HOW THE STATE OF MARYLAND INCREASED INFECTION PREVENTION AND CONTROL ACTIVITY IN LONG TERM CARE FACILITIES, 2003 - 2012

BRENDA J ROUP, PhD, RN, CIC
NURSE CONSULTANT IN INFECTION PREVENTION AND CONTROL
MARYLAND DEPARTMENT OF HEALTH AND MENTAL HYGIENE
OFFICE OF INFECTIOUS DISEASE EPIDEMIOLOGY AND OUTBREAK RESPONSE
DISCLOSURES

- NOTHING TO DISCLOSE
OBJECTIVE #1

● DESCRIBE HOW MARYLAND DHMH (DEPARTMENT OF HEALTH AND MENTAL HYGIENE) ASSESSED THE STATE OF INFECTION PREVENTION AND CONTROL PROGRAMS IN LONG TERM CARE FACILITIES IN 2003 AND IN 2008
OBJECTIVE #2

DISCUSS THE METHODOLOGY OF PROMULGATING REGULATIONS FOR INFECTION PREVENTION AND CONTROL PROGRAMS IN LONG TERM CARE FACILITIES
OBJECTIVE #3

● DESCRIBE THE DEVELOPMENT AND IMPLEMENTATION OF A BASIC INFECTION CONTROL PROFESSIONALS (ICP) COURSE AND AN ADVANCED SKILLS COURSE FOR LONG TERM CARE FACILITIES IN MARYLAND
POPULATION OF MARYLAND, 2011

- TOTAL POPULATION APPROX 5,828,289
- APPROX 70% LIVE IN THE EIGHT COUNTIES THAT SURROUND THE I95 CORRIDOR AS IT MAKES ITS WAY THROUGH MARYLAND
- APPROX 12.5% IS OVER 65 YEARS OF AGE; A PERCENTAGE THAT HAS NOT CHANGED FOR OVER 20 YEARS

SOURCE: DHMH VITAL STATISTICS ADMINISTRATION
MARYLAND’S 24 COUNTIES
HEALTHCARE FACILITIES IN MARYLAND

Health Care Facilities:
- Acute/General Hospitals, 200 beds or less: 21
- Acute/General Hospitals, 201 beds or more: 28
- Long Term Care Facilities (LTCF's): 234
- Specialty Hospitals: 20

(Behavioral Health and Acute Rehabilitation)
LICENCED BEDS

- ACUTE/GENERAL/SPECIALTY HOSPITAL BEDS = 13,650
- COMPREHENSIVE/EXTENDED CARE FACILITIES (LONG TERM CARE) BEDS = 28,500, WITH MEAN OF 120 BEDS, RANGE 18 – 556 BEDS
MARYLAND PUBLIC HEALTH

- Local Health Departments (24)
  - Each jurisdiction (Baltimore City and 23 counties) has its own Health Department

- State Health Department – Maryland Department of Health and Mental Hygiene (DHMH)
CONSULTATION

- DHMH INCLUDES (AMONG OTHERS)
  - OFFICE OF HEALTH CARE QUALITY – LICENSING AND REGULATORY OFFICE, INCLUDING CMS SURVEYS
  - OFFICE OF INFECTIOUS DISEASE EPIDEMIOLOGY AND OUTBREAK RESPONSE – CONSULTATION AND STATE GUIDANCE ON ALL ASPECTS OF INFECTIONS AND INFECTIOUS DISEASES
REFERENCE

- HOW MARYLAND INCREASED INFECTION PREVENTION AND CONTROL ACTIVITY IN LONG-TERM CARE FACILITIES, 2003 – 2008
- BRENDA J ROUP, PhD, RN, CIC
- JOSEPH M SCALETTA, MPH, RN, CIC
- AMERICAN JOURNAL OF INFECTION CONTROL, MAY, 2011
POSTER

- INFECTION PREVENTION TRAINING IMPACTS OUTBREAK RECOGNITION AND CONTROL IN LONG TERM CARE FACILITIES IN MARYLAND
- BRENDA J ROUP, PhD, RN, CIC
- EMILY LUCKMAN, MPH, BSN, RN
- PRESENTED AT INTERNATIONAL CONFERENCE OF ASSOCIATION FOR PROFESSIONALS IN INFECTION CONTROL AND EPIDEMIOLOGY, JUNE 2011, BALTIMORE, MD
SEQUENCE OF EVENTS

1999 – 2000

- CONSULTS FROM LTC FACILITIES REVEALED LACK OF KNOWLEDGE ABOUT PREVENTION AND CONTROL OF INFECTION
- SAME QUESTIONS/CONCERNS ANSWERED REPEATEDLY
- MULTIPLE REQUESTS FOR GUIDANCE FROM THE STATE
SEQUENCE OF EVENTS

- 2000 – UPDATED MRSA AND NEW VARICELLA GUIDELINES WRITTEN
- INPUT SOLICITED FROM MARYLAND CHAPTER OF AMERICAN MEDICAL DIRECTORS ASSOCIATION
- VARICELLA GUIDELINE GENERATED OVER 100 PHONE CALLS FROM FACILITIES, PRIMARILY BECAUSE OF RECOMMENDATION THAT STAFF SHOULD BE IMMUNE TO VARICELLA
SEQUENCE OF EVENTS

- BECAME OBVIOUS THAT EDUCATION BADLY NEEDED
- TWO LTC INDUSTRY GROUPS IN MARYLAND WERE NOT DOING INFECTION CONTROL EDUCATION
- APIC DELMARVA VERY SMALL CHAPTER WITH LIMITED RESOURCES
- TWO OTHER LOCAL APIC CHAPITERS FOCUSED ON ACUTE CARE
SEQUENCE OF EVENTS

- 2001 – BEGAN PLANNING EDUCATION SESSIONS WITH THE TWO INDUSTRY TRADE GROUPS
- 9/11 OCCURRED
- MARYLAND PUBLIC HEALTH BUSY WITH ANTHRAX EXPOSURES AND FEAR OF EXPOSURES
SEQUENCE OF EVENTS

- FEBRUARY 2002 – INFECTION CONTROL IN LONG TERM CARE WORKSHOP WITH APIC DELMARVA
- OVER 165 ATTENDEES
- TOPICS INCLUDED
  - IC PROGRAM ELEMENTS
  - SURVEILLANCE
  - OUTBREAK MANAGEMENT
SEQUENCE OF EVENTS

- LTC INITIATIVE INTERRUPTED AGAIN IN 2002 AND 2003 WITH:
  - SMALLPOX IMMUNIZATION PROGRAM
  - SARS
2003 SURVEY

- SURVEY OF INFECTION CONTROL PRACTICES AND RESOURCES IN MARYLAND, 2003
- PUBLISHED AS “INFECTION CONTROL PROGRAM DISPARITIES BETWEEN ACUTE AND LONG TERM CARE FACILITIES IN MARYLAND”
- AMERICAN JOURNAL OF INFECTION CONTROL, VOL 34, NO.3, 2006
SURVEY PURPOSE AND METHODS

- ASSESS:
  - SCOPE OF RESPONSIBILITIES
  - AMOUNT AND TYPES OF SUPPORT
  - RANGE OF INFECTION CONTROL (IC) PRACTICES AMONG MARYLAND’S INFECTION CONTROL PROFESSIONALS (ICPS)

- MAILED TO ALL ACUTE CARE AND SPECIALTY HOSPITALS ICPS AND TO ALL LONG TERM CARE FACILITIES DONS, JANUARY 2003.
SURVEY RESPONSE RATES

- For all facilities: 49%
- By Type of Facility:
  - Acute Hospitals: 36/40 (90%)
    - 200 beds or fewer: 15/15 (100%)
    - 201 beds or more: 21/25 (84%)
  - LTCF's: 97/247 (39%)
  - Specialty: 19/20 (95%)
ACUTE HOSPITAL IC STAFF BY BEDS

Acute Care Hospital FTE Staffing by Size

\[ y = 0.0047x + 0.271 \]

\[ R^2 = 0.8513 \]
BASIC TRAINING OF IC STAFF

Number of Staff with Basic Infection Control Training

Percent of facilities surveyed

- ACUTE <= 200
- ACUTE > 200
- LTCF
- SPECIALTY

Infectious Disease & Environmental Health Administration
[Date] 25
CONCLUSIONS FROM 2003 SURVEY

- 49% of all health care facilities responded to IC survey, with 39% from LTCFs
- 90% of all LTCFs in Maryland do not have a trained ICP and do not have in place an infection control program
- Only 20 facilities reported having a trained ICP (20/234 = 8.5%)
- LTCF ICPs would benefit from increased infection control training, epidemiological support, and input into regulatory changes.
OPPORTUNITY KNOCKS

- DURING THE SARS OUTBREAK IN CANADA IN 2003 AND SUBSEQUENT PUBLIC CONCERN, OHCQ BEGAN RECEIVING INQUIRIES FROM LTC FACILITY ADMINISTRATORS

- OIEDOR AND NURSE CONSULTANT FOR IC BEGAN FORGING RELATIONSHIPS WITH OHCQ
LONG TERM CARE INITIATIVES 2003 - 2008

- REGULATORY
- EDUCATIONAL
- FINANCIAL
INITIATIVE PARTNERS

LONG TERM CARE REGULATORS -
DHMH OFFICE OF HEALTH CARE QUALITY

LONG TERM CARE INDUSTRY TRADE GROUPS -
LIFESPAN MID ATLANTIC
HEALTH FACILITIES ASSOCIATION OF MARYLAND

LONG TERM CARE MEDICAID REIMBURSERS –
DHMH OFFICE OF MEDICARE AND MEDICAID
REGULATORY INITIATIVE

PARTNERS:
DHMH OIDEOR AND OHCQ

REVISED INFECTION PREVENTION AND CONTROL
SECTION OF CURRENT LTC REGULATION -
COMAR 10.07.02.21

THIS REQUIRED:
THAT EACH LTC FACILITY EMPLOY A TRAINED IP WHO
MANAGES THE IC PROGRAM

THAT THE IC PROGRAM INCLUDE ALL ELEMENTS OF
CMS F TAGS

CURRENTLY UNDER REVISION. WILL INCLUDE A
STAFFING REQUIREMENT FOR IPs
COMAR 10.07.02
COMPREHENSIVE CARE FACILITIES
AND EXTENDED CARE FACILITIES

- REVISION OF SECTIONS .01 – INCORPORATION BY REFERENCE AND .21- INFECTION CONTROL PROGRAM
  - BEGAN PROCESS IN SUMMER OF 2003
  - PROCESS COMPLETED FALL 2004
  - REGULATION .21 REPEALED AND NEW REGULATION .21 ADOPTED EFFECTIVE JANUARY 6, 2005
COMAR ONLINE
(CODE OF MARYLAND
ANNOTATED REGULATION)

- [http://www.dsd.state.md.us/comar/](http://www.dsd.state.md.us/comar/)
- SEARCH ON BULLET #1:
  - 10.07.02.21* TO GET ALL 4 SECTIONS
CENTERS FOR DISEASE CONTROL AND PREVENTION GUIDELINES:

- PREVENTING TRANSMISSION OF MTB IN HEALTH CARE SETTINGS
- IMMUNIZATION OF HEALTH CARE WORKERS
- EMPLOYEE HEALTH
- ISOLATION
- 2011 REVISION WILL INCLUDES NEW CDC TB, ISOLATION, MDRO, AND HAND HYGIENE GUIDELINES
10.07.02 SECTION .21
KEY PROVISIONS

- Establish, Maintain, Implement Effective IC Program
- Assign At Least One Individual With Education And Training In IC
- ICP Shall Attend A Basic IC Course Approved By OHCQ And OIEDOR
IP STAFFING FOR LTC

- 2003 SURVEY REVEALED APPROX 1.1 ICP FTE PER 100 ACUTE CARE BEDS IN MARYLAND
- BASED ON THAT, WE RECOMMENDED (AND CONTINUE TO DO SO) 0.5 ICP FTE FOR EVERY 200 BEDS IN LTC ORGANIZATION
- INCLUDES ALL BEDS – SKILLED, LTC, ASSISTED LIVING, AND INDEPENDENT
- RECOMMENDATION INCLUDED IN UPCOMING REVISION OF COMAR
EDUCATIONAL INITIATIVE

PARTNERS:

DHMH OIDEOR AND LIFESPAN MIDATLANTIC

DEVELOPED 2.5 DAY INFECTION PREVENTION AND CONTROL INSTITUTE FOR NON-ACUTE CARE SETTINGS – A BASIC IC COURSE
IPCI STRUCTURE

- GIVEN TWICE PER YEAR IN MARCH AND SEPTEMBER
- MEETS REQUIREMENTS OF COMAR 10.07.02.21
- VOLUNTEER FACULTY WITH EXTENSIVE INFECTION CONTROL EXPERIENCE IN LONG TERM CARE FACILITIES; MOST ARE “CIC”
- 12 PRESENTATIONS ON BASIC INFECTION PREVENTION AND CONTROL TOPICS IN LTC
PARTICIPATION

- NURSES FROM LTC FACILITIES
- SURVEYORS FROM DHMH OFFICE OF HEALTH CARE QUALITY
- INFECTIOUS DISEASE NURSES FROM LOCAL HEALTH DEPARTMENTS
- EPIDEWOODLOGISTS AND NURSES FROM DHMH OIEDOR
TOPICS COVERED

- INFECTION CONTROL PROGRAM ELEMENTS IN NON-ACUTE CARE (CMS F TAGS)
- MICROBIOLOGY 101
- SURVEILLANCE STRATEGIES AND METHODOLOGIES (McGEER DEFINITIONS OF HAIs)
- ISOLATION PRECAUTIONS AND MDROs
TOPICS COVERED

- ISSUES RELATED TO ENVIRONMENTAL INFECTION CONTROL AND HAND HYGIENE
- ADULT IMMUNIZATION PRACTICES
- HOW TO PULL IT ALL TOGETHER
ATTENDENCE AT IPCI
MARCH 2004 – MARCH 2012

- LTC RNs: 826
- OHCQ SURVEYORS: 79
- LHD ID STAFF: 96
- DHMH OIEDOR STAFF: 16

- TOTAL: 1019
ADVANCED SKILLS COURSE FOR IPs IN LTC FACILITIES IN MD

- DEVELOPED AFTER REPEATED REQUESTS FROM LTC IPs
- PREREQUISITE: BASIC IC COURSE
- OVER 150 LTC ICPs ATTENDED
ADVANCED SKILLS COURSE TOPICS

- PRINCIPLES OF INFECTIOUS DISEASE EPIDEMIOLOGY
- STATISTICAL ANALYSIS OF INFECTION DATA (RATES, MEAN, MEDIAN, MODE)
- GRAPHIC PRESENTATION OF INFECTION DATA
- PRINCIPLES OF CLEANING, DISINFECTION, AND PRODUCT SELECTION
- TARGETED SURVEILLANCE FOR LTC
**ADVANCED SKILLS COURSE TOPICS**

- MONITORING COMPLIANCE WITH PRACTICE
- PRINCIPLES OF ADULT LEARNING IN LTC
- PLANNING FOR INFECTIOUS DISEASE EMERGENCIES IN LTC
- INFECTION PREVENTION RELATED TO CONSTRUCTION/REMODELING
- INFLUENZA IMMUNIZATION
- MANAGEMENT SKILLS FOR LTC FACILITY IC PROGRAMS
FINANCIAL INITIATIVE

PARTNERS:
DHMH OIEDOR AND OFFICE OF MEDICARE AND MEDICAID

PAY-FOR-PERFORMANCE INITIATIVE INCLUDED INFECTION PREVENTION AND CONTROL CRITERIA:

- NUMBERS OF INDWELLING URINARY CATHETERS
- URINARY TRACT INFECTIONS IN RESIDENTS
- EMPLOYEE INFLUENZA IMMUNIZATION RATE
- PRESENCE OF TRAINED IP WHO MANAGES PROGRAM

BEGAN IN 2007
2008 SURVEY OF IC RESOURCES AND PRACTICES IN LTC FACILITIES IN MD

- 127/234 FACILITIES RESPONDED (53.4%)
- OF THOSE WHO RESPONDED, 103/127 HAVE A TRAINED ICP WHO MANAGES THE PROGRAM (81.1%)
- OF TOTAL FACILITIES, 103/234 HAVE TRAINED ICP = 44%
- INCREASE FIVEFOLD FROM 8.1% IN 2003
WHAT EFFECT ON OUTCOMES??

WHAT EFFECT, IF ANY, HAS ALL OF THIS ACTIVITY HAD ON OUTCOMES RELATED TO CARE IN THESE FACILITIES??
• Onset is defined as the day of the first symptomatic case.
• \( n = 20 \)

<table>
<thead>
<tr>
<th>OUTBREAKS RECOGNIZED ( \leq 14 \text{ DAYS} )</th>
<th>DAYS OF LAG TIME IN REPORTING</th>
<th>NUMBER OF CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAINED ICP MANAGES PROGRAM</td>
<td>MEAN 3.7 DAYS</td>
<td>MEAN 5 CASES</td>
</tr>
<tr>
<td>NO ICP, AND/OR NO TRAINING</td>
<td>MEAN 5.5 DAYS</td>
<td>MEAN 15 CASES</td>
</tr>
</tbody>
</table>
**DHMH OIDEOR RANDOM SAMPLE**  
**LTC FACILITY OUTBREAK DATA**  
**APR 2008 – DEC 2010**

<table>
<thead>
<tr>
<th>OUTBREAKS RECOGNIZED ≤ 14 DAYS</th>
<th>DAYS BETWEEN ONSET* AND REPORTING</th>
<th>NUMBER OF CASES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACILITY HAS TRAINED IP WHO MANAGES PROGRAM</td>
<td>MEAN 4.7 DAYS</td>
<td>MEAN 12.5 CASES</td>
</tr>
<tr>
<td>FACILITY HAS NO IP AND/OR NO TRAINING</td>
<td>MEAN 5.4 DAYS</td>
<td>MEAN 13.4 CASES</td>
</tr>
</tbody>
</table>

* Onset is defined as the day of the first symptomatic case.  
  n= 20
WHY THE DECREASE?

- TURNOVER OF INFECTION PREVENTIONISTS IN LTC REMAINS HIGH
- WE MAY HAVE REACHED AN IRREDUCIBLE MINIMUM
- OR.......THE SAMPLE SIZES WERE TOO SMALL TO SHOW A DIFFERENCE
IMPACT OF TRAINING

BUT:

TRAINING OF LONG TERM CARE RNs IN INFECTION PREVENTION AND CONTROL APPEARS TO HAVE A SMALL, BUT IMPORTANT, IMPACT ON THE MANAGEMENT OF OUTBREAKS IN LONG TERM CARE SETTINGS
OUTBREAKS THAT ARE RECOGNIZED EARLY RESULT IN IMPLEMENTATION OF CONTROL MEASURES AND LESS CASES OF DISEASE
LESSONS LEARNED

- WE ESTABLISHED THE INFECTION PREVENTION AND CONTROL INSTITUTE FOR NON-ACUTE CARE SETTINGS
- WE DID FOLLOW-UP SURVEY RESEARCH TO DETERMINE PROGRESS TOWARD ESTABLISHMENT OF IPC PROGRAMS IN LONG TERM CARE FACILITIES
- TRAINED IPs IN MD LTC FACILITIES INCREASED FIVE-FOLD FROM 2003 – 2008
LESSONS LEARNED

- TRAINING LTC RNs TO MANAGE IPC PROGRAMS IN LTC FACILITIES APPEARS TO HAVE A SMALL BUT IMPORTANT IMPACT ON THE MANAGEMENT OF OUTBREAKS IN THESE SETTINGS

- EARLY RECOGNITION OF OUTBREAKS RESULTS IN EARLIER IMPLEMENTATION OF CONTROL MEASURES, AND THUS LESS CASES OF INFECTION
QUESTIONS?
Maryland Prevention and Health Promotion Administration

http://ideha.dhmh.maryland.gov
http://fha.dhmh.maryland.gov