

Vulnerable Populations & HIE: Actions, Considerations, and Resources for the State HIE Program

Department of Health & Human Services (HHS) Office of the
National Coordinator for Health Information Technology (ONC)

Connecting to Post-Acute Care (PAC), Long Term Care (LTC), and Behavioral Health (BH) is central for achieving many Meaningful Use and quality measures criteria, and supporting quality, continuity and coordination of care improvements in services covered by Medicare, Medicaid and other payers.

This module has been designed to help guide HIE activities in planning to support inclusion of vulnerable populations with PAC, LTC and BH needs. The following pages highlight how inclusion of these vulnerable populations relates to:

- Meaningful Use (MU) criteria for eligible hospitals (EHs) and eligible professionals (EPs)
- Quality measures for EHs and EPs

The module will be updated to reflect the evolution of MU requirements, standards, certification criteria, and other changes.

Table of Contents

Vulnerable Populations & HIE – Overview	5
Who are “Vulnerable Populations”?.....	5
By the Numbers:	7
State Agencies Engaged with PAC/LTC & BH	12
Adoption of Technology:	13
PAC/LTC	13
Behavioral Health	15
PAC/LTC/BH & the CMS Final Rule (Medicare and Medicaid Programs; Electronic Health Record Incentive Program)	17
PAC/LTC/BH & the ONC Final Rule (HIT: Initial Set of Standards, Implementation Specifications, and Certification Criteria for EHR Technology).....	18
Standards.....	18
Certified EHR Products in PAC/LTC & BH.....	19
State HIE Program Domains and Relationship to Meaningful Use Criteria and PAC/LTC/BH	20
Vulnerable Populations & HIE – Actions & Considerations	22
HIE Actions & Considerations:	22
Vulnerable Populations & HIE – Case Studies	46
Case Studies	46
Vulnerable Populations & HIE – Resources	48
Professional, Provider & Consumer/Advocacy Associations (National & State)	48
Other State Resources	50
Other Links	51
Statutory Requirements	51
ONC/Federal Program Documents	51
Private Sector Documents	52
Appendices	53
Appendix A. Legislative/Regulatory Environment	53
Appendix B. ONC Final Rule (July 28, 2010).....	55

Appendix C. Nursing Home Disease Prevalence (MDS)..... 58
Appendix D. Home Health Disease Prevalence (NAHC)..... 60
Appendix E. Detailed State Case Studies 61

Vulnerable Populations & HIE – Overview

As state leaders support and oversee HIE activities, it is critical that these efforts recognize the needs of, and include, those vulnerable populations (description of legislative/regulatory environment in [Appendix A](#)) who receive a wide array of:

- Health services,
- Post-acute and long-term care (PAC/LTC) services, and
- Behavioral health (BH) services (defined as mental health and/or substance abuse services).

During single episodes of care and over time, these populations receive in-patient and out-patient services from a number of acute care, ambulatory, PAC/LTC, BH, and/or other service providers that are paid by multiple public and private payers (including Medicare, Medicaid, state programs, and other payers). **Inclusion of PAC/LTC and BH providers in the state’s health information exchange activities is expected to promote continuity and coordination of care, improve the quality of care, and reduce duplicative procedures, medical errors, inefficient practices, and costs.**

RECOMMENDED PRACTICE #1

States / State Designated Entities should identify and implement actions needed to:

- Ensure inclusion of “vulnerable populations” in planning /implementing information exchange
- Provide technical assistance to providers serving “vulnerable populations” to enable development/ dissemination of solutions that promote information exchange

Quality and continuity of care improvements, and associated cost reductions anticipated with the implementation of the Meaningful Use program will be, at least, minimized until HIE activities support the exchange of information on behalf of persons using PAC/LTC and/or BH services.

Who are “Vulnerable Populations”?

When referencing “vulnerable populations”, the ONC has relied on the following definition used by the Agency for Health Care Research and Quality (AHRQ):

Vulnerable Populations & HIE – Overview

Vulnerable populations are those who are made vulnerable by their financial circumstances or place of residence, health, age, personal characteristics, functional or developmental status, ability to communicate effectively, and presence of chronic illness or disability.¹

RECOMMENDED PRACTICE #2

It is incumbent upon States/State Designated Entities to define the scope of “vulnerable populations” for purposes of planning and implementing HIE activities.

For purposes of this module, the term “**vulnerable populations**” will focus on the needs of persons, served by PAC, LTC, and BH providers, having:

- long-term physical, cognitive and functional disabilities,
- short-term rehabilitation needs,
- other medically complex and/or chronic illnesses,
- serious mental illness and/or substance abuse disorders, and/or
- developmental disabilities

In addition to receiving ambulatory and acute care services, these individuals also receive a wide array of services from in-patient, home, community-based, and out-patient PAC/LTC and BH providers, many of whom are shown below in [Table 1](#). Many of these providers also contract with and receive extensive support from other ancillary providers including consulting pharmacists, pharmacies, laboratories, therapy groups, etc.

¹ *Beacon Community Cooperative Agreement Program Funding Opportunity Announcement*. Washington, D.C.: U.S. Department of Health and Human Services, Office of the National Coordinator for Health Information Technology, 2009.

Vulnerable Populations & HIE – Overview

Table 1 – Providers of PAC/LTC and BH Services

In-patient Providers of PAC/LTC and BH Services	Home/Community-Based/ Out-Patient Providers of PAC/LTC and BH Services
Skilled nursing facilities (SNFs)	Assisted living facilities
Nursing facilities (NFs)	Home health agencies (HHA) and hospice providers
Long-term acute care hospitals (LTACH)	Home and community-based service providers (such as waiver providers)
Inpatient rehabilitation facilities (IRFs)	Community mental health centers
Intermediate care facilities for mentally retarded (ICFs/MR)	Outpatient substance abuse treatment facilities
Inpatient psychiatric hospitals	Outpatient mental health clinic
Psychiatric residential treatment facilities	Outpatient substance use clinic
State psychiatric hospitals	Partial hospitalization providers
Inpatient psychiatric services of a general hospital	Case management providers
Inpatient substance use services	Mobile crisis services providers
Residential behavioral health treatment facilities	Independent licensed (or certified) practitioners (e.g., psychologists, social workers, family counselors, certified mental health counselors, certified addictions counselors, etc.)
Other Service Settings	
Correctional health services	Other licensed (or certified) Medicaid providers operating within their scope of practice to provide mental/ behavioral health care services (e.g., licensed home care agencies, peer support organizations and consumer/peer run organizations)
Social services	

By the Numbers:

There are many compelling reasons for states to include PAC/LTC and BH settings of care in health information exchange activities. Health Care Reform is prompting the shift from episodic acute care to managing the health of individuals across the health care continuum, especially those living with chronic health conditions, such as those who receive PAC/LTC and BH services. Each year, more than \$200 billion is spent on PAC, LTC and BH services to millions of Americans. These individuals also receive services from physicians, are prescribed multiple medications, and require frequent acute care hospitalizations. [Tables 2](#) and [3](#) below highlight some of the ways that persons who receive PAC/LTC and BH services impact health care services and dollars.

Vulnerable Populations & HIE – Overview

Table 2 – Post-Acute Care/Long-Term Care²

	Nursing Facilities (NF)	Skilled Nursing Facilities (SNF) and SNF/NF	Home Health Agencies	Inpatient rehabilitation facilities (IRF)	Long-term acute care hospitals (LTACH)
# of New Admissions					
<i>Medicare</i>	-	2.56 M Patients (2008)	3.2 M Users/ 6.1 M Episodes (2008)	332,000 Patients (2008)	130,869 Patients (2008)
# of Facilities	~16,000 (2008)	~15,000 (2009)	9,283 (2009)	~1,200 (2008)	386 (2008)
2008 \$					
<i>Medicaid</i>	\$56.3B (2008)		\$4.6B (2006)	-	-
<i>Medicare</i>		\$22.9B (2008)	\$16.9B (2008)	\$5.84B (2008)	\$4.6B (2008)

² Grabowski, David. *Post-Acute and Long-Term Care: A Primer On Services, Expenditures and Payment Methods*. Washington, D.C.: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, Office of Disability, Aging and Long-Term Care Policy, 2010.

Vulnerable Populations & HIE – Overview

Persons receiving services from PAC/LTC providers have numerous encounters and contacts with acute care and ambulatory providers.

- In 2006, more than one-third of Medicare beneficiaries discharged from acute care hospitals were transferred to PAC settings.³
- In 2006, over half of the Medicare beneficiaries discharged from hospitals to PAC settings had episodes of care that involved multiple PAC placements and/or multiple hospital admissions.⁴
- In 2005, persons living in nursing homes made approximately 2.2 million visits to Emergency Departments.⁵
- In 2008, almost 23.8 million Part B Medicare claims were allowed for nursing home physician visits.⁶
- In 2010, a study showed that nursing home residents average 7-8 medications – which would translate to over 15.8 million prescriptions for new admissions alone.⁷

Efficient and effective exchange of clinical information at transitions of care is critical, both for effectiveness of care and for avoidance of unnecessary costs. An American Medical Directors Association survey of 3,000 sequential admissions to skilled nursing facilities from 25 different hospitals found:

- 22% of transfers had no formal summary of information;
- legible summaries were available only 56% of the time;
- secondary diagnoses were missing in 30% of transfers;
- test results were omitted in 31% to 67% of transfers,
- advance directives and code status were absent in 81% of transfers; and

³ Gage, Barbara, Melissa Morley, Pamela Spain, and Melvin Ingber. *Examining Post Acute Care Relationships in an Integrated Hospital System*. Washington, D.C.: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, 2009.

⁴ Ibid.

⁵ Nawar, Eric, Richard Niska, and Jianmin Xu. "National Hospital Ambulatory Medical Care Survey: 2005 Emergency Department Summary." *Advance Data From Vital and Health Statistics*, June 29, 2007.

⁶ "Medicare Part B Physician/Supplier Data By Berenson And Eggers Type Of Service Code (BETOS) CY 2008." *Centers for Medicare and Medicaid Services*. N.p., 2008. Web. 19 Jul 2010. <<http://www.cms.gov/MedicareFeeForSvcPartsAB/Downloads/BETOS08.pdf>>.

⁷ Doshi, Jalpi, Thomas Shaffer, and Becky Briesacher. "National Estimates of Medication Use in Nursing Homes: Findings from the 1997 Medicare Current Beneficiary Survey and the 1996 Medical Expenditure Survey." *Journal of the American Geriatrics Society*. 53.3 (2005): 438-443.

Vulnerable Populations & HIE – Overview

- a legible phone number for the transferring physician was present in only 33% of transfers⁸

Table 3 – Behavioral Health^{9,10}

# of Persons Receiving Behavioral Health Services	
Each year more than 33 million Americans access behavioral health services to treat conditions resulting from mental health or substance use disorders.	
# of BH Providers	
Provider Type	#
Licensed, certified, and other BH providers (e.g., psychiatrists, psychologists, social workers, counselors, others) – 2002	~535,000
Substance abuse treatment facilities - 2007	~14,000
In-patient psychiatric facilities - 2008 (Total)	2,257
<ul style="list-style-type: none"> • Non-governmental free-standing psychiatric hospitals • General hospital psychiatric units • State psychiatric hospitals • Residential treatment centers 	255 1,274 220 508
Outpatient facilities (Total)	13,311
<ul style="list-style-type: none"> • Partial hospitalization and multiservice MH organizations • Community MH centers • Substance use treatment facilities (all counted in “Substance abuse treatment facilities – 2007” shown above) 	1,561 672 11,078
Aggregate Behavioral Health Expenditures (in billions)	
Total (2003)	\$121B
<ul style="list-style-type: none"> • Medicaid • Medicare • SCHIP • Other Federal 	\$30.1B \$8.3B \$1.1B \$6.6B

⁸ Levy, Cari, Anne Epstein, Lori-Ann Landry, and Andrew Kramer. *Literature Review and Synthesis of Physician Practices in Nursing Homes*. Washington, D.C.: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, Office of Disability, Aging and Long-Term Care Policy, 2005.

⁹ Schwalbe, Leslie. *Behavioral Health Providers: Expenditures, Methods and Sources of Payment, Electronic Health Record Incentive Payments for Certain Behavioral Health Providers Policy Descriptions*. Washington, D.C.: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, Office of Disability, Aging and Long-Term Care Policy, 2010.

¹⁰ Manderscheid, Ronald, and Marilyn Henderson. United States. Substance Abuse and Mental Health Services Administration. *Mental Health, United States, 2002.* , 2002. Web. 9 Aug 2010.

Vulnerable Populations & HIE – Overview

<ul style="list-style-type: none"> • States • Other 	<p>\$29B</p> <p>\$45.5B</p>
Other Expenditures on Behalf of Persons with Behavioral Needs	
Costs of Rx for community-based persons with BH needs (2010 est.)	\$23B

Persons with behavioral health disorders require coordination of care among physicians, hospitals and other healthcare providers.

- In 2007, 12.0 million emergency department (ED) visits involved a diagnosis related to a mental health and/or substance abuse (MHSA) condition, accounting for 12.5 percent of all ED visits in the U.S., or one out of every eight ED visits.¹¹
- MHSA-related ED visits were two and a half times more likely to result in hospital admission than ED visits related to non-MHSA conditions – nearly 41 percent of MHSA-related ED visits resulted in hospitalization.¹²
- Depression is one of the top 10 conditions driving medical costs, ranking 7th in a national survey of employers.¹³
- 49% of Medicaid beneficiaries with disabilities have a psychiatric illness. 52% of those who have both Medicare and Medicaid have a psychiatric illness.¹⁴
- People with serious mental illness and who were disabled, had a life span that was up to 25 years shorter and, for those who died earlier, 60% died from mostly preventable diseases.¹⁵
- Many serious MHSA conditions require lifelong management. SAMHSA administrator described how bidirectional integration of MHSA services and health care services can improve quality outcomes and reduce healthcare costs.¹⁶

¹¹ Owens, Pamela, Ryan Mutter, and Carol Stocks. "Mental Health and Substance Abuse-Related Emergency Department Visits Among Adults, 2007." *H-CUP: Healthcare Cost and Utilization Project Statistical Brief #92*. (2010)

¹² Ibid.

¹³ Mauer, Barbara, and Dale Jarvis. *The Business Case for Bidirectional Integrated Care: Mental Health and Substance Use Services in Primary Care Settings and Primary Care Services in Specialty Mental Health and Substance Use Settings*. The Integration Policy Initiative, 2010.

¹⁴ Ibid.

¹⁵ Colton, Craig, and Ronald Manderscheid. "Congruencies In Increased Mortality Rates, Years Of Potential Life Lost, and Causes Of Death Among Public Mental Health Clients In Eight States." *Preventing Chronic Disease*. 3.2 (2006).

¹⁶ Mauer, Barbara, et al, 2010.

Vulnerable Populations & HIE – Overview

RECOMMENDED PRACTICE #3

States/State Designated Entities should support the exchange of clinical information to be transmitted by eligible professionals (EPs) or eligible hospitals (EHs) that is also of high value to PAC/LTC and BH service providers including:

- Patient summary documents
- Advance Directive information
- Medication information
- Test results

State Agencies Engaged with PAC/LTC & BH

PAC/LTC and BH providers engage with, and receive oversight and funding from, a wide array of state and local government agencies. These agencies can include:

- State Medicaid Agency
- Area Agency on Aging
- State Survey Agency
- State Public Health Agencies
- State Mental Health Agency
- Governor's Office
- State Developmental Disability Agency
- State Substance Use Agency
- County Mental Health Agency
- County Developmental Disability Agency
- County Substance Use Agency
- State & County Social Service Agencies
- State & County Correctional Agencies
- Other County and City Agencies as Appropriate for Jurisdiction

Vulnerable Populations & HIE – Overview

RECOMMENDED PRACTICE #4

State/State Designated Entity planning and implementation activities should recognize and include participation by state and local agencies engaged with PAC/LTC and BH providers.

Adoption of Technology:

PAC/LTC

PAC/LTC providers have long-standing federal requirements to complete and electronically transmit standardized assessment instruments for their residents/patients including:

- Minimum Data Set (MDS) 2.0 for NFs, SNFs, and SNF/NFs (transitioning to the MDS3.0 in October 2010)
- Outcome and Information Assessment Set (OASIS) C for Home Health Agencies
- Inpatient Rehabilitation Facility (IRF) Patient Assessment Instrument (PAI) for IRFs

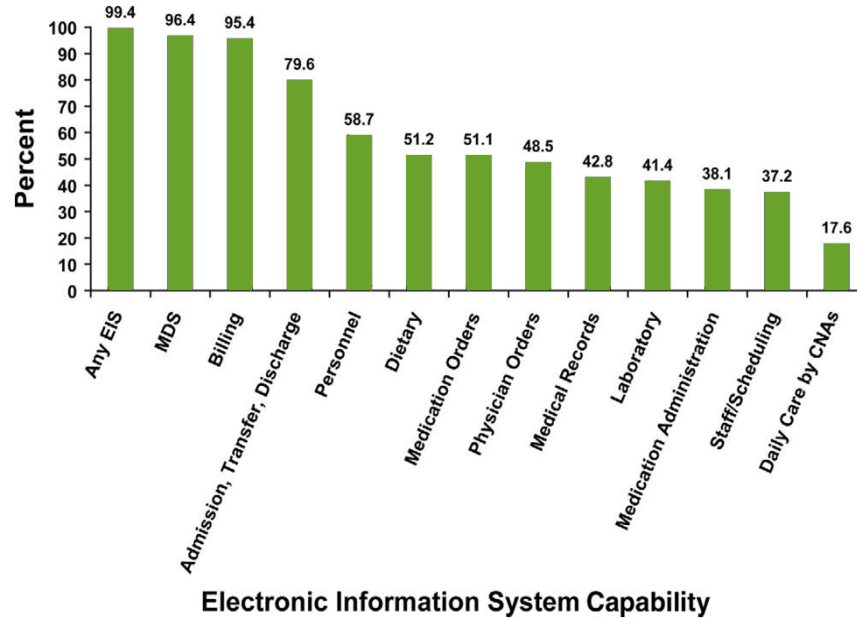
These standardized assessment instruments, submitted in accordance with CMS specified [electronic formats](#) and [requirements](#), are used by state and federal agencies for activities such as reimbursement, survey, and quality monitoring. As a result of these requirements, almost all nursing home, home health, and inpatient rehab providers have the HIT capacity to capture and transmit standardized assessments.

In addition, since there are few PAC/LTC providers who do not participate in Medicare or Medicaid, these providers fall under the HIPAA Transaction and Code Set requirements for electronic claims (HIPAA X12N-837), remittance advice (HIPAA X12N-835), etc.

Further, while federal requirements related to standardized assessment instruments and billing functions set the stage for adoption of technology by PAC/LTC providers, the use of technology has expanded into other clinical areas as shown below for Nursing Homes ([Figure 1](#)) and Home Health Agencies and Hospice ([Figure 2](#)).

Vulnerable Populations & HIE – Overview

Figure 1 – Use of electronic information systems in **NURSING HOMES**: United States, 2004 ¹⁷

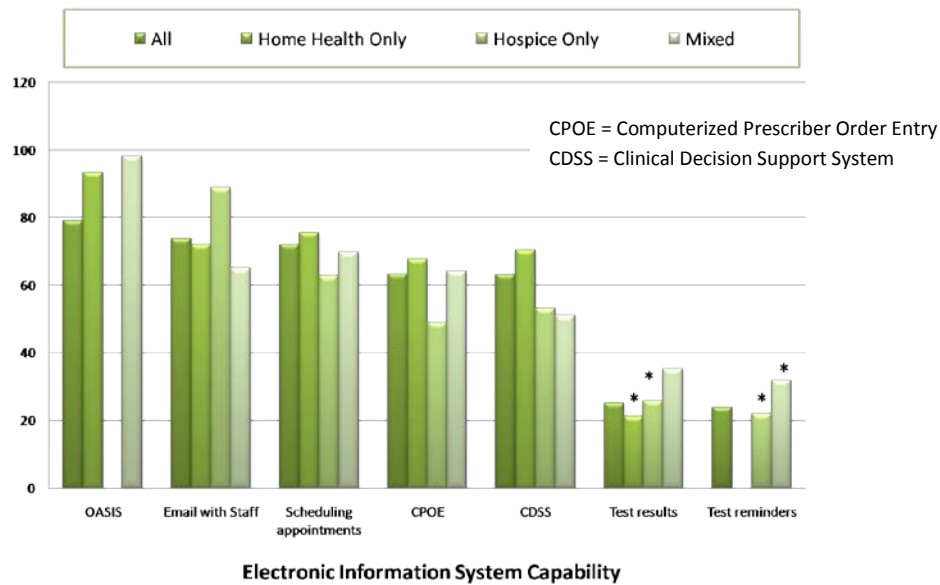


Data based on 2004 National NH survey data collected from a nationally representative sample of 1,174 nursing homes.

¹⁷ Resnick HE, Manard BB, Stone RI, Alwan M. **Use of Electronic Information Systems in Nursing Homes: United States, 2004.** In *Journal of the American Medical Informatics Association (JAMIA)*, 2009;16:179-186. Abstract available on-line at: <http://jamia.bmj.com/content/16/2/179.abstract>; last accessed: 07-18-2010.

Vulnerable Populations & HIE – Overview

Figure 2 – Use of electronic information systems in HOME HEALTH & HOSPICE: United States, 2007¹⁸



Data based on 3,920 home and hospice care agencies reporting use of any system for electronic point of care documentation. Results marked with an “*” should be interpreted with caution due to sample size. The Health and Human Services, National Center for Health Statistics (NCHS) conducts this survey and provides reporting guidelines to assist readers with understanding the reliability of these estimates. These data are reported using the NCHS guidelines.

Behavioral Health

In 2009 a survey was conducted in which almost 300 behavioral health providers responded to questions about HIT adoption. Respondents to the survey represented:

- Community behavioral health provider
- Hospital or psychiatric unit (includes free-standing psychiatric hospital, psychiatric unit in general hospital)
- Residential facility
- State or county provider
- Private clinical group practice
- Substance abuse or addictions provider
- Managed care organization
- Other (includes other behavioral health provider and other provider)

The findings in [Figure 3](#) and [Figure 4](#) below show the level of HIT implementation reported across all survey responders.

¹⁸ Resnick HE, Alwan M. **Use of Health Information Technology in Home Health and Hospice Agencies: United States, 2007.** In *Journal of the American Medical Informatics Association (JAMIA)*, 2010;17:389-395. Abstract available on-line at: <http://jamia.bmj.com/content/17/4/389.abstract>; last accessed: 07-18-2010

Vulnerable Populations & HIE – Overview

Figure 3 – Use of electronic information systems (clinical components) in Behavioral Health Settings: United States 2009 ¹⁹

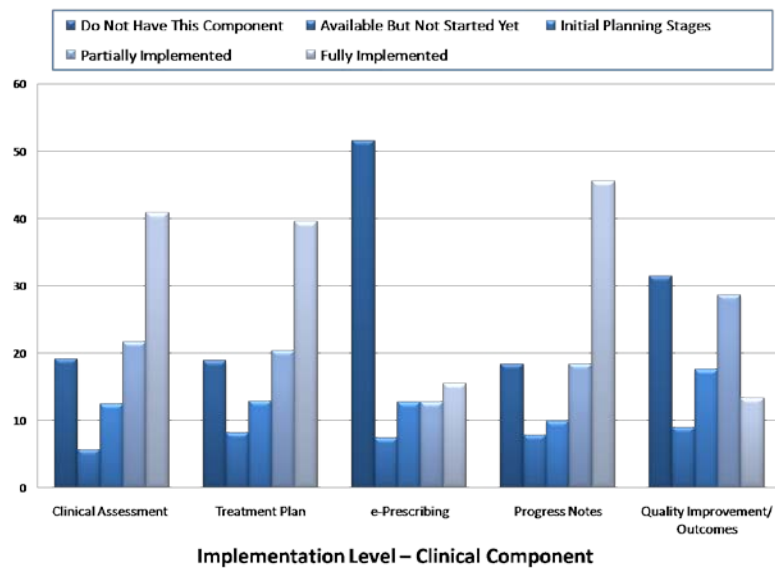
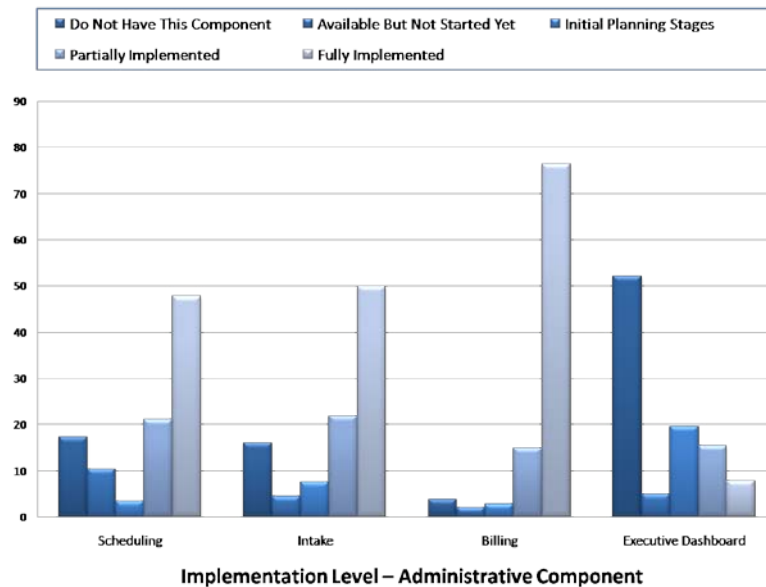


Figure 4 – Use of electronic information systems (administrative components) in Behavioral Health Settings: United States, 2009 ²⁰



¹⁹ Lefkowitz, Paul. *Behavioral Health/Human Services Information Systems Survey*. Software Technology Vendors Association, National Council for Community Behavioral Healthcare, Mental Health Corporations of America, and National Association of Psychiatric Health Systems, 2009.

²⁰ Lefkowitz, Paul, 2009.

Vulnerable Populations & HIE – Overview

PAC/LTC/BH & the CMS Final Rule (Medicare and Medicaid Programs; Electronic Health Record Incentive Program)

In general, the [CMS EHR Incentive Program final rule](#) implements provisions that provide incentive payments to eligible professionals (EPs), eligible hospitals and critical access hospitals (CAHs) participating in Medicare and Medicaid that demonstrate meaningful use of certified electronic health record (EHR) technology. This final rule includes initial Meaningful Use criteria and quality measure specifications that EPs, eligible hospitals, and CAHs must meet to qualify for incentive payments.

Meaningful Use measures in the Final Rule that are particularly critical for PAC, LTC, and BH patients and providers include:

Table 4 – Stage 1 Meaningful Use Measures

Information Exchange	Stage 1 Meaningful Use Measures
Patient summary documents	<ul style="list-style-type: none">The EP, eligible hospital or critical access hospital (CAH) who transitions a patient to another setting of care or provider of care, or who refers a patient to another provider of care, should provide summary of care record for each transition of care or referral
Advance Directive information	<ul style="list-style-type: none">Record advance directives for patients 65 or older
Medication information	<ul style="list-style-type: none">Use CPOE for medication orders directly entered by any licensed healthcare professional who can enter orders into the medical record per state, local and professional guidelinesGenerate and transmit permissible prescriptions electronically (eRx)Maintain active medication listMaintain active medication allergy listThe EP, eligible hospital or CAH who receives a patient from another setting of care or provider of care, or who believes an encounter is relevant should perform medication reconciliation
Test results	<ul style="list-style-type: none">Incorporate clinical lab test results into certified EHR technology as structured data

(See specific considerations in [Table 7](#) for how the measures relate to PAC/LTC and BH providers).

There are also clinical quality measures in the final rule that are particularly critical for PAC, LTC, and BH patients and providers. Certain quality measures for EPs may include patients receiving services by PAC/LTC/BH providers, such as measures addressing:

- Diabetes
- Hypertension
- Depression
- Alcohol and Other Drug Dependence Treatment

In calculating these CMS Quality Measures, the EP may need to take into account the service the EP provides to persons residing in or being treated by PAC/LTC/BH providers.

Vulnerable Populations & HIE – Overview

(See considerations in [Table 8](#)).

RECOMMENDED PRACTICE #5

- State HIT coordinators should coordinate with regional extension centers to consider the need for technical assistance to EPs to ensure proper construction and calculation of the EHR Incentive Program QMs.

PAC/LTC/BH & the ONC Final Rule (HIT: Initial Set of Standards, Implementation Specifications, and Certification Criteria for EHR Technology)

Standards

States and SDEs are required to plan for and enable a statewide HIE strategy that complies with adopted HIT standards put forth by the [ONC Final Rule](#) and supports implementation of the Meaningful Use program.

PAC/LTC and BH providers require the use of many of the ONC-adopted standards including the standards that support the following functionality:

- Patient Summary Record
- Electronic Prescribing

Of these initially adopted standards, the following will have many near term quality and cost benefits for PAC/LTC and BH providers.

Vulnerable Populations & HIE – Overview

Table 5 – Beneficial Adopted Standards

Functionality	Adopted Standard per ONC Final Rule
Patient Summary Record	<ol style="list-style-type: none"> 1. Health Level Seven Clinical Document Architecture (CDA) Release 2, Continuity of Care Document (CCD) <ul style="list-style-type: none"> • Implementation Specification – The Healthcare Information Technology Standards Panel (HITSP) Summary Documents Using HL7 CCD Component HITSP/C32 2. ASTM E2369 Standard Specification for Continuity of Care Record and Adjunct to ASTM E2369
Electronic Prescribing	<ol style="list-style-type: none"> 1. The National Council for the Prescription Drug Programs (NCPDP) Prescriber/ Pharmacist Interface SCRIPT standard, Implementation Guide, Version 8, Release 1 (Version 8.1) October 2005 2. NCPDP SCRIPT Standard, Implementation Guide, Version 10.6

RECOMMENDED PRACTICE #6

- States/State Designated Entities should consider steps to advance the use of adopted standards by providers serving vulnerable populations.

Certified EHR Products in PAC/LTC & BH

[HITECH](#) requires the Secretary of HHS to invest funds to support the development and adoption of appropriately-certified EHRs for health care providers who are not presently eligible for Meaningful Use incentive payments under Medicare and Medicaid.

Generally, PAC/LTC and BH providers will require the same functionalities from EHR products as those specified in the CMS Medicare and Medicaid EHR Incentive Program, and the ONC HIT: Initial Set of Standards, Implementation Specifications, and Certification Criteria for EHR Technology.

- In some instance these standards, implementation specifications, and criteria are particularly critical for PAC, LTC, and BH patients and providers, (e.g. those supporting

Vulnerable Populations & HIE – Overview

patient summary documents, advance directive information, medication information, and test results - see specific considerations in [Table 7](#)).

- In other instances, PAC, LTC, and BH providers may require EHR functionalities for which ONC has not yet adopted EHR standards, implementation specifications, or criteria (e.g. Advance directives, physical functioning and cognitive functioning - see specific considerations in [Table 7](#)).
- Finally, in some instances, PAC, LTC, and BH providers have identified EHR standards, implementation specifications, and criteria adopted in the ONC regulations that are not applicable to their setting of care (e.g. mandatory quality measurement activities in PAC/LTC are a distinct, CMS process unrelated to PQRI measures - see specific considerations in [Table 7](#)).

PAC/LTC & BH EHR Product Certification Activities

Since 2004, the PAC/LTC and BH communities have been actively involved identifying functional requirements for their EHR systems through HL7 and the Certification Commission for Health Information Technology (CCHIT). Information related to CCHIT 2011 certification programs for PAC/LTC and BH EHR products is available at www.cchit.org.

State HIE Program Domains and Relationship to Meaningful Use Criteria and PAC/LTC/BH

While PAC/LTC and most BH providers are not eligible for the Meaningful Use incentives provided by the HITECH Act, there are increasing numbers of forward thinking providers from these communities who are eager to engage with HIEs to advance timely, effective electronic exchange of information with their inpatient and ambulatory care partners. The Meaningful Use and quality measures provide an excellent framework for analyzing the “Meaningful Use touchpoints” for these providers and identifying opportunities that represent “low hanging fruit” for electronic health information exchange. A workgroup of PAC/LTC and BH experts undertook such an analysis with the goal of identifying those touchpoints, and the HIE actions and considerations that allow PAC/LTC and BH providers to be included in information exchange. The following section of this module, “[Actions & Considerations](#)”, presents a synthesis of this analysis activity. Using the ONC’s five domains for HIE activities as the structure (i.e. Governance, Finance, Technical Infrastructure, Business and Technical Operations, and Legal/Policy), this module highlights:

Vulnerable Populations & HIE – Overview

- General questions/topics that state HIT coordinators may wish to consider with respect to each of these domains to support HIE on behalf of these vulnerable populations and their providers;
- Specific issues that arise from certain Meaningful Use measures required for the Eligible Professional and Eligible Hospital EHR incentive program that are also important and applicable to the vulnerable populations described in this module and to the providers who serve them; and
- Activities undertaken in a few states to include vulnerable populations and their providers in HIE activities in those states.

Vulnerable Populations & HIE – Actions & Considerations

HIE Actions & Considerations:

- State HIT coordinators may wish to consider the following questions/topics in [Table 6](#) for each HIE domain (Governance, Finance, etc.) and their relevance for HIE for vulnerable populations and the PAC/LTC and BH providers.
- State HIT coordinators may wish to consider the following specific issues in [Table 7](#) that arise from certain Meaningful Use measures required for the Eligible Professional and Hospital EHR incentive program that are applicable to the vulnerable populations and the PAC/LTC and BH providers who serve them.
- State HIT coordinators may wish to consider certain issues when the CMS Quality Measures for EPs under the Meaningful Use rule such as those in [Table 8](#) include patients receiving services by PAC/LTC/BH providers.

While PAC/LTC and most BH providers are not eligible for the Meaningful Use incentives provided by the HITECH Act, there are increasing numbers of providers from these communities who are actively pursuing engagement with data exchange providers to advance timely, effective electronic exchange of information with their inpatient and ambulatory care partners. The Meaningful Use and quality measures provide an excellent framework for analyzing the touchpoints of these providers and identifying the opportunities that represent “low-hanging fruit” for information exchange. A workgroup of PAC/LTC and BH experts undertook such an analysis with the goal of identifying those touchpoints and the HIE actions and considerations that allow PAC/LTC and BH providers to be included in information exchange. The following tables present a synthesis of this analysis.

Vulnerable Populations & HIE – Actions & Considerations

Table 6 – General Actions and Considerations for Vulnerable Populations

Recommended Practices (Described In Overview)	
Overview Section	Action
Overview	<ol style="list-style-type: none"> 1. States/State Designated Entities should identify and implement actions needed to: <ol style="list-style-type: none"> a. Ensure inclusion of “vulnerable populations” in planning/implementing information exchange b. Provide technical assistance to providers serving “vulnerable populations” to enable development/ dissemination of solutions that promote information exchange
Who are “Vulnerable Populations”?	<ol style="list-style-type: none"> 2. It is incumbent upon States/State Designated Entities to define the scope of “vulnerable populations” for purposes of planning and implementing HIE activities.
By the Numbers:	<ol style="list-style-type: none"> 3. States/State Designated Entities should support the exchange of clinical information to be transmitted by EHs or EPs that is also of high value to PAC/LTC and BH service providers including: <ol style="list-style-type: none"> a. Patient summary documents b. Advance Directive information c. Medication information (e.g. e-Prescribing, medication history, reconciled medication list, medication allergy list) d. Test results (lab/radiology/pathology)
State Agencies Engaged with PAC/LTC & BH	<ol style="list-style-type: none"> 4. State/State Designated Entity planning and implementation activities should recognize and include participation by state and local agencies engaged with PAC/LTC and BH providers.
PAC/LTC/BH & the CMS Final Rule (Medicare and Medicaid Programs; Electronic Health Record Incentive Program)	<ol style="list-style-type: none"> 5. State HIT Coordinators should coordinate with Regional Extension Centers to consider the need for technical assistance to EPs to ensure proper construction and calculation of the EHR Incentive Program QMs.

Vulnerable Populations & HIE – Actions & Considerations

PAC/LTC/BH & the ONC Final Rule (HIT: Initial Set of Standards, Implementation Specifications, and Certification Criteria for EHR Technology)	6. States/State Designated Entities should consider steps to advance the use of adopted standards by providers serving vulnerable populations.		
General Considerations (Organized By HIE Domain)			
HIE Domain	Consideration		
Governance Domain	1. Does the State HIE oversight entity include representation by providers and consumers of PAC/LTC and BH services as part of the Governance Entity/Process?		
	<table border="1"> <tr> <td data-bbox="466 581 661 971" style="background-color: #d9ead3;"> PAC/LTC: </td> <td data-bbox="661 581 1919 971"> 1. Recommended attributes for PAC/LTC setting representatives to governance and/or oversight entity: <ul style="list-style-type: none"> a. Representatives from public & private sector, long term and post acute care services, and consumers/consumer advocates (see association listing under Resources) b. Expertise in requirements related to the clinical information to be exchanged at transitions of care including, hospitalizations/re-hospitalizations, and admission to post-acute and long term care from other care settings c. Expertise in requirements related to the clinical information to be exchanged during provision of services throughout the shared care of residents receiving post-acute and long-term care services (e.g. exchanging information between attending physicians, pharmacies and the long term/post acute care provider) </td> </tr> </table>	PAC/LTC:	1. Recommended attributes for PAC/LTC setting representatives to governance and/or oversight entity: <ul style="list-style-type: none"> a. Representatives from public & private sector, long term and post acute care services, and consumers/consumer advocates (see association listing under Resources) b. Expertise in requirements related to the clinical information to be exchanged at transitions of care including, hospitalizations/re-hospitalizations, and admission to post-acute and long term care from other care settings c. Expertise in requirements related to the clinical information to be exchanged during provision of services throughout the shared care of residents receiving post-acute and long-term care services (e.g. exchanging information between attending physicians, pharmacies and the long term/post acute care provider)
	PAC/LTC:	1. Recommended attributes for PAC/LTC setting representatives to governance and/or oversight entity: <ul style="list-style-type: none"> a. Representatives from public & private sector, long term and post acute care services, and consumers/consumer advocates (see association listing under Resources) b. Expertise in requirements related to the clinical information to be exchanged at transitions of care including, hospitalizations/re-hospitalizations, and admission to post-acute and long term care from other care settings c. Expertise in requirements related to the clinical information to be exchanged during provision of services throughout the shared care of residents receiving post-acute and long-term care services (e.g. exchanging information between attending physicians, pharmacies and the long term/post acute care provider) 	
	<table border="1"> <tr> <td data-bbox="466 971 661 1198" style="background-color: #d9ead3;"> BH: </td> <td data-bbox="661 971 1919 1198"> 1. Recommended attributes for BH setting representative to governance and/or oversight entity: <ul style="list-style-type: none"> a. Representatives from public & private sector, mental health & substance abuse, and consumers/consumer advocates b. Expertise in state specific requirements related to the clinical information to be exchanged (e.g. medications)/ privacy/ security/release of information, consent) </td> </tr> </table>	BH:	1. Recommended attributes for BH setting representative to governance and/or oversight entity: <ul style="list-style-type: none"> a. Representatives from public & private sector, mental health & substance abuse, and consumers/consumer advocates b. Expertise in state specific requirements related to the clinical information to be exchanged (e.g. medications)/ privacy/ security/release of information, consent)
BH:	1. Recommended attributes for BH setting representative to governance and/or oversight entity: <ul style="list-style-type: none"> a. Representatives from public & private sector, mental health & substance abuse, and consumers/consumer advocates b. Expertise in state specific requirements related to the clinical information to be exchanged (e.g. medications)/ privacy/ security/release of information, consent) 		
2. Have specific PAC/LTC/BH goals and strategies (including coordinating among all agencies that "touch" providers and consumers of PAC/LTC/BH), been raised and integrated into the governance and/or oversight process? 3. Are other state agencies/programs involved in financing, service delivery, and/or monitoring PAC/LTC and BH services involved in the governance and/or oversight process? 4. Does the governance and/or oversight process recognize the unique federal requirements surrounding alcohol/substance abuse			

Vulnerable Populations & HIE – Actions & Considerations

	<p>(A/SA) information found at 42 CFR Part 2 and ensure that the HIE entity:</p> <ol style="list-style-type: none"> a. Has policies in place that are consistent with those regulations, and b. Supports provider and HIE knowledge and implementation of the regulations?
<p>Finance Domain</p>	<ol style="list-style-type: none"> 1. In consideration of HIE sustainability, has the HIE service provider identified: <ol style="list-style-type: none"> a. Research/gaps-in-research for HIE on behalf of persons with PAC/LTC and BH needs? b. Specific health information exchange services needed to support PAC/LTC and BH settings of care? c. Opportunities for value added services (e.g. clinical decision support)?
<p>Technical Infrastructure Domain</p>	<ol style="list-style-type: none"> 1. Has the state HIE oversight entity identified for PAC/LTC and BH providers the availability of/gaps in: <ol style="list-style-type: none"> a. Architecture, b. Hardware, c. Software, d. Applications, e. Network configurations, and f. Other technological aspects that physically enable the technical services for HIE in a secure and appropriate manner? 2. Has the state HIE oversight entity given consideration to the: <ol style="list-style-type: none"> a. Business and Use Cases for HIE; b. Patient choice mode (state HIT coordinators should explore applicable privacy and security requirements in their state and consider how patient choice will be considered for HIE activities); c. Availability of Standards to support measures on behalf of persons receiving PAC/LTC and/or BH services; and d. Need for and availability of interfaces between EP/EH certified EHR systems and certified EHR systems in PAC/LTC and/or BH? (For example, has the state HIE entity identified the availability of certification criteria and certified EHR products for PAC/LTC and BH providers?) 3. Has the HIE oversight entity identified how: <ol style="list-style-type: none"> a. PAC/LTC/BH certified EHR systems interoperate with EP & EH certified EHR systems (e.g., hospitals, care managers, physical health care providers); and b. EP & EH certified EHR systems interoperate with PAC/LTC/BH certified EHR systems? 4. Do the technical elements comport with all implementing state and Federal privacy laws and organizational policies?

Vulnerable Populations & HIE – Actions & Considerations

	<p>5. Is the HIE Entity’s technical infrastructure compliant with federal and state requirements?</p>
<p>Business & Technical Operations Domain</p>	<ol style="list-style-type: none"> 1. Has the state oversight entity for HIE taken into account the needs of PAC/LTC and BH providers in defining the HIE services to be offered? <ol style="list-style-type: none"> a. Requirements, b. Process design, c. Functionality development, d. Project management, e. Help desk, f. Systems maintenance, g. Change control, h. Program evaluation, and i. Reporting capabilities. 2. What barriers must be removed to measure MU/quality measures that are also applicable to/inclusive of persons who receive PAC/LTC and/or BH services? 3. What activities could be undertaken to remove barriers to the inclusion of PAC/LTC and BH providers in HIE activities (e.g. federal, state, standard, certification, provider outreach activities)? 4. Has the state oversight HIE entity consulted with all state programs involved in paying for services, delivering services to, and monitoring quality of services to persons with PAC/LTC and BH needs? 5. Do the technical elements comport with all implementing state and federal privacy laws and organizational policies? 6. Has the state oversight HIE considered how provision of technical assistance (e.g. through Regional Extension Centers) to PAC/LTC and BH providers supports integration of health information exchange into provider workflows?
<p>Legal/Policy Domain</p>	<ol style="list-style-type: none"> 1. Have persons with PAC/LTC and BH needs been included as the state HIE oversight entity considered: <ol style="list-style-type: none"> a. Policy frameworks, b. Privacy and security requirements, c. Data sharing agreements, d. Laws, e. Regulations, and f. Multi-state policy harmonization activities?

Vulnerable Populations & HIE – Actions & Considerations

2. Is the state's HIE policy framework consistent with federal policy and state laws, including a determination as to whether the state choice model supports or impedes federal substance abuse and/or state mental health laws?
3. Has the state HIE addressed (consistent w/ federal and State law) whether individuals may opt in and/or opt out of HIE activities, and if so, under what conditions?
4. Have HIE service providers developed consistent protocols for physical and BH care providers to share information, consistent with unique privacy requirements?
5. Has the state HIE oversight entity taken into account restrictions on use and/or disclosure of substance use and mental health information required by [42 CFR Part 2 \(Confidentiality of Alcohol and Drug Abuse Patient Records\)](#) and any applicable state mental health laws?
NOTE: Generally speaking, about 50% of policies regarding HIE and release of information are established at the state level.
6. Has the state HIE oversight entity taken into account other state privacy and confidentiality requirements (e.g. HIV rules, etc.)?
7. Do state laws/regulations impede health information exchange for BH providers?
8. Has the state HIE oversight entity considered how permissible donations of interoperable EHR software between hospitals, physicians and other health care entities could be leveraged to advance health information exchange with PAC/LTC and BH providers? See:
 - *CMS August 8, 2006 Final Rule:* [Medicare Program; Physicians Referrals to Health Care Entities With Which They Have Financial Relationships; Exceptions for Certain Electronic Prescribing and Electronic Health Records Arrangements \(71 FR 45140\)](#)
 - *OIG August 8, 2006 Final Rule:* [Medicare and State Health Care Programs: Fraud and Abuse; Safe Harbors for Certain Electronic Prescribing and Electronic Health Records Arrangements Under the Anti-Kickback Statute \(71 FR 45110\)](#)
9. Has the state HIE oversight entity consulted with appropriate stakeholders/organizations (i.e., guidance from SAMHSA)?
10. What are the state's licensing and certification rules regarding HIE within and across states?
11. Has the state HIE oversight entity explored the implications of information exchange on Medicaid contracts with providers?
12. Have any providers in the state formed Qualified Service Organizations (QSO) or other similar organizations? The use of data by QSOs and other similar organizations may affect the conditions under which data is exchanged between provider members of the QSO.

Vulnerable Populations & HIE – Actions & Considerations

Table 7 – Specific Actions and Considerations for Vulnerable Populations Related to Meaningful Use Criteria

<p>MU Objective: Use CPOE for medication orders directly entered by any licensed healthcare professional who can enter orders into the medical record per state, local and professional guidelines. <i>(Core Set Measure)</i></p> <p>MU Measure: More than 30% of unique patients with at least one medication in their medication list seen by the EP or admitted to the eligible hospital’s or CAH’s inpatient or emergency department (POS 21 or 23) have at least one medication order entered using CPOE.</p>		
HIE Domain	Action/Consideration	
Governance	Behavioral Health:	<ol style="list-style-type: none"> HIE agreements with pharmacy and PBM end-users need to recognize prohibition on re-disclosure of prescription information that identifies an individual as a substance abuser, when being prescribed by a provider in a 42 CFR Part 2 program.
Technical Infrastructure	PAC/LTC:	<ol style="list-style-type: none"> <p>CMS published the Interim Final Rule (IFR) titled Medicare Program; Identification of Backward Compatible Version of Adopted Standard for E-Prescribing and the Medicare Prescription Drug Program (NCPDP SCRIPT 10.6) on July 1, 2010.</p> <ul style="list-style-type: none"> This IFR, with an effective date of July 1, 2010, names NCPDP SCRIPT 10.6 as a backward compatible update of the NCPDP SCRIPT 8.1 standard adopted under earlier iterations of the e-Prescribing rule. Versions of NCPDP SCRIPT prior to 10.2 do not accommodate the “three-way prescribing communications” between facility, physician, and pharmacy generally used by nursing home providers. With the adoption of the NCPDP SCRIPT 10.6 standard in the IFR, an environment is created that will enable nursing homes to engage in e-prescribing. While nursing homes are presently not required to use the CMS e-prescribing standards, the CMS IFR indicated that future proposed rule making will require nursing homes to adopt identified e-prescribing standards. <i>Resources:</i> <ul style="list-style-type: none"> HITSP Communicate Ambulatory and Long Term Care Prescription v1.0 (CAP 117) - PAC/LTC was included in the use case for this capability. HITSP Medication Orders Transaction Package v1.2 (TP 43) – PAC/LTC was included in the use case for this

Vulnerable Populations & HIE – Actions & Considerations

		transaction package.
	Behavioral Health:	<ol style="list-style-type: none"> 1. State HIE Governance Entities should assure technology to control down-stream uses and disclosures of prescription information. 2. State HIE Governance Entities should assure appropriate policies to restrict down-stream uses and disclosures of prescription information per 42 CFR Part 2 requirements and any applicable state mental health laws.
Business & Technical Operations	Behavioral Health:	<ol style="list-style-type: none"> 1. For protection of privacy/security and for appropriate disclosure of information as per 42 CFR Part 2, HIEs should be aware of and track participants in qualified service organization agreements established by providers with pharmacies, PBMs, others that receive pharmacy information and other providers.
Legal/Policy	Behavioral Health:	<ol style="list-style-type: none"> 1. 42 CFR Part 2, and mental health laws in some states, restricts use and/or disclosure of pharmacy information. This should be addressed through program policies such that, where relevant, providers should obtain patient consent for disclosures of pharmaceutical prescription, dispensing, and diagnosis information. 2. Explore HIE engagement in multi-state/federal efforts to modify 42 CFR Part 2 or state regulations to allow for sharing of alcohol/substance abuse information for treatment & safety and protecting this information from re-disclosure.
<p>MU Objective: Implement drug-drug and drug-allergy interaction checks. (Core Set Measure)</p> <p>MU Measure: The EP/eligible hospital/CAH has enabled this functionality for the entire EHR reporting period.</p>		
HIE Domain	Action/Consideration	
Governance	Behavioral Health	<ol style="list-style-type: none"> 1. Governance structures should consider adoption of policies that require use of technologies that support adherence to federal and state laws while also performing critical health functions (such as the masking of health information from Part 2 programs during drug-drug interactions).
Technical Infrastructure	Behavioral Health:	<ol style="list-style-type: none"> 1. If e-prescribing services are offered that include clinical decision support such as drug-drug/drug-allergy/drug-formulary checking, use of masking technology may be necessary to protect substance use information as required by 42 CFR Part 2 and/or applicable state law.
Business & Technical Operations	Behavioral Health:	<ol style="list-style-type: none"> 1. When a drug interaction is provided without identifying the specific drugs, providers should establish a protocol for changing the prescription or contacting the patient to request more information about the drugs they are taking. Providers should inform patients of potential risks to health when pharmacy information is withheld and

Vulnerable Populations & HIE – Actions & Considerations

		whether certain medications may not be prescribed due to lack of complete information.
Legal/Policy	PAC/LTC:	<ol style="list-style-type: none"> 1. The majority of nursing home residents receive their medications through institutional pharmacies contracted by the provider. Institutional pharmacies operate under specific regulations from the State Board of Pharmacy, so it is important to include this Board in any discussions between Eligible Hospitals/Professionals and Nursing Homes. 2. In the PAC/LTC setting, coordination of pharmacy services between the facility/provider and the off-site pharmacy assure drug-drug, drug-allergy, drug formulary checks are completed. The pharmacist in the PAC/LTC setting becomes the final check because they are responsible for the dispensing of the medications that will be administered to/by the patient.
	Behavioral Health:	<ol style="list-style-type: none"> 1. Federal laws protects the privacy of certain medications that identify an individual as a substance abuser, as do some state laws for drugs related to mental disorders.
<p>MU Objective: Generate and transmit permissible prescriptions electronically (eRx) (Core Set Measure)</p> <p>MU Measure: More than 40% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology.</p>		
HIE Domain	Action/Consideration	
Governance	Behavioral Health:	<ol style="list-style-type: none"> 1. Privacy rules should establish that HIE intermediaries should not be able to access protected information from transmission information. 2. DEA regulations now permit the transmission of controlled substances which may require new HIE governance policies.
Technical Infrastructure	PAC/LTC:	<ol style="list-style-type: none"> 1. CMS published the Interim Final Rule (IFR) titled Medicare Program; Identification of Backward Compatible Version of Adopted Standard for E-Prescribing and the Medicare Prescription Drug Program (NCPDP SCRIPT 10.6) on July 1, 2010. <ul style="list-style-type: none"> • This IFR, with an effective date of July 1, 2010, names NCPDP SCRIPT 10.6 as a backward compatible update of the NCPDP SCRIPT 8.1 standard adopted under earlier iterations of the e-Prescribing rule. • Versions of NCPDP SCRIPT prior to 10.2 do not accommodate the “three-way prescribing communications”

Vulnerable Populations & HIE – Actions & Considerations

		<p>between facility, physician, and pharmacy generally used by nursing home providers.</p> <ul style="list-style-type: none"> • With the adoption of the NCPDP SCRIPT 10.6 standard in the IFR, an environment is created that will enable nursing homes to engage in e-prescribing. • While nursing homes are presently not required to use the CMS e-prescribing standards, the CMS IFR indicated that future proposed rule making will require nursing homes to adopt identified e-prescribing standards.
	Behavioral Health:	<ol style="list-style-type: none"> 1. Technology transmission standards should promote privacy of 42 CFA Part 2 substance abuse information 2. Non-authorized users should not be able to access identifying information in its transition state.
Business & Technical Operations	Behavioral Health:	<ol style="list-style-type: none"> 1. Pharmacies and other end users may need education on BH privacy requirements.
Legal/Policy	Behavioral Health:	<ol style="list-style-type: none"> 1. 42 CFR Part 2, and mental health laws in some states, restricts use and/or disclosure of pharmacy information. This should be addressed through program policies such that, where relevant, providers should obtain patient consent for disclosures of pharmaceutical prescription, dispensing, and diagnosis information.
<p>MU Objective: Maintain an up-to-date problem list of current and active diagnoses. <i>(Core Set Measure)</i></p> <p>MU Measure: More than 80% of all unique patients seen by the EP or admitted to the eligible hospital’s or CAH’s inpatient or emergency department (POS 21 or 23) have at least one entry or an indication that no problems are known for the patient recorded as structured data.</p>		
HIE Domain	Action/Consideration	
Technical Infrastructure	Behavioral Health:	<ol style="list-style-type: none"> 1. Assure technical infrastructure can support maintenance of the privacy of diagnoses that reveal information protected under federal and state laws. 2. The HIE infrastructure will need to accommodate transfer of the 5 axis DSM and/or SNOMED codes between health providers.
Business & Technical Operations	Behavioral Health:	<ol style="list-style-type: none"> 1. If DSM is not used/supported, behavioral health providers will need training in the use of ICD.
Legal/Policy	Behavioral Health:	<ol style="list-style-type: none"> 1. 42 CFR Part 2 prohibits disclosure of information that identifies a person as a substance abuser, and some state

Vulnerable Populations & HIE – Actions & Considerations

		<p>laws impose the same restrictions for individuals with mental illness.</p> <p>2. HIEs will need to accommodate Qualified Service Organization agreements that may be in place among organizations.</p>
<p>MU Objective: Maintain active medication list. <i>(Core Set Measure)</i></p> <p>MU Measure: More than 80% of all unique patients seen by the EP or admitted to the eligible hospital’s or CAH’s inpatient or emergency department (POS 21 or 23) have at least one entry (or an indication that the patient is not currently prescribed any medication) recorded as structured data.</p>		
HIE Domain	Action/Consideration	
Technical Infrastructure	Behavioral Health:	1. Standards should accommodate extensive lists of medications, active and historical, as BH patients often take many medications and change medications at a rate that is more frequent than the general population.
Business & Technical Operations	PAC/LTC:	1. Consultant pharmacists and institutional pharmacies are responsible for assuring that all active medications are reconciled during transition of care or during change in patient status. Electronic communication between the PAC/LTC provider EHR, the physician EHR, and the pharmacy are critical to meeting this objective.
	Behavioral Health:	1. Medication lists should indicate whether methadone or other addictive substance is prescribed for pain or maintenance. Primary care physicians will need education on therapeutic prescription dosage levels for each.
Legal/Policy	Behavioral Health:	1. Providers of health information exchange services need to be aware of Federal and state laws requiring disclosure of minimum amount of information necessary to achieve purpose of disclosure when medication lists are exchanged.

Vulnerable Populations & HIE – Actions & Considerations

MU Objective: Capability to exchange key clinical information (for example, problem list, medication list, medication allergies, diagnostic test results), among providers of care and patient authorized entities electronically. *(Core Set Measure)*

MU Measure: Performed at least one test of certified EHR technology's capacity to electronically exchange key clinical information.

HIE Domain	Action/Consideration	
Governance	PAC/LTC:	<ol style="list-style-type: none"> 1. Recommended attributes for PAC/LTC setting representatives to clinical information exchange workgroup: <ol style="list-style-type: none"> a. Representatives from public & private sector, long term and post acute care services, consultant pharmacist, pharmacy and consumers/consumer advocates b. Expertise in requirements related to the clinical information to be exchanged at transitions of care including, hospitalizations/re-hospitalizations, and admission to post-acute and long term care from other care settings c. Expertise in requirements related to the clinical information to be exchanged during provision of services throughout the shared care of residents receiving post-acute and long-term care services (e.g. exchanging information between attending physicians, pharmacy and the long term/post acute care provider)
	Behavioral Health:	<ol style="list-style-type: none"> 1. Recommended attributes for BH setting representatives to clinical information exchange workgroup: <ol style="list-style-type: none"> a. Representatives from public & private sector, mental health & substance abuse, and consumers/consumer advocates b. Expertise in state specific requirements related to the clinical information to be exchanged (e.g. medications)/ privacy/ security/release of information consent
Technical Infrastructure	PAC/LTC:	<ol style="list-style-type: none"> 1. The ability of PAC/LTC systems to support content exchange standards identified in the ONC Final Rule is expected to be more pervasive than the ability to support vocabulary standards. While ICD-9 & CPT coding are used extensively in PAC/LTC settings, other vocabularies called out in the Final Rule (i.e. RxNorm for meds, LOINC for lab) are not in wide use at present. It is anticipated that their use will increase as EHR certification efforts progress. 2. Comparable functionality will be needed for both community-based and facility-based recipients of PAC/LTC services. 3. <i>Resource:</i> HITSP Consultations and Transfers of Care Interoperability Specification (IS 09)- PAC/LTC was included

Vulnerable Populations & HIE – Actions & Considerations

		in Transfer of Care use case for this specification.
	Behavioral Health:	<ol style="list-style-type: none"> The ONC has identified the CCD and CCR as designated standards for the exchange of clinical summary. However, at present, these standards do not accommodate the complexity of diagnosis information required for BH services. <ul style="list-style-type: none"> Diagnoses in BH: Diagnoses in BH are captured using the Diagnostic & Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV TR). This classification system for mental disorders looks a patient's condition from five dimensions: <ul style="list-style-type: none"> Axis I - Clinical Syndromes: describes clinical symptoms that cause significant impairment, grouping disorders into different categories such as adjustment disorders, anxiety disorders, and pervasive developmental disorders. Axis II - Personality and Mental Retardation: describes long-term problems such as vocational, educational, and personality disorders and mental retardation. Axis III - Medical Conditions: identifies physical and medical conditions that may influence or worsen disorders in Axis I and Axis II, such as HIV/Aids or brain injury. Axis IV - Psychosocial and Environmental Problems: identifies social or environmental problems that may impact disorders in Axis I or Axis II, such as unemployment, relocation, divorce, death of a loved one. Axis V - Global Assessment of Functioning: reflects a rating of the client's overall level of functioning on a scale of 0 - 100. Typically assessment scores are reported for the previous two weeks and are compared with scores from a year prior. A multi-axial full scale diagnosis addresses all areas described above. From this multi-axial diagnosis the BH professional obtains a comprehensive understanding of the patient. While a multi-axial diagnosis is not required on Medicare and Medicaid claims, medical reviews conducted on behalf of these payers will require documentation of the multi-axial diagnoses in the clinical record for compliance purposes.
Business & Technical Operations	PAC/LTC:	<ol style="list-style-type: none"> An important training issues for HIE consideration includes appropriate use of ICD-9 codes in the PAC/LTC settings. Requirements of the Official Coding Guidelines limit the clinical completeness of diagnosis information the PAC/LTC provider can provide.

Vulnerable Populations & HIE – Actions & Considerations

	Behavioral Health:	<ol style="list-style-type: none"> 1. Information from Opioid abuse/prescription monitoring programs (PMP) should be made available to eligible professionals, eligible hospitals and other non-incented providers as appropriate. 2. Does the state have a Prescription Monitoring Program (PMP) for controlled substances II - V? If not, will one be established? 3. If the state does not have or plan to have a PMP, how can the state HIE program facilitate tracking of prescriptions for controlled substances II – IV and any adverse events and deaths from these substances?
Legal/Policy	Behavioral Health:	<ol style="list-style-type: none"> 1. Regarding clinical information to be exchanged, has the state considered and established policies on issues such as privacy, security, release of information and consent? 2. Regarding exchange of information for mental health/substance abuse populations: <ol style="list-style-type: none"> a. Has the state considered and established policies in accordance with federal and state laws/regulations (i.e. 42CFR Part 2 which pertains to alcohol and substance abuse treatment programs) and ONC guidelines/ recommendations? b. Has careful consideration been given to use of opt-in or opt-out policies, and whether such policies apply to all health information exchanged or the exchange of only discrete parts of records? 3. Regarding exchange of medication information, has the state considered and established policies in accordance with federal laws that protect the privacy of certain medications that identify an individual as a substance abuser, or any applicable state laws with similar restrictions for drugs related to mental disorders?
<p>MU Objective: Implement drug-formulary checks (<i>Menu Set Measure</i>)</p> <p>MU Measure: The EP/eligible hospital/CAH has enabled this functionality and has access to at least one internal or external drug formulary for the entire EHR reporting period</p>		
HIE Domain	Action/Consideration	
Governance	Behavioral Health	<ol style="list-style-type: none"> 1. Governance structures should consider adoption of policies that require use of technologies that support adherence to federal and state laws while also performing critical health functions (such as the masking of health information from Part 2 programs during drug-drug interactions). 2. Under federal mental health and addiction parity statute, formularies may change to include additional or

Vulnerable Populations & HIE – Actions & Considerations

		different medications for the treatment of mental/substance use disorders.
Technical Infrastructure	Behavioral Health:	1. If an HIE is offering e-prescribing services that include clinical decision support such as drug-drug/drug-allergy/drug-formulary checking, use of masking technology may be necessary to protect substance use information as required by 42 CFR Part 2 and/or applicable state law.
Business & Technical Operations	Behavioral Health:	1. When a drug interaction is provided without identifying the specific drugs, providers should establish a protocol for changing the prescription or contacting the patient to request more information about the drugs they are taking. Providers should inform patients of potential risks to health when pharmacy information is withheld and whether certain medications may not be prescribed due to lack of complete information.
Legal/Policy	PAC/LTC:	<p>1. The majority of nursing home residents receive their medications through institutional pharmacies contracted by the provider. Institutional pharmacies operate under specific regulations from the State Board of Pharmacy, so it is important to include this Board in any discussions between Eligible Hospitals/Professionals and Nursing Homes.</p> <p>2. In the PAC/LTC setting, coordination of pharmacy services between the facility/provider and the off-site pharmacy assure drug-drug, drug-allergy, drug formulary checks are completed. The pharmacist in the PAC/LTC setting becomes the final check as the party responsible for the dispensing of the medications that will be administered to/by the patient.</p>
	Behavioral Health:	<p>1. Federal laws protects the privacy of certain medications that identify an individual as a substance abuser, as do some state laws for drugs related to mental disorders.</p> <p>2. HIEs should be aware of provisions in the federal Mental Health and Addiction Parity law that address the need for similar formulary requirements for mental/substance use disorders and other health conditions.</p>
<p>MU Objective: The EP, eligible hospital or CAH who receives a patient from another setting of care or provider of care or believes an encounter is relevant should perform medication reconciliation. <i>(Menu Set Measure)</i></p> <p>MU Measure: The EP, eligible hospital or CAH performs medication reconciliation for more than 50% of transitions of care in which the patient is transitioned into the care of the EP or admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23)</p>		
HIE Domain	Action/Consideration	

Vulnerable Populations & HIE – Actions & Considerations

Governance	PAC/LTC:	<ol style="list-style-type: none"> 1. Recommended attributes for PAC/LTC setting representatives to clinical information exchange workgroup: <ol style="list-style-type: none"> a. Representatives from public & private sector, long term and post acute care services, consultant pharmacist, pharmacy and consumers/consumer advocates b. Expertise in requirements related to the clinical information to be exchanged at transitions of care including, hospitalizations/re-hospitalizations, and admission to post-acute and long term care from other care settings c. Expertise in requirements related to the clinical information to be exchanged during provision of services throughout the shared care of residents receiving post-acute and long-term care services (e.g. exchanging information between attending physicians, consultant pharmacist, pharmacy and the long term/post acute care provider)
	Behavioral Health	<ol style="list-style-type: none"> 1. Recommended attributes for BH setting representatives to medication reconciliation workgroup: <ol style="list-style-type: none"> a. Representatives from public & private sector, mental health & substance abuse, and consumers/consumer advocates b. Expertise in state specific requirements related to the medications/privacy/ security/release of information consent
Technical Infrastructure	PAC/LTC:	<p>PAC/LTC patients have high medication use making medication reconciliation a highly relevant and high value activity. Supporting health information exchange between these providers and pharmacies/pharmacists is an important component of the HIE infrastructure. For example:</p> <ol style="list-style-type: none"> 1. It is critical that providers of services to these populations be included in any planned HIE activities to facilitate medication reconciliation. 2. Medication reconciliation (MR) is a component of Medication Therapy Management (Medicare Part D) and Medication Regimen Review (federal survey requirement for certain PAC/LTC and BH providers). 3. <i>Resource:</i> HITSP Consultations and Transfers of Care Interoperability Specification (IS 09). The role of the consultant pharmacist in MR is outlined, and PAC/LTC was included in Transfer of Care use case for this specification. 4. <i>Resource:</i> HITSP Medication Management Interoperability Specification v1.1 (IS 07) – PAC/LTC was included in the use case for this specification.
Business & Technical Operations	Behavioral Health:	<ol style="list-style-type: none"> 1. Information from Opioid abuse/prescription monitoring programs (PMP) should be made available to eligible professionals, eligible hospitals and other non-incented providers as appropriate.

Vulnerable Populations & HIE – Actions & Considerations

		<ol style="list-style-type: none"> 2. Does the state have a Prescription Monitoring Program (PMP) for controlled substances II - V? If not, will one be established? 3. If the state does not have or plan to have a PMP, how can the state HIE program facilitate tracking of prescriptions for controlled substances II – IV and any adverse events and deaths from these substances?
<p>Legal/Policy</p>	<p>Behavioral Health:</p>	<ol style="list-style-type: none"> 1. Regarding clinical information to be exchanged, has the state considered and established policies on issues such as privacy, security, release of information and consent? 2. Have policies been established that explicitly restrict communication of information related to mental health/substance abuse medications? 3. Regarding exchange of medication information, has the state considered and established policies in accordance with federal laws that protect the privacy of certain medications that identify an individual as a substance abuser, or any applicable state laws with similar restrictions for drugs related to mental disorders? 4. Regarding exchange of information for mental health/substance abuse populations: <ol style="list-style-type: none"> a. Has the state considered and established policies in accordance with federal and state laws/regulations (i.e. 42CFR Part 2 which pertains to alcohol and substance abuse treatment programs) and ONC guidelines/recommendations? b. Has careful consideration been given to use of opt-in or opt-out policies, and whether such policies apply to all health information exchanged or the exchange of only discrete parts of records?
<p>MU Objective: The EP, eligible hospital or CAH who transitions their patient to another setting of care or provider of care or refers their patient to another provider of care should provide summary of care record for each transition of care or referral. <i>(Menu Set Measure)</i></p> <p>MU Measure: The EP, eligible hospital or CAH who transitions or refers their patient to another setting of care or provider of care provides a summary of care record for more than 50% of transitions of care and referrals.</p>		
<p>HIE Domain</p>	<p>Action/Consideration</p>	

Vulnerable Populations & HIE – Actions & Considerations

Governance	PAC/LTC:	<ol style="list-style-type: none"> 1. Recommended attributes for PAC/LTC setting representatives to clinical information exchange workgroup: <ol style="list-style-type: none"> a. Representatives from public & private sector, long term and post acute care services, and consumers/consumer advocates b. Expertise in requirements related to the clinical information to be exchanged at transitions of care including hospitalizations/re-hospitalizations, and admission to post-acute and long term care from other care settings c. Expertise in requirements related to the clinical information to be exchanged during provision of services throughout the shared care of residents receiving post-acute and long term care services (e.g. exchanging information between attending physicians the post acute/long term care provider).
	Behavioral Health:	<ol style="list-style-type: none"> 1. Recommended attributes for BH setting representatives to clinical information exchange workgroup: <ol style="list-style-type: none"> a. Representatives from public & private sector, mental health & substance abuse, and consumers/consumer advocates b. Expertise in state specific requirements related to the clinical information to be exchanged (e.g. medications)/privacy/ security/release of information consent.
Technical Infrastructure	PAC/LTC:	<ol style="list-style-type: none"> 1. The ability of PAC/LTC systems to support content exchange standards identified in the ONC Final Rule is expected be more pervasive than the ability to support vocabulary standards. While ICD-9 & CPT coding are used extensively in PAC/LTC settings, other vocabularies called out in the Final Rule (i.e. RxNorm for meds, LOINC for lab) are not in wide use at present. It anticipated their use will increase as EHR certification efforts progress. 2. Comparable functionality will be needed for both community-based and facility-based recipients of PAC/LTC services. 3. <i>Resource:</i> HITSP Consultations and Transfers of Care Interoperability Specification (IS 09)- PAC/LTC was included in Transfer of Care use case for this specification.
	Behavioral Health:	<ol style="list-style-type: none"> 1. The ONC has identified the CCD and CCR as designated standards for the exchange of clinical summary. However, at present, these standards do not accommodate the complexity of diagnosis information required for BH services. <p>Diagnoses in BH: Diagnoses in BH are captured using the Diagnostic & Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV TR). This classification system for mental disorders looks a patient's condition from five dimensions:</p> <ul style="list-style-type: none"> • Axis I - Clinical Syndromes: describes clinical symptoms that cause significant impairment, grouping

Vulnerable Populations & HIE – Actions & Considerations

		<p>disorders into different categories such as adjustment disorders, anxiety disorders, and pervasive developmental disorders.</p> <ul style="list-style-type: none"> • Axis II - Personality and Mental Retardation: describes long-term problems such as vocational, educational, and personality disorders and mental retardation. • Axis III - Medical Conditions: identifies physical and medical conditions that may influence or worsen disorders in Axis 1 and Axis II, such as HIV/Aids or brain injury. • Axis IV - Psychosocial and Environmental Problems: identifies social or environmental problems that may impact disorders in Axis I or Axis II, such as unemployment, relocation, divorce, death of a loved one. • Axis V - Global Assessment of Functioning: reflects a rating of the client's overall level of functioning on a scale of 0 - 100. Typically assessment scores are reported for the previous two weeks and are compared with scores from a year prior. <p>2. A multi-axial full scale diagnosis would address all areas described above. From this multi-axial diagnosis the BH professional obtains a comprehensive understanding of the patient.</p> <p>3. While a multi-axial diagnosis is not required on Medicare and Medicaid claims, medical reviews conducted on behalf of these payers will require documentation of the multi-axial diagnoses in the clinical record for compliance purposes.</p>
Business & Technical Operations	PAC/LTC:	<p>1. An important training issue for HIE consideration includes appropriate use of ICD-9 codes in the PAC/LTC settings.</p> <p>2. Requirements of the Official Coding Guidelines limit the clinical completeness of diagnosis information the PAC/LTC provider can provide.</p>
	Behavioral Health:	<p>1. Information from Opioid abuse/prescription monitoring programs (PMP) should be made available to eligible professionals, eligible hospitals and other non-incented providers as appropriate.</p> <p>2. Does the state have a Prescription Monitoring Program (PMP) for controlled substances II - V? If not, will one be established?</p> <p>3. If the state does not have or plan to have a PMP, how can the state facilitate tracking of prescriptions for controlled substances II – IV and any adverse events and deaths from these substances, through an HIE?</p>
Legal/Policy	Behavioral Health:	<p>1. Regarding clinical information to be exchanged, has the state considered and established policies on issues such as privacy, security, release of information and consent by an HIE?</p>

Vulnerable Populations & HIE – Actions & Considerations

		<ol style="list-style-type: none">2. Have policies been established that explicitly restrict communication of information related to mental health/substance abuse medications?3. Regarding exchange of medication information, has the state considered and established policies in accordance with federal laws that protect the privacy of certain medications that identify an individual as a substance abuser, or any applicable state laws with similar restrictions for drugs related to mental disorders?4. Regarding electronic exchange of information for mental health/substance abuse populations:<ol style="list-style-type: none">a. Has the state considered and established policies in accordance with federal and state laws/regulations (i.e. 42CFR Part 2 which pertains to alcohol and substance abuse treatment programs) and ONC guidelines/recommendations?b. Has careful consideration been given to use of opt-in or opt-out policies, and whether such policies apply to all health information exchanged or the exchange of only discrete parts of records?
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Vulnerable Populations & HIE – Actions & Considerations

Table 8 – Quality Measures Impacted By/Relevant to PAC/LTC AND BH^{21,22,23}

This table identifies clinical quality measures from the CMS Final Rule that are particularly critical for PAC, LTC, and BH patients and providers based on the process measured and/or the population included. Certain CMS Quality Measures for EPs under the Meaningful Use rule may include encounters with patients receiving services by PAC/LTC/BH providers. In calculating these CMS Quality Measures, the EP may need to take into account the service the EP provides to persons residing in or being treated by PAC/LTC/BH providers.

Some examples of Meaningful Use Clinical Quality Measures for EPs that included encounters with patients who also receive PAC/LTC/BH are provided below:

Diabetes Measures				
PAC/LTC and BH Consideration	Number	Clinical Quality Measure Title & Description*		
<p>FACTOIDS</p> <p>PAC/LTC:</p> <p>1. Q1 2010 CMS reports on Minimum Data Set (MDS) for nursing homes shows 33.10% of 1,357,692 active nursing home residents have Diabetes Mellitus.</p> <p>2. CMS Medicare home health utilization data for 2008 showed 10.8 percent of home health patients (approximately 341,000 patients) with a diagnosis of diabetes.</p> <p>Behavioral Health:</p>	NQF 0059 PQRI 1	Title:	Diabetes: Hemoglobin A1c Poor Control	
		Description:	Percentage of patients 18 - 75 years of age with diabetes (type 1 or type 2) who had hemoglobin A1c > 9.0%	
		NQF 0064 PQRI 2	Title:	Diabetes: Low Density Lipoprotein (LDL) Management and Control
		Description:	Percentage of patients 18-75 years of age with diabetes (type 1 or type 2) who had LDL-C < 100 mg/dL	
	NQF 0061 PQRI 3	Title:	Diabetes: Blood Pressure Management	
	Description:	Percentage of patients 18 - 75 years of age with diabetes (type 1 or type 2) who had blood pressure <140/90 mmHg		
	NQF 0055 PQRI 117	Title:	Diabetes: Eye Exam	
	Description:	Percentage of patients 18 -75 years of age with diabetes (type 1 or type 2) who had a retinal or dilated eye exam or a negative retinal exam (no evidence of retinopathy) by an eye care professional		

²¹ "MDS Active Resident Information Report." *Centers for Medicare and Medicaid Services*. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, 2010. Web. 20 Jul 2010. <http://www.cms.gov/MDSPubQIandResRep/04_activeresreport.asp.

²² Centers for Medicare & Medicaid Services, Office of Information Services: Data from the Medicare Data Extract System; data development by the Office of Research, Development, and Information. *Health Care Financing Review: Medicare and Medicaid Statistical Supplement*. 2009.

²³ Mauer, Barbara, and Dale Jarvis. *The Business Case for Bidirectional Integrated Care: Mental Health and Substance Use Services in Primary Care Settings and Primary Care Services in Specialty Mental Health and Substance Use Settings*. The Integration Policy Initiative, 2010.

Vulnerable Populations & HIE – Actions & Considerations

<p>1. The presence of type 2 diabetes nearly doubles an individual’s risk of depression and an estimated 28.5% of diabetic patients meet criteria for clinical depression.</p> <p>2. Studies have shown depression is associated with poor glycemic control, increased risk for complications, functional disability and overall higher healthcare costs in diabetic patients.</p>	NQF 0062 PQRI 119	Title: Description:	Diabetes: Urine Screening Percentage of patients 18 - 75 years of age with diabetes (type 1 or type 2) who had a nephropathy screening test or evidence of nephropathy.
	NQF 0056 PQRI 163	Title: Description:	Diabetes: Foot Exam The percentage of patients aged 18 – 75 years with diabetes (type 1 or type 2) who had a foot exam (visual inspection, sensory exam with monofilament, or pulse exam)
	NQF 0575	Title: Description:	Diabetes: Hemoglobin A1c Control (<8.0%) The percentage of patients 18-75 years of age with diabetes (type 1 or type 2) who had hemoglobin A1c <8.0%.
	<p>*Note: The CMS Physician Quality Reporting Initiative (PQRI) 2010 sample criteria for quality measures in the diabetes group includes the CPT codes for:</p> <ul style="list-style-type: none"> • Physician E & M Visit Nursing Facility Care (99304-99310 and 99315-99318) • Physician E&M - Domiciliary, Rest Home, Boarding Home, Custodial Care Services, Assisted Living - Visit at the Facility (99324-99328 and 99334-99337) • Physician E&M – Home Visit – provided in a private residence (99341-99345 and 99347-99350) 		
Hypertension Measures			
PAC/LTC and BH Consideration	Number		Clinical Quality Measure Title & Description
<p style="text-align: center;">FACTOID</p> <p>PAC/LTC:</p> <p>1. Q1 2010 CMS reports on MDS data for nursing homes shows 71.50% of 1,342,096 active nursing home residents have Hypertension.</p> <p>2. CMS Medicare home health utilization data for 2008 showed 7.0 percent of home health patients (approximately 223,000 patients) with a diagnosis of hypertension.</p>	NQF 0013	Title: Description:	Hypertension: Blood Pressure Measurement Percentage of patient visits for patients aged 18 years and older with a diagnosis of hypertension who have been seen for at least 2 office visits, with blood pressure (BP) recorded.
<p>*Note: The CMS Physician Quality Reporting Initiative (PQRI) 2010 sample criteria for this quality measure includes the CPT codes for:</p> <ul style="list-style-type: none"> • Physician E&M Visit Nursing Facility Care (99304-99310) • Physician E&M – Domiciliary, Rest Home, Boarding Home, Custodial Care Services, Assisted Living - Visit at the Facility (99324-99328 and 99334-99337) • Physician E&M – Home Visit – provided in a private residence (99341-99345 and 99347- 			

Vulnerable Populations & HIE – Actions & Considerations

	99350)		
	NQF 0018	Title: Description:	Controlling High Blood Pressure The percentage of patients 18-85 years of age who had a diagnosis of hypertension and whose BP was adequately controlled during the measurement year.
	<p>*Note: The CMS Physician Quality Reporting Initiative (PQRI) 2010 sample criteria for this quality measure includes the CPT codes for:</p> <ul style="list-style-type: none"> Physician E&M – Home Visit – provided in a private residence (99341-99345 and 99347-99350) 		
Depression Measure			
PAC/LTC and BH Consideration	Number		Clinical Quality Measure Title & Description
<p>FACTOIDS:</p> <p>PAC/LTC:</p> <p>1. Q1 2010 CMS reports on MDS data for nursing homes shows 49.60% of 1,357,709 active nursing home residents have Depression.</p> <p>Behavioral Health:</p> <p>1. Individuals with major depression average twice as many visits to their primary care doctor than do non-depressed patients.</p> <p>2. People diagnosed with depression had nearly twice the annual health care costs of those without a diagnosis of depression.</p>	NQF 0105 PQRI 9	Title: Description:	Anti-depressant medication management: (a) Effective Acute Phase Treatment,(b)Effective Continuation Phase Treatment The percentage of patients 18 years of age and older who were diagnosed with a new episode of major depression, treated with antidepressant medication, and who remained on an antidepressant medication treatment.
	<p>*Note: The CMS Physician Quality Reporting Initiative (PQRI) 2010 sample criteria for this quality measure includes the CPT codes for:</p> <ul style="list-style-type: none"> Encounter Outpatient BH (90804-90815, 98960-98962, 99078, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99384-99387, 99394-99397, 99401-99404, 99408, 99409, 99411, 99412, 99510) Encounter Outpatient BH (requires Point of Service modifier) (90801, 90802, 90816-90819, 90821-90824, 90826- 90829, 90845, 90847, 90849, 90853, 90857, 90862, 90875, 90876, 99221-99223, 99231-99233, 99238, 99239, 99251-99255) Encounter Point of Service Modifier (03, 05, 07, 09, 11, 12, 13, 14, 15, 20, 22, 33, 49, 50, 52, 53, 57, 71, 72) Physician E & M Visit Nursing Facility Care (99304-99310 and 99315-99318) Physician E&M - Domiciliary, Rest Home, Boarding Home, Custodial Care Services, Assisted Living - Visit at the Facility (99324-99328 and 99334-99337) 		

Vulnerable Populations & HIE – Actions & Considerations

Alcohol And Other Drug Dependence Treatment			
PAC/LTC and BH Consideration	Number		Clinical Quality Measure Title & Description
<p>FACTOIDS:</p> <p>Behavioral Health:</p> <p>1. A ranking of 25 preventive services recommended by the United States Preventative Services Task Force (USPSTF) based on clinically preventable burden and cost effectiveness found that alcohol screening and intervention rated at the same level as colorectal cancer screening/treatment and hypertension screening/treatment.</p> <p>2. In the Kaiser Northern California system, family members of patients with substance use (SU) disorders had greater healthcare costs and were more likely to be diagnosed with a number of medical conditions than family members of similar persons without a SU condition.</p>	NQF 0004	<p>Title:</p> <p>Description:</p>	<p>Initiation and Engagement of Alcohol and Other Drug Dependence Treatment: (a) Initiation, (b) Engagement</p> <p>The percentage of adolescent and adult patients with a new episode of alcohol and other drug (AOD) dependence who initiate treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization within 14 days of the diagnosis and who initiated treatment and who had two or more additional services with an AOD diagnosis within 30 days of the initiation visit.</p>
			<p>*Note: The CMS Physician Quality Reporting Initiative (PQRI) 2010 sample criteria for this quality measure includes the CPT codes for:</p> <ul style="list-style-type: none"> • Encounter Outpatient BH (90804-90815, 98960-98962, 99078, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99384-99387, 99394- 99397, 99401-99404, 99408, 99409, 99411, 99412, 99510) • Encounter Outpatient BH (requires Point of Service modifier) (90801, 90802, 90816-90819, 90821-90824, 90826-90829, 90845, 90847, 90849, 90853, 90857, 90862, 90875, 90876, 99221-99223, 99231-99233, 99238, 99239, 99251-99255) • Encounter Point of Service Modifier (03, 05, 07, 09, 11, 12, 13, 14, 15, 20, 22, 33, 49, 50, 52, 53, 57, 71, 72) • Physician E & M Visit Nursing Facility Care (99304-99310 and 99315-99318) • Physician E&M - Domiciliary, Rest Home, Boarding Home, Custodial Care Services, Assisted Living - Visit at the Facility (99324-99328 and 99334-99337)

Vulnerable Populations & HIE – Case Studies

Connecting to, collaborating with, and learning from peers is integral to advancing any new endeavor. This page is designed to catalog HIE efforts around the country that engage participation from those in the PAC/LTC and BH communities, and provide contact information for state HIT coordinators and HIE entities.

State HIT coordinators may wish to consider activities undertaken by some states to include vulnerable populations and their providers in state HIE activities

Case Studies

Delaware Health Information Network (DHIN)

While stating that they are very early in efforts to engage PAC/LTC providers in the DHIN exchange, the steps taken to date are very encouraging to the PAC/LTC & BH communities.



1. DHIN has included representatives from nursing homes and home health agencies on their Continuum of Care committee.
2. In conducting a medication history demonstration project, DHIN included hospitals, physician offices, a home health agency, and a continuing care retirement community (an organization with a campus that includes nursing home, assisted living, and independent senior living).
3. The DHIN Consumer Advisory Committee includes diverse representation from the mental health and disabilities communities.

[Click here for the detailed case study](#)

Indiana Network for Patient Care (INPC)

Golden Living, a major U.S. long-term care provider, announced on June 16, 2010 that three of their Indianapolis skilled nursing facilities will join the Indiana Network for Patient Care (INPC). Initially, Golden Living is focusing on the Indianapolis market, with plans to later add its other 20 Indiana LivingCenters to the exchange. Linking to INPC will help it access the electronic records of patients as they move from acute care facilities to long term & post acute care.



[Click here for the detailed case study](#)

Vulnerable Populations & HIE – Case Studies

Minnesota Health Information Exchange (MN HIE)

The State of Minnesota has established a statewide mandate that by January 1, 2015, all health care providers must have in place an interoperable electronic health record system, and has identified long-term care as a setting of special interest. As reported June 30, 2010 by Government Health IT, MNHIE began, “...a pilot with the association Aging Services of Minnesota that will enable 12 long-term care organizations to access patient medication lists, lab histories, clinical care documents, benefit eligibility data and the state immunization registry via a Web connection.”



[Click here for the detailed case study](#)

Keystone Health Information Exchange (KeyHIE)

KeyHIE is working with stakeholders on processes to create and publish a standards-based CCD for the Nursing Home Minimum Data Set (MDS) and Home Health Outcome and Assessment Information Set (OASIS). The MDS and OASIS are federally mandated standardized assessment instruments for nursing homes and home health agencies. This project is intended to promote participation in KeyHIE by LTC and Home Care providers and enrich the patient information available to the continuum of providers participating in the Exchange.



[Click here for the detailed case study](#)

Vulnerable Populations & HIE – Resources

Professional, Provider & Consumer/Advocacy Associations (National & State)

Table 9 – PAC and LTC Associations

Professional, Provider and Consumer/ Advocacy Associations	
American Association of Homes and Services for the Aging (www.aahsa.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> Barbara Manard (bmanard@aaahsa.org) • <i>State Affiliates listing:</i> http://aaahsa.org/StateSearch.aspx
American Health Care Association (www.ahcancal.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> Todd Smith (tsmith@ahca.org) • <i>State Affiliates listing:</i> http://www.ahcancal.org/about_ahca/ahca_membership/Pages/StateAffiliates.aspx
American Health Information Management Association (www.ahima.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> Michelle Dougherty (michelle.dougherty@ahima.org) • <i>State Affiliates listing:</i> http://ahima.org/about/csa.aspx
American Medical Directors Association (www.amda.com)	<ul style="list-style-type: none"> • <i>National Contact:</i> Jackie Vance (jvance@amda.com) or Bill Russell (Bill.Russell@erickson.com) • <i>State Affiliates listing:</i> http://www.amda.com/governance/statechapters.cfm
American Telemedicine Association (www.americantelemed.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> Gary Capistrant (gcapistrant@americantelemed.org) • <i>State Affiliates listing:</i> N/A
Center for Aging Services Technologies (www.aahsa.org/cast.aspx)	<ul style="list-style-type: none"> • <i>National Contact:</i> Majd Alwan (malwan@aaahsa.org) • <i>State Affiliates listing:</i> N/A
Institute for Clinical Outcomes Research (www.isisicor.com)	<ul style="list-style-type: none"> • <i>National Contact:</i> Siobhan Sharkey (ssharkey@hmstrat.com) • <i>State Affiliates listing:</i> N/A
Long Term and Post Acute Care (LTPAC) HIT Collaborative	<ul style="list-style-type: none"> • <i>National Contact:</i> Michelle Dougherty (michelle.dougherty@ahima.org) • <i>State Affiliates listing:</i> N/A
National Association for the Support of Long Term Care (www.nasl.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> Annessa Kirby (annessa@nasl.org) • <i>State Affiliates listing:</i> N/A
National Association for Home Care and Hospice (www.nahc.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> Rich Brennan (rdb@nahc.org) • <i>State Affiliates listing:</i> www.nahc.org/stateforum/directory.html

Vulnerable Populations & HIE – Resources

National Center for Assisted Living (www.ahcancal.org/ncal/Pages/default.aspx)	<ul style="list-style-type: none"> • <i>National Contact:</i> Todd Smith (tsmith@ahca.org) • <i>State Affiliates listing:</i> www.ahcancal.org/ncal/about/Pages/StateAffiliates.aspx
National Association of State Units on Aging (www.nasua.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> • <i>State Affiliates listing:</i> http://www.nasua.org/about_nasua/sua_links.html

Table 10 – Behavioral Health Associations

Professional, Provider and Consumer/Advocacy Associations	
American Psychiatric Association (http://www.psych.org/)	<ul style="list-style-type: none"> • <i>National Contact:</i> Rob Plovnick rplovnick@psych.org • <i>State Affiliates listing:</i> www.psych.org/dblisting/ • <i>Committee for EHRs:</i> Laura Fochtmann lfochtmann@pharm.stonybrook.edu
American Psychological Association (www.apa.org/index.aspx)	<ul style="list-style-type: none"> • <i>National Contact:</i> Alan Nessman anessman@apa.org • <i>State Affiliates listing:</i> www.apa.org/about/organizations/associations.aspx
Depression & Bipolar Support Alliance (www.dbsalliance.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> Alan Doederlein adoederlein@dbsalliance.org • <i>State Affiliates listing:</i> www.dbsalliance.org/site/PageServer?pagename=support_findsupport Is it appropriate to provide this link for the DBSA Chapters/Support Groups?
National Alliance on Mental Illness (www.nami.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> • <i>State Affiliates listing:</i> www.nami.org/template.cfm?section=state_and_local_organizations
National Association of State Directors of Developmental Disability Services (www.nasddd.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> • <i>State Affiliates listing:</i> www.nasddd.org/MemberAgencies/index.shtml
National Association of State Head Injury Administrators (www.nashia.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> • <i>State Affiliates listing:</i> http://www.nashia.org/StatePrograms.asp
National Association of State Mental Health Program Directors (www.nasmhpd.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> • <i>State Affiliates listing:</i> http://web.memberclicks.com/mc/login.do?hidOrgID=nasmhpd&txtUseRld=ghost&isencodedstring=no&mcevent=mcsuubmit&txtPassword=ghost
National Council for Community Behavioral Healthcare (www.thenationalcouncil.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> Chuck Ingoglia chucki@thenationalcouncil.org • <i>State Affiliates listing:</i> www.thenationalcouncil.org/cs/member_associations

Vulnerable Populations & HIE – Resources

National Mental Health Association (www.nmha.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> • <i>State Affiliates listing:</i> http://www.mentalhealthamerica.net/go/searchMHA
Software and Technology Vendor Association (www.satva.org)	<ul style="list-style-type: none"> • <i>National Contact:</i> • <i>State Affiliates listing:</i> N/A

Other State Resources

Table 11 – Other Resources

Other Behavioral Health Resources & Contacts	
SAMHSA State Resource Guides: http://mentalhealth.samhsa.gov/publications/Publications_browse.asp?ID=185&Topic=State%2FTerritory+Resources	These fact sheets provide contact information for mental health agencies and advocacy organizations in each state, including the State Mental Health Agency, State Protection and Advocacy Agency, the Health Care Financing Administration, National Mental Health Association, National Alliance for the Mentally Ill, and statewide consumer organizations

Other Links

Links to statutory, regulatory, and private sectors that are helpful resources in the planning and implementation of health information exchange in PAC/LTC and BH settings are identified below.

Statutory Requirements

[ARRA/HITECH](#)

- §4104(a) Study and Report on Application of EHR Payment Incentives for Providers Not Receiving Other Incentive Payments
- §3011(a)(2) Secretary of HHS to invest in development and adoption of certified EHRs for categories of providers ineligible for support under Medicare and Medicaid for the adoption of such records

[Patient Protection and Affordable Care Act](#)

- Subtitle H Elder Justice Act §6703, Amends Title XX of the Social Security Act to add §2041(b) Certified EHR Technology Grant Program (for LTC Facilities)

ONC/Federal Program Documents

Code of Federal Regulations:

- [42 CFR Part 2 \(Confidentiality of Alcohol and Drug Abuse Patient Records\)](#)

Substance Abuse and Mental Health Services Administration (SAMHSA):

- [FAQ - Applying the Substance Abuse Confidentiality Regulations to Health Information Exchange \(HIE\)](#)

Centers for Medicare & Medicaid Services (CMS):

- [Medicare and Medicaid Programs; Electronic Health Record Incentive Program; Final Rule](#) July 28, 2010

Office of the National Coordinator for Health Information Technology (ONC):

Vulnerable Populations & HIE – Other Links

- [Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology; Final Rule](#) July 28, 2010
- [ONC Proposed Establishment of Certification Programs for Health Information Technology; Proposed Rule](#) March 10, 2010

Private Sector Documents

CCHIT Certification Programs:

- [CCHIT Certified 2011 Long Term and Post Acute Care \(LTPAC\)](#)
- [CCHIT Certified 2011 Behavioral Health](#)

LTPAC HIT Collaborative:

- [A Roadmap for Health IT in Long Term and Post Acute Care 2010-2012](#)

National Council for Community Behavioral Healthcare:

- [Planning Your EHR System--Guidelines for Executive Management.](#)

Stratis Health (Minnesota QIO) Health IT Toolkits:

- [Health Information Technology Toolkit for Nursing Homes](#)
- [Health Information Technology Toolkit for Home Health Agencies](#)

Appendices

Appendix A – Legislative/Regulatory Environment

The Legislative/Regulatory Environment and “Vulnerable Populations”

- 1) *The Health Information Technology for Economic and Clinical Health Act (HITECH Act) addresses “vulnerable populations” by:*
 - a. *Tasking the HIT Policy Committee with recommending a policy framework for the development and adoption of a nationwide health information technology infrastructure that permits the electronic exchange and use of health information – including recommendations for technologies that “address the needs of children and other **vulnerable populations**”*
 - b. *Requiring the Secretary to “invest in the infrastructure necessary to allow for and promote the electronic exchange and use of health information for each individual in the United States”.*

- 2) *The ONC State Health Information Exchange Cooperative Agreement Program Funding Opportunity Announcement requires that in the first two years each State HIE recipient:*

*Establish a statewide policy framework that allows incremental development of HIE policies over time, enables appropriate, inter-organizational health information exchange, and meets other important state policy requirements such as those related to public health and **vulnerable populations**.*

- 3) *The HIT Policy Committee (a federal advisory committee) has heard testimony regarding the need to include persons with PAC, LTC and BH needs in emerging MU measures for 2013 and 2015. For example, see page four of the [testimony](#) by Dianne Hassleman, Director of Quality and Equality, [Center for Health Care Strategies](#), a national non-profit health care resource center founded to improve health care quality and cost-effectiveness within Medicaid.*

- 4) *In April 2010, legislation was introduced in the U.S. House of Representatives that would extend eligibility for Medicare and Medicaid incentives for the meaningful use of EHRs to clinical social workers, clinical psychologists, inpatient psychiatric hospitals, behavioral health and substance use treatment facilities (see H.R.5040 – [The Health Information Technology Extension for Behavioral Health Services Act of 2010](#)).*

Appendices

The Legislative Environment and EHR Certification for Un-incented Providers

“SEC. 3011. IMMEDIATE FUNDING TO STRENGTHEN THE HEALTH INFORMATION TECHNOLOGY INFRASTRUCTURE

a) *IN GENERAL.*—The Secretary shall, using amounts appropriated . . . invest in the infrastructure necessary to allow for and promote the electronic exchange and use of health information for each individual in the United States consistent with the goals outlined in the strategic plan developed by the National Coordinator (and as available) under section 3001. The Secretary shall invest funds . . . to support the following:

(2) *Development and adoption of appropriate certified electronic health records for categories of health care providers not eligible for support under title XVIII or XIX of the Social Security Act for the adoption of such records.*

Appendices

Appendix B – ONC Final Rule (July 28, 2010)

Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology

Table 12 – § 170.205 – Content Exchange Standards & Implementation Specifications for Exchanging Electronic Health Information

Purpose	Standard/Implementation Specification
Patient summary record	<ol style="list-style-type: none"> 1. Health Level Seven Clinical Document Architecture (CDA) Release 2, Continuity of Care Document (CCD) <ul style="list-style-type: none"> • Implementation Specification – The Healthcare Information Technology Standards Panel (HITSP) Summary Documents Using HL7 CCD Component HITSP/C32 2. ASTM E2369 Standard Specification for Continuity of Care Record and Adjunct to ASTM E2369
Electronic prescribing	<ol style="list-style-type: none"> 1. The National Council for the Prescription Drug Programs (NCPDP) Prescriber/Pharmacist Interface SCRIPT standard, Implementation Guide, Version 8, Release 1 (Version 8.1) October 2005 2. NCPDP SCRIPT Standard, Implementation Guide, Version 10.6
Electronic submission of lab results to public health agencies	<ol style="list-style-type: none"> 1. HL7 2.5.1 <ul style="list-style-type: none"> • Implementation specifications - HL7 Version 2.5.1 Implementation Guide: Electronic Laboratory Reporting to Public Health, Release 1 (US Realm)
Electronic submission to public health agencies for surveillance or reporting	<ol style="list-style-type: none"> 1. HL7 2.3.1 2. HL7 2.5.1 <ul style="list-style-type: none"> • Implementation specifications - Public Health Information Network HL7 Version 2.5 Message Structure Specification for National Condition Reporting Final Version 1.0 and Errata and Clarifications National Notification Message Structural Specification
Electronic submission to immunization registries	<ol style="list-style-type: none"> 1. HL7 2.3.1 <ul style="list-style-type: none"> • Implementation specifications - Implementation Guide for Immunization Data Transactions using Version 2.3.1 of the Health Level Seven (HL7) Standard Protocol Implementation Guide Version 2.2

Appendices

	<ol style="list-style-type: none"> 2. HL7 2.5.1 <ul style="list-style-type: none"> • Implementation specifications - HL7 2.5.1 Implementation Guide for Immunization Messaging Release 1.0
Quality reporting	<ol style="list-style-type: none"> 1. The CMS Physician Quality Reporting Initiative (PQRI) 2009 Registry XML Specification <ul style="list-style-type: none"> • Implementation specifications - Physician Quality Reporting Initiative Measure Specifications Manual for Claims and Registry

Table 13 – § 170.207 – Vocabulary Standards for Representing Electronic Health Information

Electronic Information	Vocabulary Standard (Code Sets, Terminology, or Nomenclature)
Problems	<ol style="list-style-type: none"> 1. The code set specified at 45 CFR 162.1002(a)(1) for the indicated conditions. 2. International Health Terminology Standards Development Organization (IHTSDO) Systematized Nomenclature of Medicine Clinical Terms (SNOMED CTR) July 2009 version
Procedures	<ol style="list-style-type: none"> 1. The code set specified at 45 CFR 162.1002(a)(2) 2. The code set specified at 45 CFR 162.1002(a)(5)
Laboratory test results	<ol style="list-style-type: none"> 1. Logical Observation Identifiers Names and Codes (LOINC) version 2.27, when such codes were received within an electronic transaction from a laboratory
Medications	<ol style="list-style-type: none"> 1. Any source vocabulary that is included in RxNorm, a standardized nomenclature for clinical drugs produced by the United States National Library of Medicine
Immunizations	<ol style="list-style-type: none"> 1. HL7 Standard Code Set CVX—Vaccines Administered, July 30, 2009 version
Race and Ethnicity	<ol style="list-style-type: none"> 1. The Office of Management and Budget Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity, Statistical Policy Directive No. 15, October 30, 1997

Appendices

Table 14 – § 170.210 – Standards for Health Information Technology to Protect Electronic Health Information Created, Maintained, and Exchanged

Purpose	Standard
Encryption and decryption of electronic health information	<ol style="list-style-type: none"> 1. General - Any encryption algorithm identified by the National Institute of Standards and Technology (NIST) as an approved security function in Annex A of the Federal Information Processing Standards (FIPS) Publication 140–2 2. Exchange - Any encrypted and integrity protected link
Record actions related to electronic health information	The date, time, patient identification, and user identification must be recorded when electronic health information is created, modified, accessed, or deleted; and an indication of which action(s) occurred and by whom must also be recorded
Verification that electronic health information has not been altered in transit	A hashing algorithm with a security strength equal to or greater than SHA–1 (Secure Hash Algorithm (SHA–1) as specified by the National Institute of Standards and Technology (NIST) in FIPS PUB 180–3 (October, 2008)) must be used to verify that electronic health information has not been altered
Record treatment, payment, and health care operations disclosures	The date, time, patient identification, user identification, and a description of the disclosure must be recorded for disclosures for treatment, payment, and health care operations, as these terms are defined at 45 CFR 164.501

Appendices

Appendix C – Nursing Home Disease Prevalence (MDS)

The following table on nursing home disease prevalence was constructed from CMS Minimum Data Set (MDS) information available at http://www.cms.gov/MDSPubQlandResRep/04_activeresreport.asp. Each MDS item ID (e.g. “I1h” for hypertension) is hyperlinked to the source report for that condition. In addition to providing national totals, the source report for each disease condition also provides state specific prevalence data.

**Table 15 – Nursing Home Minimum Data Set (MDS)
Active Resident Information Report: First Quarter 2010¹**

MDS Disease/Diagnoses Response (Question I1)		Total Active Residents	Total - This disease applies to this resident
I1h	Diseases - Heart/Circulation - Hypertension	1,342,096	71.50%
I1ee	Diseases - Psychiatric/Mood - Depression	1,357,709	49.60%
I1u	Diseases - Neurological - Dementia other than Alzheimer's	1,342,051	39.60%
I1a	Diseases - Endocrine/Metabolic/Nutritional - Diabetes Mellitus	1,357,692	33.10%
I1i	Diseases - Musculoskeletal - Arthritis	1,342,114	32.50%
I1nn	Diseases - Other - Allergies	1,342,112	30.70%
I1oo	Diseases - Other - Anemia	1,342,104	28.50%
I1k	Diseases - Heart/Circulation - Other cardiovascular disease	1,342,089	21.70%
I1f	Diseases - Heart/Circulation - Congestive heart failure	1,357,736	21.50%
I1o	Diseases - Musculoskeletal - Osteoporosis	1,342,120	21.30%
I1c	Diseases - Endocrine/Metabolic/Nutritional - Hypothyroidism	1,342,133	20.80%
I1dd	Diseases - Psychiatric/Mood - Anxiety disorder	1,342,124	20.80%
I1t	Diseases - Neurological - Cerebrovascular accident (stroke)	1,357,752	20.30%
I1ii	Diseases - Pulmonary - Emphysema/COPD	1,357,734	18.70%
I1q	Diseases - Neurological - Alzheimer's disease	1,342,101	16.90%
I1e	Diseases - Heart/Circulation - Cardiac dysrhythmia	1,342,127	15.70%
I1j	Diseases - Heart/Circulation - Peripheral Vascular Disease	1,357,744	12.90%

¹ "MDS Active Resident Information Report." Centers for Medicare and Medicaid Services. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, 2010. Web. 20 Jul 2010. http://www.cms.gov/MDSPubQlandResRep/04_activeresreport.asp.

Appendices

I1d	Diseases - Heart/Circulation - Arteriosclerotic heart disease	1,357,739	12.70%
I1v	Diseases - Neurological - Hemiplegia/Hemiparesis	1,357,746	10.10%
I1aa	Diseases - Neurological - Seizure disorder	1,342,133	10.00%
I1ji	Diseases - Sensory - Cataracts	1,342,127	8.40%
I1qq	Diseases - Other - Renal failure	1,342,120	8.40%
I1ll	Diseases - Sensory - Glaucoma	1,342,135	8.00%
I1pp	Diseases - Other - Cancer	1,342,123	6.80%
I1y	Diseases - Neurological - Parkinson's disease	1,342,136	6.30%
I1gg	Diseases - Psychiatric/Mood - Schizophrenia	1,357,755	6.20%
I1mm	Diseases - Sensory - Macular degeneration	1,342,137	5.50%
I1r	Diseases - Neurological - Aphasia	1,357,746	5.50%
I1ff	Diseases - Psychiatric/Mood - Manic Depression (Bipolar Disease)	1,357,748	4.10%
I1m	Diseases - Musculoskeletal - Hip Fracture	1,357,740	4.10%
I1hh	Diseases - Pulmonary - Asthma	1,357,755	3.80%
I1bb	Diseases - Neurological - Transient ischemic attack	1,342,137	3.00%
I1g	Diseases - Heart/Circulation - Deep vein thrombosis	1,342,133	2.50%
I1n	Diseases - Musculoskeletal - Missing Limb	1,342,139	2.20%
I1i	Diseases - Heart/Circulation - Hypotension	1,342,132	1.50%
I1w	Diseases - Neurological - Multiple Sclerosis	1,357,753	1.30%
I1cc	Diseases - Neurological - Traumatic brain injury	1,342,135	1.10%
I1kk	Diseases - Sensory - Diabetic retinopathy	1,342,144	0.90%
I1s	Diseases - Neurological - Cerebral Palsy	1,357,758	0.90%
I1x	Diseases - Neurological - Paraplegia	1,357,758	0.80%
I1z	Diseases - Neurological - Quadriplegia	1,357,756	0.80%
I1b	Diseases - Endocrine/Metabolic/Nutritional - Hyperthyroidism	1,342,130	0.70%
I1p	Diseases - Musculoskeletal - Pathological bone fracture	1,342,135	0.50%

Appendices

Appendix D – Home Health Disease Prevalence (NAHC)

The following table from the National Association for Home Care and Hospice summarizes 2008 home health disease prevalence data from the CMS *Health Care Financing Review: Medicare and Medicaid Statistical Supplement*. 2009.

Table 16 – Medicare Home Health Utilization by Principal Diagnosis Calendar Year 2008

Principal ICD-9-CM Diagnosis ¹	Principal ICD-9-CM Codes	Patients (1,000's)	Percent
Infectious and Parasitic Diseases	001-139	20	0.6
Neoplasms	140-239	110	3.5
Malignant Neoplasm of Trachea, Bronchus, and Lung	162	22	0.7
Endocrine, Nutritional, and Metabolic Diseases and Immunity Disorders	240-279	372	11.7
Diabetes Mellitus	250	341	10.8
Diseases of the Blood and Blood Forming Organs	280-289	60	1.9
Mental Disorders	290-319	68	2.1
Diseases of the Nervous System and Sense Organs	320-389	152	4.8
Diseases of the Circulatory System	390-459	809	25.5
Essential Hypertension	401	223	7.0
Heart Disease	402, 410-411, 413-414, 427-428	398	12.6
Diseases of the Respiratory System	460-519	271	8.6
Pneumonia, Organism Unspecified	486	59	1.9
Diseases of the Digestive System	520-579	74	2.3
Diseases of the Genitourinary System	580-629	82	2.6
Diseases of the Skin and Subcutaneous Tissue	680-709	196	6.2
Diseases of the Musculoskeletal System and Connective Tissue	710-739	399	12.6
Osteoarthritis and Allied Disorders	715	93	2.9
Symptoms, Signs, and Ill-Defined Conditions	780-799	262	8.3
Injury and Poisoning	800-999	208	6.6
Supplementary Classification	V01-V82	1,088	34.3
Total, All Diagnoses²	---	3,172	100.0
Total Leading Diagnoses³	---	1,813	57.2
¹ ICD-9-CM is International Classification of Diseases, 9 th Revision, Clinical Modification (Volume 1). Only the first-listed or principal diagnosis has been used. ² Includes invalid codes not listed separately. ³ Specific leading diagnostic categories were selected for presentation because of frequency of occurrences or because of special interest. Source: Centers for Medicare & Medicaid Services, Office of Information Services: Data from the Medicare Data Extract System; data development by the Office of Research, Development, and Information. <i>Health Care Financing Review: Medicare and Medicaid Statistical Supplement</i> . 2009.			

Appendix E – Detailed State Case Studies



Delaware: Statewide Health Information Exchange Case Study – Engaging PAC/LTC and BH Providers

Background:

Delaware's HIE, the Delaware Health Information Network (DHIN), is a public-private partnership that was started in 1997. In 2003 DHIN shifted its focus from the exchange of administrative to clinical information that providers could use at the point of care to improve patient outcomes and increase efficiency. DHIN exchange currently provides laboratory results; hospital admission, discharge, and transfer data; and radiology reports, using the Web-based ProAccess application developed by Medicity. DHIN expects to add radiology images, electronic order entry, and transcribed reports. In addition, a medication history search function will soon be piloted in emergency departments to evaluate its performance and cost. Clinical information from laboratory and hospital participants is automatically delivered through DHIN in real time to the ordering provider at the point of care. Six hospitals currently participate and two more are considering joining, out of a total of nine in the state.

Providers access DHIN by logging into an online "inbox," where results for their patients are delivered. If they already use an EHR, the data links to patients' electronic records. If the office uses paper records, the provider can schedule the program to regularly print out patient results in a standardized format, to be integrated with paper files. DHIN will also soon add an EHR Primer that will help providers who would otherwise be unlikely to purchase an EHR to meet federal "meaningful use" criteria to qualify for incentive payments. While the EHR Primer does not have all the functions of an EHR; it does allow limited electronic functionality.

For patients, participation in DHIN is on an opt-out basis. Patients receive information about the exchange at the point of care, and can decline to participate. DHIN's consumer advisory committee, composed of a wide range of individuals and organizations (including advocates for people with disabilities, mental health advocates, cancer survivors, community health centers, AARP, and others) plays a strong role in the program's governance, and worked extensively to develop its privacy policy.

Appendices

Key Lessons:

The [program's vision](#) is to develop a network among all health care providers to "improve patient outcomes and patient–provider relationships, while reducing service duplication and the rate of increase in health care spending." A strong, inclusive strategic planning process and involvement of all stakeholders to build consensus and tailor implementation to the particular needs and capabilities of participants have been important factors enabling DHIN's progress so far.

PAC/LTC/BH Activities

1. While stating that they are very early in efforts to engage PAC/LTC providers in the DHIN exchange, the steps taken to date are very encouraging to the PAC/LTC community.
 - a. DHIN has included representatives from nursing homes and home health agencies on their Continuum of Care committee.
 - b. In conducting a medication history demonstration project, DHIN included hospitals, physician offices, a home health agency, and a continuing care retirement community (an organization with a campus that includes nursing home, assisted living, and independent senior living).
2. The DHIN Consumer Advisory Committee includes diverse representation from the mental health and disabilities communities.

For more information:

Contact: info@dhin.org or (302) 678-0220

See: [Delaware Health Information Network Web Site](#)

Source:

<http://www.commonwealthfund.org/Content/Innovations/State-Profiles/2009/November/Delaware-First-State-First-Statewide-Health-Information-Exchange.aspx>

Appendices



Indiana Network For Patient Care (INPC)

Case Study – Engaging PAC/LTC and BH Providers

Background:

In 1994, with funding from the National Institutes of Health and the National Library of Medicine, Regenstrief Institute Medical Informatics extended Regenstrief Medical Records System to the Indiana Network for Patient Care (INPC), a city-wide clinical informatics network. Indianapolis is served by five major hospital systems - Community Hospitals Indianapolis, St. Vincent Hospitals and Health Services, St. Francis Hospital and Health Centers, Clarian Health, and Wishard Health Services. These five INPC hospital systems operate a total of 11 different hospital facilities and more than 100 geographically distributed clinics and day surgery facilities. Collectively these systems admit 165,878 patients, and serve more than 390,000 emergency room visits and 2.7 million clinic visits per years.¹

All INPC participants now deliver registration records, all laboratory tests, and all UB92 records (diagnosis, length of stay, and procedure codes) for hospital admissions and emergency room visits to separate electronic medical record vaults in a central INPC server located at Wishard Hospital. The computer system standardizes all clinical data as it arrives at the INPC vault, laboratory test results are mapped to a set of common test codes (LOINC) with standard units of measure, and patients with multiple medical record numbers are linked. Each institution has the same file structure and shares the same term dictionary, which contains the codes, names (and other attributes) for tests, drugs, coded answers, etc. When a patient is seen in any of the 11 emergency rooms operated by the consortium hospitals, and the patient consents, the information from all of these institutions about one patient can be presented as one virtual medical record.¹

INPC collects nearly 13 million HL7 messages per month from over 25 geographically separate hospitals, public health departments, and more than 100 clinics and imaging facilities, distributed across Indianapolis and its collar counties and continues to expand. The INPC repository carries over 1.5 billion pieces of clinical data, including 25 million text reports; over 80 million radiology images; and 750,000 EKG tracings and 16 million different patient registrations. The information in the INPC follows the patient, not the physician or a specific

¹ "Home Page." Indiana Network For Patient Care. Indiana Network For Patient Care, n.d. Web. 3 Aug 2010. <<http://www.regenstrief.org/medinformatics/inpc>>.

Appendices

health system, so physicians can view a patient's previous care information from all participating institutions as a single virtual record.²

The INPC serves as the backbone for a number of other services used in Indiana:

- **Public Health Electronic Syndromic Surveillance (PHESS)** – Indiana passed a law to require hospitals with emergency departments to electronically provide a certain core set of data elements to the Indiana State Department of Health (ISDH) on a real-time or near real-time basis, such as chief complaint. Currently, Regenstrief connects to 76 hospitals (via the INPC) out of 114 in the state. Regenstrief sends ED chief complaint information from over 6,000 ED encounters to ISDH daily to monitor public health events, disease outbreaks, and bioterrorism.
- **Clinical Messaging: DOCS4DOCS® service (D4D)** – This system, run by the Indiana Health Information Exchange in conjunction with Regenstrief, delivers laboratory and other clinical results from the participating data sources (e.g., a hospital's lab), to the intended responsible provider. The results can also be transmitted via HL7 directly to a practice's EMR system or via fax. D4D service delivers electronic copies of discharge summaries, operative notes, EKGs, and radiology reports from over 35 hospitals in Indiana, and more are being added. Over 36 million messages have been delivered to nearly 10,000 physicians throughout the state.

PAC/LTC/BH Activities

Golden Living, a major U.S. long-term care provider, announced on June 16, 2010 that three of their Indianapolis skilled nursing facilities will join the Indiana Network for Patient Care (INPC). Initially, Golden Living is focusing on the Indianapolis market, with plans to later add its other 20 Indiana LivingCenters to the exchange. Linking to INPC will help it access the electronic records of patients as they move from acute care facilities to long term & post acute care (LTPAC).

Julianne Williams, a division president for Golden Living identified reduced re-hospitalizations as a key goal stating "We believe that the opportunity and ability to share medical information with the medical staff of hospitals will improve patient care and enable the best transition of care between us and any other medical provider."³

² Overhage, Marc. "Summary of Health Information Exchange Services in Indiana." Indiana Network for Patient Care. Regenstrief Institute/INPC, n.d. Web. 3 Aug 2010. <<http://www.regenstrief.org/medinformatics/inpc/hie-services-available/Summary%20Indiana%20HIE%20Services.pdf>>.

³ "Improving Care for Older Adults: First Post-Acute Care Company Joins Indiana Network for Patient Care." Golden Living Press Releases. Golden Living, 16 June 2010. Web. 3 Aug 2010. <<http://www.goldenliving.com/healthcare-news-events/gl-press-releases/press.aspx?assetId=53b48036-857b-4e98-b843-6c95786b80cb>>.

Appendices

Quality Improvement: Quality Health First® program (QHF) – The QHF program is run by the Indiana Health Information Exchange, Inc. in conjunction with Regenstrief. It builds upon the INPC system by providing physicians with disease management and preventive health summaries to help them track their patients with chronic illnesses and take steps to proactively care for them. Participating health insurers provide financial incentives to physicians.⁴

⁴ Overhage, Marc, 2010.

Appendices



Minnesota's Mandate for Interoperable EHRs by 2015 Case Study – Engaging PAC/LTC and BH Providers

Background:

The Minnesota Health Information Exchange (MN HIE) is a public-private collaborative that reflects the health community's strong commitment to pursue e-health goals in a coordinated, systematic, and thoughtful way. The vision of the Minnesota e-Health Initiative is to

“... accelerate the adoption and effective use of health information technology to improve health care quality, increase patient safety, reduce health care costs and enable individuals and communities to make the best possible health decisions.”

In 2007 and 2008, several significant changes in Minnesota law were enacted including:

- “A mandate that all hospitals and health care providers have an interoperable electronic health record (EHR) system by 2015.”
- “ By January 1, 2015, all hospitals and health care providers must have in place an interoperable electronic health records system within their hospital system or clinical practice setting. The commissioner of health, in consultation with the [Minnesota e-Health Initiative] Advisory Committee, shall develop a statewide plan to meet this goal, including uniform standards to be used for the interoperable system for sharing and synchronizing patient data across systems. The standards must be compatible with federal efforts. The uniform standards must be developed by January 1, 2009...”

The [Minnesota Statewide HIE Implementation Plan](#) identifies several benefits that are expected to arise though implementation of an interoperable EHR including:

Enabling clinicians to improve the continuity of care by being able to exchange information with their patients' other providers. Synchronizing information as a patient moves between a clinic, hospital and long term care facility.⁵

The Minnesota Statewide HIE Implementation Plan identifies providers that will be impacted by the Plan including:

⁵ Minnesota. Prescription for Meeting Minnesota's 2015 Interoperable Electronic Health Record Mandate: A Statewide Implementation Plan. , 2008. Web. 3 Aug 2010.
<<http://www.health.state.mn.us/ehealth/ehrplan2008.pdf>>.

Appendices

- **Assisted Living**
- **Home Health Agencies**
- Hospital/Health System Based
- Jail Health/Correctional Facilities
- **Mental/Behavioral Health**
- Primary Care Settings
- Group/Private Practice
- **Hospice**
- Independent
- **Long Term Care Facilities**
- **Mental Health Centers**
- **Skilled Nursing Facilities**

The Plan also identifies long-term care as a setting of special interest.⁶

PAC/LTC /BH Activities

1. As reported June 30, 2010 by [Government HealthIT](#), MNHIE began, "...a pilot with the association Aging Services of Minnesota that will enable 12 long-term care organizations to access patient medication lists, lab histories, clinical care documents, benefit eligibility data and the state immunization registry via a Web connection."²
2. In addition to creating HIT toolkits for physician practices, [Stratis Health](#) (Minnesota Quality Improvement Organization), has created HIT toolkits for nursing homes and home health agencies containing dozens of practical worksheets and other tools to assist in EHR assessment, planning, selection, implementation, effective use and maintenance.

⁶ Hayes, Heather. "Minnesota HIE pushes data to elder care providers." Government Health IT 30 June 2010: n. pag. Web. 3 Aug 2010. <<http://www.govhealthit.com/newsitem.aspx?nid=74123>>.

Appendices



Pennsylvania: Keystone Health Information Exchange **Case Study – Engaging PAC/LTC and BH Providers**

Background:

The Keystone Health Information Exchange (KeyHIE®) formed in April of 2005 under the leadership of Geisinger Health System and serves central and northeastern Pennsylvania. KeyHIE® is governed as a loose collaboration using a Memorandum of Understanding to support the efforts of the initiative. Bylaws have been drafted, but due to concerns with overhead, the group chose to defer a formal incorporation until it becomes appropriate. The KeyHIE® Governance Team meets quarterly in-person and also has a monthly teleconference to discuss ongoing projects. The Hospital and Healthsystem Association of Pennsylvania (HAP) has actively participated in these meetings.

As of January 2009 thirteen organizations have signed a Memorandum of Understanding (MOU) to move forward with creating a regional health information organization governing body.

Services:

When patients authorize it, physicians can access patient health information residing at any hospital participating in KeyHIE®, including:

- medications
- laboratory results
- history of recent hospital visits
- allergies
- diagnostic tests
- blood type

However, accessing clinical information through individual EHR portals proved to be cumbersome to most clinicians and resulted in low adoption by participants. In 2007, the project scope expanded to include a community document repository. In 2008, GE Healthcare was contracted to host a registry and repository based on the international Integrating the Healthcare Enterprise (IHE) platform. Publication of documents began in October 2008 with Discharge Summaries and History & Physicals, and expanded in 2009 to include Radiology reports.

Appendices

Clinicians using the KeyHIE® portal can now see a list of encounters from the Record Locator Service(RLS), and then access clinical information by selecting one or more clinical documents. This methodology allows most participants to contribute information they can readily produce today from existing systems, but it also positions KeyHIE® to maintain Continuity of Care Documents (CCDs). In the near future we expect EHR systems to connect directly to the KeyHIE® registry and repository to access and publish CCDs in order to improve care coordination for their patients. New participants may choose to maintain their own repository by registering their documents in a common registry. In this way KeyHIE® will support both a centralized and federated architecture.

PAC/LTC/BH Activities

1. Presbyterian Senior Living, a not-for-profit organization providing retirement and senior care services, is one of thirteen organizations that have signed a MOU to move forward with creating a governing body for KeyHIE. Presbyterian Senior Living and their affiliates provide services to more than 5,400 seniors in 23 locations in the mid-Atlantic region of Pennsylvania, Maryland, Ohio and Delaware
2. KeyHIE is working with stakeholders on processes to create and publish a standards-based CCD for the Nursing Home Minimum Data Set (MDS) and Home Health Outcome and Assessment Information Set (OASIS). The MDS and OASIS are federally mandated standardized assessment instruments for nursing homes and home health agencies. This project is intended to promote participation in KeyHIE by LTC and Home Care providers and enrich the patient information available to the continuum of providers participating in the Exchange.

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