The Epidemiology of Healthcare-Associated Infections (HAIs) in Long Term Care

UNIT I

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HEALTH CARE ASSOCIATED INFECTIONS (HAIs)

- 25 Million people will be treated in U.S. hospitals this year (2013).
- Approx. 2 million will develop nosocomial HAIs infections
- Approx. 90,000 will die!
- Length of stay (LOS) will be increased by 8 million days
- Cost will be increased by $3-7 billion

HHS ACTION PLAN - 2009

- Phase I - Hospitals
- Phase II - Ambulatory Care Settings
- Phase III - Long Term Care (2013)

The Extent of the HAI Problem in LTC

- Difficult to assess due to:
  - Heterogeneity
  - Oversight differences
  - Staffing
  - Payment incentives

The Extent of the HAI Problem in NH/ SNFs

- Nursing Home - provides primarily long-term maintenance & restorative care for those needing support with activities of daily living.
- Skilled Nursing Facility - offer more intensive medical & nursing services but not as much as acute care hospitals.

NH/SNF -
- Vast majority of certified NHs provide this combination of services
- Current Action Plan focusing here
- Recent estimates-rates of HAIs range between 1.4 to 5.2 infections per 1000 resident-care days.
- Out of the 105 million adults living in NH/SNF - 765,000- 2.8 million infected every year
**OUTBREAKS IN NH/SNF’s**

- Outbreaks are very common
  - (1966-2008 – 37 pathogens associated with 206 outbreaks)*
- Influenza and Streptococcus pneumoniae respiratory outbreaks
- Clostridium difficile and norovirus cause most GI outbreaks
  * Age Ageing, 2010 May; 39(3):299-305

**OUTBREAKS IN NH/SNF’s**

- Skin & soft tissue infection outbreaks most commonly associated with MRSA, or Group A Beta Strep
- UTIs with multi-drug resistant enteric bacteria have recently identified along with
- Outbreaks of Hepatitis B & C associated with improper injection practices.
  * Age Ageing, 2010 May; 39(3):299-305

**Demographics Elderly**

- Problem likely to worsen.
  - 2009 – 84.8% of residents in CMS certified Nhs/SNFs were 65yr or older and 36.9% were 85 or older.
  - By 2030 - >65 age group is projected to reach 71.5 million people
    - Estimated 12-14% of U.S. population
    - U.S. Census Bureau

**Factors That Predispose the Elderly to Infection**

- Impaired Host Defenses
  - Immune senescence
  - Chronic diseases
  - Medications
  - Malnutrition
  - Anatomic & functional changes
  - Degree of exposure to infections

**Healthcare-Associated Infections**

- Not present on admission & develop after 48 hrs.
- Incidence is greater in elderly than any other age group
- Not all preventable

**WHAT IS PREVENTABLE**

- Up to 70% ????
- If only 30-50% of HAI's are preventable, this equals:
  - 600,000 to 1 million infections;
  - 30,000-50,000 deaths
### Most Common HAIs seen in NHs/SNFs

- Urinary Tract Infections
- Lower Respiratory Infections
  - Pneumonia and influenza-like illness
- Blood Stream Infections
- Skin and Soft Tissue Infections
- Gastroenteritis
  - C. diff.
  - Norovirus