

Longitudinal Trends in Infection Rates in US Nursing Homes, 2006 – 2011

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BACKGROUND

- Approximately 1.6 – 3.8 million infections occur annually among US nursing home (NH) residents
- Most estimates of infections in NH residents are based on outdated and cross-sectional data
- Minimum Data Set (MDS) assessments are performed on NH residents and provides a source of infection data
- The MDS was most recently revised and implemented in 2010 (MDS 3.0)
- It is important to consider how MDS data can be used for infection surveillance in NHs

OBJECTIVES

- Describe infection item differences in MDS versions 2.0 and 3.0
- Estimate longitudinal infection trends in US NHs
- Evaluate consequences of MDS revisions on infection measurement

METHODS

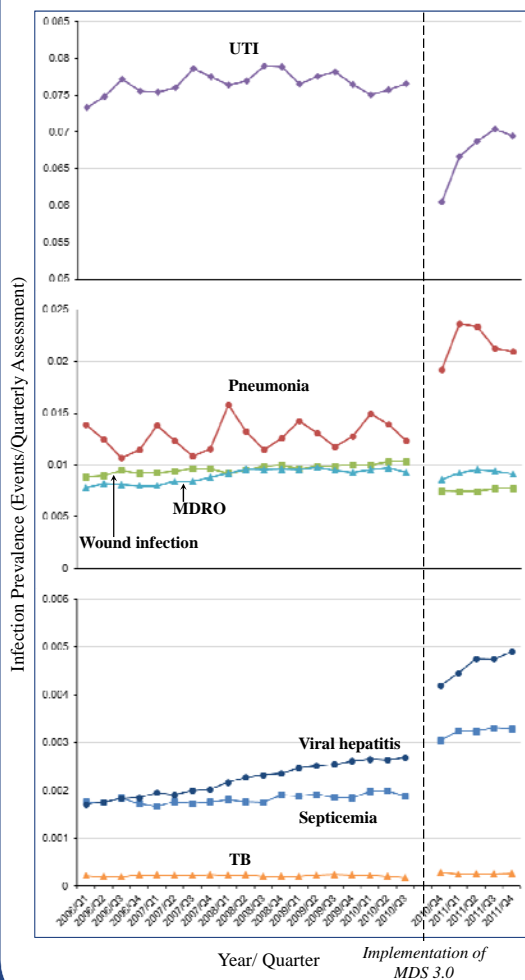
- Infection items on both MDS 2.0 and 3.0 were identified and compared to assess differences
- Annual and quarterly MDS assessment data for 2006 – 2011 were used to estimate prevalence of infection
- Percent change in infection prevalence was estimated using MDS 2.0 data
- Consequences of MDS 3.0 implementation were evaluated using data from the last quarter of MDS 2.0 and the first quarter of MDS 3.0
- Differences in prevalence were evaluated using Student's t-tests and a significance level of 0.05

ACKNOWLEDGEMENT

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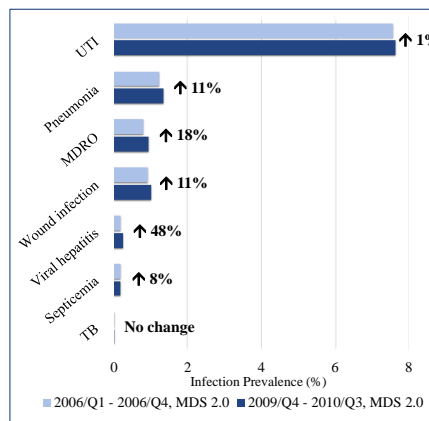
RESULTS

LONGITUDINAL TRENDS IN INFECTION PREVALENCE

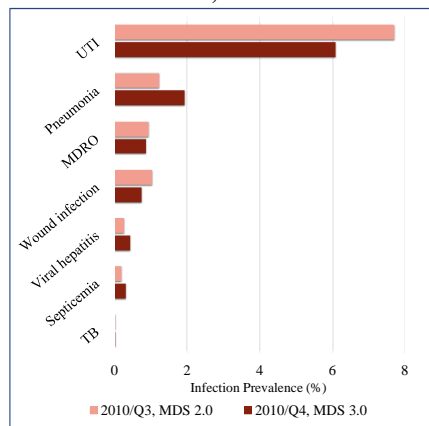


Notes: UTI = Urinary tract infection; MDRO = Multi-drug resistant organism; TB = Tuberculosis

PERCENT CHANGE IN INFECTION PREVALENCE, 2006 - 2010



COMPARISON OF INFECTION PREVALENCE, MDS 2.0 VS. 3.0



RESULTS

- Infection items found on both MDS 2.0 and 3.0 included UTI, pneumonia, MDRO, wound infection, viral hepatitis, septicemia, and TB
- Items for *C. difficile*, conjunctivitis, HIV, respiratory infection (other than pneumonia), and sexually transmitted diseases were included on MDS 2.0 but not 3.0. Items for antibiotic use and isolation or quarantine were included on MDS 3.0 but not 2.0
- Infection diagnosis items had two look-back periods in MDS 3.0 (60-day disease identification period and a shorter diagnosis status period) but only one in MDS 2.0 (the shorter diagnosis status period)
- MDS data from 24 quarters and over 14,000 NHs (n=25,903,977 assessments) were used to calculate infection prevalence
- UTI and pneumonia were the most common infections for all time periods
- Between 2006 – 2010, there were significant increases in the prevalence of all infection types except TB (p-values <0.01)
- MDS 3.0 implementation significantly impacted the prevalence of all infection types (p-values <0.01)

CONCLUSIONS

- Substantial increases in NH infections were identified for most items evaluated
- MDS data is useful for infection surveillance in NHs but revisions need to be considered when evaluating longitudinal trends
- Additional research is needed to understand increases in infection prevalence and to evaluate best practices for infection prevention as well as other factors that might impact NH resident health