



A National Priority: Reducing Health Care Associated Infections

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Healthcare **Associated** Infections

This is a change in Terminology from
Healthcare **Acquired** Infections

- Acquired at dialysis center
- Infections acquired in other treatment settings



Dialysis Patients are at Risk of HAI

- They have multiple and frequent exposure to Healthcare environment (3x a week) – **Risk of exposure to infections**
- They require a method of vascular access such as central line catheters or AV fistula – **Opportunities to acquire infections.**
- Extracorporeal nature of Hemodialysis devices - **Opportunities for transmission of infections**
- Dialysis patients are immunocompromised - **Susceptible to infections**



Patients are at Risk of HAI in Dialysis Facilities

- Patients are treated in a small treatment environment - **Risk for exposure to infections**
- More body fluid than any other out-patient setting - **Opportunities to acquire infections**
- High number of opportunities for infections per hour of patient care - **Opportunities for transmission of infections**
- Extracorporeal circuit – **Allows pathogens to go in to bloodstream of patient**



HAI in Dialysis Patients is a Public Health Burden / Concern

- Growing dialysis population: ~400,000 as of 2010
- 2020 projection for all ESRD: **533,800***
- Infections
 - 2nd leading cause of death in dialysis patients
 - Most common: **vascular access**
- Antimicrobial resistant infections, **emerging patterns of resistance**
- 7/10 patients in US start dialysis with a Catheter. First year infection rates for these patients are higher and this is a growing concern

United States Renal Data System (USRDS) 2010 Annual Data Report

* The State of Chronic Kidney Disease, ESRD, and Morbidity and Mortality in the First Year of Dialysis , Collins et al; CJZ





What do we know?

- Infections are one of the leading cause of death in dialysis patients
- Infections are one of the leading cause of hospitalizations in dialysis patients
- Infections are leading cause of loss of vascular access



CMS - End Stage Renal Disease Facilities Conditions for Coverage (2008)

- To receive Medicare reimbursement dialysis facilities follow CMS conditions for coverage
- CMS developed Interpretive Guidelines for these conditions.
- Medicare Surveyors use these guidelines when they inspect dialysis facilities
- They are used to certify new dialysis facilities



Top Ten Deficiencies in Surveys - 2010

Rank	US	NE	CT	MA	NH	VT	ME	RI
1	V113	V 113	V 520	V541	117	515	V751	112
2	V 122	V 541	V 113	V113	114	143		122
3	V 403	V 520	V 101	V111	184	122		
4	V 715	V 501	V 541	V114	122	113		
5	V 541	V 122	V 684	V544	113	714		
6	V 543	V 114	V 501	V143	115	627		
7	V 767	V 101	V 504	V542	755	404		
8	V 401	V 117	V 323	V501	110	320		
9	V 402	V 115	V 715	V634	250	318		
10	V 116	V 542	V 726	V191	143			



Most Commonly Sited Deficiencies in Surveys

- V113 - Hand washing, gloves
- V114 - Sufficient sinks
- V122 - Cleaning & disinfection of contaminated surfaces
- V116 - Dedicated patient items-meds, tape, syringes etc
- V117- Clean area separated from “dirty” area - medication prep area separate from biohazard area



CMS or CDC – Who can track infections in Dialysis Facilities?

- CMS has infection control mandates under conditions for coverage but not every dialysis facility is surveyed every year.
- CDC has guidelines and recommendations but does not have a way to track infections in dialysis facilities



Vital Signs – March 1st 2011

CDC
Vitalsigns™
March 2011

1 in 20



About 1 in 20 patients get an infection each year while receiving medical care.

41,000

About 41,000 bloodstream infections strike hospital patients with central lines each year.

37,000

About 37,000 bloodstream infections happen each year to kidney dialysis patients with central lines.

Making Health Care Safer

Reducing bloodstream infections

A central line is a tube that a doctor usually places in a large vein of a patient's neck or chest to give important medical treatment. When not put in correctly or kept clean, central lines can become a freeway for germs to enter the body and cause serious bloodstream infections. These infections can be deadly. Of patients who get a bloodstream infection from having a central line, up to 1 in 4 die. Bloodstream infections in patients with central lines are largely preventable when healthcare providers use CDC-recommended infection control steps. Medical professionals have reduced these infections in hospital intensive care unit (ICU) patients by 58% since 2001. Even so, many still occur in ICUs, in other parts of hospitals, and in outpatient care locations. In 2008, about 37,000 bloodstream infections occurred in hemodialysis* outpatients with central lines.

*Use of a machine to clean or filter the blood when kidneys no longer work.

Learn what you can do to reduce central line infections.

→ See page 4

Want to learn more? Visit

<http://CDC.VitalSigns.HAI.FactSheet.pdf>





Centers for Disease Control and Prevention

MMWR

Early Release / Vol. 60

Morbidity and Mortality Weekly Report

March 1, 2011

Vital Signs: Central Line–Associated Blood Stream Infections — United States, 2001, 2008, and 2009

58% reduction

	2001	2008	2009
Inpatient ICU	43,000 (27,000–67,000)		18,000 (12,000–28,000)
Inpatient non-ICU			23,000 (15,000–37,000)
Outpatient hemodialysis		37,000 (23,000–57,000)	

~41,000

?

<http://www.cdc.gov/mmwr/pdf/wk/mm60e0301.pdf>



HAI is High Priority for HHS

- CDC's Vital Signs Report brought attention
- HHS Tier 2 Action Plan (out patient dialysis facilities)
- State Departments -ARRA funding for state plan's

Pressures in ESRD World

- Bundled Payment (Prospective Payment System) – Jan 2011
- Quality Incentive Program – Jan 2012 tied to Payment
- Public Reporting



CDC's Three Important Goals for Dialysis Facilities

- Blood Stream Infection prevention
- Increased participation of **Dialysis facilities in CDC's National Healthcare Safety Network (NHSN) to track infections**
- Increase infection control knowledge and education of **dialysis facility personnel**



What is National Healthcare Safety Network? (NHSN)

- CDC's secure internet-based surveillance system for healthcare-associated conditions and related processes for **all settings**
- Several thousand hospitals are already participating
- Currently focus is on outpatient hemodialysis setting
 - BSIs and other vascular access infections
- Designed to be used by **dialysis facility personnel**



Participation of dialysis facilities in NHSN is limited

- Enrollment of dialysis facilities in NHSN started in 2009
- Over-representation of hospital-based dialysis facilities
- Mandated for dialysis facilities in 1 state (Colorado)
- Expanding
 - ~300 facilities currently participating (~ 5500 in US)
 - State initiatives, End-Stage Renal Disease (ESRD) Network QI projects, increased awareness is increasing enrollment.



Problem statement - Why such low participation in NHSN?

- Dialysis facilities have identified difficulty in setting up their facility in NHSN
- They identified a registration burden and data entry burden.
- They have reported difficulty with definitions used for various events in the module.



How it all began...

**Network of New England received a grant from
Office of the Assistant Secretary for Health - Region I**

One Year Pilot Project

**“New England Dialysis Collaborative:
Healthcare-Associated Infection in Dialysis Facilities”**



Profile of New England Dialysis Centers

State	Centers			Patients
	LDO	Independent	Hospital	
CT	34	3	4	3,716
MA	48	13	15	5,629
ME	12	0	6	922
NH	11	1	0	800
RI	3	10	4	1,020
VT	1	1	6	327
Total	109	28	35	12,413

Notes: LDOs = 3 national corporations. Hospitals include Veteran's Hospitals, satellites and clinics. Source: SIMS Date: 12/31/2010





Tasks for New England Collaborative on HAI

- Establish HAI / ESRD New England Collaborative
- Establish partnerships between
 1. CDC, CMS
 2. HHS, and
 3. State health departments – Infection Control Programs
 4. Large Dialysis Organizations
 5. Dialysis clinics and other regional entities
- Establish a Regional Advisory Committee
- Develop a surveillance project with at least 3 states in New England
 1. Select Providers
 2. Provide Training for enrollment
 3. Enroll Providers in NHSN
 4. Provide Training for Data Entry
- **Provide suggestions to CDC to improve the process of enrollment**



Regional Advisory Committee

Office of the Assistant Secretary for Health - Region I

Network of New England

Large Dialysis Organizations (DaVita, DCI and FMC) - Representatives
Hospital Associated Dialysis Facility Representatives
Independent Dialysis Facility Representatives

State Health Departments – Infection Control Program Coordinators
Centers for Disease Control and Prevention Representatives
Centers for Medicare and Medicaid Services – Representatives
Office of the Assistant Secretary for Health - Baltimore

This project brings together dialysis facilities and their regulatory and oversight agencies such as CMS, CDC, State Health departments of the New England states and Network of New England.





Selection of Dialysis Facilities

Dialysis Facilities by Affiliation

FMC

DCI

DaVita

Independent

Hospital

Dialysis Facilities by State

MA

CT

ME

VT



Provide Training: Starting Troubles – Technical Difficulties in following CDC's instructions

- What is required for each step is not mentioned. For example step 2 says register but it does not mention that in order to register training and **training date** are needed.
- Does not specify what type of training is required and how much training is required.
- Dialysis forms are embedded in forms required by other settings. Sorting out forms needed by dialysis facilities is a big task.
- Instructions for completing the dialysis form and the definitions for some important fields are not in the same place.



Enroll Facilities: Process Improvement

- Network of New England provided 10 step instructions to set up dialysis facilities in NHSN based on CDC's instructions for all setting type. [Network of New England instructions to set up](#)
- Provided WebEx training on set up and data entry in to NHSN <http://www.networkofnewengland.org/Infections.htm>
- Tracked all issues that dialysis facilities encountered during enrollment process
- Based on those issues identified, provided [“Challenges and Suggestions”](#) document to CDC to improve enrollment process.
- **CDC acted on those suggestions - Some items were addressed directly**
Some were addressed in training
Some were addressed as FAQ



Enroll Facilities

Dialysis Facility Specific Instructions are created

- CDC compiled information for dialysis facilities at <http://www.cdc.gov/dialysis/collaborative/about/index.html>
- Based on suggestions provided by Network of New England training is also customized for dialysis facilities and is posted at
<http://www.cdc.gov/nhsn/dialysis/training/part-1-Understanding-Surveillance-Requirements-V6-4.pdf>
<http://www.cdc.gov/nhsn/dialysis/training/part2-Enrollment-SetUp-Data-Entry-6-4-june-2011.pdf>
- **Future process of enrolling dialysis facilities** is streamlined.
- Involved all LDO's.



Network of New England is “Group Administrator” in NHSN

- Network of New England can run reports for all facilities
- Compare data between facilities in the group as well as with mean of all facilities in the collaborative
- Compare with national data.
- Twenty Two facility’s data is compared

Data reported from Jan 2011 to Aug 2011 by Dialysis Facilities in Network of New England Group

No of patient Months reported: 8005

No of Fistula patient Months reported: 5037

No of Graft patient Months reported: 1101

No of Tunneled Catheter patient Months reported: 1746

No of Non- Tunneled Catheter Patient Months reported: 141

No of events reported = 712

No of Graft related events reported = 102

No of Fistula related events reported = 400

No of catheter related events reported = 255

No of Hospitalizations 472

In-unit IV Antimicrobial Start 248

Access Related Bacteremia 54

Vascular Access Infection 52

Network of New England Healthcare Associate Infections (HAI) Activities

Project / Month	9/10	12/10	3/11	5/11	6/11	9/11	12/11	3/12	6/12	9/12	12/12
Office of Regional Administrator Pilot HAI Project	<ul style="list-style-type: none"> Enroll at least 12 providers Process to Use NHSN <i>Ends 9/29/11, was extended to 11/29/11</i>										
CT DPH Federal Funds				<ul style="list-style-type: none"> Maximum of 30 Providers Validate Data Identify Core Interventions 							
Office of Regional Administrator Year 2 Project							<i>**Starts 9/30/11**</i> <ul style="list-style-type: none"> Analyze Data from Pilot Design Intervention: Preventative & Control 				
CT DPH Federal Funds Year 2 Proposal Submitted by DPH 9/30/2011							Build on experience from data validation in Year 1. Expand number of providers.				



Future Directions

- Data analysis
- Reports to Facilities and group
- Data quality check
- Data validation - **CT –DPH project**
- Interventions – **OASH Year 2 Project**
- Harmonization of HAI requirements for different agencies



Using Data for Action Plans

- Aggressive antimicrobial stewardship
- Evidence based interventions for Positive Blood Culture
- Vascular access care protocols and hand hygiene
- Reduce non-tunneled catheters




Conclusions

- Infections are a major challenge for dialysis facilities
- Several mandates from CMS exist, however infections are most cited deficiencies
- CDC has guidelines and recommendations for dialysis facilities for IP / IC
- Reducing BSI in dialysis facilities is high national public health priority
- NW1 started New England Collaboration on HAI
- Established Regional Advisory Committee
- Enrolled Providers
- Streamlined dialysis facility specific enrollment process with CDC
- Enrolling facilities in future has become easy.
- Network 1 started Connecticut Department of Public Health HAI project



Facilities Participated in HAI Projects

DaVita Woburn	Eastern Maine Dialysis
DaVita Norwalk	Lincoln Lakes Region Dialysis
Framingham Dialysis	Berkshire Medical Center
Chicopee Dialysis	South Western Vermont Renal Center
Newburyport Dialysis	Fletcher Allen - Med Ctr Hosp of VT Campus
Damariscotta Dialysis	Fletcher Allen - Barre Satellite
Peabody Dialysis	Fletcher Allen - RRMC Satellite
Umbagog Dialysis	Fletcher Allen - St. Albans Satellite
DCI Boston	Fletcher Allen - Chittenden County Dialysis
DCI Brigham/Faulkner	Fletcher Allen - North Country Dialysis Unit
DCI Walden Pond	MaineGeneral Medical Center
Hartford Hospital	Uconn Dialysis Center
Eastern Maine Medical Center	Manchester Dialysis Center



Contact Network of
New England to
enroll in HAI
projects