depression and frequency of completing the survey. We recommend users consider the findings when determining how to screen for depression in primary care settings.[3]

AMERICAN COLLEGE OF Lifestyle Medicine

Meaning and Connectedness

Over the last 2 weeks, how often have you felt like your life had purpose or meaning?

Not at all	Several days	More than half the days	Nearly every day

Over the last 2 weeks, how often have you felt connected with any support network (e.g. community, spiritual, friends/family, nature, yoga, or meditation)?

Not at all	Several days	More than half the days	Nearly every day

Substance Use

In the case that something in the electronic medical record already exists to assess for the following substances, we recommend you use those assessment tools.

Have you used NICOTINE (cigarettes, e-cigarettes/vaping, chewing tobacco pouches, cigars) in the past year? ____ Yes ____ No

If you marked "YES", how many (cigarettes, e-cigarettes/vaping, chewing tobacco pouches, cigars) do you usually use a week? ____ per week

Are you currently using any over-the-counter or prescription nicotine replacement products? ____ Yes ____ No

Are you interested in quitting? ____ Yes ____ No

On a scale of 1-10, with 1 being least and 10 being most, how concerned are you about your nicotine use?

0 1 2 3 4 5 6 7 8 9 10

Not Concerned Somewhat Concerned Very Concerned

Have you used ALCOHOL (12 oz beer, 5 oz wine, 1.5 oz liquor) in the past year? ____ Yes ____ No

If you marked "YES", how much alcohol do you usually use a week? ____ per week

On a scale of 1-10, with 1 being least and 10 being most, how concerned are you about your alcohol use?

0 1 2 3 4 5 6 7 8 9 10

Not Concerned Somewhat Concerned Very Concerned

Have you used MARIJUANA / THC / CBD in the past year? ____ Yes ____ No

If you marked "YES", is this marijuana prescribed by a healthcare professional? ____ Yes ____ No

If you marked "YES", how much marijuana do you usually use a week? ____ per week

On a scale of 1-10, with 1 being least and 10 being most, how concerned are you about your marijuana use?

0 1 2 3 4 5 6 7 8 9 10

Not Concerned Somewhat Concerned Very Concerned

AMERICAN COLLEGE OF Lifestyle Medicine

Substance Use Cont.

Have you used Other DRUGS (cocaine, heroin, meth, opioids etc.) in the past year? ____ Yes ____ No

If you marked "YES", how much do you usually use a week? ____ per week

On a scale of 1-10, with 1 being least and 10 being most, how concerned are you about your recreational drug use?

0 1 2 3 4 5 6 7 8 9 10

Not Concerned — Somewhat Concerned — Very Concerned

References:
1. Golightly YM, Allen KD, Ambrose KR, Stiller JL, Evenson KR, Voisin C, Hootman JM, Callahan LF. Physical Activity as a Vital Sign: A Systematic Review. Prev Chronic Dis. 2017 Nov 30;14:E123. doi: 10.5888/pcd14.170030. PMID: 29191260; PMCID: PMC5716811.
2. Gilbody, S., Richards, D., Brealey, S., & Hewitt, C. (2007). Screening for depression in medical settings with the Patient Health Questionnaire (PHQ): A diagnostic meta-analysis. Journal of General Internal Medicine, 22(11), 1596-1602. 10.1007/s11606-007-0333-y
3. 1. Simon J, Panzer J, Wright KM, et al. Reduced accuracy of intake screening questionnaires tied to Quality Metrics. Annals of Family Medicine. September 1, 2023. Accessed September 19, 2024. https://www.annfammed.org/content/21/5/444.

AMERICAN COLLEGE OF Lifestyle Medicine

AMERICAN COLLEGE OF Lifestyle Medicine

Appendix B. Validated Assessment Tools for Lifestyle Domains

LM Domain	Brief Assessments	In-Depth Follow-Up Tools
Nutrition	Starting the Conversation[1] OR DietID[2,3]	Variety of tools depending on goals of assessment: ASA24 from NCI[4,5] Dietary History Questionnaire (DHQ) from NCI[4,6-8] Dietary Screener Questionnaire (DSQ) from NCI[9]
Physical Activity	Exercise Vital Signs[10,11] (EVS) (two questions; past week) and (recommended by the Physical Activity Alliance) *During the past month, how many times per week did you do physical activities or exercises to strengthen your muscles?*	Sedentary Time and Activity Reporting Questionnaire (STAR-Q)[12,13] or International Physical Activity Questionnaire (IPAQ) Short Form [14] (brief survey, past 7 days) and/or (After brief screening with IPAQ short form) IPAQ long form [14]
Sleep	Global Sleep Assessment Questionnaire (GSAQ)[15,16]	Pittsburgh Sleep Quality Index[17,18] long form

Stress / Well-Being	Patient Health Questionnaire 2 item (PHQ2) [19-21] Perceived Stress Scale[22-24] (4 item) Generalized Anxiety Disorder 2 (GAD-2)[25,26]	Patient Health Questionnaire 8 item (PHQ8)[27,28] or 9 item (PHQ9) [20,21,29] (The PHQ8 should be used if there is no qualified healthcare provider to address suicidality, and the PHQ9 can be used if there is one.) Perceived Stress Scale[22,24,30] (10 item) Generalized Anxiety Disorder 7 (GAD-7)[25,26]
		Satisfaction with Life Scale[31]
Social Support	A Brief Measure of Social Support[32]	A Brief Measure of Social Support[32] Social support for diet[33] Social support for exercise[33]
Substance Use	NIDA Quick Screen[34] or Tobacco, Alcohol, Prescription Medication, and Other Substance Use (TAPS) Tool, Part One[35] For other specific patient populations, please see the NIH curated list of tools: https://www.drugabuse.gov/nidamed- medical-health-professionals/screening-tools-resources/chart-screening-tools	(if yes to any questions on NIDA Quick Screen) ➔ NIDA Modified Assist[34] or (following TAPS Part Two, Part Two of TAPS automatically follows) Tobacco, Alcohol, Prescription Medication, and Other Substance Use (TAPS) Tool, Part Two[35]

References

1. Paxton, A.E., Strycker, L.A., Toobert, D.J., Ammerman, A.S. and Glasgow, R.E., 2011. Starting the conversation: performance of a brief dietary assessment and intervention tool for health professionals. Am. J. Prev. Med., 40(1): 67-71.
2. Turner-McGrievy, G., Hutto, B., Bernhart, J.A. and Wilson, M.J., 2022. Comparison of the Diet ID Platform to the Automated Self-administered 24-hour (ASA24) Dietary Assessment Tool for Assessment of Dietary Intake. J Am Nutr Assoc, 41(4): 360-382.
3. Katz, D.L., Rhee, L.Q., Katz, C.S. et al., 2020. Dietary assessment can be based on pattern recognition rather than recall. Medical Hypotheses, 140: 109644.
4. Kipnis, V., Subar, A.F., Midthune, D. et al., 2003. Structure of dietary measurement error: results of the OPEN biomarker study. Am J Epidemiol, 158(1): 14-21; discussion 22-16.

5. Moshfegh, A.J., Rhodes, D.G., Baer, D.J. et al., 2008. The US Department of Agriculture Automated Multiple-Pass Method reduces bias in the collection of energy intakes. Am J Clin Nutr, 88(2): 324-332.
6. Thompson, F.E., Subar, A.F., Brown, C.C. et al., 2002. Cognitive research enhances accuracy of food frequency questionnaire reports: results of an experimental validation study. Journal of the American Dietetic Association, 102(2): 212-225.
7. Subar, A.F., Thompson, F.E., Kipnis, V. et al., 2001. Comparative validation of the Block, Willett, and National Cancer Institute food frequency questionnaires : the Eating at America's Table Study. Am J Epidemiol, 154(12): 1089-1099.
8. Subar, A.F., Kipnis, V., Troiano, R.P. et al., 2003. Using intake biomarkers to evaluate the extent of dietary misreporting in a large sample of adults: the OPEN study. Am J Epidemiol, 158(1): 1- 13.
9. Thompson, F.E., Midthune, D., Kahle, L. and Dodd, K.W., 2017. Development and Evaluation of the National Cancer Institute's Dietary Screener Questionnaire Scoring Algorithms. J Nutr, 147(6): 1226-1233.
10. Kuntz, J.L., Young, D.R., Saelens, B.E. et al., 2021. Validity of the Exercise Vital Sign Tool to Assess Physical Activity. Am J Prev Med, 60(6): 866-872.
11. Coleman, K.J., Ngor, E., Reynolds, K. et al., 2012. Initial validation of an exercise "vital sign" in electronic medical records. Med Sci Sports Exerc, 44(11): 2071-2076.
12. Csizmadi, I., Neilson, H.K., Kopciuk, K.A. et al., 2014. The Sedentary Time and Activity Reporting Questionnaire (STAR-Q): reliability and validity against doubly labeled water and 7-day activity diaries. Am J Epidemiol, 180(4): 424-435.
13. Neilson, H.K., Ullman, R., Robson, P.J., Friedenreich, C.M. and Csizmadi, I., 2013. Cognitive testing of the STAR-Q: insights in activity and sedentary time reporting. J Phys Act Health, 10(3): 379-389.
14. Maddison, R., Ni Mhurchu, C., Jiang, Y. et al., 2007. International Physical Activity Questionnaire (IPAQ) and New Zealand Physical Activity Questionnaire (NZPAQ): a doubly labelled water validation. Int J Behav Nutr Phys Act, 4: 62.
15. Klingman, K.J., Jungquist, C.R. and Perlis, M.L., 2017. Questionnaires that screen for multiple sleep disorders. Sleep Med Rev, 32: 37-44.
16. Roth, T., Zammit, G., Kushida, C. et al., 2002. A new questionnaire to detect sleep disorders. Sleep Med, 3(2): 99-108.
17. Buysse, D.J., Reynolds, C.F., 3rd, Monk, T.H., Berman, S.R. and Kupfer, D.J., 1989. The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. Psychiatry Res, 28(2): 193-213.
18. Manzar, M.D., BaHammam, A.S., Hameed, U.A. et al., 2018. Dimensionality of the Pittsburgh Sleep Quality Index: a systematic review. Health Qual Life Outcomes, 16(1): 89.
19. Kroenke, K., Spitzer, R.L. and Williams, J.B., 2003. The Patient Health Questionnaire-2: validity of a two-item depression screener. Med Care, 41(11): 1284-1292.
20. Mitchell, A.J., Yadegarfar, M., Gill, J. and Stubbs, B., 2016. Case finding and screening clinical utility of the Patient Health Questionnaire (PHQ-9 and PHQ-2) for depression in primary care: a diagnostic meta-analysis of 40 studies. BJPsych Open, 2(2): 127-138.

21. Kroenke, K., Spitzer, R.L., Williams, J.B. and Löwe, B., 2010. The Patient Health Questionnaire Somatic, Anxiety, and Depressive Symptom Scales: a systematic review. Gen Hosp Psychiatry, 32(4): 345-359.
22. Lee, E.H., 2012. Review of the psychometric evidence of the perceived stress scale. Asian Nurs Res (Korean Soc Nurs Sci), 6(4): 121-127.
23. Kroenke, K., Spitzer, R.L., Williams, J.B. and Löwe, B., 2009. An ultra-brief screening scale for anxiety and depression: the PHQ–4. Psychosomatics, 50(6): 613-621.
24. Cohen, S., Kamarck, T. and Mermelstein, R., 1983. A global measure of perceived stress. J Health Soc Behav, 24(4): 385-396.
25. Spitzer, R.L., Kroenke, K., Williams, J.B. and Löwe, B., 2006. A brief measure for assessing generalized anxiety disorder: the GAD-7. Arch Intern Med, 166(10): 1092-1097.
26.
27. Sapra, A., Bhandari, P., Sharma, S., Chanpura, T. and Lopp, L., 2020. Using Generalized Anxiety Disorder-2 (GAD-2) and GAD-7 in a Primary Care Setting. Cureus, 12(5): e8224-e8224.
28. Shin, C., Lee, S.-H., Han, K.-M., Yoon, H.-K. and Han, C., 2019. Comparison of the Usefulness of the PHQ-8 and PHQ-9 for Screening for Major Depressive Disorder: Analysis of Psychiatric Outpatient Data. Psychiatry investigation, 16(4): 300-305.
29. Kroenke, K., Strine, T.W., Spitzer, R.L., Williams, J.B., Berry, J.T. and Mokdad, A.H., 2009. The PHQ-8 as a measure of current depression in the general population. Journal of affective disorders, 114(1-3): 163-173.
30. Kroenke, K., Spitzer, R.L. and Williams, J.B., 2001. The PHQ-9: validity of a brief depression severity measure. Journal of general internal medicine, 16(9): 606-613.
31. Roberti, J.W., Harrington, L.N. and Storch, E.A., 2006. Further psychometric support for the 10-
item version of the perceived stress scale. Journal of College Counseling, 9(2): 135-147.
32. Diener, E., Emmons, R.A., Larsen, R.J. and Griffin, S., 1985. The satisfaction with life scale. Journal of personality assessment, 49(1): 71-75.
33. Sarason, I.G., Sarason, B.R., Shearin, E.N. and Pierce, G.R., 1987. A Brief Measure of Social Support: Practical and Theoretical Implications. Journal of Social and Personal Relationships, 4(4): 497-510.
34. Sallis, J.F., Grossman, R.M., Pinski, R.B., Patterson, T.L. and Nader, P.R., 1987. The development of scales to measure social support for diet and exercise behaviors. Prev Med, 16(6): 825-836.
35. NIDA National Institute on Drug Abuse, 2012, March 1. Resource Guide: Screening for Drug Use in General Medical Settings, nida.nih.gov.
36. McNeely, J., Wu, L.-T., Subramaniam, G. et al., 2016. Performance of the Tobacco, Alcohol, Prescription Medication, and Other Substance Use (TAPS) Tool for Substance Use Screening in Primary Care Patients. Annals of internal medicine, 165(10): 690-699.

AMERICAN COLLEGE OF Lifestyle Medicine

Appendix C. Lifestyle and Quality of Life Measures in LOINC and SNOMED CT

Standardized Substance Use Screeners in LOINC and SNOMED CT

Screener Name	Description	LOINC Code(s) Available	SNOMED CT Mapping
AUDIT (Alcohol Use Disorders Identification Test)	10-item tool for identifying alcohol misuse.	Yes ✅ (e.g., 75626-2)	Yes ✅
DAST (Drug Abuse Screening Test)	Assesses drug use problems (excluding alcohol and tobacco).	Yes ✅ (e.g., 73831-0)	Yes ✅
CAGE Questionnaire	4-item alcohol screening tool.	Yes ✅ (e.g., 63506-7)	Yes ✅
ASSIST (WHO Alcohol, Smoking and Substance Involvement Screening Test)	Covers multiple substances including tobacco, alcohol, cannabis, etc.	Yes ✅ (e.g., 72166-2)	Partial
TAPS Tool (Tobacco, Alcohol, Prescription medication, and other Substance use)	Combines screening and brief assessment.	Yes ✅ (e.g., 93029-6)	Partial
CRAFFT (for adolescents)	Substance use screening for youth aged 12–21.	Yes ✅ (e.g., 93027-0)	Partial

Standardized Physical Activity Screeners in LOINC & SNOMED CT

Screener / Assessment Tool	Description	LOINC Code(s) Available	SNOMED CT Mapping
Physical Activity Frequency Questions	Includes questions like “How many days per week do you engage in physical activity?”	✅ Yes (e.g., 68516-4, 68517-2)	✅ Yes
Exercise Vital Sign (EVS)	Captures minutes of moderate to vigorous physical activity per week.	✅ Yes (e.g., 89555-7)	✅ Yes

Screener / Assessment Tool	Description	LOINC Code(s) Available	SNOMED CT Mapping
PROMIS Physical Function & Activity Measures	Patient-reported outcomes for physical function and activity limitations.	☑ Yes (e.g., 71966-2)	☑ Yes
Behavioral Risk Factor Surveillance System (BRFSS)	Includes physical activity questions used in public health surveillance.	☑ Yes (e.g., 68518-0)	Partial
SAMHSA Two-Question Screener	Adopted for HTI-1 compliance; includes physical activity questions.	☑ Yes	Partial

Standardized Sleep Screeners in LOINC & SNOMED CT

Screener / Assessment Tool	Description	LOINC Code(s) Available	SNOMED CT Mapping
PROMIS Sleep Disturbance & Sleep-Related Impairment	Patient-reported outcomes assessing sleep quality and daytime function.	☑ Yes (e.g., 71939-9, 71940-7)	☑ Yes
Epworth Sleepiness Scale (ESS)	Measures daytime sleepiness and risk for sleep disorders like sleep apnea.	☑ Yes (e.g., 92770-7)	☑ Yes
Pittsburgh Sleep Quality Index (PSQI)	Assesses sleep quality over a 1-month interval.	☑ Yes (e.g., 93025-4)	Partial
Sleep Duration & Quality Questions	Includes items like “How many hours do you sleep on average?”	☑ Yes (e.g., 76694-2, 76695-9)	☑ Yes
Behavioral Health Screening Tools	Some include sleep-related questions (e.g., PHQ-9, GAD-7).	☑ Yes	☑ Yes

Standardized Stress Screeners in LOINC & SNOMED CT

Screener / Tool	Description	LOINC Code(s) Available	SNOMED CT Mapping
Perceived Stress Scale (PSS)	Measures perceived stress over the past month. Widely used in research and clinical settings.	☑ Yes (e.g., 92777-2)	☑ Yes
PROMIS Emotional Distress – Stress	Part of the NIH PROMIS suite; assesses stress-related emotional distress.	☑ Yes (e.g., 71941-5)	☑ Yes
PHQ-9 (Patient Health Questionnaire)	Primarily for depression, but includes stress-related symptoms.	☑ Yes (e.g., 44249-1)	☑ Yes
GAD-7 (Generalized Anxiety Disorder)	Screens for anxiety, often linked with chronic stress.	☑ Yes (e.g., 69738-3)	☑ Yes
SAMHSA Behavioral Health Screener	Includes stress-related questions as part of broader behavioral health.	☑ Yes	Partial

Social Connectedness Screeners

Social connectedness is often assessed as part of broader **Social Determinants of Health (SDOH)** screening tools. These tools are coded in **LOINC** for questions and **SNOMED CT** for responses.

Common Tools & Panels

Screener / Tool	Description	LOINC Coded	SNOMED Coded
PRAPARE (Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences)	Includes questions on social isolation, support systems, and relationships.	☑ Yes	☑ Yes
AHC-HRSN (Accountable Health Communities Health-Related Social Needs)	CMS-endorsed tool with items on loneliness and social support.	☑ Yes	☑ Yes
LOINC Panel 93025-4	Includes items like "How often do you feel lonely?"	☑ Yes	☑ Yes
PROMIS Social Isolation / Emotional Support	Patient-reported outcomes on perceived isolation and support.	☑ Yes (e.g., 71945-6)	☑ Yes

These are often used in primary care, behavioral health, and population health initiatives.

Spirituality Screeners

Spirituality is less commonly standardized but is gaining traction, especially in palliative care and holistic health.

Available LOINC Panels

Screener / Item	Description	LOINC Code	SNOMED Mapping
Spiritual/Existential Concerns Panel	Includes questions like "Was the patient asked about spiritual concerns?"	✅ Yes (e.g., 106644-8)	✅ Yes
Hospice Outcomes and Patient Evaluation (HOPE)	CMS tool includes spiritual assessment items.	✅ Yes (e.g., 106623-2)	✅ Yes
FICA Spiritual History Tool (Faith, Importance, Community, Address)	Not fully coded in LOINC yet, but some systems map it manually.	❌ Partial	❌ Partial

These are especially relevant in hospice, geriatrics, and integrative medicine.

Standardized Nutrition Screeners in LOINC & SNOMED CT

Screener / Tool	Description	LOINC Code(s) Available	SNOMED CT Mapping
Nutrition Risk Screening (NRS-2002)	Assesses nutritional risk in hospitalized patients.	✅ Yes (e.g., 93024-7)	✅ Yes
Malnutrition Screening Tool (MST)	Simple 2-question tool for identifying malnutrition risk.	✅ Yes (e.g., 93023-9)	✅ Yes
Mini Nutritional Assessment (MNA)	Comprehensive tool for older adults.	✅ Yes (e.g., 93022-1)	✅ Yes
Dietary Intake Questions	Includes items like "How many servings of fruits/vegetables do you eat daily?"	✅ Yes (e.g., 68520-6, 68521-4)	✅ Yes
PROMIS Nutrition-Related Measures	Patient-reported outcomes related to eating behaviors and nutrition.	✅ Yes	✅ Yes

Screener / Tool	Description	LOINC Code(s) Available	SNOMED CT Mapping
CMS Hospice Item Set (HIS)	Includes nutrition-related questions for end-of-life care.	☑ Yes	☑ Yes

Standardized Wellbeing & Quality of Life Screeners in LOINC & SNOMED CT

Screener / Tool	Description	LOINC Code(s) Available	SNOMED CT Mapping
PROMIS Global Health & Wellbeing Measures	Covers physical, mental, emotional, and social wellbeing.	☑ Yes (e.g., 71961-3)	☑ Yes
WHOQOL-BREF (World Health Organization Quality of Life)	Assesses quality of life across physical, psychological, social, and environmental domains.	☑ Yes (e.g., 93021-3)	☑ Yes
SF-36 / SF-12 (Short Form Health Surveys)	Measures functional health and wellbeing from the patient's perspective.	☑ Yes (e.g., 21881-0)	☑ Yes
EQ-5D (EuroQol 5-Dimension)	Assesses mobility, self-care, usual activities, pain/discomfort, and anxiety/depression.	☑ Yes (e.g., 85012-6)	☑ Yes
Patient-Reported Outcomes Measurement Information System (PROMIS)	Includes multiple domains relevant to wellbeing and life satisfaction.	☑ Yes	☑ Yes
CDC HRQOL-4 (Health-Related Quality of Life)	Brief tool used in public health surveys.	☑ Yes (e.g., 86645-9)	☑ Yes

September 5, 2025

Physician-Focused Payment Model Technical Advisory Committee (PTAC)
U.S. Department of Health and Human Services
200 Independence Avenue SW
Washington, DC 20201

Submitted via email: PTAC@HHS.gov

Re: Request for Public Input; Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers

Dear Members of the Committee:

Innovaccer, Inc. (Innovaccer) appreciates the opportunity to provide input to PTAC's request on using data and health IT to empower patients and support providers. Our Co-founder and CEO, Abhinav Shashank will share insights on integrating data-driven insights into the workflow during his panel discussion, "*Emerging Data Strategies for Supporting Shared Decision-Making Between Providers and Patients*." We have included those insights as well as additional input on patient empowerment in this response.

As an industry leading data platform, Innovaccer is dedicated to empowering healthcare organizations with data-driven insights and technology solutions that improve care coordination, reduce costs, and enhance the patient experience. We have worked extensively with Accountable Care Organizations (ACOs), health systems, and physician practices navigating the complexities of value-based care and care transformation in general.

In partnership with our provider and payer customers, including ACOs, we are committed to advancing the goals outlined in the recently-announced CMS' Health Technology Ecosystem initiative. As an "early adopter" and one of 21 data networks committing to become a CMS-Aligned Network, Innovaccer was honored to attend the White House event where this initiative was unveiled. We are participating in this effort as a fundamentally market-driven approach that leverages mature standards like FHIR APIs and USCDI v3 and provides "carrots" rather than regulatory "sticks" to foster industry-wide momentum.

Additionally, Innovaccer is fully aligned with CMS' goal to "kill the clipboard" by implementing a framework that empowers patients and providers with seamless, digital access to health information, with an aggressive target for implementation of July 4, 2026. We are committed to meeting the CMS-Aligned Network criteria because we believe our customers—and all patients—deserve a better, less fragmented healthcare experience, and this initiative represents the most credible attempt in years to achieve that shared vision. Rather than focusing on data ownership, our purpose is to make data useful, mobile, and impactful for our customers and their communities. Innovaccer views this initiative as the most credible path in years to move beyond industry skepticism and build a healthier future for all Americans.

At its core, Innovaccer was built to solve healthcare's core structural issue—disconnected data—by unifying, harmonizing, and activating information across clinical, claims, social, and operational sources. Our overlay approach sits above existing systems to embed curated insights natively into clinician workflows, minimizing

disruption and maximizing the likelihood that clinicians can act in real time. This philosophy underpins our healthcare intelligence platform, Innovaccer Gravity™, and it directly aligns with PTAC's focus on patient empowerment, shared decision-making, and value-based care.

Below are specific responses to the questions posed for public input.

1) How can electronic health vendors work together to improve data interoperability?

Interoperability improves when vendors adopt open standards while enabling neutral overlays that avoid adding new silos. Innovaccer's platforms implement a standards-based, connector-driven model that integrates EHR, claims, labs, SDOH networks, and other enterprise sources through a unified data model and FHIR-enabled pipelines. By design, this overlay architecture allows information to flow across heterogeneous environments—such as Epic, Oracle Health (Cerner), MEDITECH, payer systems, and community resource platforms—without requiring rip-and-replace projects or locking clinicians into a single vendor's ecosystem. This means a physician can see an up-to-date longitudinal record and next-best actions inside the tools they already use, while the platform orchestrates identity resolution, normalization, and governance behind the scenes. This type of vendor collaboration makes standards useful and scalable in practice.

2) How can data infrastructure be improved to ensure the availability of patient data?

Availability hinges on three layers: reliable ingestion, durable normalization, and immediate activation. Innovaccer Gravity addresses these with prebuilt connectors, a unified data model, and an activation layer that drives clinical, financial, and operational use cases once data is harmonized. This creates a single, longitudinal view that can be surfaced to different roles—physicians, care managers, navigators, pharmacists—without duplicating data silos or adding portals. With Innovaccer Gravity, organizations can then add cross-domain intelligence and AI services that scale across use cases, improving time-to-value while reducing total cost of ownership (TCO) for IT leaders responsible for analytics, quality, and population health. The result is not only "available" data but data that is timely, trustworthy, and useful at the point of decision.

3) What are solutions to transferring data from mobile and wearable apps into EHRs and vice versa?

The key is to establish secure, consented API pipelines that transform raw device telemetry into clinically meaningful signals and then push those signals into the clinician's native workflow. Innovaccer's FHIR-enabled ingestion can take patient-generated health data from mobile and remote monitoring tools, associate it with the correct patient record, and contextualize it with other data (e.g., diagnoses, meds, utilization, SDOH). Innovaccer Gravity's "care agents" can trigger actions—such as alerts to a navigator when a CHF patient's weight rises rapidly or automated scheduling nudges the patient—so clinicians see curated insights rather than a stream of raw readings. This bidirectional flow also allows care plans and education to be "pushed" to the patient's app or portal based on the same context, supporting shared decision-making and adherence.

4) What funding mechanisms can be used to promote improvements in patient data?

Funding should reward the actionable use of data, not merely data collection. We recommend three mechanisms. First, federal and state grants should support the adoption of overlay platforms that unify data and embed intelligence in clinician workflows, particularly in safety-net and rural settings where integration capacity is limited. Second, CMS pilots and demonstrations should reimburse for the delivery of clinically validated insights (e.g., risk scores, next-best actions, closed-loop referrals) when those insights demonstrably improve outcomes such as readmissions, gap closure, and patient experience. Third, quality programs should include patient activation and engagement metrics, recognizing performance improvements traceable to data activation (e.g., closed-loop SDOH referrals, successful navigator outreach). Case study evidence—including readmissions reductions and value-based savings—suggests the economic returns justify such incentives when they are tied to outcome-oriented use of data.[1]

5) How can patients be empowered to better understand and use their health care data?

Patients need narrative, context, and next steps—not just raw results. Innovaccer's approach is to convert multi-source data into plain-language insights linked to immediate actions (i.e., schedule this visit, enroll in this program, complete this screening) while aligning those actions with a clinician-approved care plan. Within the same overlay, navigators and clinicians see the identical longitudinal record, reducing confusion and ensuring that the guidance presented to patients is consistent. Innovaccer Gravity's intelligence can tailor education and outreach to a patient's conditions and social needs in applications, copilots, and AI agents, connecting to community resources through closed-loop referral networks so that next steps for patients are practical, localized, and trackable.

6) How can patient outcomes be improved by empowering patients through data and digital tools?

When curated insights are embedded in the care team's workflow and aligned with patient-facing guidance, organizations consistently report fewer avoidable readmissions, better transitional care, and improved measure performance. Innovaccer case examples describe materially lower readmission rates and stronger care coordination once patient engagement and care management were standardized on the platform. The reason is straightforward: activation compresses the lag between insight and action—risk flags lead to timely outreach, social needs assessments produce verified referrals, and discharge follow-ups are orchestrated with the right cadence and channel. In value-based arrangements, these improvements roll up to lower total cost of care and strengthen shared savings performance.[2]

---

[1] Innovaccer (2022). "CHESS Health Solutions Uses the Innovaccer Health Cloud to Reduce Readmissions by 23% and Generate Over $3M in Value." https://innovaccer.com/resources/news/chess-health-solutions-uses-the-innovaccer-health-cloud-to-reduce-readmissions-by-23-and-generate-over-dollar3m-in-value. Accessed August 26, 2025.

[2] Innovaccer (2022). "Reducing 30-day Readmissions with Streamlined Patient Engagement on the Innovaccer Health Cloud." https://webflow.innovaccer.com/case-studies/reducing-30-day-readmissions-with-streamlined-patient-engagement#schedule-a-demo-form. Accessed August 26, 2025.

7) What are effective approaches for using patient navigators to support patients?

Navigators are most effective when they operate from the same longitudinal record and the same evidence-based playbooks as clinicians. Innovaccer equips navigators with role-specific views that prioritize patients by risk and need, show open care gaps and social needs, and record outreach in a way that is visible across the team. Innovaccer Gravity's clinical care agent can automate task creation, route work to the right team member, and standardize handoffs with auditable trails, allowing navigators to spend more time with patients and less time reconciling spreadsheets and inboxes. The ability to track closed-loop referrals to community-based organizations further expands navigators' impact beyond the clinic walls.

8) What are best practices for shared decision-making, and how can incentives help?

Shared decision-making succeeds when clinical guidelines, patient preferences, and current context are presented at the point of care with minimal extra clicks. Innovaccer's overlay embeds guideline-linked prompts and patient-specific nudges within native EHR screens and common productivity tools, promoting consistent conversations about options, risks, and next steps. At the organizational level, leadership can reinforce this behavior by tying team incentives to engagement and activation metrics, funding navigator programs that support pre- and post-visit education, and standardizing documentation workflows so that shared decisions propagate across the care team. Culture and incentives therefore become the multiplier on technology—when clinicians are rewarded for engagement, they adopt and sustain these digital practices.

9) How can providers help to engage patients and promote patient empowerment?

Providers engage patients most effectively when they can act inside their existing tools and when the next action is unambiguous. Innovaccer's model places prioritized insights and patient context directly within EHR and CRM canvases, surfacing the "one thing to do now" for each encounter or panel review. Providers can launch referrals to social services, trigger patient education, and assign navigator tasks without toggling among multiple systems. Over time, AI assistance can reduce documentation burden and highlight patterns—such as repeated ED use due to transportation barriers—so that clinicians and patients co-create realistic plans that blend clinical and social supports.

10) What are the most effective approaches for empowering patients with multiple chronic diseases?

Complex patients require integrated, longitudinal care plans that unify primary, specialty, behavioral, and social domains. On Innovaccer's platform, comorbidity-aware risk models and condition-specific pathways can coordinate outreach cadence, lab monitoring, and visit sequencing while Innovaccer Gravity-based agents automate much of the task orchestration. Patient-facing guidance, in turn, is personalized and reinforced by navigators, with closed-loop referrals addressing housing, food, or transportation barriers that undermine adherence. Organizations report that this combination—standardized workflows plus individualized supports—improves adherence, reduces acute utilization, and enhances experience, all of which contribute to lower TCOC.

11) What are effective care delivery models to engage patients with chronic conditions?

Team-based models that share a single source of truth and common playbooks are consistently effective. Innovaccer operationalizes this through shared registries, risk-driven panels, and role-specific worklists for physicians, advanced practitioners, nurses, pharmacists, social workers, and community health workers. Because the overlay sits across systems, each team member sees the same information and can close their portion of the loop—medication reconciliation, nutrition counseling, transportation scheduling—without duplicate documentation. Many organizations layer virtual care touchpoints (telehealth, remote monitoring) into this same workflow, ensuring that digital engagement is part of the standard model rather than an add-on.

12) What role can ancillary providers play in shared decision-making and empowerment?

Ancillary providers are critical translators of clinical intent into daily action. On Innovaccer, these professionals receive contextualized, role-appropriate prompts—e.g., a pharmacist sees high-risk medication combinations and cost-saving alternatives; a nutritionist sees food insecurity flags and can trigger a referral to local resources; a community health worker is notified when a transportation barrier threatens attendance. Because referrals are closed-loop and progress is visible to the entire team, ancillary providers can document impact and escalate issues promptly, making shared decision-making a continuous process rather than a one-time conversation.

13) How can patients with chronic diseases be empowered to make healthy choices?

Patient empowerment is enhanced when advice is contextual, locally actionable, and reinforced. Innovaccer's SDOH workflows incorporate structured screening, curated educational content, and referrals to community-based organizations that address food, housing, utilities, and transportation. For example, the Children's Mercy case highlights a standardized pediatric screening and referral program, built with Innovaccer and FindHelp, that connects families to reliable community resources while tracking follow-through.[3] When patients see that the health system can link "what I should do" to "how I can do it nearby," engagement rises and lifestyle guidance becomes realistic.

14) What benefit design changes can incentivize patient empowerment?

Benefit design should lower the friction to engage and reward sustained participation. Payers and employers can reduce cost-sharing for high-value digital services (e.g., remote monitoring, care management, navigator support), add incentives for completing preventive and chronic care tasks triggered by digital nudges, and expand coverage for community-based supports when closed-loop referrals demonstrate impact. Because Innovaccer can attribute engagement and outcomes to specific interventions, these benefits can be tested and tuned in value-based contracts where savings and quality incentives are shared.

15) How can ACO payment models incentivize patient empowerment?

Measurement should recognize engagement as a driver of outcomes rather than an optional add-on. We recommend incorporating activation metrics—closed-loop referral completion rates, navigator-initiated gap closures, readmission-risk outreach

[3] Innovaccer (2024). "Children's Mercy Integrated Care Solutions: Implementing Pediatric Screening and Referral Process with Innovaccer." https://innovaccer.com/case-studies/children-mercy-integrated-care-solutions. Accessed August 26, 2025.

adherence—alongside traditional quality measures. ACO contracts can explicitly credit organizations for deploying platforms and agents that standardize evidence-based workflows across providers and geographies. Real-world examples on Innovaccer show that readmission reductions, better transitional care, and MSSP savings correlate with the disciplined use of these digital workflows, supporting the case to reward empowerment infrastructure and its measured results.[4]

16) How can providers be incentivized to promote patient empowerment?

Providers respond to incentives that respect time, reduce burden, and improve outcomes. Payment models should share savings for documented activation outcomes and subsidize the adoption of overlay platforms that deliver actionable insights in-workflow. At the organizational level, health systems can tie clinician and team bonuses to engagement KPIs (timely outreach after discharge, gap closure velocity, successful SDOH resolution), while investing in training and change management to normalize these practices. Innovaccer Gravity's availability through marketplaces and AI tooling ecosystems also lowers procurement and deployment barriers, getting tools in clinicians' hands faster.

17) How can patients be incentivized to participate in value-based care?

Patients participate when they see tangible benefits. Financial incentives (e.g., reduced premiums or copays) linked to engagement milestones should be paired with practical supports such as transportation, food, and care navigation that the platform can coordinate and verify through closed-loop data. Communication should be transparent about how their participation improves outcomes and reduces costs for them and the system. When patients encounter personalized, timely guidance that aligns with their life constraints—and when a navigator can quickly remove barriers—participation becomes the path of least resistance, not another to-do.

Conclusion

PTAC's theme—empowering patients and supporting providers—requires more than interoperability; it requires activation. Innovaccer's overlay architecture, unified data model, and Innovaccer Gravity's cross-domain intelligence deliver curated insights into existing workflows so clinicians can act in real time and patients can receive clear, supported next steps. We encourage PTAC to consider funding and measurement strategies that reward outcome-oriented activation, closed-loop community integration, and standardized team-based workflows that demonstrably improve experience, quality, and total cost of care.

Sincerely,

Abhinav Shashank
Co-Founder and CEO

David Nace, MD
Chief Medical Officer

Lisa Bari, MBA, MPH
Head of External Affairs

[4] Innovaccer (2025). "Innovaccer Case Studies." https://innovaccer.com/case-studies. Accessed August 26, 2025.

Accountable for HEALTH

Tel 202 487 1393
mmcdermott@accountableforhealth.org
14 Ridge Square NW, Suite 300
Washington, DC 20016

September 5, 2025

Physician-Focused Payment Model Technical Advisory Committee (PTAC)
U.S. Department of Health and Human Services
200 Independence Avenue SW
Washington, DC 20201

Submitted via email: PTAC@HHS.gov

Re: Request for Input; Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers

Dear Members of the Committee:

Thank you for the opportunity to provide comments in response to the Request for Input (RFI) on *Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers*.

Accountable for Health is a non-partisan, national advocacy and policy organization dedicated to accelerating the adoption of effective accountable care. We work to support policymakers in advancing a health care system that delivers better outcomes, improved care experiences, greater access, and lower costs. Central to effective accountable care reforms is transparent, interoperable, and patient-centered data infrastructure that empowers individuals and equips providers to deliver high-quality, coordinated care.

Using data and digital tools to empower consumers and support provider decision-making is essential to making accountable care work. Too often, people experience health care that is fragmented, duplicative, wasteful, and confusing. Accountable care reforms aim to change that by improving care experiences and outcomes through care coordination, connected care teams, and services that address both medical and non-medical needs. Accountable for Health applauds the Administration's commitment to reducing undue burden and promoting a seamless and secure flow of health information between patients, providers, and payers, which will not only support providers currently participating in accountable care arrangements but also make value-based care more attractive to late adopters who remain in fragmented fee-for-service delivery.

As the Physician-Focused Payment Model Technical Advisory Committee (PTAC) prepares for future discussions on the use of data and technology in APMs, we offer recommendations based on our commitment to accelerate the adoption of accountable care that improves health care for all individuals and communities. In prioritizing digital health tools, we urge the Committee to focus on opportunities that are simple and accessible for patients and caregivers. Digital technologies that are burdensome for beneficiaries to use will not be successful in supporting shared decision-making or improving outcomes.

Accountable for HEALTH

Tel 202 487 1393
mmcdermott@accountableforhealth.org
14 Ridge Square NW, Suite 300
Washington, DC 20016

Our responses to specific questions of the RFI are below. Additional feedback can be found in the chart in Appendix A.

1) How can electronic health vendors work together to improve data interoperability?

Electronic health vendors can improve data interoperability by collaborating to accelerate the adoption of unified industry standards such as FHIR and removing barriers that limit integration across systems. Data interoperability presents a major challenge for integration and innovation, largely due to slow and inconsistent adoption of industry standards like Fast Healthcare Interoperability Resources (FHIR). While the industry is making progress, uptake remains sluggish. The lack of interoperability and standard adoption continues to represent a critical barrier to efficient data exchange and technological advancement.

Addressing the issue requires not only better technical solutions and unified standards, but also greater collaboration and governance across organizations. Greater adoption of interoperability standards like FHIR would bring significant benefits to healthcare by enabling seamless, secure data exchange between disparate systems and organizations. With standardized data formats and protocols, healthcare providers could access complete and up-to-date patient information regardless of which EHR system is used, reducing errors and improving care coordination. Patients would benefit from a smoother experience, as their medical history could follow them effortlessly between doctors, specialists, and hospitals, empowering them to be more engaged in their own care. Additionally, standardized interoperability paves the way for innovative healthcare technologies, data analytics, and population health initiatives, ultimately leading to better patient outcomes, increased efficiency, reduced provider burden, and lower costs across the healthcare system.

2) How can data infrastructure be improved to ensure the availability of patient data?

Improving data infrastructure to ensure the availability of patient data requires building scalable, interoperable systems that support timely, reliable access to information across care settings. To ensure the availability of patient data, accountable care entities managing clinical and financial risk must have scalable, interoperable infrastructure that supports timely, data-driven care management. Today's healthcare infrastructure still relies heavily on on-premises EHRs, which often face limitations in computing power and connectivity. Improving data availability requires advancing interoperability across systems and shifting toward modern infrastructure capable of supporting real-time data exchange.

Alternative Payment Model (APM) participants need shared operational transactions that allow for the timely exchange of clinical and claims data (both adjudicated and preadjudicated), real-time prior authorizations (including those associated with CMS waivers (e.g., SNF 3-Day Waiver)), and real-time checks on current performance to date (e.g. the use of Da Vinci Value-Based Performance Reporting Implementation Guide) instead of performance at a quarterly or yearly basis. Access to real-time admission, discharge, and transfer (ADT) data across the care continuum is also critical to managing aligned beneficiaries proactively.

Accountable for HEALTH

Tel 202 487 1393
mmcdermott@accountableforhealth.org
14 Ridge Square NW, Suite 300
Washington, DC 20016

Modernizing HIPAA transactions and adopting modern computing approaches such as API-based data exchange will be key to building the infrastructure needed to ensure patient data is available when and where it is needed.

4) What funding mechanisms can be used to promote improvements in patient data?

Funding mechanisms to promote improvements in patient data should include financial incentives for Advanced Alternative Payment Model (APM) participants to adopt and use technologies that reduce readmissions and improve outcomes. Today, Accountable for Health members invest in technology to improve patient experience and outcomes, such as utilizing a patient navigator in nursing facilities to improve post-acute care, but receive no support or incentives to make such investments beyond the nature of two-sided risk arrangements.
A stable environment for payment models, paired with flexibility in permitted technologies, is essential for the success of APM participants. These organizations should have access to incentives and/or subsidies to support adoption (e.g., preferential quality scoring/benchmark treatment for demonstrating active use of certified digital tools or allowing ACOs to use prepaid shared savings for digital health adoption investment). ACOs also face issues with beneficiaries opting out of data sharing, as it is challenging to effectively manage patient care with limited claims history. We encourage PTAC to consider ways to either require data sharing as a condition of participation or exclude those beneficiaries from certain programs to hold ACOs harmless.

10) What are the most effective approaches for empowering patients with multiple chronic diseases to help improve quality, outcomes, and TCOC?

One effective approach for empowering patients with multiple chronic conditions is to establish a nationwide provider directory of FHIR endpoints that supports seamless data access and coordination across care teams. Accountable for Health members currently spend significant time and resources mapping providers and specialties to ensure that they are managing their patients' care throughout their care journey. A nationwide provider directory would allow access to the right data for the right entity, at the right time; reduce time to market; improve patient quality of care; and create an ecosystem for the next generation of health care technology.
This resource would enable faster and more accurate retrieval of patients' medical histories and insurance records, which is crucial for care coordination, transitions of care, and minimizing duplicate tests or procedures. Additionally, clarity about where claims data resides—and how to access it through FHIR APIs—would support more effective analytics, eligibility verification, and value-based care initiatives.

11) What are effective care delivery models to increase the engagement of patients with chronic conditions?

One effective care delivery model to increase the engagement of patients with chronic conditions is the use of real-time event notifications to alert providers when their patients experience an acute episode. Event notifications play a central role in enabling established care teams to respond quickly, coordinate follow-up care, and prevent avoidable complications or readmissions. In some cases, ACOs are able to work with hospitals to obtain event notifications

Accountable for HEALTH

Tel 202 487 1393
mmcdermott@accountableforhealth.org
14 Ridge Square NW, Suite 300
Washington, DC 20016

for a roster of aligned patients. In other cases, hospitals are unwilling to work with the ACO entity itself and/or accept a roster for notifications. Event notification transmissions should be required in near real-time to enable timely care coordination.

Policies that could be helpful to clear barriers to consistent implementation of the event notification Condition of Participation (CoP) include:

- Requiring hospitals to enable roster-based approaches for notifications
- Requiring any hospital receiving reimbursement under any risk-bearing program (e.g., Medicare Advantage, MSSP, ACO REACH) to participate in electronic patient event notifications to community providers
- Eliminating the ability for EHRs to control what they are willing to contribute
- Further development of ADT messaging standards to support inclusion of new data elements and types of notifications, such as facility name, address, and NPI; consideration of a FHIR API transaction and existing implementation guides (e.g., Da Vinci Unsolicited Notifications), which also reduces burden related to ACO waivers
- Expansion of the patient population to whom the CoP applies to include patients discharged from the ED without admission, as well as those admitted in observational status
- Expansion of the minimum information in the notification to include the discharge disposition data field, offering more detail about the recommended outpatient care

Conclusion

Accountable for Health appreciates the opportunity to provide comments on this RFI. If you have any questions about our comments or need more information, please do not hesitate to contact Mara McDermott, mmcdermott@accountableforhealth.org.

Sincerely,

Mara McDermott

Mara McDermott
CEO

Accountable for HEALTH

Tel 202 487 1393
mmcdermott@accountableforhealth.org

14 Ridge Square NW, Suite 300
Washington, DC 20016

APPENDIX A: DETAILED FEEDBACK

Question	Feedback/Opportunities
How can electronic health vendors work together to improve data interoperability?	Access to real-time, comprehensive information that can travel with patients between appointments/providers that is easily accessible; shift towards digital processes away from paper- and fax-based methods; leverage FHIR-based standards to ensure seamless and consistent data exchange (including use of industry-wide, national initiatives like TEFCA); EHR modules should also allow for easy integration of third-party applications that promote innovation and enhance functionality across systems.
How can data infrastructure be improved to ensure the availability of patient data?	Cloud-based solutions that allow scalable, secure, and transportable data storage (while maintaining robust privacy and security practices); develop and deploy robust health information exchanges at regional and national levels; enable investments in health data analytics capabilities to derive actionable insights from patient data.
What are solutions to transferring data from mobile and wearable apps into EHRs and vice versa?	Utilize FHIR-based APIs for seamless data transfer between devices/applications and EHRs, including standardized data fields to minimize churn and friction; patient-directed data sharing mechanisms; ensure validation processes for accuracy and reliability of patient-generated health data.
What funding mechanisms can be used to promote improvements in patient data?	Previously, APM bonuses served as a mechanism to fund these types of improvements and investments. Today, those bonuses lag substantially. Congress should revisit this structure with CMS input as to how to incent improvements in patient data.
How can patients be empowered to: **(a) better understand the health care data they can access through tools such as patient portals (e.g., to make data meaningful and actionable).** **(b) make better decisions regarding their health?**	**Make health data meaningful and actionable:** Prioritizing user-friendly design in EHRs and ensure patients are not inundated with medical jargon or uncomprehensible recommendations. Embedding personalized insights and tailored recommendations that transforms raw data into actionable guidance. EHRs should not just be data repositories but rather dynamic tools that support value-based, person-centered care. **Empowering patients to make better health decisions:** patient portals to integrated shared decision-making tools; embedding risk calculators or predictive models to provide patients and clear understanding of potential outcomes; access to personalized health coaching. Secure messaging features to enable real-time communication with care teams.
How can patient outcomes (e.g., quality, patient experience, clinical outcomes, total cost of care) be	Predictive analytics and remote monitoring allows for real-time oversight of patient progress. Visibility into comprehensive data sets in real-time enables personalized care plains tailored to meet patient needs. Use of AI to augment care team for low-complexity, non-clinical needs.

Accountable for HEALTH

Tel 202 487 1393
mmcdermott@accountableforhealth.org
14 Ridge Square NW, Suite 300
Washington, DC 20016

Question	Feedback/Opportunities
improved by empowering patients through the use of health data and digital health tools?	
What are effective approaches for using patient navigators to support patients in managing their health care?	Care team training in communication and shared decision-making enhances ability to foster trust and collaboration throughout the care journey. Patient-reported outcomes integrated into decision-making process with structured follow-up protocols that allows for adaptability in care plans.
What are best practices for encouraging shared decision-making between clinicians and patients? ***and*** **What role can health system level incentives and organizational culture play in influencing shared decision-making?**	Aligning financial incentives with shared decision-making; developing performance-based metrics to track patient engagement and empowerment; cultivating a culture that values collaboration and trust. Recognizing and awarding clinicians and care team members who excel in patient engagement alongside deployment of a shared decision-making model as the baseline expectation.
How can providers help to engage patients and promote patient empowerment?	Access to complete health records/test results and provide personalized educational materials for patients and caregivers. Encourage patients to set and track health goals.
What are the most effective approaches for empowering patients with multiple chronic diseases to help improve quality, outcomes, and TCOC?	Human-centered, digital-forward approach that meets patients where and when they most need support. Tools need to be easy to use, convenient and accessible. Enabling access to digital-forward tools such as remote monitoring devices and telehealth alongside peer support and mentoring groups.
What are effective care delivery models to increase the engagement of patients with chronic conditions?	Team-based care models that go beyond the traditionAL doctor-patient relationship and include a multidisciplinary set of stakeholders. This enables trust to be built with the care team and support for navigating a complex and burdensome healthcare ecosystem. Effective delivery models also leverage digital support tools, including patient apps or portals, to actively manage their condition through tracking of health data and real-time communication with care team members. VBC models should also incentivize long-term patient engagement rather than episodic care.

Accountable for HEALTH

Tel 202 487 1393
mmcdermott@accountableforhealth.org
14 Ridge Square NW, Suite 300
Washington, DC 20016

Question	Feedback/Opportunities
What role can ancillary providers (e.g., nurses, nutritionists, community health workers, pharmacists, behavioral health providers) play in promoting shared decision-making and patient empowerment?	Ancillary providers are an extension of the core medical team and help to create a collaborate care team. This could include stakeholders such as a pharmacist or nutritionist. Shared decision-making model enables all members of the care team to be equipped with data and resources to engage patients effectively and proactively.
How can patients with chronic diseases be empowered to make healthy choices about nutrition and other factors that affect their health?	Personalized nutrition and lifestyle coaching to identify strategies that promote healthy behaviors; access to remote monitoring tools to track key health metrics; partnerships with community-based organizations to address SDOH.
What kinds of benefit design changes can help to incentivize patient empowerment?	Zero-dollar copays for primary care services, reduced cost-sharing for patients who actively manage their health, rewards for meeting health goals or joining wellness programs, and coverage of digital health and remote monitoring tools.
How can payment and performance measurement for population based, total cost of care models such as ACOs be designed to incentivize patient empowerment?	Payment and performance measures should integrate patient engagement and activation metrics, patient-reported outcomes, and use of shared decision-making tools into quality metrics. In turn, shared savings and related financial incentives will further reward ACO investment.
How can providers be incentivized to promote patient empowerment (e.g., through the use of digital tools, patient education)?	Today, APM participants are severely hampered in their ability to talk to patients about the benefits of accountable care. Freeing providers up from these restrictions and allowing more open communication would improve overall patient education and more collaborative care conversations.
How can patients be incentivized to participate in value-based care?	Dedicated care teams; zero-dollar or reduced out-of-pocket costs for choosing high-value providers; financial rewards for participating in care management programs; wellness programs that reward healthy behaviors and action on preventive care.

September 5, 2025

Physician-Focused Payment Model Technical Advisory Committee (PTAC)
Assistant Secretary for Planning and Evaluation
U.S. Department of Health and Human Services
Submitted electronically to: PTAC@HHS.gov

RE: Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers Request for Input (RFI)

Dear Members of the Physician-Focused Payment Model Technical Advisory Committee:

The National Association of ACOs (NAACOS) appreciates the opportunity to submit comments in response to the request for information (RFI) on Using Data and Health Information Technology to Transparently Empower Consumers and Support Providers. NAACOS is a member-led and member-governed non-profit of nearly 500 accountable care organizations (ACOs) in Medicare, Medicaid, and commercial insurance working on behalf of health care providers across the nation to improve quality of care for patients and reduce health care cost. Collectively, our members are accountable for the care of over 9.5 million beneficiaries through Medicare's population health-focused payment and delivery models, including the Medicare Shared Savings Program (MSSP) and Direct Contracting/ACO REACH.

Transforming care delivery and improving clinical outcomes are cornerstones of accountable care. ACOs and providers in accountable care regularly use data and technology, integrating claims and clinical data, adopting tools that engage patients in their care delivery, and leveraging emerging technologies (e.g., AI) to advance innovative solutions and improve population health. We strongly encourage the Administration to leverage ACOs and providers in accountable care as partners in designing approaches to these areas to ensure that health information flows across the care continuum.

With responsibility for total cost of care and clinical outcomes, accountable care requires (1) bi-directional capture of data that are seamlessly integrated at the point of care, (2) merged data across multiple care settings, users, and endpoints, (3) tools to engage and empower patients in their care, and (4) the ability to leverage datasets for multiple purposes including population health, quality measurement, and patient engagement. Ultimately, ACOs and providers in accountable care are the best test cases for ensuring that data are not locked away in silos.

We look forward to continued engagement with the PTAC and the Administration on designing thoughtful approaches to unleash data to improve management of chronic conditions, empower patients, and reduce administrative burdens. Our comments below reflect the opinion of our members and our shared goals to improve value-based care and empower patients through the effective and responsible adoption of technology in healthcare.

Response to RFI Questions

Question #1: How can electronic health vendors work together to improve data interoperability?

The key focus for most value-based care (VBC) arrangements is the aggregation of digital data across providers to track patient behaviors and outcomes. Individual patient data, available in real-time, are critical to care teams that create and monitor care plans for patients and for those same patients to remain invested in their journey to better health. Aggregated data are needed to share among providers working to improve care coordination and the overall health of the population. These data include claims, eligibility, administrative and clinical data across multiple electronic health records (EHRs), and patient self-reported data.

It should be reiterated that the lack of interoperable data from EHRs is a major barrier to successful data aggregation. Alternative Payment Models (APMs) typically interface with multiple – sometimes hundreds – of instances of EHRs. Based on the recent MSSP reporting experiences, ACOs report that there is already significant variability in system and system version capabilities. It is essential that APMs and their practices be able to easily interface with these products to shift towards digital-forward processes and away from paper- and fax-based reporting. To date, certification of EHRs has not aligned with providers' needs and requirements.

APMs must be able to merge and deduplicate patient information across multiple different EHRs – and multiple instances and versions of those EHRs. Currently, this challenge causes difficulties in quality reporting and other data analysis capabilities. **We urge CMS/ASTP to include this specific capability as a requirement of certification, specifically that EHRs must support standardized data sharing (via APIs or other technologies).** Without this capability, ACOs and their providers will continue to encounter challenges in collecting the data needed for individual patient care and population health management.

Sharing and collection of data from multiple providers of all types, and the ability to analyze that data is a key requirement and should be considered an essential vendor CEHRT requirement. We also suggest that the ability to produce consolidated patient reports for the care teams, in addition to the provider, be a CEHRT requirement. Additionally, the ability to integrate third-party applications is an area that should be explored for additional CEHRT requirements. This would promote innovation and enhance use of patient-generated health data (e.g., from wearables).

Additionally, while the current criteria and standards provide a broad foundation, they do not focus on the needs for accountable care and population health management. Specifically, current criteria and standards do not consider cross-setting and cross-provider outcome reporting. To date, APMs must rely on collecting information from their participating providers. This approach meets bare minimum needs but is costly, complex, and burdensome. Essentially, ACOs are left to verify that each instance of each version of an EHR used by their participating practices meets these criteria.

At the same time, we caution CMS to avoid being overly prescriptive in its CEHRT requirements for APMs and providers in APMs. A better approach would be to create broad, total cost of care incentives and allow APMs to determine how to adopt technologies based on their unique needs, providers, and patient populations. Current approaches measure the functionality of providers' EHRs in a "check box" fashion of whether a functionality exists. This approach is best suited for ASTP assessment and certification of technologies.

Any CEHRT requirement for APMs should consider the specific model purposes and goals and avoid simply adopting requirements from other programs. For example, the current CEHRT and quality reporting requirements for APMs seek alignment with individual and group clinician requirements set forth in the Merit-based Incentive Payment System (MIPS). This approach ignores the overall population health goals of APMs.

NAACOS suggests that the provider requirements for CEHRT should vary based on the model. However, all CEHRT should have the full capabilities to meet the needs and requirements of providers, across models. Some APM models may not need to leverage all certified EHR requirements, allowing for model-specific flexibility. In some cases, individual provider reporting rather than APM-level reporting may be used to avoid the complexity of managing the extraction and combination of data from many independent sites with different EHRs into an aggregate report. The one-size-fits-all approach does not work given the variety of APM models and organizational structures. CMS/ASTP should work with health information technology (HIT) vendors and APMs during model development to ensure these tailored requirements can be implemented in vendor products and by the providers participating within a specific model, without undue cost or burden.

Finally, accountable care and APMs should be a test case for uses of CEHRT, as providers in these models have advanced data needs. Because they often work with providers of varying sizes, geography, and vendor systems, APMs can provide valuable, real-time information on how vendors are (or are not) meeting the criteria and standards.

Question #2: How can data infrastructure be improved to ensure the availability of patient data?

Full patient clinical and claims data, eligibility and attribution to providers, outcomes tied to quality measures, real-time patient actions and conditions, and individual provider capabilities are essential data needed in accountable care arrangements. Additionally, full and complete access to data is vital. CMS could enable this through cloud-based solutions that allow scalable, secure, and transportable data storage (while maintaining robust privacy and security practices) and investments in health data analytics capabilities for ACOs and APMs to derive actionable insights from patient data.

However, ACOs have struggled to access complete information in the following areas:

- Patients Opt-Out of Data Sharing: Beneficiaries in ACOs have the option to opt-out of data sharing, which creates challenges for ACOs to manage the care of patients. Some ACOs report that up to 8% of beneficiaries opt out of data sharing. CMS should exclude patients who opt out of data sharing from quality measurement requirements and explore other opportunities for reporting with these patients. Additionally, CMS should better educate patients on the importance of data sharing as part of the opt-out process.
- Admission, Discharge, and Transfer (ADT) Data: Many ACOs find that real-time notifications to providers on patient actions (e.g., emergency department admissions) provide critical information that activates timely interventions. While CMS requires hospitals to notify providers through ADT alerts, that information is not always accessible by ACOs. A prior survey of NAACOS members highlighted that more than a third (38%) of ACOs do not have agreements in place with hospitals or third-party vendors. For the 62% of ACOs that receive alerts, the majority (66%) state that the alerts are “extremely useful” and 23% said they are “somewhat useful." Ongoing barriers to receiving this information include:
    - *Costs:* Nearly half of ACOs that receive alerts pay upwards of $50,000 a year for them. Health information exchanges (HIEs) charge a flat connection fee and then an additional

fee for each transaction thereafter. When there are hundreds of thousands of transactions, fees can be costly.
    - *Lack of Access to HIEs or Vendors:* CMS encourages use of an intermediary, such as an HIE, to route notifications to the appropriate provider. But some states and locales lack a functional HIE. Additionally, not all third-party vendors or HIEs cover an entire market or have access to all hospitals in a region. In these cases, the ACO must go to multiple sources, raising the complexity and cost.
    - *Inconsistent Data:* Several known challenges with HIEs and broader interoperability also impact the usefulness of the ADT alerts.
        - Missing providers: Smaller providers have a harder time joining an HIE because of the cost. In many states, rehab facilities and nursing homes are also not included.
        - Missing patients: Some states require patients to opt-in to HIEs, limiting the data that ACOs could receive so that it is not useful or cost-effective to maintain systems to receive ADT alerts.
        - Lack of vital information: Alerts often lack diagnosis information and other critical details about the encounter, making the information not actionable.
        - Unusable format: Data from HIEs do not have an ideal or consistent format, which requires additional programming and manipulation before it can be used. Given the vast inconsistencies, this type of data transformation is particularly burdensome for ACOs with multiple HIE connections.
        - Patient matching: Hospitals struggle to match incoming patients with their historical records, especially in cases where patients have common names or name changes.
- Substance Use Data: CMS currently excludes these data from the Claim and Claim Line Feed (CCLF) files that ACOs receive, which creates barriers to providing coordinated, integrated behavioral health care. Despite Congress' efforts to align 42 CFR Part 2 with Health Insurance Portability and Accountability Act (HIPAA) through Section 3221 of the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), CMS' regulation still restricts secure sharing of substance use disorder (SUD) claims data.

Question #3: What are solutions to transferring data from mobile and wearable apps into EHRs and vice versa?

CMS should use FHIR-based APIs for seamless data transfer between devices/applications and EHRs, including standardized data fields to minimize churn and friction, patient-directed data sharing mechanisms, and ensuring validation processes for accuracy and reliability of patient-generated health data.

Question #4: What funding mechanisms can be used to promote improvements in patient data?

ACOs and providers in accountable care currently use tools and technologies, such as AI, population health analytics, and patient engagement tools, and see opportunities for improved use. However, as we discussed above, barriers of cost, education, return on investment (ROI), and compatibility with EHRs are major obstacles to overcome. Removing these barriers will improve adoption of tools without requiring them as part of the APM model or participant requirements. That is, if these tools and technologies show their expected results for individual APMs, we would expect them to be adopted. For example, many ACOs are adopting AI to improve patient stratification for population health

management. Additionally, given the significant differences among APMs and their providers, voluntary adoption of digital technologies, rather than requirements, would be a better approach so that APMs can tailor their solutions based on their needs and patients.

To meet the cost and outcome parameters of an APM, providers must adopt technology-enabled approaches. Often, providers make these investments using shared savings achieved through the model and advanced APM incentives, which are received long after the performance year. Upfront incentives (i.e., pre-paid shared savings and capitation options) have enabled providers to make more timely investments in technology. **Accordingly, CMS must consider an incentive framework within the broader context of the financial challenges facing ACOs to ensure ACOs can sustain continued investments in health technology. For example, the expiration of the Advanced APM incentives, combined with pressures from the benchmark ratchet, will make it increasingly difficult for ACOs to support these investments. We urge CMS to work with stakeholders to address these underlying financial challenges.** Potential opportunities to incent adoption include higher shared savings percentages for ACOs demonstrating effective digital tool implementation or bonus payments tied to patient engagement metrics via digital platforms.

NAACOS supports potential incentives to develop or make digital health products available to members of an APM as part of the APM funding. This approach is particularly helpful for small, independent, rural, and other providers who lag in technology adoption. The cost to purchase these products is often a barrier to participants, so financial incentives can promote their purchase and use. Incentives could be in the form of per-member per-month (PMPM) payments to the ACO for patient use of products or allowing patient bonuses for use of digital health products.

In any incentive approach, we encourage consideration of prior obstacles.

- *Overcome provider and patient uncertainty:* There is a need to demonstrate the use and value of these products to both providers and patients, as patient and provider knowledge of products can be limited.
- *Test prior to adoption:* Support APMs in testing and implementing these technologies without suffering any consequences of technology failure, or unforeseen consequences. For example, a testing lab that allows APMs to gain experience with the products before full-scale implementation may be one solution to this problem and incentivize use.
- *Avoid overly prescriptive approaches:* In lieu of requiring any one technology or approach, CMS should focus on achieving a particular outcome and allow APMs the ability to adopt technologies based on their patients' and the organization's needs and capabilities.
- *Prevent an overabundance of data:* The proliferation of patient digital health products could potentially overwhelm practices; there must be limits on the type and amount of data that are sent to providers and care teams so that they receive information that is most relevant for clinical decision-making.
- *Need for upfront incentive framework:* Upfront incentives (i.e., pre-paid shared savings and capitation options) have enabled providers to make more timely investments in technology.

The Administration should also consider other approaches for alleviating cost burdens. For example, CMS could explore cost sharing arrangements between CMS and APMs, like the Medicaid State Systems where the Federal government provides a percentage of the cost. Additionally, CMS could sponsor group purchasing arrangements for these initiatives to enable individual provider use without needing individual contracting. Finally, CMS and ASTP/ONC should ensure that vendors do not place undue costs on providers. For example, vendors should be prohibited from charging for producing files that are

required for quality reporting and tracking, such as QRDA files, a standard document format for the exchange of electronic clinical quality measure (eCQM) data between provider practices and CMS. These should not come at an additional cost to ACOs.

Question #5: How can patients be empowered to:

a) **Better understand the health care data they can access through tools such as patient portals (e.g., to make data meaningful and actionable).**
b) **Make better decisions regarding their health?**

Question #6: How can patient outcomes (e.g., quality, patient experience, clinical outcomes, total cost of care) be improved by empowering patients through the use of health data and digital health tools?
Question #7: What are effective approaches for using patient navigators to support patients in managing their health care?

Value-based, person-centered care would be greatly enhanced if providers can leverage data and tools to engage patients in managing their health. This can be achieved with EHRs that are dynamic tools used by patients or other portals/applications that can integrate data into the EHR. Opportunities include:

- Prioritizing user-friendly design in EHRs and other tools, as well as ensuring they are not inundated with medical jargon or uncomprehensible recommendations.
- Embedding personalized insights and tailored recommendations that transform raw data into actionable guidance.
- Embedding resources to support shared decision making, such as explanations of potential outcomes, personalized health coaching, and secure messaging to communicate with care teams.
- Incorporating predictive analytics and remote monitoring to allow for providers to conduct real-time oversight of patient progress

Question #8: What are best practices for encouraging shared decision-making between clinicians and patients?

a) What role can health system level incentives and organizational culture play in influencing shared decision-making?

Best practices for encouraging shared decision-making between clinicians and patients include aligning financial incentives with shared decision-making and developing performance-based metrics to track patient engagement and empowerment. Health system-level incentives and organizational culture can influence shared decision-making in a positive way through the cultivation of a culture that values collaboration and trust. Recognizing and awarding clinicians and care team members who excel in patient engagement alongside the deployment of a shared decision-making model is crucial in the development of baseline expectations.

Patient Empowerment and Chronic Disease Management

- **Question #9: How can providers help to engage patients and promote patient empowerment?**
- **Question #10: What are the most effective approaches for empowering patients with multiple chronic diseases to help improve quality, outcomes, and TCOC?**
- **Question #11: What are effective care delivery models to increase the engagement of patients with chronic conditions?**

- **Question #12: What role can ancillary providers (e.g., nurses, nutritionists, community health workers, pharmacists, behavioral health providers) play in promoting shared decision-making and patient empowerment?**
- **Questions #13: How can patients with chronic diseases be empowered to make healthy choices about nutrition and other factors that affect their health?**
- **Question #14: What kinds of benefit design changes can help to incentivize patient empowerment?**
- **Question #15: How can payment and performance measurement for population based, total cost of care models such as ACOs be designed to incentivize patient empowerment?**

Patient Empowerment

ACOs employ a team-based approach that goes beyond the traditional doctor-patient relationship and include a multidisciplinary set of stakeholders. Ancillary providers (e.g., pharmacist, nutritionist) are an extension of the core medical team and help to create a collaborative care team. This enables trust to be built with the care team and adds support for navigating a complex and burdensome health care ecosystem. Effective models leverage digital support tools, including patient apps or portals, to actively manage their condition through tracking of health data and real-time communication with care team members. Approaches include:

- Access to complete health records and test results
- Personalized educational materials for patients and caregivers
- Human-centered design that meets patients where and when they most need support
- Access to digital-forward tools, such as remote monitoring devices
- Telehealth alongside peer support and mentoring groups
- Personalized nutrition and lifestyle coaching to identify strategies that promote healthy behaviors.

Engaging Patients with Chronic Conditions

NAACOS has previously provided comments to the PTAC on Addressing the Needs of Patients with Complex Chronic Conditions or Serious Illnesses in Population-Based Total Cost of Care (PB-TCOC). Many of the barriers highlighted are still present today and former recommendations are more important now than ever. Patients with complex chronic conditions or serious illnesses have some of the highest health care costs and some of the greatest opportunities to benefit from the care coordination and wraparound services that value-based care can provide. However, program policies are often not designed with these populations in mind, making it difficult for them to be attributed to and benefit from these models. Similarly, this makes it challenging for health care provider organizations that predominantly serve complex and high-needs patients to participate and succeed in value models. For example, program elements of the MSSP have been designed based on the traditional Medicare population writ large. When organizations serving a high proportion of patients with complex chronic conditions or serious illnesses participate, challenges with financial benchmarks, attribution methodologies, and performance measurement arise.

Complex and seriously ill populations are significantly different than the average traditional Medicare population. Attempting to fit these high-needs populations into APMs designed for standard populations will always fall short of accounting for their unique needs and circumstances. Due to this, these beneficiaries have historically had limited participation in APMs.

Lessons from organizations serving complex or seriously ill populations in the High Needs Track of ACO REACH and in the MSSP can help inform future model design appropriately tailored to these populations. Future APM design should enable and incentivize participation of organizations providing care to these populations by appropriately accounting for these considerations. Services that can be made available for patients include personalized nutrition and lifestyle coaching to identify strategies that promote healthy behaviors, access to remote monitoring tools to track key health metrics, and partnerships with community-based organizations to address SDOH.

NAACOS recommends the following considerations for the development of effective TCOC model design to further engage patients and promote patient empowerment:

- Design alternative program policies to account for high-cost, high-needs beneficiaries who are significantly different from the average traditional Medicare beneficiary.
- Ensure participation criteria do not exclude high-needs beneficiaries from benefitting from value-based care models.
- Account for the care settings and care delivery models through which these populations are often receiving care in attribution models.
- Design financial methodologies specifically for these populations to ensure sustainability and predictability for the participating organizations that serve them.

Evaluating patient experience

NAACOS supports efforts to advance performance measurement for population-based total cost of care models to incentivize patient empowerment. Survey measurements to capture patient experiences are a vital tool ACOs can maximize to meet their needs for improvement efforts in a timely and actionably way. We caution against the use of certain web-based tools, such as the CAHPS for MIPS survey, to evaluate patient experience of care provided by ACOs. The timing of surveys results in patients conflating experiences with various providers and having difficulty recalling experiences that took place months ago. The survey itself has not been updated and the questions included are confusing, leading, and can be misinterpreted. Overall, many ACOs report that CAHPS performance does not correlate with whether the patient would recommend the provider or provider group to friends and family. Instead, many ACOs are using their own internal surveys that have a much larger sample size and are more meaningful to patients and providers, using the survey data for improvement purposes.

Question #16: How can providers be incentivized to promote patient empowerment (e.g., through the use of digital tools, patient education)?

Educated patients are empowered patients and providers should seek to encourage that behavior. Beyond achieving intended care goals, there are opportunities to create incentives by incorporating patient empowerment metrics into value-based care payment models, offering financial and non-financial rewards for effective use of digital tools, or implementing pay-for-performance programs tied to patient satisfaction/activation measures.

Question #17: How can patients be incentivized to participate in value-based care?

One of the largest challenges in advancing accountable care is the limited awareness patients and their caregivers have around value-based care models and the benefits it holds for improved care coordination. Effectively communicating these benefits is one strategy providers can implement to better engage patients in their care. NAACOS would like to elevate previously published guidance, co-

developed with the Health Care Transformation Taskforce, on the effective methods to engage people in governance, care planning, and care delivery redesign, primarily in accountable care organizations (ACOs).

Key challenges for beneficiary communications and education include limited the knowledge beneficiaries have about what an ACO is and misconceptions about terms like "accountable care" and "value-based care." CMS regulatory requirements and definitions for "marketing materials and activities" cause ACOs to be more cautious about developing content that could fall under the definition. Additionally, beneficiaries have reported that CMS template-language is confusing and they note that templates are not provided in multiple languages.

Effective utilization of voluntary patient alignment is another challenge. Not all beneficiaries are aware of the importance of having a primary care relationship and many care engagement and delivery tools were not developed in collaboration with patients. Operationally, CMS' factsheet for beneficiaries on how to choose a primary clinician may be misleading. When an individual clinician leaves a particular practice location, the beneficiaries that follow the clinician to a new location will still align to the previous practice location. This results in beneficiaries being attributed to ACOs they are no longer receiving care through, or not being attributed to an ACO provider from which they are receiving primary care services, because voluntary alignment takes precedence over claims-based alignment. Other challenges include varying applications of Medicare fee-for-service requirement waivers across accountable care models.

Additional challenges for beneficiary participation and input in ACO governance include beneficiaries' lack of time, expertise, and background knowledge of health care payment structures and operations necessary for full engagement in board discussions.

Recommendations to better improve beneficiary engagement across all aspects of an ACO include:

1. **Beneficiary communications must be tailored to different patient populations. Current regulations require a one-size-fits-all approach which limits educational and engagement potential to specific audiences.** CMS should transition to approaches that empower ACOs to tailor the timing and information communicated to beneficiaries. As with other programs, CMS could set broader parameters for beneficiary communications and timelines and allow ACOs to customize their approaches. For example, beneficiaries are best served when communicated with in their primary language to build trust and foster a fuller understanding of what is being communicated to them.
2. **ACOs and other APMs can be improved with enhanced beneficiary engagement tools.** ACOs offer freedom from regulatory burden by waiving certain Medicare FFS requirements. Many waivers tested offer a direct benefit to the patient, such as waiving cost-sharing for certain services or allowing a beneficiary to be directly discharged to a skilled nursing facility (SNF) without meeting the minimum nights of a hospital stay. These benefits facilitate improved engagement for patients with the health care they seek. However, waivers are inconsistently applied across the various ACO models. CMS should work to expand and align waivers that provide direct benefits to beneficiaries and support ACOs with understanding parameters for meeting beneficiary-related requirements.
3. **Meaningful input from patients, family caregivers, and communities is critical to the success of accountable care models.** Effective two-way communication promotes person-centeredness and can advance population health goals. CMS should ensure ACOs and other APM participants have adequate guidance to solicit beneficiary input and feedback, establish community

partnerships, and incorporate these perspectives into their work. The focus should be on co-creation of care delivery models where the patient voice is considered and acted upon throughout the care continuum.

Conclusion

Thank you for the opportunity to provide feedback on leveraging data and technology to empower patients. NAACOS and its members are committed to providing the highest quality care for patients while advancing population health goals for the communities they serve. If you have any questions, please contact Aisha Pittman, senior vice president, government affairs at aisha_pittman@naacos.com.