Healthcare Quality Reporting Program

NURSING HOME SUBCOMMITTEE

3-4:30pm, 8/21/12
RIHCA, 57 Kilvert Street, Warwick, RI

Goals/Objectives
▪ To advise the Department on nursing home reporting and implement agreed-upon policies

Invitees		
☐ Rosa Baier, MPH	☐ Hugh Hall, MA	☐ Adele Renzulli
☐ Lonnie Bisbano	☐ Jim Nyberg, MPA	☐ Janet Robinson, RN, MEd, CIC
☐ John Gage, MBA, CNHA, CAS, FACHCA	☐ Gail Patry, RN, CPEHR (Chair)	☐ Samara Viner-Brown, MS
☐ Diane Gallagher	☐ Mariana Peterson, BSN	☐ Margaret Vigorito, RN, MS
☐ Stefan Gravenstein, MD, MPH	☐ Arthur Pullano	

Time	Topic/Notes
3:00pm	**Welcome** *Rosa Baier, MPH* - Today's objectives - Action items: • Share Steering Committee advisory letter and interview results (Rosa) • Reference nursing homes' NHSN needs in HAI advisory letter to HHS (Rosa) • Ask nursing homes about My InnerView survey instrument (Margaret) • Outreach to AHCA about satisfaction surveys (Rosa) • Research plans for quality-based nursing home compensation (Sam/Rosa)
3:05pm	**Resident and Family Satisfaction Surveys** *Rosa Baier, MPH* *Margaret Vigorito, RN, MS* - Results of survey about My InnerView (handout) - 2012 satisfaction survey process: • Letter sent to nursing homes • Timeline • Follow-up - Upcoming next steps

4:00pm **Open Forum & Next Steps**
Rosa Baier, MPH

- HHS Action Plan to Prevent Hospital-Acquired Infections (HAIs):
  - New Long-Term Care Facilities chapter (draft)
  - HHS soliciting public comments through Wednesday 8/22
  - Comments may be addressed to OHQ@hhs.gov
- Action items
- Next meeting: 10/16/12

Rhode Island Healthcare Quality Reporting Program Steering Committee

Rosa Baier, MPH
Department of Health Contractor (Facilitator)

Ted Almon
The Claflin Company (Business Community Representative)

Virginia Burke, Esq.
RI Association of Health Care (Licensed Facilities Representative)

Cathy Cranston
RI Partnership for Home Care (Licensed Facilities Representative)

Arthur Frazzano, MD
Rhode Island Medical Society (Medical Profession Representative)

Neal Galinko, MD, MS, FACP
UnitedHealthcare of New England (Health Insurer and Health Plan Representative)

Diane Gallagher
Alliance for Better Long-Term Care (Consumer Representative)

Debra McDonald, RN
Blue Cross & Blue Shield of RI (Health Insurer and Health Plan Representative)

Linda McDonald, RN
United Nursing and Allied Professionals (Nursing Profession and Organized Labor Representative)

Jim Nyberg
LeadingAge RI (Licensed Facilities Representative)

Donna Policastro, NP, RCN
RI State Nurses Association (Nursing Profession Representative)

Louis Pugliese
Eleanor Slater Hospital (Department of Mental Health, Retardation and Hospitals)

Gina Rocha, RN, MPH
Hospital Association of RI (Hospital Representative)

Vacant seats (5):
House of Representatives; State Senate; Department of Human Services; Department of Elderly Affairs; and one Director Appointment

April 18, 2012

Michael Fine, MD
Director of Health
Rhode Island Department of Health
Three Capitol Hill
Providence, RI 02908

Dear Dr. Fine:

On behalf of the Healthcare Quality Reporting Program's Steering Committee, which I facilitate, I am writing to provide the committee's recommendations regarding the program's current priorities and future direction.

As you know, the committee is a legislatively-mandated stakeholder group that advises the program on publishing comparative performance measures for licensed healthcare facilities and providers, per RIGL Chapter 23-17.17, Section 23-17.17-6. The committee's role includes providing policy recommendations to guide programmatic activities and direction. Since the program's inception in 1999, we have made significant progress publishing reports: our successes include being among the first states to report hospital, nursing home and home health patient satisfaction data and the only state (to date) to collect and report data on physicians' health information technology (HIT) adoption.

The program is at a critical juncture, currently resuming activities after a nine-month contracting hiatus (July 2011-March 2012) and with a state operating budget now at 50% of historical funding levels (1999-2011). We must critically examine every facet of the program to maximize its benefit and impact.

The recommendations that follow on pp. 2-3 are based on structured interviews conducted with 11 of the 12 current committee members between April 4, 2012 and April 12, 2012. Two program staff conducted each interview, recording notes independently and then combining them to identify overall themes and formulate recommendations. We vetted the first draft of this letter and the attached recommendations with the full committee at its April 16, 2012 meeting, prior to finalizing and sending them to you.

Additionally, at the April 16, 2012 meeting, the committee requested that you share Department of Health population health outcomes goals with the program, so that they can begin to align reporting efforts with such goals.

On behalf of the committee, I suggest that you use these recommendations to prioritize and implement program activities. Thank you for your consideration.

Sincerely,

Rosa Baier

Rosa Baier, MPH
Facilitator, Steering Committee
Program Director, Healthcare Quality Performing Program

CC: Steering Committee Members
Samara Viner-Brown, MS, Chief, Center for Health Data and Analysis

Healthcare Quality Reporting Program Recommendations
April 16, 2012

The following recommendations from the Steering Committee are based on structured interviews conducted with 11 of our 12 current committee members between April 4, 2012 and April 12, 2012 and feedback received during the April 16, 2012 committee meeting.

1. **Sustain all current activities.**

   None of the committee members could identify a program activity that could be discontinued or streamlined. Committee members universally said that current activities (including both the stakeholder process and the reports themselves) are valuable and should be sustained.

   Many specifically commented on how useful the data reports are for healthcare providers' peer benchmarking and internal quality improvement, although they recognized opportunities to improve both the website's usability and consumers' awareness and use of the reports.

2. **Expand reporting to align with local and national priorities**.

   Most committee members commented on the importance of further expanding program activities to support and anticipate the changing healthcare environment.

   Locally, this includes ensuring that the data reports are used to inform state planning and reflect topics, such as home health care, that support policies to shift patients to home and community-based services.

   Nationally, this includes aligning reporting topics with patient safety and hospital readmission initiatives, for example, and incorporating changing Medicare reporting methods and quality measures.

3. **If activities *must* be streamlined due to funding, retain primary data collection efforts and eliminate clinical quality measure reports.**

   Several participants cited primary data collection efforts that are important and should be sustained; specifically mentioned were the home health satisfaction survey, nursing home satisfaction survey and physician HIT survey. These primary data support concurrent state policies and priorities, such as policies shifting patients from acute and long-term care to home and community-based services and payors' efforts to accelerate HIT adoption.

   There was general agreement that the program could link to national reports, where they exist, rather than duplicate efforts to generate local report formats; examples would be the home health, hospital and nursing home clinical quality measure reports. However, most committee members saw value in the local formats and said that eliminating them would be a last resort.

4. **Seek grant funding for both operations and research.**

   All committee members supported using the state funding to apply for external funding.

   Grant funding could sustain current stakeholder and reporting activities and also enable expansion; for example, improved marketing of reports to consumers, website redesign or the addition of new reporting topics.

   Research funding could support consumer testing of report content and formats, as well as evaluation of the impact of reports on patient choices, outcomes and costs. The program could disseminate research lessons to build on our public reporting leadership and better position the program to receive grant funding.

5. **Improve consumer awareness and use of the reports**.

   Many committee members recognized lack of consumer awareness as a key barrier to ensuring the program's maximal impact. Currently, the program notifies subcommittee members when recurring reports are released and disseminates press releases for noteworthy reports; but the reports are only available electronically and are not specifically marketed either to consumers (patients and families) or to the providers who help consumers make care decisions.

   Low-cost suggestions to address this issue included leveraging committee members' existing communication vehicles (websites, newsletters, etc.) to share information more widely and outreaching to community partners (AARP, THE POINT, etc.) and discharge planners who can incorporate the reports into the information they share with consumers.

   Of the three recommendations centered on the reports themselves (recommendations # 5-7), committee members cited awareness as the highest-priority task.

6. **Improve the content and format of the reports.**

   Several comments focused on the content and format of the reports, many of which are published as "diamond reports" (one, two or three diamond ratings) or bar graphs and most of which include all providers in a single, static PDF file format. Recommendations included providing additional context (at appropriate health literacy levels) and exploring ways to make the reports interactive and user-driven, allowing consumers to view multiple providers and several quality measures of their choice.

   These comments are in line with recommendations provided to the program by a 2005 technical expert panel, which recommended testing reports with consumers and incorporating cognitive science into the report formats.

7. **Improve the program's website and branding**.

   Similar to recommendation #6, committee members advised improving the navigation, language (context) and ease of use of the reporting program website.

   Adding key words to the web pages may be an easy way to increase the likelihood that consumers find the reports, since there is some evidence that consumers use different search phrases than experts. Testing the navigation and text with consumers may also increase the likelihood that they use the information they find.

   Many other states have dedicated URLs that are "branded" and marketed to consumers (e.g., MyHealthOptions or CalHospitalCompare). Recommendations included creating a similar website, either separate from or linked to the Department's.

8. **Expand committee members' roles and responsibilities.**

   Many suggested that the program ask committee members to provide in-kind support, either to accomplish program tasks (if needed) or to maximize the program's community reach (similar to recommendation #5). Some suggested that the steering committee's in-kind support could be codified in a charter that describes committee members' roles and responsibilities.

Rhode Island Healthcare Quality Reporting Program
Hospital-Acquired Infections Subcommittee

Leonard Mermel, DO, ScM
HAI Subcommittee Co-Chair and Academic Researcher (Rhode Island Hospital)

Rosa Baier, MPH
Facilitator and Rhode Island HAI Coordinator (Rhode Island Department of Health)

Utalpa Bandy, MD
State Epidemiologist (Rhode Island Department of Health)

Marlene Fishman, MPH, CIC
Infection Prevention Representative (Our Lady of Fatima Hospital)

Julie Jefferson, RN, MPH, CIC
Infection Prevention Representative and Infection Control Practitioners of Southeast New England Liaison (Rhode Island Hospital)

Maureen Marsella, RN, BS
Medicare QIO Liaison (Healthcentric Advisors)

Linda McDonald, RN
Organized Labor Representative (United Nurses and Allied Professionals)

Pat Mastors
Consumer Organization Representative (Pear Health, LLC)

Robin Neale, MT (ASCP), SM, CIC
Infection Prevention Representative (Women & Infants' Hospital)

Kathleen O'Connell, RN, BSN, CIC
Infection Prevention Representative (Kent Hospital)

Lee Ann Quinn, RN, BS, CIC
Infection Prevention Representative (South County Hospital)

Janet Robinson, MEd, RN, CIC
Infection Prevention Representative (East Side Clinical Laboratory Inc.)

Georgette Uttley, MEd, BSN, RN
Health Insurer and HMO Representative (Blue Cross & Blue Shield of Rhode Island)

Nancy Vallande, MSM, MT, CIC
Infection Prevention Representative (The Miriam Hospital)

Margaret Vigorito, MS, RN
ICU Collaborative Representative (Healthcentric Advisors)

Cindy Vanner
State Laboratory Representative (Rhode Island Department of Health)

Samara Viner-Brown, MS
HAI Subcommittee Co-Chair (Rhode Island Department of Health)

June 21, 2012

Department of Health and Human Services (HHS)
Office of Healthcare Quality
200 Independence Ave, SW., Room 711G
Washington, DC 20201,
Attention: Draft National HAI AP

To Whom It May Concern:

On behalf of the Rhode Island Department of Health's Hospital-Acquired Infections (HAI) Subcommittee, which we facilitate, we are writing to provide our committee's feedback on the draft *National Action Plan to Prevent Healthcare-Associated Infections: Roadmap to Elimination (HAI AP).*

The Rhode Island HAI Subcommittee is a multi-disciplinary stakeholder group charged with implementing our state's HAI Plan, under the 2009 National HAI AP, and publicly reporting HAI, as part of a legislatively-mandated healthcare quality reporting program.

Our group membership, listed at left, is mandated by Rhode Island General Law Chapter 23-17.17-6 and includes the following categories listed in the Federal Register: the general public; healthcare, professional and educational organizations/societies; health system providers; state and local public health agencies; public health organizations; and insurers and business groups. This composition ensures that we have the knowledge and expertise to inform implementation of our state's HAI Plan and also to react to the draft HAI AP.

First, we commend HHS for including numerous federal agencies in the development of the draft HAI AP, for explicitly stating that your goal is to coordinate and maximize the efficiency of prevention efforts across the federal government, and for specifying different agencies' roles in implementing the HAI AP. Ensuring alignment and preventing duplication is of the utmost importance, both (1) to ensure that all payors, policymakers and stakeholders are collecting and benchmarking performance using the same methods and (2) to streamline data requests for providers, encouraging efficiency.

We strongly encourage further alignment between federal agencies, such as the CDC and CMS, to ensure that requirements for NSHN surveillance and public reporting are synchronized. An example of the impact of federal misalignment on state-level work to implement HAI Plans is our committee's work to publicly report *C. difficile*: In 2009, we selected the NHSN *C. difficile* infection (CDI) methodology (one of two CDC-provided choices). We now have five quarters of data collected and planned to begin releasing public reports in late 2012, once we accrued sufficient data to account for variability. However, beginning in July 2012, CMS is requiring Inpatient Prospective Payment System (IPPS) hospitals to submit data using the NHSN Lab ID methodology; this includes all 11 acute-care hospitals in Rhode Island. (All other hospitals nationwide will be required to begin submitting these data in January 2013.) This is problematic for local

reporting efforts, because our state's hospital infection preventionists cannot commit the resources to collect both CDI and Lab ID. Switching to Lab ID may delay public reporting by 18 months or more—and yet, the infection preventionists believe strongly that CDI data most accurately reflect incidence and would have preferred to continue CDI surveillance and reporting.

Second, we support the expansion of the draft HAI AP from the acute-care setting to other healthcare settings, including long-term care. Infections require care coordination and precautions as patients transition from one provider to another, making HAIs an important issue for providers across the care continuum. Expanding the HAI AP to include other healthcare settings recognizes the cross-setting nature of HAIs and elevates the importance of related prevention efforts within local communities.

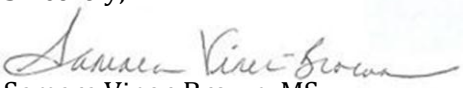
We urge caution, however, if long-term care facilities are required to submit data to NHSN, as was recently stated by Dr. Nimalie Stone from the CDC at the American Infection Control Practitioners Annual Conference. The infrastructure and resources are significantly different in long-term care as compared to acute care. The vast majority of long-term care facilities do not have dedicated infection preventionists, as hospitals do, and staff often have limited access to and ability to use computers. These facilities will need resources, education and assistance to submit NHSN data while minimizing the opportunity cost with regards to infection prevention activities.

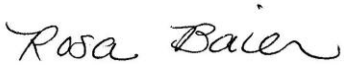
Third, we applaud the draft HAI AP's inclusion of healthcare worker influenza vaccination. Vaccinating healthcare workers is an important strategy to protect vulnerable patients by curbing the transmission of influenza. In Rhode Island, we publicly report healthcare worker influenza vaccination rates for our hospitals and are piloting a similar report for nursing homes. We also have draft rules and regulations that propose mandating influenza vaccination for workers. Including healthcare worker influenza vaccination in the HAI AP will further state and national efforts to increase influenza vaccination uptake.

Finally, we suggest that HHS incorporate patent engagement and participation into the draft HAI AP. Locally and nationally, the driving purpose behind public reporting is to inform and protect the public, and to achieve the greatest possible quality of care. Yet despite our collective commitment and best efforts, the extent to which the data we are reporting are meaningful and actionable to consumers remains unclear. We support greater patent engagement and participation to help drive the agenda for meaningful improvement in HAIs, along with solutions that inform and educate patients, enhance health literacy, foster better patient-provider communication and encourage patients to take greater ownership of their healthcare experience.

We thank you for your consideration of these comments and encourage you to contact us with questions or for clarification.

Sincerely,





Samara Viner-Brown, MS
Rhode Island Department of Health
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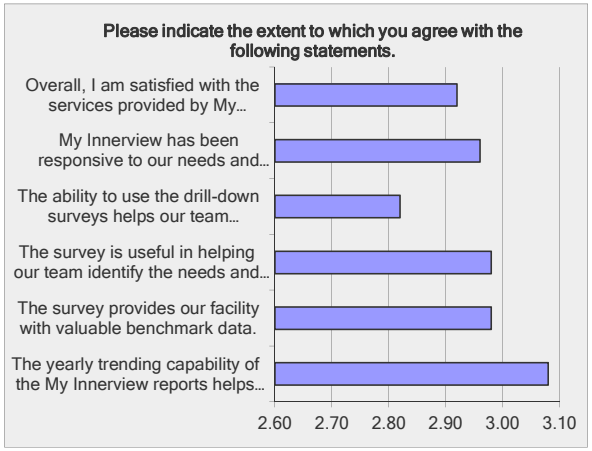
Rosa Baier, MPH
Healthcentric Advisors
rbaier@healthcentricadvisors.org

CC: HAI Subcommittee Members

Department of Health- NH-MyInnerView survey feedback

Please indicate the extent to which you agree with the following statements.

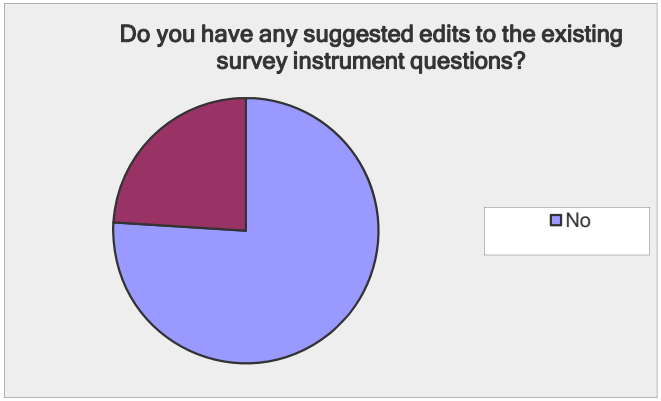
Answer Options	strongly disagree	disagree	agree	strongly agree	Rating Average	Response Count
The yearly trending capability of the My Innerview	2	4	30	12	3.08	48
The survey provides our facility with valuable	4	5	28	12	2.98	49
The survey is useful in helping our team identify the	4	7	24	14	2.98	49
The ability to use the drill-down surveys helps our team	4	10	26	9	2.82	49
My Innerview has been responsive to our needs and	3	4	33	8	2.96	48
Overall, I am satisfied with the services provided by My	5	4	31	10	2.92	50
Please provide any additional comments about your above responses:						9
					answered question	50
					skipped question	0



Number	Please provide any additional comments about your above responses:
1	We use the benchmarks to initiate quality improvement activities but there is not much of a difference year to year. We feel that yearly is too often to conduct the survey. We feel it would be much more benificial to conduct the survey every 2 to 3 years.
2	The we utilize the data in general but not to ID needs and wants
3	This type of resident & family satisfaction tracking is already done on our corporate level.
4	Our facility provides satisfaction surveys to residents and families after discharge which helps our team identify the needs and wants of our residents and families. Not a negative to My Innerview in any way, only we provide our own surveys. And as the Administrator I review each and every one. Thank you
5	I find that compared to the initiation of this service -the last 2 years this organization uses myinnerview less and less. We find that for short stay folks, exit interview are more timely and not covered in this effort. For long term families, they complain the survey is too long and I believe that not enough participate affecting validity. It has become a small piece of our QI process. However, we do incorporate a review all the same.
6	too much info. on the web site - takes too long to navigate. Simplifying would increase use of the data.
7	I asked to review the survey results and when I tried my facility was not listed. I was given additional help but have not been able to review the results.
8	They do not communicate well when asking for information. The questions are not relevant aspecially the employye satisfaction surveys. Worthless
9	the questions that are directed towards "management" are not specific to who management is. It could be the

Department of Health- NH-MyInnerView survey feedback

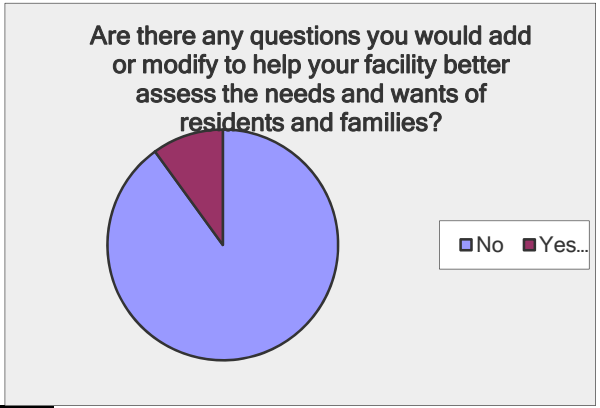
Do you have any suggested edits to the existing survey instrument questions?		
Answer Options	**Response Percent**	**Response Count**
No	76.0%	38
Yes (please specify):	24.0%	12
	answered question	50
	skipped question	0



Number	Yes (please specify):
1	I think if the questions were not so general it would be helpful
2	On the employee interview, the question that asks if an employee thinks that management cares about them as an employee, needs to be more specific in relation to what defines "management" -- charge nurse, unit manager, Department head, or administrator.
3	If a particular floor has issues there is no way to cull out that information. Also, some questions, like "responsiveness of management" do not define whether respondents are evaluating managers on the floor or administration.
4	For both families and residents - some tool using domains with 5 response options, not 4. Allow for drop downs for those who want to respond to detail, but creat an opportunity for those who may want a brief version.
5	The question regarding rating of rehab therapy is misleading. Very few long term residents actually have an order for rehab therapy. However,
6	Have not been able to review the survey
7	Who is your supervisor, what does the question really mean, employee satisfaction a waste of money. I do my own.
8	would like clarification on the staff survey. who is the Supervisor in regards to the question about support from your supervisor, or something like that. Is this referring to the Administrator, charge nurse, dns, etc. I have used this tool in several RI homes and that always comes up in discussion because it is always has a more negative answer. I would suggest adding immediate supervisor if nothing else but a better clarified question would be great
9	WHen using the term "administration or mgt" it would be better to clarify: Immediate supervisor or overhead administration. There is a big difference which help us to truly identify.
10	The questions related to management need to be drilled down to who management is. We have all departments depicted in the survey but who is management?
11	The tool has not been upgraded for years it is old and need to refect more what customers are requesting.
12	Studies show that sicker residents have overall lower satisfaction than residents that are healthier, acuity needs to be a factor in satisfaction surveys.

Department of Health- NH-MyInnerView survey feedback

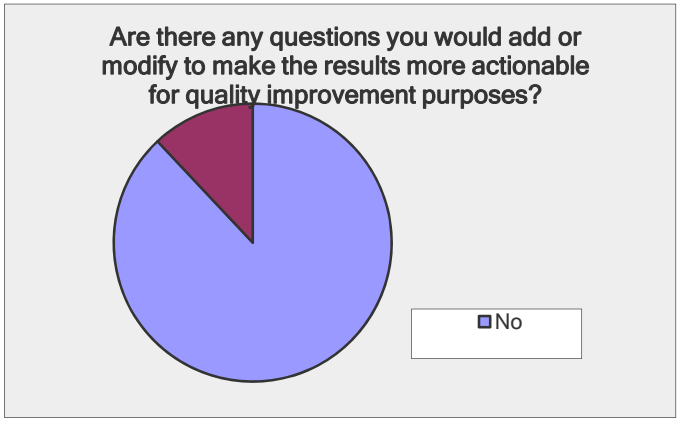
Are there any questions you would add or modify to help your facility better assess the needs and wants of residents and families?		
Answer Options	**Response Percent**	**Response Count**
No	90.0%	45
Yes (please specify):	10.0%	5
	answered question	50
	skipped question	0



Number	Yes (please specify):
1	Yes..maybe break the questions down into more specifics. We have not started the QIS survey yet, but perhaps some quesitons similar to what the State surveyors will be asking
2	Something related to specifics regarding response from staf
3	Have not been able to review the survey
4	Drill down on nursing. Do you have supplies, the building is loaded, they just do not have them in the closet. Ridiculous.
5	Cukture chanf

Department of Health- NH-MyInnerView survey feedback

Are there any questions you would add or modify to make the results more actionable for quality improvement purposes?		
Answer Options	**Response Percent**	**Response Count**
No	88.0%	44
Yes (please specify):	12.0%	6
	answered question	50
	skipped question	0

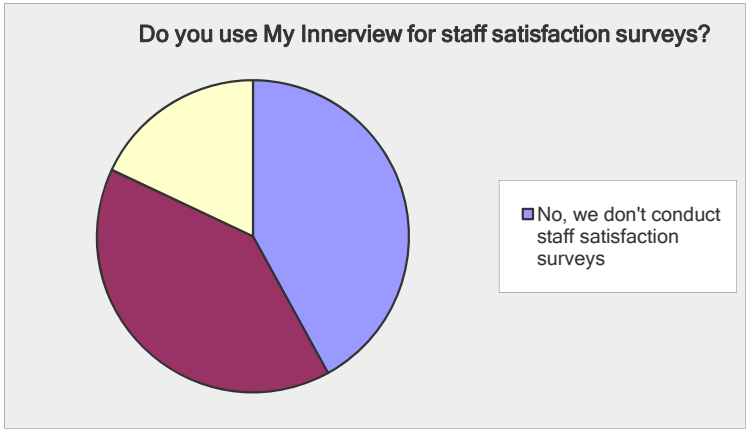


Number	Yes (please specify):
1	same as above
2	Question regarding therapy needs to be modified
3	Have not been able to review the survey
4	More specific, pointed questions. Management cares, who what department?
5	see prior response as this always makes it more difficult to isolate the issue and make the necessary changes.
6	Yes more information required before one moves on when there is a negative response.

Department of Health- NH-MyInnerView survey feedback

Do you use My Innerview for staff satisfaction surveys?		
Answer Options	**Response Percent**	**Response Count**
No, we don't conduct staff satisfaction surveys	42.0%	21
Yes, we use My Innerview	40.0%	20
No, we use another vendor (please indicate which one):	18.0%	9
	answered question	50
	skipped question	0

Number	No, we use another vendor (please indicate which one):		
1	facility survey.		
2	We use our own that we developed		
3	Corporate generated		
4	we do inhouse surveys		
5	internal tool		
6	we use inhouse reviews		
7	Internal form		
8	we developed our own tool many years ago before My Inner View existed!		
9	Our own Customer Satisfaction Survey		



National Action Plan to Prevent Healthcare-Associated Infections: Roadmap to Elimination
CHAPTER 10. LONG-TERM CARE FACILITIES

I. Introduction

The purpose of this chapter is to provide a guide to identify and prioritize efforts for the prevention of healthcare-associated infections (HAIs) in long-term care facilities (LTCFs). This chapter is an addition to the original *National Action Plan to Prevent Healthcare Associated Infections: Roadmap to Elimination* (the National Action Plan), and constitutes the third phase of the National Action Plan. The present document represents a culmination of several months deliberation by subject matter experts across The U.S. Department of Health and Human Services' (HHS) operating and staffing divisions, including: the Administration on Aging (AoA); the Agency for Healthcare Research and Quality (AHRQ); the Centers for Disease Control and Prevention (CDC); the Centers for Medicare & Medicaid Services (CMS); the Health Resources and Services Administration (HRSA); the Indian Health Services (IHS); the Assistant Secretary for Planning and Evaluation (ASPE); and the Office of the Assistant Secretary for Health (OASH) along with representatives from the Department of Defense (DoD) and the Department of Veterans Affairs (VA), and is offered to the HHS Steering Committee as a starting point for determining policy direction, quality improvement guidelines and further areas of research that will benefit those residing in Long Term Care Facilities (LTCFs).

HAIs are a leading cause of death in the United States and cause needless suffering and expense. It is estimated that one in twenty U.S. hospitalized patients will acquire a HAI.[1] While this data is specific to acute care hospital patients, HAIs can occur in any healthcare setting including LTCFs.

Long Term Care Facilities (or LTCFs) are defined as facilities providing a spectrum of institutional health care programs and services outside the acute care hospital. Since the publication of the first phase of the National Action Plan in 2009, which focused on the acute care setting, there has been growing awareness of the need for a chapter to address LTCFs. A growing number of individuals are receiving care in LTCFs and it is projected that, by 2030, >5 million Americans will reside in nursing homes/skilled nursing facilities (NHs/SNFs).[2] These trends create an increased risk for HAIs, which can worsen health status and increase healthcare costs. This chapter seeks to review the current state of HAIs in LTCFs, current promising practices in infection control, surveillance data sources and will propose priority measures and goals to guide federal HAI prevention initiatives in LTCFs.

A. Burden of HAIs in LTCFs

For the purposes of this document, several terms will be defined. Nursing home (NH) is the term used to describe a nursing facility providing primarily long-term maintenance and restorative care for individuals needing support with their activities of daily living. Skilled Nursing Facilities (SNFs) are defined as facilities offering more intensive medical and nursing services,

[1] Klevens MR, Edwards JR, Richards CL & et al. Estimating Health Care-Associated Infections and Deaths in U.S Hospitals, 2002. Public Health Reports. March-April 2007; 122: 160-6.

[2] Strausbaugh LJ, Joseph CL, The Burden of Infection in Long-Term Care Infect Control Hosp Epidemiol 2000; 21: 674-679

such as subacute care, but not as intensive as acute care hospital levels. The vast majority of certified nursing homes in the US provide a combination of long-term nursing care or restorative services and skilled nursing services. So, we are combining the terms Nursing Homes and Skilled Nursing Facilities (NHs/SNFs) to represent this healthcare provider setting.

In 2000 it was estimated that the burden of HAIs ranges from 1.6 to 3.8 million infections among 1.5 million Americans in 16,700 US NHs/SNFs every year.[3] Data used to calculate these burden estimates was limited to reports from research studies involving small numbers of facilities using different methodologies to define HAIs. Additionally, these studies represent NHs and SNFs exclusively and were conducted over 10 years ago. Data are lacking from other LTC settings such as assisted living facilities, residential care facilities, and independent senior living communities. These burden estimates, therefore, may not be reflective of the current population residing within the full spectrum of LTCFs. These burden estimates, therefore, may not be reflective of the current population in LTCFs.

More recent estimates of the rates of HAI occurring in NH/SNF residents range widely from 1.4 to 5.2 infections per 1,000 resident-care days.[4,5] Extrapolations of these rates to the approximately 1.5 million US adults living in NHs/SNFs, suggest a range from 765,000 to 2.8 million infections occurring in US NHs/SNFs every year.[6] With the rising number of individuals receiving more complex medical care in NHs/SNFs, it is possible that these numbers underestimate the true magnitude of HAIs in this setting. Additionally, morbidity and mortality due to HAIs in LTCFs is substantial. Infections are among the most frequent causes of transfer from LTCFs to acute care hospitals and 30-day hospital readmissions.[7,8] Data from older studies conservatively estimate that infections in the NH/SNF population could account for over 150,000 hospitalizations each year with a resultant $673 million in additional healthcare costs.[5] Infections have also been associated with increased mortality in this population.[4,9,10] Extrapolations based on estimated from older publications suggests that infections could result in as many as 380,000 deaths among NH/SNF residents every year.[5]

B. Scope of Long-Term Care Settings in the National Action Plan to Prevent Healthcare-Associated Infections: Roadmap to Elimination

Taking into account the heterogeneity of resident populations in different LTCFs, as well as differences in oversight, staffing levels and payment incentives, we decided to focus on NHs and SNFs for the first iteration of this chapter of the National Action Plan. The ultimate goal is to

[3] Strausbaugh LJ Joseph CL, The Burden of Infection in Long-Term Care Infect Control Hosp Epidemiol 2000; 21: 674-679

[4] Pennsylvania Patient Safety Authority. 2009 Annual Report. Available at: http://patientsafetyauthority.org/Documents/Annual_Report_2009.pdf Accessed [September 15, 2011].

[5] Koch AM, Eriksen HM, Elstrøm P, Aavitsland P, Harthug S, Severe consequences of healthcare-associated infections among residents of nursing homes: a cohort study Journal of Hospital Infection (2009) 71, 269-274

[6] Strausbaugh LJ Joseph CL, The Burden of Infection in Long-Term Care Infect Control Hosp Epidemiol 2000; 21: 674-679

[7] Teresi JA, Holmes D, Bloom HG, Monaco C & Rosen S. Factors differentiating hospital transfers from long-term care facilities with high and low transfer rates. Gerontologist. Dec 1991; 31(6):795-806

[8] Ouslander JG, Diaz S, Hain D, Tappen R, Frequency and Diagnoses Associated With 7- and 30-Day Readmission of Skilled Nursing Facility Patients to a Nonteaching Community Hospital. J Am Med Dir Assoc 2011; 12: 95–203

[9] Boockvar KS, Gruber-Baldini AL, Burton L, Zimmerman S, May C & Magaziner J. Outcomes of infection in nursing home residents with and without early hospital transfer, J Am Geriatr Soc. Apr 2005; 53(4): 590-6

[10] Ahmed AA, Hays CL, Liu B & et al. Predictors of in-hospital mortality among hospitalized nursing home residents: an analysis of the National Hospital Discharge Surveys 2005-2006. J Am Med Dir Assoc. Jan 2010; 11(1):52-8. Epub 2009 Dec 10

develop a more comprehensive federal HAI prevention schema for the entire spectrum of LTCFs.

Given that the intent and goal of this chapter is to best guide current and future federal efforts in HAI prevention in LTCFs, the working group decided upon an approach that would allow for the discussion of various infections and metrics. This discussion led to a resulting chapter that is limited in scope. We have decided to focus on the NHs and SNFs settings and the five priority areas and goals: NHSN enrollment, Urinary tract infections/Catheter Associated Urinary tract infections (UTIs/CAUTIs), *Clostridium difficile* infection(CDI), resident influenza and pneumococcal vaccination and healthcare personnel influenza vaccination. These are intended not as a final goal but as a first step.

Other settings and HAIs that are discussed in this chapter are intended to provide background on the current status of HAIs in LTCFs. While we have chosen not to focus on these other settings and issues in this iteration, we understand their importance and the potential for HAI occurrence in these settings, as demonstrated by numerous outbreaks of viral hepatitis infections in assisted living facilities due to unsafe blood glucose monitoring practices in that setting.[11,12] We have focused on a select group of infections in certain settings, but we understand that fundamental infection prevention practices, such as hand washing, will aid in reducing HAIs in any setting.

II. Long-Term Care Settings

A. Understanding Long-Term Care

Establishing guidelines for an appropriate approach to infections in LTCFs is complicated by the heterogeneity of these settings and the patient populations residing in them. There are varying terms, and degrees of inclusiveness that make it difficult to provide a single definition of LTC. Therefore we will use the Medicare definition. Medicare defines LTC as "a variety of services that includes medical and non-medical care that supports both the health and personal care needs of individuals who may have a chronic illness or are living with a disability, either physical or intellectual. LTC services support individuals in their activities of daily living (ADLs), and provide assistance in typical tasks such as bathing, dressing and eating."[13]

These various combinations of services can be stratified in a number of ways—by regulating body (state or federal), by location of the services, the level of care or length of time support is provided, and/or by the goal of the care.[14,15] For some residents of LTCFs, especially those in NHs, the goal of the individual's care may be to maintain their health and functional status by addressing their healthcare and ADL needs, while for others it might be to maximize dignity and

[11] Thompson ND, Barry V, Alelis K, Cui D & Perz JF. Evaluation of the potential for bloodborne pathogen transmission associated with diabetes care practices in nursing homes and assisted living facilities, Pinellas County. J Am Geriatr Soc. 2010; 58(5); 914-8.

[12] Patel AS, White-Comstock MB, Woolard CD & Perz JF. Infection control practices in assisted living facilities: a response to hepatitis B virus infection outbreaks. ICHE; 30(3);209-14

[13] What is Long-Term Care? (n.d.) Retrieved August 11, 2011, from Medicare: http://www.medicare.gov/LongTermCare/Static/Home.asp

[14] Plochg T, Deloij DMJ, van der Kruk TF, Janmaat TACM, Klazinga NS. Intermediate care: For better or worse? Process evaluation of an intermediate care model between a university hospital and a residential home. BMC Health Services Research. May 2005; 35(5).

[15] Transitions of Care in the Long-term Care Continuum, AMDA Clinical Practice Guideline, 2010. Retrieved from http://www.amda.com/tools/clinical/TOCCPG/index.html

comfort as their health and functioning decline. In other settings, the goal of care may be to provide transitional support until an individual's return to a community setting (skilled nursing/sub-acute rehabilitation) or to maintain independence and connection to community living (home health services or community-based long-term services and support). Another goal of LTC may be to provide respite for informal caregivers (e.g., adult day services).

B. Long-Term Care Settings

LTC services are delivered in a variety of settings and provide various levels of support across the continuum of care. The blending of services and workforces will continue to span across many LTC settings as new models of care emerge and technology allows for delivery of complex care in a greater number of environments outside of traditional healthcare facilities.[16,17]

We are focusing on LTCFs. However, it is important to be able to view LTCFs within the context of the continuum of LTC services. The processes for setting standards, monitoring outcomes, and evaluating quality of care in these arenas are related. In order to define the scope of this strategic action plan for addressing HAIs in LTCFs, we examined three common settings along the continuum of LTC services and categorized frequently used settings within each one (Appendix A):

Facility Based Long-Term Care: At a minimum, these models or settings provide housing for individuals needing LTC support, but level of support can range from minimal support for ADLs to full 24-hour skilled nursing care. A main feature of facility-based LTC is optimizing the functional status of residents.[18] Also, many models of facility-based care provide a scale of services that allows for an increasing level of support without having to transfer to another facility.[19] Continuing care retirement communities, which may include independent living, assisted living, and CNFs on the same campus, are examples. These settings may be regulated at the state or federal level, or both (for NHs).

Home and Community-Based Supports and Services: The major goal of home-based supports and services is to maintain and support independence and community-living. It is accomplished through the provision of various social and clinical services in an individual's home or residential setting. In many states, home- and community-based supports and services also are furnished in some facility-based settings such as assisted living and board and care residences, with the goal of supporting maximum independence and avoiding transfer to a higher, more expensive level of care. Home- and community-based long-term supports and services also combines formal workforce supports and services with informal caregiver support.[20, 21] Services can include personal care services (assistance with ADLs),

[16] Plochg T, Deloij DMJ, van der Kruk TF, Janmaat TACM, Klazinga NS. Intermediate care: For better or worse? Process evaluation of an intermediate care model between a university hospital and a residential home. BMC Health Services Research. May 2005; 35(5).

[17] Leff B, Burton L, Mader SL, Naughton B, et al. Hospital at home: Feasibility and outcomes for a program to provide hospital-level care at home for acutely ill older patients. Annals of Internal Medicine. Dec. 2005; 143(11): 798-808

[18] Transitions of Care in the Long-term Care Continuum, AMDA Clinical Practice Guideline, 2010. Retrieved from http://www.amda.com/tools/clinical/TOCCPG/index.html

[19] Sanders, J. Continuing Care Retirement Communities: A Background and Summary of Current Issues, Department of Health and Human Services, 1997. Retrieved from http://aspe.hhs.gov/daltcp/reports/ccrcrpt.htm#ccrc)

[20] Skarupski KA, McCann JJ, Bienias JL, Wolinsky FD, et al. Use of home-based formal services by adult day care clients with Alzhiemer's disease. Home Health Care Service Q. 2008; 27(3): 217-39.

[21] Davey A, Femia EE, Zarit SF, Shea DG, et al. Life on the Edge: Patterns of formal and informal help to older adults in the United States and Sweden. Journal of Gerontology: Psychological and Social Sciences. Sept. 2005; 60(5): S281-88.

home health, and skilled nursing, as well as many others.[22,23] As technology improves, becomes more accessible, and is combined with improvements in medical care, more care will be provided formally (through paid support) in the home and supported by increased financial resources for home-based care. The Money Follows the Person Demonstration, the Balancing Incentives Program, Health Home Demonstration, Independence at Home Demonstration, Community First Choice and Person Centered Medical Homes are examples. As these programs continue to develop and evolve, the defining qualities such as workforce, training and HAI preventions will further blend the continuum of LTC.

Bridge or Substitutive Care: This term refers to models of care that span settings and bridge between medical and social service needs or allow for facility-based levels of care to be provided in community-based settings.[24,25] Models such as adult day care incorporate various levels of medical care and social support that have been evaluated to varying degrees.[26] Medically oriented models such as the Program for All Inclusive Care for the Elderly (PACE), provides in-home medical care to individuals needing NH/SNF level of support. Other socially oriented models feature a main goal of providing support to both the individual and caregiver and provide social interaction, personal care services and chronic disease management.[25,27] Respite care, or "care provided in the home or facility intermittently in order to provide temporary relief to a family home care giver" is an additional example of a type of LTC that may span settings, but supports an individual's goal to remain in a community residential setting.[28]

C. Differentiating Long-Term Care and Post-Acute Care

The Medicare payment structure identifies four post-acute care providers (i.e., services following acute care hospitalizations): Long-Term Care Hospitals (LTCHs), Inpatient Rehabilitation Facilities (IRFs), NHs/SNFs, and Home Health Agencies (HHAs).[29] With the exception of HHAs, all of these are considered to be LTCFs. LTCHs, also known as long-term *acute* care hospitals, provide complex medical services to a population more comparable to an acute care intensive care unit population than those receiving traditional LTC. Similarly, IRFs, also referred to as *acute* rehabilitation facilities, provide intensive rehabilitation services, which differentiates them from the sub-acute rehabilitation provided in NHs and SNFs. Although the population in these post-acute care settings has overlapping LTC service needs, the differences in acuity/complexity of care delivered and resources available in LTCHs and IRFs make them separate and distinct from the traditional settings of LTC.

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[22] Definitions & Need of LTC (n.d.) Retrieved September 27, 2011, from The National Clearinghouse for Long-Term Care Information: http://www.longtermcare.gov/LTC/Main_Site/Understanding/Definition/Index.aspx

[23] Types of Long-Term Care (n.d.) Retrieved August 11, 2011, from Medicare: http://www.medicare.gov/LongTermCare/Static/TypesOverview.asp

[24] Plochg T, Deloij DMJ, van der Kruk TF, Janmaat TACM, Klazinga NS. Intermediate care: For better or worse? Process evaluation of an intermediate care model between a university hospital and a residential home. BMC Health Services Research. May 2005; 35(5).

[25] Leff B, Burton L, Mader SL, Naughton B, et al. Hospital at home: Feasibility and outcomes for a program to provide hospital-level care at home for acutely ill older patients. Annals of Internal Medicine. Dec. 2005; 143(11): 798-808

[26] Baumgarten M, Lebel P, LaPrise H, LeClerc C, Quinn C. Adult day care for the frail elderly: Outcomes, satisfaction, and cost. Journal of Aging and Health. May 2002; 14(2): 237-59.

[27] Hartle, M., Jensen, L. (n.d.) *Planning and Creating Successful Adult Day Services and Other Home and Community-Based Services* [White paper]. Retrieved from http://www.nadsa.org/wp-content/uploads/2011/05/NADSA-Tutorial-for-Starting-Center.pdf

[28] MeSH, 1985

[29] Medicare Payment Policy, MedPAC report March 2011. Available here: http://www.medpac.gov/documents/Mar11_EntireReport.pdf

III. Current Status of HAIs and Infection Control in Long-Term Care

A. Epidemiology of HAIs in LTC

Although the LTC setting covers a broad array of facility-types and services, the majority of HAI data available in the US relates to NH/SNF residents. Two relatively recent studies report the prevalence of NH/SNF associated infections to range from 5.2 to 7.6% based on single-day point prevalence surveys.[30] The mandatory public reporting system for NHs in Pennsylvania published the most recent data available on incidence of HAIs in NHs. That state reported an overall incidence of 1.4 infections/1000 residents days based on data reported from 645 NHs over a 6-month period.[31] This rate is considerably lower than what has been reported by epidemiologic studies in NHs where incidence ranges from 3.6-5.2/1,000 resident days.[32,33] These differences may be accounted for by differences in definitions used and facility-types, and how and why data was collected (i.e., for research versus for public reporting). However, consistent among all these studies and reports, the most commonly reported HAIs in NHs are urinary tract infections (UTI), lower respiratory tract infection (LRTI), skin and soft tissue infections (SSTI) and gastroenteritis (GE).[34,35,36] Cases of LRTI can be further broken down into influenza-like illness (ILI) and pneumonia, while most cases of GE are due to either *Clostridium difficile* infection (CDI) or outbreaks of Norovirus GE. Although some studies reported data on blood-stream infections in NH, no recent data could be found on the incidence or prevalence of central-line associated blood stream infections (CLABSIs) in NHs or current estimates of central-line use in this setting.[37]

B. Pathogenesis of Infections in Older Adults

CMS reports that in 2009 84.8% of LTCF residents in CMS certified NHs/SNFs were 65 years old or older, with 36.9% being 85 or older.[38] The geriatric population has many unique factors contributing to the severity and frequency of infections including limited physiologic reserve, defects in host defenses, higher rates of co-existent chronic diseases (i.e., Type II diabetes, Chronic Obstructive Pulmonary Disease [COPD]), poorer responses to therapy, increased frequencies of therapeutic toxicity (secondary to increased rates of liver and renal failure), and complications from invasive diagnostic procedures. For the older adults residing in NHs/SNFs,

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[30] Tsan L, Langberg R, Davis C, Phillips Y, Pierce J, et al. Nursing home-associate infection in Department of Veterans Affairs community living centers. American Journal of Infection Control. Aug. 2010; 38(6): 461-6.

[31] Pennsylvania Patient Safety Authority. 2009 Annual Report. Available at: http://patientsafetyauthority.org/Documents/Annual_Report_2009.pdf Accessed [September 15, 2011].

[32] Stevenson KB, Moore J, Colwell H, Sleeper B. STANDARDIZED INFECTION SURVEILLANCE IN LONG-TERM CARE: INTERFACILITY COMPARISONS FROM A REGIONAL COHORT OF FACILITIES InfectControl Hosp Epidemiol 2005;26:231-238

[33] Koch AM, Eriksen HM, Elstrøm P, Aavitsland P, Harthug S, Severe consequences of healthcare-associated infections among residents of nursing homes: a cohort study Journal of Hospital Infection (2009) 71, 269-274

[34] Tsan L, Langberg R, Davis C, Phillips Y, Pierce J, et al. Nursing home-associate infection in Department of Veterans Affairs community living centers. American Journal of Infection Control. Aug. 2010; 38(6): 461-6.

[35] Pennsylvania Patient Safety Authority. 2009 Annual Report. Available at: http://patientsafetyauthority.org/Documents/Annual_Report_2009.pdf Accessed [September 15, 2011].

[36] Eikelenboom-Boskamp a,b,*, J.H.M. Cox-Claessens c, P.G.M. Boom-Poels d, M.I.J. Drabbe e, R.T.C.M. Koopmans f,1, A. Voss Three-year prevalence of healthcare-associated infections in Dutch nursing homes Journal of Hospital Infection (2011); 78: 59-62

[37] Mylotte JM. Nursing home-aquired blood stream infections. ICHE. 2005 Oct; 26(10):833-7

[38] CMS Nursing Home Data Compendium. Available here: https://www.cms.gov/CertificationandComplianc/12_NHs.asp [accessed 01/17/2012]

there is the additional risk of infection from exposure to multidrug-resistant pathogens, delays in diagnosis and therapy, and complications from treatments. Symptoms of infections also may be absent or present in vague or atypical ways compared to younger populations.

Another factor of significant importance to older adults is a reduced response to antigens. This is especially important for those residing in NHs/SNFs that generally have more frequent contact with other people increasing exposure risk during times of community outbreaks of seasonal influenza and other respiratory or gastrointestinal infections. For older adults, this means that immunizations with tetanus toxoid, pneumococcal, or influenza vaccine may not be as effective and may not provide adequate protection. In addition, immunizations although widely used in the young, appear to be provided inconsistently to older adults.

Older adults also are at risk from under reporting of signs and symptoms. In the NH/SNF setting, the majority of primary care is provided by staff with less formal clinical training than in acute care settings. Due to impaired communication from underlying conditions causing either some level of cognitive impairment(e.g., Alzheimer's disease), mental health impairment that can cause confusion or exacerbation of symptoms or other neurological compromising conditions (e.g., stroke), older adults may not be able to verbalize early signs and symptoms of infection. Confusion due to infection may be hard to differentiate from progression of underlying neurological conditions or non-infectious processes such as dehydration and medication side effects. NH/SNF residents also may have delays in diagnosis and therapy because of transportation issues, lack of access to technology such as chest x-rays or blood tests, and challenges with communication from clinical providers who are off site.

C. Antibiotic Use and Resistance in Nursing Homes

Antimicrobials account for approximately 40% of all systemic drugs prescribed in LTCFs with a likelihood of 50% to 70% that a resident will receive at least one course of a systemic antimicrobial agent during a 1-year period.[39] Few studies have examined the percentage of inappropriate use of antibiotics in LTCFs and estimates of appropriate use range form 49-62%.[40] Studies estimate that 25% to 75% of systemic antibiotic use may be inappropriate in the LTC setting. All this antibiotic exposure carries the risk of adverse drug reactions, complications such as CDI, and promotes the emergence of multidrug-resistant organisms (MDROs). A study of NH/SNF data aggregated from five states calculated the incidence of antibiotic resistant infections among 56,000 LTC residents in SNFs as 12.7/1,000 residents in a one-year period.[41] Devices, wounds, antibiotic use and recent hospitalization are some of the major risk factors for development of an MDRO infection in NH/SNF residents.

D. Specific HAIs among Nursing Home Residents

1. Urinary tract infections (UTI). Data from many studies show that UTI is the most commonly reported and treated infection in NH/SNF residents. Given that the national average

[39] Nicolle LE, Bentley DW, Garbaldi R, Neuhaus EG & Smith PW. Antimicrobial use in long-term-care facilities. SHEA Long-Term-Care Committtee. Infect Control Hosp Epidemiol. Aug 2000; 21(8):537-45.

[40] Van Buul, LW; van der Steen, JT; Veenhuizen, RB; Achterberg WP; Schellevis, FG; Essink, RTGM; van Benthem, BHB; Natsch, S; and Hertogh, CMPM, Antibiotic Use and Resistance in Long-Term Care Facilities. (2012). JAMD. PMID: 22575772, e-publication ahead of print.

[41] Rogers MAM, Mody l, Chenowth C, Kaufman SR & Saint S. Incidence of antibiotic-resistant infection in long-term residents of skilled nursing facilities. American Journal of Infection Control. Sept 2008; 36(7): 472-5.

for urinary catheter use in these facilities is approximately 5%, the majority of UTI manifesting in LTC are not catheter-associated.[42] Many older individuals develop weakened pelvic muscles that results in incomplete emptying of the bladder, urinary retention, and bacterial colonization of the urinary tract. There is significant morbidity associated with these infections. In a study of blood stream infections manifesting in NH/SNF residents, 50% were related to UTI.[43] Urinary tract infections are a leading driver of hospitalizations accounting for almost 30% of hospital readmissions from NH/SNF within 30-days.[44] Impaired renal function in older adults can complicate management of UTI/pyelonephritis, which makes the choice of antibiotics difficult.

The prevalence of asymptomatic bacteriuria (ASB), bacterial colonization of the urinary tract without local signs or symptoms of infection, ranges from 23% to 50% in non-catheterized NH/SNF residents to 100% among those with long-term urinary catheters.[45] The challenges in differentiating ASB from symptomatic UTI can lead to inappropriate antibiotic use and its related complications. The high prevalence of ASB and the challenges with diagnosing symptomatic UTI in NH/SNF residents has lead to antibiotic overuse in this population. This increases the likelihood of adverse events and complications of previous antibiotic treatment (e.g., CDI) along with emergence, transmission, and acquisition of MDROs. Therefore highlighting appropriate diagnosis and management of symptomatic UTI is a critically important issue in the NH/SNF setting.

2. Lower respiratory tract infections (LRTI). Between 2000 and 2002, the leading infectious disease cause of both hospitalization and death among people over 65 years old was lower respiratory tract infections.[46] Pneumonia is the fifth leading cause of death in people over 65. The diagnosis of LRTI is difficult because the presentation frequently is atypical. For example, the only evidence of infection might be general malaise, anorexia, nonspecific weakness, behavioral changes, or weight loss. Occasionally, pneumonia in older adults may present with little cough, no fever, and few changes to the bedside lung exam. Instead, altered mental status has been found to be the most common presenting symptom in 40% of elderly with bacterial pneumonia.[47] The attack rate for pneumonia is highest among those in NHs/SNFs. One study found that 33 of 1,000 NH/SNF residents per year required hospitalization for treatment of pneumonia, compared with 1.14 of 1000 elderly adults living in the community.[48] Because of altered oral flora previously mentioned, there is a high rate of gram negative pharyngeal colonization making the diagnosis difficult. Declining oral hygiene also increases the risk of aspirating bacterial agents into the lungs among individuals with difficulty swallowing and/or diminished cough reflex, especially in LTCF residents with underlying neurologic conditions (i.e., stroke). Complicating treatment is the frequency of

[42] CMS Nursing Home Compare. Available at http://www.medicare.gov/NHCompare/ Last accessed: 01/13/2012

[43] Mylotte JM. Nursing home-aquired blood stream infections. ICHE. 2005 Oct; 26(10):833-7

[44] Ouslander JG, Diaz S, Hain D, Tappen R, Frequency and Diagnoses Associated With 7- and 30-Day Readmission of Skilled Nursing Facility Patients to a Nonteaching Community Hospital. J Am Med Dir Assoc 2011; 12: 195–203

[45] Nicolle LE, Bentley DW, Garbaldi R, Neuhaus EG & Smith PW. Antimicrobial use in long-term-care facilities. SHEA Long-Term-Care Committtee. Infect Control Hosp Epidemiol. Aug 2000; 21(8):537-45.

[46] Curns AT, Holman RC, Sejvar JJ, Owings MF & Schonberger LB. Infectious disease hospitalizations among older adults in the United States from 1990 through 2002. Arch Intern Med. Nov 2005; 165(21): 2514-20

[47] Mathe C, Niclaes L, Suetens C, Jansb B & Buntinx F. Infections in Residents of Nursing Homes, Infect Dis Clin N Am 21 (2007) 761-772

[48] Marik PE., and Kaplan D. Aspiration Pneumonia and Dysphagia in the Elderly 10.1378/chest.124.1.328CHEST July 2003 vol. 124no. 1 328-336

underlying respiratory diseases including asthma and COPD. These co-existing conditions increase the risk of developing pneumonia in this population and contribute to greater morbidity from an infection.

3. Influenza and Influenza-like Illness (ILI). Despite the availability of a safe and effective vaccine, influenza infections continue to be the 8th leading cause of death in the U.S.[49] The CDC estimates that 3,000 to 49,000 influenza-associated deaths occur each year and studies indicate that 90% of influenza-associated deaths occur in patients aged 65 years or older.[50,51] Moreover, influenza-associated morbidity and mortality is significantly higher in elderly patients (>85 years) and patients with chronic medical conditions such as respiratory, cardiovascular, or onco-hematological disease.[50,52] Residents of LTCFs are of notable risk for influenza infection due to the close proximity of residents and their frequent interactions with healthcare personnel (HCP) as well as relatives and other visitors.[53] Influenza outbreaks in LTCFs have been attributed to low influenza vaccination rates among HCP.[54] Increased vaccination coverage of HCP, combined with high vaccination coverage in residents, has been shown to reduce both the incidence of healthcare-associated influenza and influenza-related mortality among older patients in LTCFs.[55,56]

4. *Clostridium difficile* infection (CDI). The incidence of CDI–related hospitalizations doubled from 5.5 per 10,000 population in 2000 to 11.2 per 10,000 in 2005. CDI–associated mortality increased from 5.7 per million population in 1999 to 23.7 per million in 2004. The number of hospitalizations and deaths were disproportionately higher among individuals over the age of 65.[57] CDI is becoming the number one cause of diarrhea in NH/SNF residents, accounting for more than 50% of all GE infections reported in Pennsylvania NHs.[58] It is estimated that more than half of all healthcare-associated CDI cases will manifest in NHs with rates reported between 1.7-2.9/10,000 resident days.[59] The increasing rate and morbidity of CDI makes it imperative to use antibiotics judiciously in this population.

5. Skin, soft tissue and wound infections. The physical barrier of the epidermis becomes thinner with aging and protective subcutaneous fat declines, which allows for skin tears, decubitus (pressure) ulcer formation, and subsequent bacterial infection. Approximately 12% of short-stay

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[49] Kochanek, K., et al., *Deaths: Preliminary Data for 2009.* National Vital Statistics Reports, 2011. **59**(4): p. 1-51.

[50] CDC. *Estimating Seasonal Influenza-Associated Deaths in the United States: CDC Study Confirms Variability of Flu.* [cited 2011 17 November]; Available from: http://www.cdc.gov/flu/about/disease/us_flu-related_deaths.htm

[51] Thompson, W., et al., *Mortality associated with influenza and respiratory syncytial virus in the United States.* JAMA, 2003. **289**(2): p. 179-186.

[52] Gaillat, J., et al., *Morbidity and mortality associated with influenza exposure in long-term care facilities for dependent elderly people* Eur J Clin Microbiol Infect Dis, 2009. **28**(9): p. 1077-1086.

[53] DJ, S., G. Kerr, and C. WF, *Nosocomial transmission of influenza.* Occup Med, 2002. **52**(5): p. 249-253

[54] CDC, *Outbreaks of 2009 pandemic influenza A (H1N1) among long-term-care facility residents - three states, 2009.* MMWR Morb Mortal Wkly Rep, 2010. **59**(3): p. 74-77.

[55] Carman, W., et al., *Effects of influenza vaccination of health-care workers on mortality of elderly people in long-term care: a randomised controlled trial.* Lancet 2000. **355**(9198): p. 93-97.

[56] Potter J, Stott DJ, Roberts MA, Elder AG, O'Donnell B, Knight PV, and Carman WF, *Influenza Vaccination of Health Care Workers in Long-term Hospitals Reduces the Mortality of Elderly Patients.* JID, 1997. 175: p 1-6 .

[57] Lyytikainen et al. Emerg Infect Dis. 2009. 15(5): 761–765

[58] Pennsylvania Patient Safety Authority. 2009 Annual Report. Available at: http://patientsafetyauthority.org/Documents/Annual_Report_2009.pdf Accessed [September 15, 2011].

[59] Campbell RJ, Giljahn L, Machesky K et al. Clostridium difficile infection in Ohio hospitals and nursing homes during 2006. Infect Control Hosp Epidemiol 2009;30:526–533.

NH/SNF residents and 10% of high-risk, long-stay residents had pressure ulcers in 2010.[60] Skin and soft-tissue infections (SSTIs) are the third most common infection in LTCF residents, with a reported prevalence of 1% to 9%.[61] Cellulitis and infected pressure ulcers are two of the most common types of SSTIs in the nursing home population.[62] Infections occur in up to 65% of pressure ulcers and may lead to osteomyelitis and sepsis, requiring costly and aggressive therapy.[63] In the NH/SNF setting, Group A *Streptococcus* (GAS) and methicillin-resistant *Staphylococcus aureus* (MRSA) are particular clinically important pathogens that that can cause skin, soft tissue and wound infections. GAS has been associated with severe invasive infections, hospitalizations, and deaths in the NH/SNF population.[64] MRSA is well known as a cause of HAIs, especially related to device use and wounds in the acute care hospital setting. The prevalence of MRSA in residents of LTCFs has been reported to be as high as 58%.[65,66] Because of the movement of NH/SNF residents between acute care and LTC, there is likely greater risk for development of clinically significant MRSA infections associated with the high rates of carriage in this population.

E. Challenges for HAI Prevention in Long-term Care Settings

NHs/SNFs must maintain infection prevention and control (IPC) programs in order to comply with the federal regulations governing licensing and certification. The expectations for those programs are outlined within the Interpretive Guidance for Infection Control at F Tag 441, last revised by CMS in December 2009.[67] Most NHs/SNFs lack adequately trained and committed personnel and resources for this task. A study from Maryland demonstrated that the number of infection preventionists (IP) in NHs is 4-fold lower than the number of IPs in acute care facilities of similar size.[68] The vast majority of NH/SNF IPs have multiple titles and work part-time on infection prevention regardless of the bed size or acuity of the residents cared for in their facility.[69] Additionally, less than 10% of the current IPs in NHs/SNFs have any specific infection prevention and control training (e.g., Certification in Infection Control) compared to >95% of acute care IPs.[70] Personnel resources dedicated to IPC vary widely across the NH/SNF spectrum; some states have regulatory expectations that infection control coordinators in NHs have documented training, but most do not have specific requirements for the infection prevention training or staff time dedicated for the infection control coordinators in these facilities.[69] Other barriers to implementing an effective IPC program include limited staff

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[60] CMS Nursing Home Compare. Available at http://www.medicare.gov/NHCompare/ Last accessed: 01/13/2012

[61] Nicolle LE. Infection control in long-term care facilities. Clinical Infectious Disease. 2000 Sep; 31(3):752-6.

[62] High KP, Bradley SF, Gravenstein S & et al. Clinical practice guidelines for the evaluation of fever and infection in older adult residents of long-term care facilities: 2008 update by the Infectious Disease Society of America. Jour Amer Geriatr Society. 2009; 57(3):375-94.

[63] Yoshikawa TT, Norman DC. Approach to fever and infection in the nursing home. J Am Geriatr Soc 1996 Jan;44(1):74-82.

[64] SchwartzB , UsseryX T. GroupA streptococcal outbreaks in nursing homes. Infect Control Hosp Epidemiol. 1992;13:742-747.

[65] Stone ND, Lewis DR, Johnson TM 2nd, Hartney T, Chandler D, Byrd-Sellers J, McGowan JE Jr, Tenover FC, Jernigan JA, Gaynes RP, Methicillin-resistant *Staphylococcus aureus (MRSA) Nasal Carriage in Residents of Veterans Affairs Long-Term Care Facilities: Role of Antimicrobial Exposure and MRSA Acquisition* . Infect Contr Hosp Epidemiol. 2012 Jun; 33(6): 551-7. Epub 2012 Apr 13.

[66] Mody L, Kauffman CA, Donabedian S, Zervos M, Bradley SF. Epidemiology of *Staphylococcus aureus* colonization in nursing home residents. Clin Infect Dis 2008;46(9): 1368-1373.

[67] For further information see the CMS State Operations Manual, available here: https://www.cms.gov/Manuals/IOM/ItemDetail.asp?ItemID=CMS1201984

[68] Roup, BJ., Roch JC & Pass M. Infection Control Program Disparities between Acute and Long-term Care Facilities in Maryland. AJIC 2006; 34(3):122-27

[69] Smith, P. et al. ICHE 2008; 29(9): 785-814

[70] Roupe BJ and Scaletta JM. How Maryland increased infection prevention and control activity in long-term care facilities, 2003-2008 AJIC 2011 39:292-295

resources, high staff turnover, funding difficulties, and limited information technology (IT) access and infrastructure to support IPC activities. A recent study from Utah demonstrated that although most facilities had desktop computers available for their infection prevention program, 25% had outdated operating systems and less than 20% had fully integrated radiology, diagnostic laboratory, or microbiology data with their facility computer system. The primary use of the computer was for Internet access to identify IPC resources (77%), but use of IT tools for implementing the IPC program was largely underutilized.[71]

IV. HHS Data Sources and Projects on Reducing and Preventing HAIs in LTCFs

Reliable measurement of HAIs in any healthcare setting requires a readily available data source that includes standardized elements that can be collected accurately with minimal burden to care providers. The long-term goal for HAI surveillance is to develop a data collection system that can support multiple components for assessing the quality of healthcare delivery including disease surveillance, effectiveness of prevention and control activities, quality improvement, public reporting, and financial incentive determinations. Currently, many individual data sources fall short of this goal. However, to the extent that routine data sources in clinical settings such as mandated assessments and billing codes do not provide valid epidemiologic data, additional procedures can be imposed if judged high priority and/or able to serve multiple uses.

An informal survey of participating agencies on the working group was conducted to identify potential data sources in development or already in use in the LTC setting. We also have included data sources in use in other care settings that could be considered for LTC. A table summarizing current HHS Programs is provided in Appendix B.

Standardized Assessment Instruments: The Social Security Act requires that all persons (regardless of payer) who reside in a Medicare or Medicaid certified nursing facility must have a resident assessment, which includes use of a Minimum Data Set, completed at certain intervals (e.g., admission, quarterly, annually, when there is a significant change in the resident's condition, and at discharge). CMS has established requirements for the content and electronic transmission of the MDS.

The MDS was implemented nationally in 1990 and updated to its current version in October 2010. The MDS relies on a variety of sources including resident interviews and medical records to capture information on clinical diagnoses limited and medication information as well as physical and cognitive functioning, mood, and resident preferences in diet and activities.

Using the MDS, NHs report data for all residents on UTIs and catheter. Two National Quality Forum (NQF)-endorsed measures (196 and 686) have been developed from this MDS data and are used as part of the NH Quality Initiative for quality reporting and public reporting purposes. These quality measures apply to long-stay NH/SNF residents, as neither measure is endorsed for short-stay residents.

[71] Jones M., Samore MH., Carter M. & Rubin MA. Long-term care facilities in Utah: A description of human and information technology resources applied to infection control practice. AJIC. 2011 Sep 10 [Epub ahead of print].

NQF 684 Percent of Residents with a Urinary Tract Infection (Long-Stay) [72]

This measure reports the percentage of long-stay NH/SNF residents with a UTI within 30 days of the most recent assessment. These data are reported at the facility level over a six month period. The MDS 3.0 has more extensive instructions for identifying UTIs to reduce the number of false positives. This measure does not specifically address catheter-associated urinary tract infection (CAUTI). To do so, a positive assessment for a UTI would need to be paired *at the patient level* with a positive assessment for an indwelling catheter (MDS item H0100 A), but this would be only an approximate approach. The look back periods for the two measures can differ, therefore attribution could be problematic.

NQF 686 Percent of Residents Who Have/Had a Catheter Inserted and Left in Their Bladder (Long-Stay)

This measure assesses the percentage of long-stay NH/SNF residents who have or had a catheter within the seven days prior to the most recent assessment. Note that despite the title, this measure does *not* specifically assess new insertions of catheters. This measure is subject to the same limitations as NQF 684.

Despite refinements made to the MDS 3.0 that include documentation of the presence of UTIs and use of devices such as urinary catheters, seasonal influenza and pneumococcal vaccinations, clinical assessments, care areas triggered and care plans, there are limitations to using MDS data as a universal data source to track HAI in nursing homes. First, assessments provide snapshots of patients at a particular point in time, and the time between assessments may not capture important changes. For instance, assessments on long-stay residents may occur as infrequently as quarterly. Therefore, infection events could be missed between measurement periods. Second, the definitions of certain events, such as UTI, are not standardized and their validity using the MDS 3.0 is unknown. Despite these limitations, electronic MDS assessment data is available from approximately 16,000 nursing homes for approximately 3 million individuals that reside in nursing homes during a year.

Administrative claims data: Administrative claims data cover many different types of sites. Within Phase 1 of the National Action Plan, hospital discharge data is one of the measurement systems for tracking CDI (Hospitalizations with *C. difficile* per 1,000 patient discharges). While there may be technical challenges for the ICD-9 to ICD-10 transition and for cross-walking codes across different settings and payment systems, these are likely to be surmountable. More concerning is that coded diagnosis of UTI, CAUTI, and CDI is neither a sensitive nor specific indicator of clinical diagnosis. Moreover, several authors have shown that ICD-9-CM coding of CAUTI is poor because the procedure code for catheter insertion is rarely used.[73] Despite these limitations, these Medicare claims are the basis for the HAC policy and payment adjustments as published in the Inpatient Prospective Payment System Final Rule 2011.

National Healthcare Safety Network (NHSN): The CDC's National Nosocomial Infections Surveillance (NNIS) system began in 1970 as a voluntary, hospital-based reporting system to

[72] Replaces NQF 196 in the MDS 3.0

[73] Zhan C., Elixhauser A., Richards CL Jr., & et al. Identification of hospital-acquired catheter-associated urinary tract infections from Medicare claims: sensitivity and positive predictive value. Medical Care. Mar 2009; 47(3): 364-9.

monitor HAIs and inform local and national prevention efforts. Between 1970 and 2004, participation in NNIS increased from 62 hospitals in 31 states to almost 300 hospitals in 37 states by 2004. NNIS data reporting concluded in 2004, succeeded by the National Healthcare Safety Network (NHSN) in 2005. NHSN data was first provided in 2006. A sharp increase in NHSN participation began in 2007 as a result of open enrollment and enactment of several state laws mandating HAI reporting to NHSN. Current enrollment by acute care hospitals is approximately 4800 hospitals, representing most acute care hospitals in the U.S.

NHSN provides a secure, internet-based surveillance reporting infrastructure, as well as standardized surveillance tools and methodology for performing prospective, active surveillance for a variety of HAI events for use in a broad array of healthcare settings. The NHSN allows for monitoring and reporting a wide array of infections and process measures through two components, The Healthcare Personal Safety Component and the Patient Safety Component.[74,75]

In 2012, NHSN will be releasing a LTCF Component. This component was developed in response to a growing interest in HAI data from non-acute care settings and to promote and facilitate infection surveillance specifically for LTCFs, in settings such as NHs/SNFs. In recognition of the resource limitations often facing LTCFs, the process of data collection and reporting for this component have been streamlined and simplified, and uses data collection forms specifically designed for use by LTCFs. Instructions and standardized definitions for use with each module are provided as well as detailed surveillance protocols. Data reported will allow LTCFs to independently analyze their data within NHSN. HAI events can be characterized by both resident and facility characteristics.

The modules available within the LTCF component include UTI surveillance (both catheter-associated and non-catheter related events), MDRO and CDI surveillance by laboratory identified events, and monitoring of hand hygiene and gown/glove use as prevention process measures. Of note, the endorsement of CAUTI quality measures for hospitals has been broadened to include inpatient rehabilitation facilities (IRFs) and long term care hospitals (LTCHs). IRFs and LTCHs will begin collecting data on October 1, 2012. Also of note, LTCHs enrolled in NHSN will also have access to the Healthcare Personnel Safety Component to allow for monitoring of healthcare staff influenza vaccination coverage rates.

National Center for Health Statistics (NCHS): The NCHS Long-Term Care Statistics Branch (LTCSB) conducts a nationally representative sample survey on LTC providers and their care recipients. The National Nursing Home Survey (NNHS) has been conducted seven times since 1973 and the National Home and Hospice Care Survey (NHHCS) has been conducted seven times since 1992. NNHS and NHHCS collect medical conditions of sampled residents and patients including infections, some of which are healthcare associated. In 2010, NCHS fielded the first ever National Survey of Residential Care Facilities (NSRCF), which includes assisted living communities and residents.

NCHS collected the following infection-related topics in one or more of its recent LTCSB surveys: strategies to encourage influenza vaccinations among employees; percentage of

[74] Available at: http://www.cdc.gov/nhsn/hps.html
[75] Available at: www.cdc.gov/nhsn/psc.html

employees and patients/residents receiving the influenza vaccine in the last influenza season; influenza and pneumonia vaccination programs for patients/residents; percentage of patients/residents ever receiving pneumonia vaccinations; presence of infection control staff; and, use of a written plan for managing patients/residents during an influenza pandemic. The new LTCSB survey, the National Survey of Long-Term Care Providers (NSLTCP), which will replace NNHS, NHHCS and NSRCF, will expand its core coverage of LTC providers to include residential care facilities and adult day services centers (using survey data), in addition to NHs, HHAs, and hospices (using existing administrative data). HAI-related modules could be added to NSLTCP core content to measure HAI prevalence among LTC recipients and document HAI prevention programs across LTC providers.

Patient Safety Organizations and Common Formats: The Patient Safety and Quality Improvement Act of 2005 (Patient Safety Act) authorized the creation of Patient Safety Organizations (PSOs) to improve the quality and safety of U.S. healthcare delivery. The Patient Safety Act encourages clinicians and healthcare organizations to voluntarily report and share quality and patient safety information without fear of legal discovery. The AHRQ is coordinating the development of the Common Formats, which standardize the definitions and reporting formats for patient safety events. In early 2011, AHRQ released a beta version of the Common Formats for NHs/SNFs. The NQF reviewed public comments on the beta version and provided feedback in September 2011. AHRQ plans to publish a revised version with specifications for electronic implementation in 2013. The Common Formats for LTCFs contains a module for HAIs that includes CLABSI, CAUTI, and CDI.

The Department of Veterans Affairs (VA): The VA is a large provider of LTC in the United States with 133 Community Living Centers (CLCs) previously known as Nursing Home Care Units. In 2005, the VA conducted a national point prevalence survey in CLCs using modified CDC definitions for HAIs excluding SSI and infections of the reproductive system or provider initiated antimicrobial therapy for an infection.[76] This survey was repeated in 2007 and in 2009. In addition to the point prevalence surveys, the VA can measure the impact of prevention measure. For example, because UTI was the number one HAI identified on all three point prevalence surveys, all CLCs are participating in ongoing surveillance for CAUTI and compliance to a urinary catheter insertion bundle, with optional participation for reporting on compliance to a urinary catheter maintenance bundle.

V. Metrics and Evaluation

This section provides a framework to assess short- and long-term measurement of progress toward HAI prevention in LTCFs that reflects the National Quality Strategy and HHS priorities. Its objective is to provide a framework to measure HAI surveillance, prevention, and elimination initiatives across LTCFs. This proposed strategy was developed to be consistent with the aims of the National Quality Strategy; Better Care and Healthy People/Healthy Communities, and

[76] Tsan L, Langberg R, Davis C, Phillips Y, Pierce J, et al. Nursing home-associate infection in Department of Veterans Affairs community living centers. American Journal of Infection Control. Aug. 2010; 38(6): 461-6.

Affordable Care, that will be used to guide and assess local, state, and national efforts to improve health and the healthcare delivery system.[77]

A. Healthcare-Associated Infections Metrics for Long-Term Care Facilities

Consistent with other phases of the Action Plan, we focused on HAIs that are nationally burdensome, due to high prevalence and/or high cost, and known to be preventable through implementation of evidence-based care practices. Based on the literature reviewed, the following HAIs were selected: 1) UTIs, including CAUTI and catheter care processes, and 2) CDI. Two additional priority modules focus on vaccination of residents and HCP to prevent influenza and pneumonia. The inclusion of these vaccine priorities support the HCP influenza vaccination module included in Phase 2 of the National Action Plan, and the current CMS NH/SNF quality measures promoting resident vaccinations. Furthermore, these vaccine measures are consistent with national vaccination goals in the Healthy People 2020 objectives.

We favor consensus body endorsement (e.g., NQF), where feasible, for all quality measures of HAI outcome and care processes in LTCFs once these measures have been piloted and assessed for accuracy and validity. Additional measures implemented in other care settings may be considered for use in LTC, if they are found to be relevant and data collection is feasible. We have included as an additional priority a measure of enrollment into the National Health Safety Network, because we believe this will be an important surveillance tool for assessing the impact of HAIs in LTC and because enrollment in this program may serve as an indicator of both provider awareness of and provider proactivity to reduce HAIs.

B. Priority Areas, Measures and Goals:

Priority Area 1: Enrollment in NHSN for Nursing Home Infection Surveillance Activity

One of the largest challenges to addressing HAI prevention in LTC is the lack of universally applied methodology and infrastructure to support infection surveillance activities in LTCFs. To address this gap in infection surveillance data collection infrastructure, the new NHSN LTCF Component was developed to promote and facilitate infection surveillance specifically for LTCFs. One of the core purposes of this tool is to support HAI prevention efforts and process improvement work by individual facilities.

The use of the NHSN LTC component could help facilities to demonstrate their commitment to ongoing quality assurance and performance improvement (QAPI) activity. In 2013, all NHs will be required to have a QAPI program in place. The quality assurance aspect of the QAPI program is often a challenge for healthcare providers because of limits to their ability to collect and/or analyze their own care processes and outcomes data.

The reduction of HAIs is an excellent goal for facilities' initial QAPI projects for multiple reasons. First, there is high impact for improving resident outcomes and reducing costs by addressing preventable HAIs. Second, the LTCF Component of NHSN can provide facilities with standardized data collection tools that will reduce variation in the application of the criteria used by facilities to define HAI events. Third, it will provide an external surveillance system to monitor and analyze data on the incidence of HAIs in their facility. This would provide an essential feedback loop (quality assurance) for facilities to determine their baseline

[77] Available at: http://www.healthcare.gov/law/resources/reports/quality03212011a.html

rates of HAIs, perform root cause analyses, and collect ongoing data to assess the impact of their prevention initiatives (performance improvement).

This alignment with NHSN and the QAPI initiative would benefit all LTC stakeholders. For instance, it would provide the public health and payer communities with data to both monitor HAIs in LTC and to drive down costs associated with these preventable events across the care continuum. The providers and customers would benefit greatly from this because NHSN would provide the facilities with crucial data for their own quality initiatives that can shift their costs to prevention and improve the health of the residents. Additionally, with sufficient LTCF reporting data in the NHSN system, national HAI benchmarks can be determined, therefore allowing for meaningful interpretation of data and facilitating evaluation of the impact of implemented prevention efforts. Increases in the number of LTCFs using NHSN over time can be a way to track the successful implementation and adoption of the NHSN LTC Component.

Proposed Metric:

I. # certified nursing homes enrolled into the NHSN LTC Component / # certified nursing homes in the US
   Goal: 5% of certified nursing homes enroll in NHSN over the 5 years following launch of the component

Priority Area 2: Clostridium difficile Infection

CDI surveillance using laboratory identified (Lab ID) events as a proxy measure has been incorporated as a reporting option within the NHSN LTCF component. Similar to other healthcare settings, there may be some limitations to using Lab ID events within the LTCFs because access to microbiology labs and stool testing practices vary across different facilities. The Lab ID event surveillance methodology has been well tested, and adopted by CMS for the IPPS FY2012 rule for inpatient acute care facilities. The LTCF Component LabID event uses the same definitions as the acute care reporting to maintain a standard methodology across care settings. Data from a small pilot indicates Lab ID event methodology is feasible in nursing home. This methodology provides a simple and standardized approach to performing CDI surveillance in the LTC setting.

Proposed Metric:

I. Incident NH-onset CDI Lab-ID events: # events / 10,000 resident days
   - Incident lab events are defined as no previous positive or prior positive >8 weeks
   - Only those events occurring >3 calendar days after resident admission are considered NH-onset.

   Goal: Pilot implementation of reporting to NHSN, evaluate variability in measure, and obtain consensus on measurable 5- year goal

Priority Area 3: Vaccination for Residents (influenza, pneumococcal)

Vaccination for seasonal influenza and pneumococcus are widely available and highly effective in reducing the risk of infection events in older adults; therefore, LTCF resident influenza and pneumococcal vaccination have been selected as the priority measures. The reporting of resident vaccination status for influenza and pneumococcus through the MDS for both short- and long-stay residents has been required by CMS since 2005. Data from the first six months of use of the newest version of the MDS shows long-stay residents with higher

rates of vaccination for seasonal influenza and pneumococcus (81.7% and 79.8% respectively) than for short-stay residents (60.1% and 61.2%).[78] Our proposed goal is a combined rate for both short- and long-stay residents and is in line with the Healthy People 2020 goal of 90% vaccination coverage for both seasonal influenza and pneumococcal disease (IID-12.8 and IID 13.3).[79]

Proposed Metrics:

I. # residents receiving influenza vaccine either within the facility or outside the facility during the current or most current influenza season/ # residents eligible for the influenza vaccine
II. # residents receiving pneumococcal vaccine or that are up-to-date with their pneumococcal vaccination / # residents eligible for pneumococcal vaccine
Goal: We propose a goal of 85% vaccination coverage of LTCF residents for seasonal influenza and pneumococcus in five years.

Priority Area 4: Healthcare Personnel Influenza vaccination

Increasing influenza vaccination coverage among HCPs is a national priority, as indicated by the inclusion of a chapter in the second phase of the National Action Plan.[80] The proposed goal is in alignment with the influenza vaccination of HCPs chapter of the National Action Plan and the Healthy People 2020 goal of increasing the percentage of HCPs receiving the seasonal influenza vaccine each year to 90% using the National Health Interview Survey (NHIS) conducted by CDC.[81] The most current NHIS data is from the 2007-2008 season in which HCP working in LTC trailed HCP in acute care settings in reporting receiving the influenza vaccine (36.2% compared to 63.4%).[82] Data from an internet panel survey conducted by CDC for the 2009-2010 influenza season indicated that this gap was closing, with 64.4% of HCP in LTC reporting receiving the influenza vaccine compared to 71.1% of HCP in acute care hospital settings.[83]

Proposed Metric:

I. Proportion of Healthcare Personnel who work in long-term care who received the seasonal influenza vaccine as measured by the National Health Interview Survey
Goal: In alignment with the previous Influenza Vaccination of HCP chapter, 70% of HCPs in LTC receiving the seasonal influenza vaccination by 2015.

Priority Area 5: Urinary Tract Infections, Catheter-Associated Urinary Tract Infections and Catheter Care Processes

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[78] CMS internal data

[79] Healthy People 2020 Immunization and Infectious Disease Objectives, IID-12.8 and IID-13.3, available at: http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=23

[80] Available at: http://www.hhs.gov/ash/initiatives/hai/actionplan/index.html#tier2

[81] Healthy People 2020 Immunization and Infectious Disease Objectives, IID-12.9, available at: http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=23

[82] NHIS data available at: http://www.cdc.gov/vaccines/stats-surv/nhis/2009-nhis.htm

[83] Centers for Disease Control and Prevention. Influenza Vaccination Coverage among Health Care Personnel--United States, August 2010-April 2011. *Morbidity and Mortality Weekly Report (MMWR)*; 60(32):1073-1077. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6032a1.htm?s_cid=mm6032a1_w

UTIs are consistently one of the highest reported infections in LTCFs. They account for a significant proportion of hospital admissions and emergency department visits.[84] Due to this high prevalence, UTIs are a priority in LTCFs, though we must emphasize the importance of reporting only symptomatic UTIs so as not to promote the antibiotic treatment of ASB and the associated consequences from antimicrobial misuse and overuse in this population. The future measure will need to take this emphasis into account; for example, the NHSN LTC UTI definitions identify symptomatic infections by incorporating criteria captured through prospective surveillance using relevant clinical data from medical record review. Laboratory tests, while part of the surveillance definition, are not the sole means for identifying UTI events. The combination of signs, symptoms and confirmatory laboratory data should minimize the inclusion of ASB within UTI event reporting. As the NHSN LTC component and other surveillance systems are developed, we will look to obtain consensus on what data source(s) to use.

Proposed Metrics:

I. Non-catheter associated symptomatic UTI incidence rate: #events/1,000 resident days
II. Catheter-associated symptomatic UTI incidence rate: # events/1,000 catheter days
III. Catheter utilization ratio: catheter days/resident days
Goal: Pilot reporting to NHSN, evaluate variability, obtain consensus on measurable 5- year goal

C. Implementation Obstacles for Data Collection and Surveillance

Although this LTC HAI prevention plan is establishing national priorities and metrics for the LTC setting we recognize there may be several obstacles to achieving these HAI surveillance goals in LTCFs:

1. Provider burden: As with any proposed measurement, the choice of measure should take into account the burden of collecting, validating, and reporting the outcome. In order to assure the adoption and use of any reporting system, the system itself must be simple and must provide useful data feedback to the user that can be utilized to improve quality and efficiency within the facility.

2. Data collection vehicles and infrastructure: Currently, LTCFs are in various states of "electronic" readiness and may need to build an IT infrastructure. Data transfer and sharing agreements are necessary factors of implementation of electronic surveillance systems, such as NHSN. While the current state of electronic data collection is limited, it does propose an opportunity for federal partners to align current (such as the MDS 3.0) and future (NHSN and Common Formats) data systems. [85]

3. Measure Reliability Issues: Because of the diversity of services provided across the spectrum of LTCF, the HAI rates may vary greatly among facilities. Infrequent HAI events, low utilization of devices (i.e., urinary catheters), and variability in the size of facilities could

[84] Ouslander JG, Diaz S, Hain D, Tappen R, Frequency and Diagnoses Associated With 7- and 30-Day Readmission of Skilled Nursing Facility Patients to a Nonteaching Community Hospital. J Am Med Dir Assoc 2011; 12: 95–203

[85] MDS 3.0 data elements have been linked to the Office of the National Coordinator's Accepted Health Information Technology Vocabularies. The vocabularies include SNOMED and LOINC.

contribute to widely varying rates which may pose challenges for the development of benchmarks and standards.

4. Risk adjustment: Risk adjustment is necessary for some outcome measures. Patient populations and use of catheters and antibiotics may differ vastly across care settings, and may compound the definitional issues and introduce variability into the proportion of preventable infections. However, due to the lack of knowledge about important variables required for appropriate risk adjustment of HAI rates in the LTC setting, further research will be required to ensure that risk adjustments are conducted appropriately.

D. Success Stories and Opportunities:

Success Stories: The acute care hospital experience with NHSN reporting can serve as an example of successful enrollment and participation. Since the implementation of NHSN in 2005, there have been steady increases in the number of hospitals enrolled and participating in various modules of NHSN. Increases have been driven by state-specific HAI mandates that require reporting through NHSN. Since CLABSI reporting for intensive care units (ICUs) to NHSN was included in the 2011 CMS Inpatient Prospective Payment System (IPPS), hospital enrollment in NHSN has grown dramatically to approximately 4800 hospitals, representing most acute care hospitals in the U.S. Similar to our observation in the hospital experience, enrollment in the NHSN will need to be a primary process metric that will provide context to subsequent data reporting through NHSN.

Opportunities: Several policy levers may be considered including public reporting of LTCF prevalence or incidence estimates, rates or standardized infection ratios (SIRs) for UTIs (already in place), CAUTIs and CDI. MDS 3.0-based quality measures are in place for UTIs, and urinary catheter use. Since MDS 3.0 is nationally mandated for all residents in Medicare or Medicaid participating LTCFs, data collection necessarily provides a readily available data source for public reporting purposes. Similarly, NHSN participation in the LTCF module could likewise be publicly reported. Reliable data requires robust participation. However, once achieved, it can serve as a basis of quality improvement measurement and reporting. In the future, it is possible that NHSN-based quality measures may be further incentivized, or included in LTCF survey and certification processes.

VI. Promising Practices in Infection Control in LTCFs

Multiple federal, national, state, and local healthcare and public health organizations have contributed to the development of evidence-based information about effective strategies to prevent HAIs within LTCFs. This section provides a summary of selected promising practices from among this work surveyed. These were included based upon the supporting evidence, identified needs and prevention priorities, recommendations from professional organizations, and feasibility of implementation within LTCFs. The section has been separated into five sub-sections: A. Infection Surveillance; B. Influenza Vaccine; C. Education and Training Initiatives on Infection control in LTC; and D. State Financial Incentives.

A. Infection Surveillance

Conducting surveillance and monitoring infection rates are the cornerstones of HAI prevention.[86] Successful use of the collaborative approach to infection surveillance and prevention has been demonstrated in the acute healthcare settings, where large and sustained decreases in CLABSI have been reported.[87,88,89] In the LTC setting, the feasibility of forming a collaborative to perform HAI surveillance using standardized methodology also has been demonstrated. Pennsylvania requires reporting of HAIs in all NHs, and has been collecting data since 2009.[90] While this is one of the most comprehensive public reporting statutes in the nation, it is too early to state whether public reporting has led to a reduction in HAI incidence. Other states have implemented smaller collaborative. For example, in Idaho, 17 LTCFs participated in active surveillance for HAIs and collected data for a period of 12 months.[91]

Recently, several state public health departments have developed collaboratives to promote HAI prevention and initiate infection surveillance within LTCFs in their respective states (Appendix C). In Indiana, the State Health Department and the University of Indianapolis created a surveillance measurement system for LTCF collaborative participants, including acute care hospitals and LTCFs, and developed a goal to reduce CDI and CAUTI SIR by at least 12.5% over the 15-month initiative.[92] In Vermont, a multicenter, evidence-based HAI collaborative was formed among acute care hospitals and LTCFs.[93] A planning committee, comprising IPs from acute care facilities, administrators from LTCFs, staff from the state health department, the Vermont Program for Quality in Health Care, and, CDC, was formed to define the educational objectives of the collaborative. MRSA and *Clostridium difficile* were identified as the collaborative focus, with the goal of reducing and eliminating the transmission of MDROs across the healthcare spectrum.

B. Healthcare Personnel Influenza Vaccination

Over the past two years, 11 professional societies (including the American Medical Association, the Society for Healthcare Epidemiology of America, and the American Public Health Association) have recommended some form of mandatory influenza vaccination for their members. Other groups (American Nurses Association/2010, Service Employees International Union/2010) recognize the importance of influenza vaccination but also emphasize that workers' rights and due process be part of any requirement or mandate. More than 200 hospitals have now adopted mandatory influenza vaccination polices for their employees. CDC reports that

[86] Gaynes RP, Solomon S. Improving hospital-acquired infection rates: the CDC experience. J Qual Improv 1996; 22:457-67

[87] CDC. Reduction in Central Line--Associated Bloodstream Infections Among Patients in Intensive Care Units --- Pennsylvania, April 2001--March 2005. MMWR;54:1013-16

[88] Pronovost P et al. An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU. NEJM 2006;355:2725-2732.

[89] Pronovost PJ et al. Sustaining reductions in catheter related bloodstream infections in Michigan intensive care units: observational study. BMJ 2010;340:c309.

[90] Pennsylvania Patient Safety Authority. Act 52 – Medical Care Availability and Reduction of Error Act. Available at http://patientsafetyauthority.org/PatientSafetyAuthority/Governance/Pages/Act52.aspx [January 18, 2012]

[91] Stevens et al. Standardized infection surveillance in long-term care: Interfacility comparisons from a regional cohort of facilities. ICHE 2005;26:231-8).

[92] Indiana. Collaborative Information. Available at: http://www.in.gov/isdh/24769.htm. Accessed [June 16, 2011].

[93] Vermont. Collaborative information. Available at: http://www.vpqhc.org/interior.php/pid/13/sid/188. Accessed [June 16, 2011].

overall influenza vaccination coverage among HCP was 63.5%, but among the 13% of HCP that had an employer requirement for vaccination, coverage was 98.1%.[94]

In 2011, the National Quality Forum endorsed a standardized measure for reporting HCP influenza vaccination, which was tested for usability in a variety of healthcare institutions, including LTCFs. The implementation of this measure will start in acute care hospitals through use as a reporting standard by the Joint Commission and as part of a CMS rule for FY2015 Hospital Inpatient Quality Reporting Program which includes HCP influenza vaccination. However, the CDC's NHSN reporting system will use the measure in a new module for reporting aggregate HCP influenza vaccination rates that will be available to both acute care and LTCFs. The acute care experience and LTC demonstration projects could inform further use of this measure for LTCFs.

C. Education and Training Initiatives

The American Medical Directors Association (AMDA), the national professional association of medical directors, attending physicians and others practicing in the LTC continuum, has developed clinical practice guidelines (CPGs), "Common Infections in the Long-Term Care Setting," intended as a resource for all members of the LTCF interdisciplinary team.[95] The CPG includes the following elements:

- An introduction, including discussion of susceptibility, risk factors, and critical elements of a comprehensive institutional infection prevention program;
- Criteria and recommendations for recognition of changes in status that may indicate presence of infection as well as admission assessment for infection;
- Assessment;
- Treatment;
- Monitoring, including recognition of outbreaks, implementation of vaccination programs, surveillance practices, staff practices and employee health & education, and antibiotic use monitoring

The Society for Healthcare Epidemiology of America and the Association for Professionals in Infection Control and Epidemiology have also developed guidelines for infection prevention and control in LTCFs. These were originally developed in 1997 and updated via a position paper published in 2008 incorporating new research and experience in the field.[96] Both sets of guidelines offer providers extensive information on additional resources and a detailed set of practice recommendations.

These guidelines address the elements of:

- Epidemiology
- Nosocomial infections in the LTC setting
- Aspects of effective infection control programs
- Regulatory requirements

[94] CDC. Influenza Vaccination Coverage Among Health-Care Personnel---United States, 2010—11 Influenza Season. MMWR 2011;60(32):1073-1077.

[95] More information available here: http://www.guideline.gov/content.aspx?id=32667

[96] Smith et al. SHEA/APIC Guideline: Infection Prevention and Control in the Long-Term Care Facility. ICHE 2008;29:785-814.

One promising initiative called ECHO-AGE that is being piloted at Boston's Beth Israel Deaconess Medical Center is based on the highly successful ECHO project piloted in New Mexico that used SKYPE technology to educate rural physicians about the management of Hepatitis C. The program has significantly reduced the morbidity and costs associated with this disease in numerous underserved areas.[97] In similar fashion, ECHO-AGE will educate NH/SNF physicians and nurses about the management of common geriatric conditions in the NH. Rural NH/SNF physicians will present cases to academic geriatricians on a weekly basis over the internet, enabling them to access expert opinions from a distance. As these NH/SNF physicians and nurses become experts in geriatric care, they will serve as local resources for other physicians in their local area.

Efforts also have focused on improving prescribing practices in LTCFs. Several guidelines to reduce antibiotic resistance in healthcare settings, including LTCFs, have been published.[98, 99, 100, 101] Even though antimicrobial stewardship is acknowledged as being a component of the LTCF infection control program,[102, 103] as stated above there are many challenges to implementing antimicrobial stewardship programs in LTCFs. To address this issue, educational materials and guidance to aid the implementation of antimicrobial stewardship programs in LTCFs have been developed. For example, collaboration among the Michigan Antibiotic Resistance Reduction (MARR) Coalition, Michigan Department of Community Health, Michigan Society for Infection Prevention and Control (MSIPC), and CDC resulted in a toolkit designed to help LTCFs implement, "12 Steps to Prevent Antimicrobial Resistance Among Long-Term Care Residents."[104] Recently, an antimicrobial stewardship program toolkit was developed through a collaboration between the Greater New York Hospital Association and the New York State Department of Health, that included both acute care hospitals and LTCFs.[105]

D. State Financial Incentives

Recently, the CDC outlined a number of state financial practices intended to support HAI education and surveillance activities within hospitals. Some of these endeavors could potentially be tailored or extended to the LTC context:

- Nevada used funds from penalties gathered from hospital facilities that fail to comply with various state HAI guidelines to support HAI education and training in hospitals.

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[97] Arora S., Thornton K., Murata G. & et al. Outcomes of treatment for hepatitis C virus infection by primary care providers. New England Journal of Medicine 2011; 364(23):2199-207

[98] Dellit et al. IDSA/SHEA Guideline for developing an institutional program to enhance antimicrobial stewardship. Clinical Infectious Diseases 2007; 44:159–77.

[99] Cohen et al. Recommendations for Metrics for Multidrug-Resistant Organisms in Healthcare Settings: SHEA/HICPAC Position Paper. ICHE 2008;29:901-13.

[100] APIC Guide 2009a. Guide to the Elimination of Methicillin-Resistant *Staphylococcus aureus* (MRSA) in the Long-Term Care Facility. Available at: http://www.apic.org/Content/NavigationMenu/PracticeGuidance/APICEliminationGuides/MRSA_in_LTC_09.pdf **[**Accessed July 17, 2011**]**.

[101] APIC Guide 2010. Guide to the Elimination of Multidrug-resistant *Acinetobacter baumannii* Transmission in Healthcare Settings. Available at: http://www.apic.org/Content/NavigationMenu/PracticeGuidance/APICEliminationGuides/AB_Guide.pdf **[**Accessed July 17, 2011].

[102] Smith et al. SHEA/APIC Guideline: Infection Prevention and Control in the Long-Term Care Facility. ICHE 2008;29:785-814.

[103] Smith et al. Antibiotic Stewardship Programs in Long-Term Care Facilities *Annals of Long-Term Care: Clinical Care and Aging*. 2011;19[4]:20-25.

[104] MARR (Michigan Antibiotic resistance Reduction Coalition. Long-term Care Tool Kit. 12 Steps to Prevent Antimicrobial Resistance Among Long-Term Care Residents. Available at: www.mi-marr.org/LTC_toolkit.html [Accessed October 24, 2011].

[105] GNYHA Antimicrobial Stewardship Project. Available at: http://www.gnyha.org/6652/Default.aspx

- New Hampshire created a hospital fee mechanism to pay for its HAI program, which started in July 2011.
- Washington established a hospital infection control grant account for infection control and surveillance programs.

VII. Federal Regulatory Oversight and Performance Incentive Programs in NFs/SNFs

A. Federal Regulatory Oversight

The Division of Nursing Homes (DNH) in the Survey and Certification Group at CMS is working on multiple projects as part of its ongoing efforts to reduce the rate of HAIs in NHs. These projects include enhancing the data analysis of both facility deficiency data and the clinical data from the MDS and working with federal partners on studies to assess the practice of HAI prevention at the state level.

A key strength of the CMS Survey and Certification process is that the NH/SNF surveyors have an opportunity to assess the quality of NH/SNF infection control and prevention policies and practices on a regular basis. When deficiencies are found in an annual or complaint survey, the surveyor has the authority to cite the NH/SNF for that violation based on the federal regulation (F-tag 441) directly related to infection control and prevention practices in NHs/SNFs.[106] The DNH continues to monitor trends in this deficiency for increased citation rates and to determine state to state variation in citations. While higher citations may be related to an increased awareness of HAIs in NHs/SNFs, the DNH will monitor this area closely to proactively address HAI-related issues in NHs/SNFs before they become widespread or pose an immediate threat to the residents. The DNH is simultaneously improving its ability to analyze citation data by expanding the analyses to include the qualitative information captured in the surveyor's written documentation supporting a cited deficiency (CMS Form 2567). By looking at these data, the DNH will be able to analyze, among other things, the nature of the citations as well as the surveyors' sophistication when assessing a facility's infection control practices and procedures.

The DNH will also continue to publicly report on the MDS-based quality measures. The new measures based on the MDS 3.0 will be released in spring 2012, and contain a wealth of information on HAI-related metrics including UTIs, catheterization, and vaccinations. Staff at the DNH will also look at data elements in the MDS related to infections, such as wound infections and MDROs. As part the DNH's efforts to analyze staffing rates as they relate to NH/SNF care quality, the DNH is examining rates of avoidable hospitalizations from NHs/SNFs for a number of conditions, including sepsis, UTIs, and respiratory infections.

Additionally, the DNH has been working with the CDC on a project to identify states' HAI initiatives. This work is scheduled to be completed by 2013, and includes an environmental scan of all state survey training coordinators and state HAI coordinators to determine the extent to which states are addressing HAI reduction in NHs/SNFs. This study will also include an in-depth analysis of the more advanced state programs for HAI reduction. The end products of this study will provide a baseline for determining states' level of readiness for addressing HAIs in

[106] For further information see the CMS State Operations Manual, available here: https://www.cms.gov/Manuals/IOM/ItemDetail.asp?ItemID=CMS1201984

NHs/SNFs. They will also provide valuable lessons for successful HAI reduction efforts that we can incorporate into NH/SNF surveyor training.

B. Performance Incentive Programs

Nursing facilities in the United States are heavily reliant on two public payers: Medicaid and Medicare, and these revenue streams account for a substantial portion of their operations. Nursing facilities, like other provides, are responsive to payment incentives and over time may restructure care and delivery in response to those incentives. As such, payment incentives can impact resident outcomes. Further, although there are no direct models to highlight, there are several promising practices that HHS should consider modifying or expanding to reduce HAIs in NHs/SNFs, including:

1. The Centers for Medicaid and Medicare's Nursing Home Value-Based Purchasing (NHVBP) Demonstration

Under the NHVBP, CMS will provide financial incentives to NHs/SNFs that provide high quality care or demonstrate improvements in care. Participating NHs/SNFs will be assessed on various quality measures and then receive payments based on performance. While none of the quality metrics included in the demonstration explicitly focus on HAIs, two (urinary catheters left in the bladder and pressure ulcer incidence) at least indirectly relate to HAIs. The NHVBP demonstration also tracked as an indicator of quality the participating facility's rate of resident transfers for conditions, such as UTI, sepsis, respiratory infections. It is worth exploring whether quality metrics within the NHVBP program could be expanded to include HAIs of interest.

2. Broader Application of the HAC-POA Policy

In 2007-2008, CMS launched the Hospital Acquired Condition Present on Admission Policy (HAC-POA), which was applied to Inpatient Prospective Payment System Hospitals. This system could prove instructive when contemplating strategies for financially incentivizing HAI reductions in nursing facilities. CMS is examining the broader implementation of the HAC-POA system across settings that serve Medicare beneficiaries, including nursing facilities. Conceivably states that adjust nursing facility payment rates based on case mix might have payment systems that lend themselves to a HAC-POA type policy more easily (because more granular data is collected). In any case, more research would be needed to determine how or if a HAC-POC policy would work in nursing facilities.

3. Improving Care Quality for Nursing Facility Residents

The CMS Medicare-Medicaid Coordination Office has recently announced an effort to improve care for nursing facility residents. While this program has only recently been launched, it is conceivable that interventions funded through this effort may directly or indirectly influence HAI prevalence in nursing facilities.

4. Pay for Performance

At the national level, beginning in 2012, CMS will track and impose financial penalties on hospitals with higher-than-average rates of readmission for particular conditions, some of which may align with HAI definitions. Some states have initiated a variety of pay for performance strategies in NHs/SNFs. For example, in Georgia, under the Nursing Home Quality Initiative, all NHs/SNFs in the state are evaluated along a host of quality metrics, including prevalence of pressure ulcers among residents.

5. The Centers for Medicare and Medicaid Services' NH Quality Assurance and Performance Improvement (QAPI) program

The Affordable Care Act requires all nursing homes to have a QAPI program in place by 2013. The program should effectively and continuously reevaluate the quality of the care they provide and quickly remedy any identified problems. CMS has embarked on a multi-year effort in order to provide the best tools and resources to help nursing homes implement their QAPI programs by undertaking three initiatives:

- **QAPI Tools and Resources:** In collaboration with CMS contractors, CMS is in the process of identifying and designing effective QAPI tools, templates and resources for nursing homes.
- **Technical Assistance (TA):** CMS contractors will test QAPI tools, resources, and approaches to providing TA in a multi-year demonstration project with a small group of nursing homes. These tools and resources will be made available to all NHs following testing.
- **The Nursing Home Quality Improvement Questionnaire:** A questionnaire was designed to identify the quality systems and processes NHs currently have in place, as well as assess the extent to which these systems and processes function to help NHs recognize and address quality issues. CMS and their contractors will use this information to help refine the QAPI components.

NHs may find enrolling in NHSN and other HAI prevention efforts offers a means of demonstrating their commitment to quality improvement, and HAI reduction initiatives can be built into a NH's QAPI plan.

VIII. Communications and Outreach to the Long-Term Care Community

The primary objective of the Communication Strategies Plan is to reduce HAIs in LTCFs by:

- Disseminating key messages about practices to prevent HAIs in LTC residents
- Increasing knowledge and awareness of these key prevention practices among providers, consumers, and general public

In order to prevent and reduce HAIs in LTCFs, key messages need to reach a variety of target audiences. There are a number of ongoing quality and healthcare-related initiatives across HHS, including the National Quality Strategy, Partnership for Patients, and National Prevention Strategy (Appendix D). Recommended actions in this section purposefully integrate messages across other HHS campaigns (and campaigns with which HHS is involved as a partner) as appropriate. Appendix D identifies:

- Internal and external partners to HHS
- Existing campaigns that may provide opportunities for joints use of resources and messaging
- Target audiences
- A variety of methods for educating and communicating with these audiences

The messaging for the overall campaign should be appropriate to the level of the audience and use the principles of risk communication and social marketing. If used by HHS, all messages should have the appropriate level of agency clearance. Other messaging should be developed by HHS and be part of the public domain for shared use by professional groups and audiences. Regardless of the audience and communication technique, all involved HHS partners should seek to focus on the same key messages for consistency and focus on an easily accessible and understood format for the respective target audience.

Consistent with the Outreach Plan for the first phase of the National Action Plan more generally, the methods to target prevention of HAI in LTCFs will use various channels of communications and state of the art best practices, including:

- Raising awareness of the importance of addressing HAIs in unique LTCFs
- Empowering consumers with the tools and knowledge to be effective self-advocates for HAI prevention
- Helping healthcare professionals focus their attention on preventive steps (including relevant CDC evidence-based guidelines) that will yield the greatest benefits
- Sharing the overall progress of the nation in reducing national rates of HAIs in LTCFs
- Promoting and sustaining heightened national attention to HAIs within the LTC provider community by highlighting the HHS Action Plan and the progress that will be realized through the fulfillment of the plan
- Reshaping the social norms that impact HAIs so that HHS prevention measures become standard practice for both LTC providers and consumers

Reaching Out to New Audiences

The HAI LTC campaign may need to identify additional audiences for which its message is particularly relevant. While many other HHS campaign goals clearly align with the goals of the Action Plan, the target audiences for the HAI LTC action plan may only be peripherally engaged in other quality campaigns. There may be audiences who may touch the consumers or work with relevant providers in other contexts who may be able to carry messages or disseminate materials. For example, the initiative may want to consider reaching out to malpractice/professional liability carriers. If new audiences are unfamiliar with the campaign strategies being used, additional efforts may be made in order to effectively reach the new target audience.

IX. Next Steps and Future Directions

A. Antibiotic Stewardship

Considering the many challenges related to the implementation of antibiotic stewardship programs in LTCFs, several recommendations are proposed: 1) an assessment of current resources dedicated to antibiotic stewardship programs within LTCFs, 2) pilot or demonstration projects that evaluate the implementation of the antibiotic stewardship programs and their impact on antibiotic use practices in LTCFs; and 3) identification of the best methods to implement and sustain antibiotic stewardship programs within LTCFs.

B. Promoting Influenza Vaccination among LTC Healthcare Personnel

Additional research is needed to determine barriers to implementation of staff influenza vaccine programs and causes for low vaccine uptake among LTC staff. Much work has occurred in the field, specifically with Phase 2 of the National Action Plan and the Influenza Vaccination of Healthcare Personnel Working Group, The Working Group will continue to work closely with the Quality Performance Measures Working Group which has focused on LTC as part of their second year project.[107]

C. Tracking Hospitalizations and Re-hospitalizations

Avoidable hospitalizations and re-hospitalizations among long-stay NH/SNF residents and sub-acute residents, respectively, are important and costly indicators of poor care transitions. A large proportion of these hospitalizations may be due to infections. Thus, tracking the (re)hospitalizations of NH/SNF residents for infections is an important part of improving care quality and reducing HAIs in LTC. Robust data sets are necessary to accomplish this goal, as inpatient claims data and MDS data are insufficient on their own to capture all hospitalizations for NH/SNF residents.

DNH has for years been analyzing a data file that links the resident-level MDS assessments with Medicare Inpatient Claims data to determine the rate of avoidable hospitalizations (among them are UTIs and sepsis) as an outcome associated with understaffing. Medicare Payment Advisory Commission (MedPac) has done analyses on a similar file for their annual report to Congress on 30-day readmissions from SNFs. Key among the advantages of resident-level linked files is that there is no additional burden on providers.

As this system places no additional burden on providers it can be used in parallel with other surveillance systems such as NHSN. While NHSN will be an important tool for tracking the occurrence of all HAIs in NHs, CMS, through this system, will be able to analyze claims and clinical data to identify those HAIs that result in hospitalization. These efforts will align with other HHS initiatives to reduce readmissions and healthcare-associated conditions including healthcare-associated conditions which are HAIs.

These data files need to be updated to link the data from the new MDS (Version 3.0). The DNH currently is working on the development of these datasets to continue refining NH/SNF staffing measures. Such files could provide this workgroup and other stakeholders with a key tool for assessing the burden of HAIs in LTC, because the most severe HAIs that require hospitalizations can be identified.

X. Summary of Recommendations

Subject Area		Recommendation
Research Gaps	1.1	Need for more recent HAI incidence data for priority HAIs

[107] Influenza Vaccination of Healthcare Personnel Working Group Meeting Notes – July 26, 2011.

Subject Area		Recommendation
Data Sources and Measurements	2.1	HAI infection surveillance and reporting to NHSN should be encouraged as the industry norm. NHSN data collection and transfer should concurrently support surveillance and monitoring, quality measurement and reporting, and compliance monitoring.
	2.2	Consider integration of the AHRQ Common Formats project to encourage NHs to adopt and use Health IT which comply to standards accepted by the Office of the National Coordinator of Health Information Technology.
	2.3	The UTI, CAUTI and CDI measurement set should place *prevention* as the highest priority. As such, development of measures of catheter and antibiotic utilization should be encouraged in CNFs in a manner that is well-aligned with the acute hospital to enable system-level measurement.
	2.4	The consideration of *transitional care* measures, consistent with other current health system priorities, may encourage patient-and episode-centered care and discourage cost-shifting. Measures of hospital admissions, readmissions, ED visits and perhaps also observation stays are feasible to develop using ICD-9-CM and ICD-10-CM codes.
	2.5	Inclusion of additional measures should be parsimonious and tailored to the quality improvement priorities of specific sites of care.
	2.6	Construction of a data collection system that can support multiple components for assessing the quality of healthcare delivery including disease surveillance, effectiveness of prevention and control activities, quality improvement, public reporting, and financial incentive determinations in LTC.
HAI Prevention Promising Practices in LTCFs	3.1	Evaluate the use and success of the collaborative approach within regions or states to implement and perform HAI surveillance in NHs/SNFs. Use this information to determine how NH/SNF collaboratives should be designed, structured, and implemented to ensure they are successful in achieving their goals.
	3.2	Determine the feasibility of using a Healthcare Associated Condition (HAC) policy in NHs/SNFs, and identify what HAC or HAI are most relevant for NH/SNF providers.
	3.2.	An assessment of current resources dedicated to antibiotic stewardship programs within NHs/SNFs may allow for a better understanding of such programs in the LTC setting is needed.

Subject Area		Recommendation
	3.2.1	Pilot or demonstration projects that evaluate the implementation of the antibiotic stewardship programs (e.g., MARR Tool Kit) and their impact on antibiotic use practices in LTCFs
	3.2.2	Identification of the best methods to implement and sustain antibiotic stewardship programs within LTCFs.
	3.3	Additional research is needed to determine barriers to implementation of staff influenza vaccine programs and causes for low vaccine uptake among LTC staff. A pilot project could be conducted to evaluate the feasibility of collecting the relevant data to monitor and systematically report influenza vaccine coverage rates for LTCF staff.
	3.4	Exploration of the role and feasibility of including HAI-specific metrics in the NHVBP and determination of what metrics can and should be included should be considered.
Communications	4.1	There is a potential knowledge and training gap that may exist in rural areas, where primary care physicians often serve as medical directors of LTCFs, without any formal training or background in geriatrics. Some rural health providers may not be connected to formal geriatric training programs or NH/SNF//LTC associations, but can be targeted through various education networks under HRSA. Some state health departments (including licensing bodies and public networks) and state HAI coordinators under ARRA also may distribute materials and disseminate messages from the HAI strategy and could be focused on rural providers.
	4.2	This initiative could consider making a special effort to coordinate with the annual flu vaccine campaign, established to highlight the importance of continuing influenza vaccination. The HAI/LTC work could focus especially on efforts to encourage LTC staff as well as consumers and their caregivers and visitors to get immunized in order to protect NH/SNF residents.
	4.3	The initiative should develop free clinical education materials, perhaps as phone apps, that assess clinicians' knowledge and connect them with web-based training.
	4.4	Campaign outreach materials could be made available, royalty-free, to an array of audiences, including, manufacturers of equipment and goods used in LTC to best aid in increasing the availability of all outreach materials.

APPENDIX A:
Settings of Long-Term Care

Theme	Setting Type or Model	Definition*	Regulation Level	Data Source
Facility-Based Long-Term Care	Skilled nursing facility	Facilities which provide nursing supervision and limited medical care to persons who do not require hospitalization/Extended care facilities which provide skilled nursing care or rehabilitation services for inpatients on a daily basis.	Medicare	MDS, OSCAR, CASPER
	Nursing facility	Facilities providing primarily long-term maintenance and restorative care for individuals needing support with their activities of daily living.	State level	
	Board and Care Homes	"Also called residential care facilities or group homes, are smaller private facilities, usually with 20 or fewer residents…Residents receive meals, personal care and have staff available 24 hours a day. Nursing and medical attention are not usually provided on the premises." [108]	State level	
	Assisted Living	A housing and healthcare alternative combining independence with personal care. It provides a combination of housing, personalized supportive services and healthcare designed to meet the needs, both scheduled and unscheduled, of those who need help with activities of daily living. (www.alfa.org) Year introduced: 2003	State Level	

* All definitions taken from MeSH (Medical Subject Headings), the NLM controlled vocabulary thesaurus used for indexing articles for PubMed unless otherwise noted.
[108] Facility Based Services: Board and care homes (n.d.) http://www.longtermcare.gov/LTC/Main_Site/Understanding_Long_Term_Care/Services/Services.aspx

Theme	Setting Type or Model	Definition*	Regulation Level	Data Source
Facility-Based Long-Term Care	Continuing Care Retirement Communities	"Provide both housing and healthcare for the elderly, in addition to emphasizing social involvement and community life. A CCRC is intended to supply a *continuum of care* throughout the life-time of its elderly residents by maintaining an assortment of on-site medical and social services and facilities. This allows residents to enter into the community while still relatively healthy and then move on to more intensive care as it becomes necessary—incorporating independent living, assisted living and nursing home level of care"[109].	State Level	
Bridge or Substitutive Models	Adult Day Care	Institutional healthcare of patients during the day. The patients return home at night.	Medicare (PACE)	
	Hospital-at-Home, hospital based home care	Hospital-sponsored provision of health services, such as nursing, therapy, and health-related homemaker or social services, in the patient's home.		
	Respite Care	Care provided in the home or a facility institution intermittently in order to provide temporary relief to a family home care giver		
Home-based care	Home Health	Community health and nursing services providing coordinated multiple services to the patient at the patient's homes. These **home-care services** are provided by a visiting nurse, home health agencies, hospitals, or organized community groups using professional staff for care delivery.	Medicare	

[109] "Continuing Care Retirement Communities: Introduction" (1997). http://aspe.hhs.gov/daltcp/reports/ccrcrpt.htm#intro

Theme	Setting Type or Model	Definition*	Regulation Level	Data Source
Home-based care	Home and Community-Based Long-Term Services and Supports	"Refers to assistance with daily activities that generally helps older adults and people with disabilities to remain in their homes. Many people with functional limitations or cognitive impairments need assistance with activities of daily living (ADLs) such as bathing, dressing, and using the toilet, or instrumental activities of daily living (IADLs) such as shopping, managing money or medications, and doing laundry. Services such as personal care, chore assistance, transportation, congregate meals, or adult day services all constitute HCBS."[110]	State and Federal (Medicaid Waiver)	

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[96] Kassner, Enid. (2011). Home and Community-Based Long-Term Services and Supports for Older People http://assets.aarp.org/rgcenter/ppi/ltc/fs222-health.pdf

APPENDIX B

Current HHS Projects and Programs for reporting of Healthcare-Associated Infections in the Long-term Care Setting

Project Title	**Description of Project**	**Lead Agencies**	**Timeline**
NHSN LTC infection surveillance reporting	LTC Component for HAI and MDRO reporting	CDC/DHQP	Fall 2012
	Healthcare Personnel Safety Component for vaccination reporting		Aggregate reporting to be available starting in Fall 2012
HAI prevention initiatives in State Health Departments	Supporting inclusion of LTCFs in state coordinated HAI prevention efforts	Health Depts. CDC/DHQP	Initiated summer 2009 – ongoing
Infection surveillance inclusive of LTC residents	CDC Emerging Infection Program (EIP), population-based infection surveillance for invasive MRSA, *Clostridium difficile*, Multi-drug resistant gram-negative bacteria, Candidemia Goal: to generated population-based estimates of infection incidence.	CDC/DHQP	Ongoing
National Survey of Long-Term Care Providers (NSLTCP)	Survey will include primary data collection (for assisted living and other residential care facilities and adult day service centers) and administrative data (for nursing homes, home health agencies, hospices). With partnership, NSLTCP could be used to monitor infection control practices of LTC providers and immunization status of and infection burden among LTC residents	CDC/NCHS	Ongoing, starting in 2012
Influenza vaccination coverage studies in LTC	Data for LTC staff influenza vaccination available from National Health Interview Survey annually (requires special analyses to identify LTC staff and often results in a lag in reporting); 2007 National Home Health Aide and National Home and Hospice Care Surveys have baseline data for some employee categories along with strategies to encourage influenza vaccination.	CDC/NCHS	

Project Title	**Description of Project**	**Lead Agencies**	**Timeline**
Common Formats	SNF modules CAUTI CLABSI	AHRQ	2013
NH Quality reporting	Influenza and pneumococcal vaccination of residents Catheter use for long-stay residents Urinary tract infections among long-stay residents	CMS, Office of Clinical Standards & Quality	In progress through MDS 3.0. Public reporting to begin in April 2012
NH Certification Surveys	Assessments of Infection Control programs in NHs/SNFs as part of the annual facility certification process	CMS, Office of Clinical Standards & Quality	Ongoing
Post-acute care quality reporting*	CLABSI – Long-term acute care hospitals CAUTI – Long-term acute care hospitals and inpatient rehabilitation facilities	CMS, Office of Clinical Standards & Quality, Division of Chronic & Post Acute Care	Proposed

* Program may have application in SNF/NH in the future

APPENDIX C

Examples of Centers for Disease Control and Prevention supported state infection healthcare-associated infection prevention activities engaging LTCFs*

State	Needs assessment	Training/education	Collaborative
Georgia	150 facilities responded to prevention practices needs assessment tool	183 NH/SNF staff representing 129 LTCFs attended 3 regional infection control training courses; Effectiveness evaluated by comparing pre- and post-training knowledge	Establish *C. difficile* infection definitions and surveillance methods for LTCF (3 acute and 12 LTCF)
Illinois	Prevention practices needs assessment tool sent to 800 facilities in Jan 2011; 100 responses to date		
Indiana	57 LTCF responded to prevention practices needs assessment tool	Developed surveillance reporting infrastructure, training resources and educational webinars	*C. difficile* infection /Cather associated urinary tract infection collaborative engaging 80 LTCF facilities
Nevada	Conducted on-site infection control program assessments as outreach to 47 LTCF	Provided written recommendations for improving infection control program along with tools and resources	Starting LTCF collaborative January 1st, 2012
New Mexico		Developing educational webinar	Quality Improvement Organization (QIO) launched *C. difficile* infection collaborative to include LTCF
Vermont	31 skilled nursing facilities completed prevention practices needs assessment tool	Hosted series of webinars and face-to-face training meetings which facilitated prevention work at community level	Multi drug resistant organisms (MDRO) collaborative grouping 17 acute care hospitals and 33 LTCF (n=31) into community "healthcare clusters"

State	Needs assessment	Training/education	Collaborative
Virginia	Implemented prevention practices needs assessment tool; modified to also be administered to assisted living facilities (ALF); 88 (34%) nursing homes and 36 (11%) ALF responded	Developed LTCF infection control training course and toolkit Hired Health Education specialist for regional LTCF training events; 5 2-day training sessions (day 1 ALFs, day 2 NHs)	Developing a UTI prevention collaborative with a group of LTFs
Washington	Utilized prevention practices needs assessment tool as part of facility engagement for MDRO collaborative	Hosted face-to-face training and webinars to facilitate prevention efforts	Regional MDRO collaborative modeled after Vermont; Piloting in 2 communities, each has acute care facility partnered with surrounded extended care facilities, 14 LTCF involved

* This list highlights several programs, but is not comprehensive of all ongoing state prevention activities in LTC

http://www.cdc.gov/hai/stateplans/states-w-LTC-collaborative.html#in

APPENDIX D

HHS Partners and Current Communication Techniques and Audiences

The following table identifies HHS and external partners, their existing communication outlets/vehicles and identified target audiences.

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
Agency for Healthcare Research and Quality (AHRQ)	Agency's Electronic Newsletter: www.ahrq.gov/news/enewsix.htm	2-3x/month	over 70,000 subscribers (healthcare professionals, clinicians, researchers, patients/consumers, etc)	Website visits and views.
	Agency's Patient Safety and Health Information Technology E-Newsletter: www.ahrq.gov/news/ptsnews.htm	monthly	over 40,000 subscribers (healthcare professionals, clinicians, researchers, patients/consumers, etc)	Website visits and views.
	AHRQ E-mail Blast to Patient Safety Subscribers (GovDelivery)	weekly	over 37,000 subscribers (healthcare professionals, clinicians, researchers, patients/consumers, etc)	Website visits and views.
	Agency's "Research Activities" newsletter: www.ahrq.gov/research/resact.htm	monthly	over 60,000 subscribers (healthcare professionals, clinicians, researchers, etc)	Website visits and views.

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
	Dr. Clancy's Consumer Advice columns--*easy-to-understand info for consumers to help navigate the healthcare system.*	monthly	Online publication; also distributed to AARP members.	Website visits and views.
	Podcasts/radiocasts via AHRQ's Healthcare411: http://healthcare411.ahrq.gov/	weekly	English and Spanish-language podcasts post every Wednesday and are then delivered to over 1,200 radio stations nationally	Website visits and views; media hits.
	AHRQ's Media /Reporters listserv (AHRQ newsroom: http://www.ahrq.gov/news/vnewsix.htm)	As needed		
	Various social networking tools (Twitter, Facebook, YouTube)	As needed		
Centers for Disease Control and Prevention (CDC)	Websites	Ongoing	Healthcare providers and the general public	Number of: • Website views • Click-throughs Downloads

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
	Online partnerships with the private sector outlets which includes a weekly video commentary, news, and continuing medical education.	Weekly release	Healthcare providers	Number of: • Website views, continuing medical education completion rates, • Video commentary downloads, • partners contacted through targeted listserv blasts, • media outlets containing coverage
	Targeted newsletters	Ongoing	State health departments; National Healthcare Safety Network users	
	Partner conference calls and calls with clinicians (CDC's Clinician Outreach Communication Activity	Ongoing	Healthcare providers, organizations, and consumer advocates	Number of participants
	Press/media release (for breaking news)	As needed/ appropriate	Major national, regional, local press; can be tailored to trade publications	Number of: • Media views • Investor views • Third party distributors • Total visibility index • Engagement index Overall clips

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
	Matte release (for evergreen news or long-lead	As needed	Major national, regional, and local press; can be tailored to trade publications	Number of outlets who picked up the story
	Social media (e.g., CDC's Safe Healthcare blog, Facebook, Twitter, eCards)	As needed	Healthcare professionals; general public	Number of: • Viewers • Click-throughs Reposting or retweeting of content
	Listserv (GovDelivery messages with thousands of self-subscribers)	As needed	Over 80,000 subscribers (healthcare providers, general public, and media).	Number of: • Subscribers • Individuals who opened and read the message • Individuals who clicked through to the website

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
Centers for Medicare and Medicaid Services (CMS)	SNF/LTC, Home Health/Hospice, ESRD, Hospital, LTCHs, IRFs, and Physician/Nurse/Allied Health Open Door Forums (i.e. combination of streaming media based and telephone conference calls. Follow up materials posted on web with list-serve notification of new postings and upcoming calls.	Forums scheduled every 6 to 8 weeks and Special Open Door Forums and Listening Sessions/Stakeholder Calls as needed	CMS staff, 4,000 partner organizations on managed listservs and Subscribers to page watch on selected CMS web pages.	Detailed information on registered participants and participants who connect by toll free phone number. Stroke counts for connections to streaming forums on Ustream or cms.gov/live. Note multiple listeners may use a single tracked connection. Participation depends on promotion by subject matter experts.
Administration on Aging (AoA)	AoA E-newsletter	Weekly	Subscribers (aging network providers, advocates, etc.)	Number of subscribers
	AoA Website	As needed	General public	Number of web views
	Press Release	As needed	General public	# of media outlets running release

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
	Long Term Care Ombudsman Programs, a network of more than 10,000 resident advocates, who have frequent access to residents, resident families/ representatives, and staff. The following are methods to disseminate information among LTC Ombudsmen:			
	1. National Ombudsman Resource Center, which hosts:			
	• listserv to ombudsmen nation-wide,	As needed	LTC Ombudsmen	Number of subscribers
	• newsletter (the "Gazette")	Weekly	LTC Ombudsmen and available to other consumer advocates	Number of subscribers and hits on website
	• training events	Semiannual conferences plus web-based training as needed	LTC Ombudsmen	Number of attendees
	AoA outreach to 2 national associations for LTC ombudsmen; through conference calls and/or partners' newsletters	As needed	LTC Ombudsmen	Number of callers and/or subscribers

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
Health Resources and Services Administration	**Area Health Education Centers (AHECs)** Community-based training programs are developed at health service delivery sites in rural and underserved locations.	training	health professions students, primary care residents, healthcare providers, and kindergarten through 12th grade students, with a focus on 9th through 12th grade health career students	
	Geriatric Education Centers (GECs)	training	health professions students, faculty and practitioners in the diagnosis, treatment, prevention of disease and disability, and other health problems of the elderly	
	State Offices of Rural Health (SORHs) Creates a focal point within each State for rural health issues. The program provides an institutional framework that links communities with State and Federal resources to help develop long-term solutions to rural health problems. One of the program's core functions is to serve as a clearinghouse of information and innovative approaches for enhancing rural health services delivery.	Information dissemination as needed	State and local rural partners and stakeholders	Numbers of partners contacted through targeted listserv blasts

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
	National Health Service Corps (NHSC) Clinicians		Depending on work setting, the following are most relevant for HAI-LTC prevention education: Primary Care Physicians (MD or DO); Dentists (general, pediatric and geriatric); Nurse Practitioners (primary care); Physician Assistants (primary care)	
	State Flex Coordinators (for dissemination to Critical Access Hospitals) The Medicare Rural Hospital Flexibility Grant Program (Flex) provides funding to State governments for a number of activities, including quality and performance improvement initiatives. Only States with critical access hospitals (CAHs), or potential CAHs, are eligible. Flex funding encourages the development of cooperative systems of care in rural areas -- joining together CAHs, EMS providers, clinics and health practitioners to increase efficiencies and quality of care.			

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
	Office of Health Information Technology and Quality (OHITQ) This office provides trans-HRSA expertise and leadership on HIT and quality issues. Representing all of HRSA and its diverse grantees, OHITQ seeks to improve the quality of healthcare for safety net populations and strengthen the health workforce that serves these populations. OHITQ works in collaboration with other HHS agencies (e.g., Office of the National Coordinator, Agency for Healthcare Research and Quality) and external stakeholders (e.g., National Quality Forum) on important HIT and quality initiatives.		HRSA Grantees, ONC, AHRQ, National Quality Forum	
Possible additional interested HRSA partners	**Maternal and Child Health Bureau**		Providers for children with special healthcare needs	

HHS Partners	Communication Outlet/Vehicle	Frequency	Audience	Available Metrics
	HIV/AIDS Bureau *AIDS Education and Training Centers (AETC) Program of the Ryan White HIV/AIDS Program:* the AETC program is a network of regional and national training centers. *Expanding HIV Training into Graduate Medical Education Program*: the 2010 National HIV/AIDS Strategy Federal Implementation Plan calls for HRSA to foster residency training with a focus on HIV management and care at community health centers serving large numbers of HIV-infected patients.	education, training, consultation and clinical decision support residency training	Healthcare professionals treating HIV-infected patients and health professionals who care for populations at highest risk for HIV. Community health centers serving large numbers of HIV-infected patients.	
	Bureau of Primary Health Care		clinicians in Federally Qualified Health Centers and "Look-Alikes"	

Healthcare Safety and Quality Campaigns

The following table identifies HHS and non-HHS campaigns, which could serve as vehicles for integrating LTC-specific HAI prevention activities through existing techniques.

Existing Campaigns	Campaign Partners	Technique	Frequency	Audience	Available Metrics
Advancing Excellence Campaign *(CMS funds the website and several HHS partners are ex officio members in this campaign. Goal of campaign is to promote quality, best practice and measurement development within nursing facilities.)*	Administration on Aging Agency for Healthcare Research and Quality (AHRQ) Alliance for Quality Nursing Home Care Alzheimer's Association American Academy of Nursing -- Expert Panel on Aging American Association for Long Term Care Nursing (AALTCN) American Association of Nurse Assessment Coordination (AANAC) American College of Health Care Administrators (ACHCA) American Health Care Association (AHCA) American Health Quality Association (AHQA) American Medical Directors Association (AMDA) Association of Health Facility Survey Agencies (AHFSA) Centers for Disease Control and Prevention (CDC) Centers for Medicare & Medicaid	Development of national clinical and organizational goals (one of current goals relates to reduction in pressure ulcers) and resources to help facilities reach the goal, disseminated through website (nhqualitycampaign.org), training events, resource material development, support to LANES (Local Area Networks for Excellence), etc.	On-going	Nursing facility providers, clinical professionals, consumers, regulators, funders, advocates LANEs	-Number of facilities participating in campaign; - Trending of performance related to relevant goals. - Website views

Existing Campaigns	Campaign Partners	Technique	Frequency	Audience	Available Metrics
	Services (CMS) and its contractors, the Quality Improvement Organizations (QIOs) and State Survey Agencies Department of Veterans Affairs Foundation of the National Association of Long Term Care Administrator Boards Gerontological Advanced Practice Nurses Association (GAPNA) Institute for Healthcare Improvement (IHI) LeadingAge National Association of Directors of Nursing Administration in Long Term Care (NADONA/LTC) National Association of Health Care Assistants (NAHCA) National Association of State Long-Term Care Ombudsman Programs (NASOP) National Gerontological Nursing Association (NGNA) PHI Pioneer Network Service Employees International Union (SEIU) The Commonwealth Fund The Consumer Voice The Evangelical Lutheran Good Samaritan Society				

Existing Campaigns	Campaign Partners	Technique	Frequency	Audience	Available Metrics
	The John A. Hartford Foundation's Institute for Geriatric Nursing				
National Quality Strategy	• Quality Improvement Organizations • Patient Safety Organizations • Health plans • National Health Services Corps • NQF/National Priorities Partnership • Federal Interagency Working Group on Healthcare Quality	• 10th SOW • Public Reporting • Aligning certification, accreditation, regulation efforts • NPP and other patient safety webinars		Clinicians and providers, with a focus on primary care providers	# of Webinars and training participants Inclusion of HAI-LTC Action Plan in annual update of National Quality Strategy
Partnership for Patients	• Over 5,500 hospitals, clinicians, care providers, consumer, community or patient advocate organizations, employers, unions, health plans • Partnership also includes state, local governments	• Partnership focuses on both improving care in hospitals to reduce HAC, while also supporting care between settings, including supporting transitions to LTCFs		Hospitals, patient advocate groups, LTCF s across the continuum of care, home health, nursing homes, assisted living, HCBS providers, etc.	Patient safety webinars # LTC facilities who have signed the Partnership pledge
One and Only Campaign	Safe Injection Practices Coalition, led by CDC and including: • Accreditation Association for	• Resources for healthcare providers	Ongoing	Healthcare providers and consumers	Website metrics: http://www.oneandonlycampaign.org/

Existing Campaigns	Campaign Partners	Technique	Frequency	Audience	Available Metrics
(Safe Injection Practices)	Ambulatory Health Care (AAAHC) • Ambulatory Surgery Center Association • American Association of Nurse Anesthetists (AANA) • Association for Professionals in Infection Control and Epidemiology, Inc (APIC) • BD (Becton, Dickinson and Company) • Centers for Disease Control and Prevention (CDC) • CDC Foundation • Covidien • Health Resources and Services Administration • HONOReform Foundation • Hospira • Institute for Safe Medication Practices • MEDRAD • National Association of County & City Health Officials (NACCHO) • Nebraska Medical Association • Nevada State Medical Association (NSMA) • Premier healthcare alliance • U.S. Food and Drug	(e.g., training video, CME, iPhone application, brochures, fact sheets, posters) • Resources for consumers (e.g., fact sheets, brochures, posters, electronic communicatio n) • Outreach through coalition partners CDC-funded state-based initiatives			CME completers Partner outreach

Existing Campaigns	**Campaign Partners**	**Technique**	**Frequency**	**Audience**	**Available Metrics**
	Administration-Safe Use Initiative (advisor)				
Get Smart for Healthcare *CDC's program focusing on antimicrobial stewardship in inpatient facilities (including nursing homes)*	An initiative run by CDC with numerous professional partners	Campaign provides antibiotic stewardship resources for inpatient facilities, including resources that could be utilized in LTCFs (http://www.cdc.gov/getsmart/healthcare/)	Ongoing with a 1-week health observance every November	Healthcare providers (inpatient facilities including nursing homes), Hospital administrators, policymakers	Website metrics Outreach around health observance (Get Smart Week) Partner outreach
Hand Hygiene *CDC's hand hygiene resources for all healthcare settings*	An initiative run by CDC with numerous professional partners	CDC hand hygiene initiative with numerous resources for healthcare providers (e.g., evidenced-based guideline, training resources, and audit tools) and patients (e.g., videos,	Ongoing with two health observances in May and December	Healthcare providers, patients and their families	Website metrics Outreach around health observances (May and December)

Existing Campaigns	Campaign Partners	Technique	Frequency	Audience	Available Metrics
		brochures). Website: http://www.cdc.gov/handhygiene			