HIT Policy Committee Advanced Health Models and Meaningful Use Workgroup
FINAL
Report of the June 2, 2015, Public Hearing

Names of ONC Staff Liaisons Present: Michelle Consolazio and Alex Baker

Meeting Attendance: (see below)

Purpose of Hearing: Provide recommendations to the Health IT Policy Committee (HITPC) to facilitate the effective use of HIT to support and scale advanced health models in support of the Advanced Health Models and Meaningful Use Workgroup charge and of delivery system reform goals

Introductions and Opening Remarks

Workgroup members and staff introduced themselves. HITPC Vice Chairperson and Workgroup Chairperson Paul Tang talked about the need for new advanced care models. Exemplars of new models were invited as panelists. He went through the agenda and other materials that had been circulated in advance of the meeting.

Framing Remarks

Thomas Mason, ONC, talked about the importance of involving the community in improving health and the need for a technology and infrastructure to support those efforts. Jodi Daniel, ONC, urged the panelists to report on actionable steps.

Chisara Asomugha, CMS, showed slides and reported on her agency's support of health care delivery system reform and the movement away from fee-for-service plans (FFS). During January 2015, HHS announced goals for value-based payments within the Medicare FFS system. The Innovation Center portfolio aligns with the delivery system reform focus areas. Several models are currently being studied. An HIT infrastructure is essential to make new models work. She acknowledged the contributions of the workgroup.

Suma Nair, HRSA, talked about the importance of technology in supporting her agency's efforts to provide health care to the underserved. She described the history of federally qualified health centers (FQHC). 96% of FQHCs have adopted EHRs.

PANEL I: How Advanced Health Models Integrate Data across Service Delivery to Support Health for Individuals

Nancy Garrett, Hennepin Health in Minnesota, described her defined provider network, in which a shared EHR is used. A risk-sharing funding model is used and medical and social services are integrated. A consensus-based governance model is in place. Funding is based on capitated reimbursement from the state Medicaid program. About 11,000 members, primarily males, are enrolled. They have many overlapping morbidities, such as mental health conditions, chemical dependency, homelessness, and chronic physical conditions, and their use of the ED is described as frequent. The model of care includes a strong role for community health workers both inside and outside the clinic. Complex cases are referred to an ambulatory ICU. Clinical care is coordinated with targeted behavioral health and social

service interventions. A shared EHR connects all of the services. An integrated data warehouse can fill in clinical gaps by combining EHR and claims data and provide a real-time Rx picture. Of particular importance is linking members to any supportive housing available to them. The program has resulted in considerable reductions in ED and hospital use. She delineated opportunities and barriers for the HITPC to consider:

- State and national laws make two-way sharing of social services data with medical providers difficult
- Identity matching introduces waste in the health care system and is a patient safety issue
- Payment systems that put dollars in caregivers' hands and allow creativity across settings
- Appropriate risk adjustment of payment rates for social determinants of health
- Electronic health records are designed to be transactional – one patient at a time – and for medical settings

She closed by saying that the health sector needs policies that incent vendors to develop systems that work for and across social service, public health, and medical care.

Virna Little, Institute of Family Health, showed slides and described the organization as having a staff of 1,400 spread across Manhattan, the Bronx, and upstate New York. An Epic system has been in use since 2014. All providers, services, and programs have been on the system since implementation. Over 130 organizations and specialty providers are on Institute Link. This includes foster care, mental health services, drug and disability programs, and pharmacy providers. Transformed care coordination has resulted in expedited admissions, shared care plans, decreased admissions, use of shared records, increased referrals for care, re-engagement of individuals who present at community organizations, and suicide prevention. In the future, community organizations will be able to document in the record. Expansion to correctional facilities is being considered.

Allen Dobson, Community Care of North Carolina (CCNC), showed slides describing his organization as serving 1.4 million Medicaid recipients, of whom approximately 400,000 qualify in the aged, blind, or disabled category. The program is statewide and involves 1,800 primary care practices, more than 90% of primary providers in the state. Fourteen regional networks are being consolidated. Each network staff includes a pharmacist; a behavioral health provider; care managers; a clinical director and network director; and 501(c)(3) organizations, hospital-owned networks, and networks associated with a county health department. Many care managers are embedded in medical practices, hospitals and EDs. A primary care doctor leads a diverse team of health care professionals working at the top of their respective licenses. The state makes monthly per-member, risk-adjusted payments, and provides flexible resources for medical practices. He emphasized a number of principles. Population health needs differ from encounter-based care. Population health uses prompts to action and a dynamic care plan; 86-page Continuity of Care Documents do not change care delivery or health outcomes. Rather than transfer records, actionable insights that inform the team member receiving the information are handed off. Data liquidity for care plans from all electronic systems of record is required. Standards ideally apply across all provider types and settings. He gave several examples of integrating data across the continuum of care. One pertained to pregnancy and OB care management. A universal risk screening tool used during the prenatal visit by several hundred participating practices is incorporated into a statewide care management information system. Risk segmentation for targeted care management support is provided by local public health departments. Medicaid claims, patient risk data, and vital records are used for performance reporting and providing feedback to practices and stakeholders. CCNC also contributes to disease and immunization registries and supports independent physicians in attaining meaningful use.

Ruben Amarasingham, Parkland Center for Clinical Innovation (PCCI) in Dallas, submitted written testimony in addition to his oral presentation slides. PCCI is a 501(c)(3) research and development corporation specializing in clinical prediction and surveillance software for U.S. hospitals and CBOs. He explained that the Dallas IEP consists of the Pieces™ Software Platform, Pieces Iris™, and Pieces Plexus™. It is possible to mine EHR data by using natural language. But the most important data for predicting events is not necessarily in the EHR. PCCI is connected to 9,000 organizations in Dallas in order to deal with fragmentation. The Pieces™ software platform runs prescriptive algorithms that calculate a patient's risk of adverse health events, using a combination of clinical and social risk factors. The system recommends targeted interventions appropriate to the patient's level of risk. Pieces Iris™ is a low-cost, configurable, and easy-to-implement full-service case management and client tracking tool designed for CBOs. Pieces Plexus™ is an electronic platform that enables health care providers, community groups, and social service agencies to share medical and social information via a secure information exchange network. Data are collected from hospitals and CBOs via Pieces™ and Pieces Iris™, respectively. The Pieces™ software platform sits on top of the exchange for improved decision-making at the point of care. Data captured include all relevant client-level and patient-level data as the individuals receive services at various points across the community. Leveraging these big data sets, Pieces™ will be able to forecast adverse events and support the decision-making of both clinical and social care providers. Several barriers would benefit from federal and local policy changes. For example, laws and policies designed to protect patients receiving substance use treatment lack clarity on data sharing. In some areas, there is little consensus around substance abuse confidentially regulations. Entities do not agree on the rule for disclosures to social service agencies. Even where there is clarity, many of the organizations do not have the resources or legal and privacy technical support necessary to understand data sharing and governance. Community-based social service organizations, unlike hospitals and other medical care providers, lack the financial and staff resources to maximize the use of technology. More demonstration projects are needed.

Q&A

A moderator called out several themes in the testimonies. Integration of services is team-based and requires integrated data across many sites and services. There are no standards for this. The EHR is transactional, hospital-based, and very limited. Also, legal clarity on permissions and consents are issues.

Tang inquired about the process for agreeing on common data elements and sharing a dynamic care plan. Dobson responded that in North Carolina they started with a state-sanctioned organization, which included a care management system. Amarasingham said that in Dallas organizers brought organizations together in a massive town hall for feedback in the design of the data model and user interfaces. They rely on flexible data analytics so that they can respond to changes in policy. Another panelist said that they used EHRs as the organizing entity for the care plan. In another setting, organizers worked with CBOs and their own providers regarding the dynamic care plan and how goals are set, prioritized and supported. Not all providers need to set a unique goal; some may support another's goal. Tang asked them to think about what to recommend to the federal government.

Responding to a question about contributions to and reconciliation of plans, Little referred to having a process and rule for reconciling across organizations. She said that structuring and reconciling occurs within the warehouse and begins with identify matching, which does involve some manual work. A Medicaid model is used for reconciliation of ED visit data. The process integrates and uses diagnostic and claims data from two sources. In terms of what would be necessary to reconcile care plans, she mentioned a patient portal that could be expanded; it would depend on the capability and preferences of the population. Little talked about using Community Connect and focusing on shared care plans of high utilizers. Cultural change is required. North Carolina does not necessarily use a common shared

space. Social service care plans are different from medical care plans. There is some integration of clinical and claims data, but some information does not fit into data items. Dobson acknowledged that he struggles with how to give information back to social service organizations in a way that it can be used. He said that his organization could use guidance and assistance on how to do this. According to Amarasingham, shared care plans require the capability to make quick changes. The plan is really a conversation. In response to a need to summarize the conversation of providers, his company used natural language processing to compress these conversations into one-page documents. Compliance with conflicting and differently interpreted federal and state laws on information about substance abuse services and clients is a major issue. Help to clarify and simplify these laws is needed.

Responding to a question about engaging individuals, Garrett said that her organization works with CBOs. It also trains its providers to use CBO input with patients. Dobson said that his organization gets input from everyone, but it does not have a patient communication tool because Medicaid has not funded it. Not everyone in the community has the tools for sharing communications. Traditionally, communication in small rural communities has been personal and informal. Mechanisms must be reestablished. Another panelist said that her organization tries to involve individuals in those aspects of the care plan on which they wish to work. In deciding how to parse the information in a shared care plan, Amarasingham said that EHR data were reviewed and prioritized. Analysts identified the type of data and information that providers continued to go back to. By this monitoring, that kind of information was incorporated into the HIT. Flexible interfaces allow dragging and dropping information and the analysis of user patterns. In North Carolina, filtering is driven by the recipient's credentials, and analytics are used to flag alerts with suggested guidance. Filtering is based on the use of credentials and what people say they want to see. Garrett referred to a shared care plan section in the record and a summary by goals. She acknowledged the challenges in doing this. Little reported that social service providers have their own operational record systems. A dashboard is available for care coordinators to identify patients in the ED or hospital; they can then prioritize their cases. Headers and risk assessment results are also used.

Panelists had several ideas for payment structures to best facilitate integration of services in other communities and populations. Little and Garrett agreed that global capitation models with the right quality measures would be the right approach. For Dobson, incremental steps to global capitation would be a better approach to break down silos among both providers and payers. Resources and infrastructure vary across place. Partial capitation could be introduced for sharing among select providers whose services have the greatest impact on reducing costs. Funding to incent this work across large populations is necessary. Amarasingham talked about the difficulties of defining a population for global capitation. Patients move among providers and jurisdictions. The pathways for all these organizations to build shared care plans have to be developed.

David Lansky asked about capturing data on value. Capturing data on total cost across organizations is difficult. Dobson said that public funding can be leveraged. The public policy on reinvestment of savings in prevention should be examined. Investments at one point will likely yield benefits at very different points. Medicaid populations move and change over time. The schools may be the place to invest. Another panelist referred to potential findings from international research.

In response to a question about the importance of information exchange, Dobson said that connecting multiple health systems, safety net providers, and social service agencies facilitates exchange. Discussion about the lack of a universal identifier ensued. Garnett said that in the beginning, CBOs had no idea about HIE. Now they perceive its value. Little repeated that the inability to match identities is costly to the entire system. Amarashingham acknowledged that hospital competition affects sharing. But the

technical challenge of matching may be primary. Another panelist talked about working with the public health agency for access to death records and other vital records.

Art Davidson asked about capturing plan information directly from the social service providers' own systems. Little indicated that nothing such as that has been attempted, nor is medical information put into social service records. Dobson said that Davidson's question is exactly what providers want. But two-way communication is very difficult. Although his organization has tried to do something toward extracting and inputting data across systems, there are no standards for a uniform identifier and matching. Small FQHC, which are typically behind the curve on technology, could benefit from such a capability. Amarashingham indicated that they intend to develop this capacity in Dallas.

Having observed that the panelists' organizations used different paths to integrate services and information, a member asked about the factors involved in taking these different paths. How did they decide where to start? Amarashingham responded that in Dallas the CBOs did not really have systems; a few had very unique systems. So there was no common place to start. It was easier to put together an enterprise system. Dobson said that in North Carolina, they had built a coordination tool years ago. It has all Medicaid claims data and is based on a public utility concept. Trust in sharing information affects how much is shared. Trust must precede data sharing. Tang asked about ensuring that the non-medical care organizations handle data responsibly. Little said that her organization was careful with access. Access was granted only where it was required to do a job. Compliance officers were involved with training non-medical services providers. Garrett referred to working with CBOs that do not have privacy officers. Providers can link to records based on their functions. Amarasingham reported that the participating organizations actually want only very limited information. Social service organizations are not interested in the medical data. An exception is pharmacists who want all available data.

Charlene Underwood wondered about a trend toward use of the same risk adjustment approach. Garrett said that she wants a uniform approach. Amarashingham believes that the approach should depend on intent and use. Dobson declared that local models work best in North Carolina. Although some standardization could be useful, innovation may be more important.

Tang asked for two recommendations. Panelists responded:

- Develop standards for collection of social determinant data (Little offered to send suggestions for standards)
- Offer incentives to vendors to integrate social and medical information and providers
- Agree on standards for privacy and security across providers offering similar services
- Provide ONC funding to take down silos
- Resolve conflict between state and federal laws on protecting and sharing information
- Build model programs

Panelists indicated that they agreed with their colleagues' nominations.

Public Comment:

Larry Green submitted this comment:

> "This set of presentations reveals the lack of an agreed data model for primary care — with its necessary connectivity with clinical, family, and community partners. Wouldn't a shared conceptual data model be a useful foundation to guide this scattered, important workspace? Who is best positioned to 'call the meeting' to establish the conceptual data model and reach toward establishing the standards to enable it?"

Participant submitted this comment:

"A nationally lead [sic] effort on Community Health Metrics and Measures that is qualitative as well as quantitative, encompassing social media like Instagram and YouTube could be very valuable so communities and funders can work out what 'progress' means. This might be a basket like that used in the Consumer Price Index (CPI) and each community might weight [sic] different factors differently".

PANEL II: How Advanced Health Models are Supporting Whole Health and Wellness for the Individual across the Continuum

Steve Tierney reported on South Central Foundation (SCF) in Alaska, currently in year 1 of meaningful use stage 2. It has NCQA-PCMH level 3 designation and operates two primary care centers and two community health centers serving Alaskan Native communities. He described how and what he learned from his experiences in that environment. The tribe took over the services from the Indian Health Service in the mid-1990s and used this opportunity to totally restructure services. Organizers concluded that documentation interferes with listening to and understanding the patient's story. Much can be automated and done by non-physicians. They put staff of different disciplines into the same room, making referrals more efficient. Initial changes freed up time to analyze outcomes and patterns. They reengineered the workforce to accommodate the scattered settlements of the population. Tierney stated that a high proportion of health care is repetitive monitoring. He sees the office visit as a special moment in time for communication between the staff and the patient. Data can be used in different ways. External data sources can be used to acquire SES and other information; then the data can be clustered to use to allocate resources. All of this provides context. Providers can concentrate on the 10% of the patients who most need medical attention. Not everyone needs an action care plan. Policy makers must understand that adding tasks and information collection means something else will be neglected. The goal is to understand people in their context rather than to apply a disease-centered approach. Throwing interventions into the system is not a good idea. It is better to develop the data infrastructure and look at the system work products.

Fred Rachman, Alliance of Chicago Community Health Services, a HRSA-funded health center controlled network that provides shared HIT background across more than 45 safety net organizations in 16 states, reported that Ed Wagner's Chronic Disease Model, promoted by the Institute for Healthcare Improvement, guides his organization's approach. The technology for automated collection of vital signs at the visit combined with data analytic and reporting capabilities enables the health centers to track health at the population level, inform pre-visit planning and organization of the care team to address the day's schedule, support population management functions, guide performance improvement activities, and highlight trends over time. In Chicago, there is enough density of population seen at the health centers on the Alliance platform to develop community-level heat maps of obesity and other health conditions and characteristics. Individual-level health information can not only set context for care provision, but can contribute to real time public health surveillance. The Alliance participates in a citywide project called Health Link in which data are pooled and, with a matching algorithm, are used to create pictures of health conditions across the city. Building on this experience, the CAPriCorn project, one of the PCORnet projects funded in Chicago, is building a virtual research infrastructure that can go even deeper. The CommRx project, a partnership among the Alliance, the Chicago Health Information Technology Regional Extension Center, and the University of Chicago Center for South Side Health and Vitality Studies enables health problems to be identified and matched through an ontogeny-based algorithm in real time to a comprehensive database of community resources in the consumer's immediate vicinity, to return a real time Healthy Rx given to the patient as part of the visit summary. Aggregate data can help communities develop resources. Technology is only an enabler, and can only be applied within the larger ecosystem of health system design and policies. The current system is focused

on the reimbursable medical intervention, generally delivered at a medical institution. However, the disruptive force of rapidly developing consumer technology, coupled with the experience of consumers in other areas of their lives and the insight that the majority of activity that affects health occurs outside medical institutions, demands that perspective be altered. For health care to advance, reimbursement policies must be changed and investment made in community-based primary and preventive health. The barriers to innovative technology-enabled care are more based in these factors than the technology or willingness to innovate.

In the absence of scheduled panelist Nancy Eldridge, Daniel highlighted several points about Cathedral Square Corporation and Support and Services at Home (SASH). (See Eldridge's submitted written testimony as well as her presentation slides.) SASH serves elders and others with special needs who live in federally-subsidized housing. SASH has reportedly reduced hospitalizations, improved nutrition, increased activity, and reduced Medicare expenditures. 96% of SASH participants are connected with their PCP. Although 53% of clients failed their initial fall risk assessment, over a 2-year period, a 17% decrease in cohort falls occurred. Also, there was a 27% increase in the number of persons with diagnosed hypertension whose blood pressure came under control in the 2-year period. Telemedicine at home is in the future. The data on each participant are entered into Vermont's Central Clinical Registry, a web-based repository with robust reporting and analytic capability. (This is not Vermont's HIE.) The software (DocSite) was developed by a private entity and the current owner decided to drop the health care software line. Vermont is purchasing the DocSite source code and will migrate all data over to be housed at the HIE, Vermont Information Technology Leaders (VITL). Cathedral Square can have access to VITL because it operates a licensed assisted living residence. However, none of the other 21 housing organizations administering SASH have been given access. Eldridge believes that these housing organizations qualify as health care operators under 45 CFR 164.501 and should be allowed to enter into a VITL services agreement on that basis.

Q&A

In response to a question about Healthy Rx, Rachman acknowledged that the information on community resources originally came from a student asset-mapping project. The database is updated annually by students. Consumer feedback is used as well to correct and update information. If more resources were available, it could be made open-table.

Tierney reported that after years of contracting with different companies to conduct patient satisfaction surveys, staff concluded that the information was of little use. Now they use iPods to administer a modified CAHPS daily as patients exit. The information is useful.

Regarding his opinion of meaningful use, Tierney said that having a legible, immediately accessible record is essential in acute care, but is less so in the maintenance work that constitutes most of health care. How to make it work requires ongoing discussion. Rachman observed that the stages of meaningful use recognize the need for more flexibility and innovation. Stage 3 is attempting to get that right.

It was noted that the panelists were reporting on government funded projects. What will happen when funding ends? There is not a business case to support this work. However, the business case may be changing.

Since many apps give instructions on how to merge accounts, something similar may be possible with acquiring information on community assets. HIT should leverage what is happening in other sectors. It is not necessary to fit social determinants data into existing systems, but adjustment can be done for context. Another panelist talked about giving more control to consumers. Providers may need to contemplate their obsolescence.

In response to a question about change in tribal health outcomes, Tierney said that his organization found that care teams ranked the same on all measures over time. That is, a team's rank or score was consistent over different measures and time. They eventually discovered that personality — the ability to connect to the patient — is the key component. Workers are now trained in storytelling. Patient demographic and SES characteristics have changed over time. Young patients are much more engaged and comfortable in communicating with health workers. SCF was willing to invest in the long, long (over generations) term and it paid off. Rachman said that public health surveillance to detect outbreaks requires more volume than his organization produces. However, progress has been made with outcomes. The next area to explore is patient-reported outcomes.

Regarding standards to apply to interconnectivity with community resources and new classes of providers, Rachman approved of structure, but said that a period of innovation is necessary to know what is needed. It is not always useful to share a lot of data; sometimes an alert is all that is needed. Tierney agreed, saying that focusing on the near 5% of high-risk or need patients is sufficient. A Paredo diagram can be sufficient. The definition of the near 5% may vary by regions and communities. Pattern recognition is the key. It is better to use the available data rather than trying to standardize. Define the 5%, analyze that data, and examine the results of interventions. Key strokes indicate thoughts and can be tracked. Mapping of thoughts can be undertaken.

Concerning the next steps for policy, Tierney talked about using the available information and applying new techniques, such as what the grocery industry uses. The health industry can use existing data for pattern matching and prediction. It is not necessary to stuff these data into the EHRs. Data elements can be pulled out for analysis in another platform. The government can fund that other platform. Rachman recommended a focus on data capture and interoperability. Solve patient identification. Encourage learning from experimentation. Do not give up on patient engagement even though the patient summary and portal may not have yielded the expected result. Finally, break down the self-preserving function of institutions.

PANEL III: How Advanced Health Models are Supporting Integrated Care for Individuals with Complex, Chronic Conditions

Sharon Hewner, SUNY Buffalo, submitted written testimony in addition to her presentation slides. She described in great detail how nurse-delivered, evidence-based interventions are administered at a population-level to improve continuity during care transitions from the acute hospital to the community. The process starts with admission, discharge, and transfer (ADT) notifications generated by the hospital and sent to the Regional Health Information Organization (RHIO). The RHIO distributes ADT notifications simultaneously to the pilot primary care sites and to the clinical data repository (CDR). Within the CDR, the ADT notifications are filtered for discharges from the inpatient setting and matched against the practice's subscribe and notify list and the cohort table, which adds information about disease complexity, to create the care transitions alert. The alert is delivered via secure email to the nurse care coordinator's mailbox and triggers her to make an outreach call and complete the tool to assist in developing a care plan, which addresses social determinants of health. Cases that generate an alert are followed to ensure a primary care visit within a week and no 30-day readmission to allow for enhanced visit billing. The RHIO needs to have an infrastructure that supports sending ADT to primary care and CDR and which allows for transmission and storage of Continuity of Care Documents (CCD). The practice must be able to develop a subscribe and notify roster of patients for the nurse care coordinator, be able to transmit a listing of ICD-9 codes (problem list) for their entire roster of patients, have secure email and results delivery with the RHIO, and employ a nurse in the role of care coordinator. The COMPLEXedex™ algorithm creates the cohort table which identifies high-risk cases and the Patient-

Centered Assessment Method (PCAM) developed by the University of Minnesota Department of Family Medicine and Community Health to evaluate how social determinants of health contribute to the risk of readmission. The alert includes information from the ADT notice, such as discharging hospital and discharge diagnosis. Information about the 12 chronic conditions is included from the cohort table to remind the care coordinator of other complicating diagnoses. The relative risk of hospitalization is included to help the coordinator prioritize cases based on disease complexity. Contact information is included to facilitate telephone outreach. The alert instructs the coordinator to contact the patient and provides critical knowledge about the admission and of underlying disease complexity. After speaking to the recently discharged patient, the nurse completes the PCAM and enters the level of complexity for each question as a PCAM laboratory value. The nurse totals the score for each domain by hand, although a web-based PCAM Calculator that incorporates automated scoring, data visualization, and decision support in developing a patient-centered care plan is being developed. Originally, ADT notices were delivered into the primary care EHR. However, the volume of notices that were not actionable overwhelmed the practice. The system was revised to send the notices via secure email to the care coordinator. Emergency visits that do not follow a hospital discharge are forwarded to the triage nurse for follow-up. Recently, the office has been able to use the enhanced primary care billing code for patients meeting the criteria, suggesting a possible approach to sustainability. The care coordinator reports better rapport with patients and patients have appreciated the outreach. Furthermore, patients are more engaged in their care and some have begun to contact the coordinator for questions. The intervention builds on existing capabilities in regional primary care practices and the RHIO is supported by the ONC Beacon program. The project is in the fourth quarter of implementation. Staff is analyzing baseline health outcomes using de-identified data from the New York State Medicaid Data Warehouse (MDW) by individual primary care practice, and has validated the risk-stratification algorithm in both the MDW and EHR. Filters for the ADT notifications have been identified so that care transition alerts are created for high-risk discharges. Initially, there were a large number of false positive alerts that overwhelmed the care coordinator. It was a challenge to identify and correct the problems because the research team was unable to view either ADT notices or Care Transitions Alerts because of required separation of data between the clinical intervention and research evaluation of health outcomes portions of the project. Staff still needs to develop a solution that allows filter of ADTs that go to the care coordinator. In conclusion, Hewner talked about the importance of recognizing new roles for nurses.

Jim Dunford, San Diego Community Information Exchange, showed slides and described the network, which connects the HIE, county departments, select homeless and other social services organizations, and fire and EMS, and embeds case management. The technology works with real-time API integration, single sign-on, auto quick-search, and validates view rights by user role. Other providers and services are to be added over time with frail elderly and disabled persons to be added in July. He emphasized the importance of aligning with 2-1-1 systems. The program was initially a Beacon project. Based on the San Diego experience, he recommended support of interoperability standards, including the National Information Exchange Model (NIEM), Housing and Urban Development Homeless Management Information Systems (HUD HMIS), and the Alliance of Information and Referral Systems (AIRS) taxonomy of providers; and a mandate that federally-funded health care and social service programs share information on mutual clients using endorsed standards for social service interoperability.

Lee Sacks, Advocate Health System, which is the largest network in Illinois, showed slides describing his employer's system. The reimbursement model has shifted considerably since 2010 and now is based 55% on FFS population management, 24% on FFS. The organization has value-based agreements with commercial insurers, Medicare Advantage, Medicare ACOs, and Medicaid ACE, as well as for its employees. IT solutions consist of risk stratification, care management workflow and patient

documentation, web-based data warehouse and reporting, predictive modeling, and advanced disease registries. He presented slides depicting the transformation of raw data into big data and how the latter enable measurement and feedback to improve care. Finally, he presented a list of items that are both barriers and opportunities:

- Health information exchange participation
- Unique patient identifier
- Behavioral health privacy
- Vendor resistance
- Demographic and socioeconomic data
- Post-acute facilities and programs

Q&A

A moderator commented on several themes: the power of a phone call and direct communication with patients; having integrated assessment tools; leveraging CCDs; registries as drivers to improvement; interoperability standards and use of a unique patient identifier; and mandatory sharing of federally-funded information.

San Diego contracts with 2-1-1 to conduct certain functions such as food stamps. Broward County uses 2-1-1 to identify and intervene with very high-risk elders. In San Diego, 2-1-1 brings 6,000 organizations to bear.

Hewner described what occurs with the data that are collected. The social data packets collected when the nurse has the outreach phone call are incorporated into her care transition note and also become discrete data in the laboratory section. When the CCD is produced, it brings both the care transition note and the discrete data together and it goes to the RHIO, which pushes it to the clinical data repository where it is available to any network member. The member must do a lookup for the information. The social information can be tracked over time and used for communication between the acute care hospital, the primary care provider, and the palliative care provider as necessary.

In response to a question about whether the current standards that ONC has promulgated are sufficient to allow nurses to communicate well in these transitions or whether there is a need for more specific standards for nurses to share across settings, a panelist said that part of the problem with a nursing ontology like the Omaha System is that it is not within an interprofessional team. In a community-based setting, a separate ontology is problematic. It would be ideal for the Omaha System to integrate more with other things like SNOMED.

Dumford added that in San Diego the fire and EMS system implemented an EMS hub as a part of the HIE and all real-time data are flowing toward the HIE. And in the future a bidirectional system may be introduced. The most frequent users of EMS can be identified — the homeless, mentally ill, and elderly fallers. Five community paramedics go out and consent these individuals and ask them to agree to a care plan. Sometimes the provider can intervene before the patient is transported to the ED in a subsequent call. This is an attempt to follow the model of the National Health Service in dealing with the homeless in downtown London — fix the worst person first. If homelessness can be reduced in San Diego, then tourism benefits and the business community profits.

Referring to nursing terminologies, Lang said that the goal is interoperability of terms. Terminologies must have descriptions, a concept, and a value. There are other terminologies in addition to Omaha that have been mapped into SNOMED. They are being used without the realization that they are nursing terminologies. Data should not be isolated by discipline. She expressed concern that the discussion had

jumped from physicians and the medical care model to social determinants and the social model not realizing that 3.1 million nurses struggle every day to give care even when they are not eligible providers.

Making two recommendations, a panelist talked about filtering information to support decision-making at the clinical site and keeping information collection on social determinants flexible. Dunford recommended that more work be done to bring EMS systems into HIT and use them to reduce admissions and readmissions. He recommended the development of community health measures with which to incentivize ACOs. Sachs recommended a direct patient identifier and interoperability.

Public Comment:

Carol Bickford, American Nurses Association, commented on the value of using a nursing terminology, which was initially developed for discussions with individual patients. These terminologies are being mapped to SNOMED and are available to capture the richness from nursing care. But SNOMED does not include terms for outcomes and this is an area to consider for development.

Fred Rachman encouraged people to think about and use the rich nursing terminology in care planning.

Workgroup Discussion on Themes from the Day and Wrap-Up

Tang gave each member the opportunity to call out two themes from the testimonies. Responses are condensed as follows:

- Data sources outside of health and metrics to reflect a community commitment.
- Care planning is the right direction. Be sure to be flexible in order to innovate.
- Uniform process for individual identification and uniform protections for patient information are essential.
- Sharing the right information with the right person; standards before mandates; leverage existing methods for communication.
- It is not enough to capture the data. Warehouse and other resources for analysis and use are required. Small organizations do not have these resources. Funding to continue demonstration work is lacking.
- There is information outside of EHRs that is relevant and powerful, and there is information related to precision medicine below the EHRs. Patient identification and interoperability are profound needs.
- Social determinants, the right data, use of available data, and dynamic care plans.
- Learnings from the Alaska organization.
- Sharing the record with social service organizations; how to record and make resources available at the point of care.
- Payment policy is an important lever. Patient identifier and helping understand what can be shared are needs.
- More is being done with social services than realized. More is needed to integrate the individual into HIT tools.
- An individual-facing and centered longitudinal care plan; roadmap of standards for certification that open up to non-medical services.
- Challenges and potential in using extant data to identify patients most likely for interventions.

- A catalog of what people are doing; safe harbor for sharing and learning, prioritizing and minimizing data; patient-facing care plans.
- Structured data capture for social determinants; explore human service standards and methods for measuring total cost of care.
- Community support may be the primary factor for success.
- These organizations have done it. They offer a positive message. Benefits should accrue to those who make the investment.
- Work on a model that combines the pieces described by panelists; work on interdisciplinary care plans beginning with those currently in use; consider what goes to the warehouse.

Kelly Cronic, ONC, spoke about having heard from communities about using incremental changes to show value. Some organizations have successfully integrated social services, reduced readmissions, and used the results to negotiate with payers. Someone needs to help social service organizations with this. There is concern about capturing social determinate data, which suggests an incremental approach. Regarding dual programs, existing organizations are not always used. Standardized community directories would allow everyone to use well-established organizations.

Tang thanked the staff for putting the hearing together. He is interested in working upstream to predict health outcomes rather than concentrating on end-of-life care. Perverse incentives should be removed. For the follow-up meeting June 3, he instructed members to think about the infrastructure and data to improve health within communities. Tapping into existing resources is another thing to consider.

Closing Remarks

Daniel closed the hearing by reminding members that ONC wants recommendations on how the federal government can promote scaling of the successful projects described by panelists. Recommendations should be actionable, have high impact, balance standardization and flexibility, and go beyond ONC to include other HHS agencies as well as other federal partners. They must recognize the limits to federal policy and explicit prohibitions. She is looking for three to five top interventions and the most significant HIT gaps.

Materials

Agenda
Panelist bios
Questions to panelists
Presentation slides
Written testimonies

Meeting Attendance								
Name	06/03/15	06/02/15	05/19/15	05/07/15	04/27/15	03/27/15	03/20/15	02/27/15
Alexander Baker	X	X	X	X	X	X	X	X
Amy Zimmerman				X	X			
Arthur Davidson	X	X	X	X	X	X	X	X

Charlene Underwood	X	X	X	X	X	X	X	X
Cheryl Damberg	X	X	X	X	X	X	X	X
Devin Mann	X	X	X	X		X		
Frederick Isasi								
Ginny Meadows	X	X	X	X	X	X	X	X
Jessica Kahn								
Joe Kimura			X	X	X	X	X	X
John Pilotte								
Lauren Wu	X	X		X				
Lisa Marsch			X	X		X	X	
Lisa Patton	X	X		X		X	X	X
Mark Savage	X	X	X	X	X	X	X	X
Marty Fattig	X		X	X	X		X	X
Michael H Zaroukian	X	X	X	X	X	X	X	X
Neal Patterson	X	X	X	X	X		X	X
Norma Lang	X	X	X	X	X	X	X	X
Patrice Holtz	X	X		X				
Paul Tang	X	X	X	X	X	X	X	X
Robert Flemming								
Samantha Meklir	X	X			X	X	X	X
Shaun Alfreds							X	X
Shawn Terrell	X	X						
Stephan Fihn					X	X		

Suma Nair	X			X	X			
Sumit Nagpal	X	X			X	X		
Terrence O'Malley	X	X	X	X		X	X	X
Terri Postma							X	
Total Attendees	**20**	**18**	**15**	**20**	**17**	**17**	**18**	**16**