Infection Prevention Breaches During Diabetes Care in Adult Care Homes — North Carolina, July, 2011–June 2012

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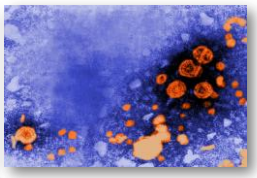
Hepatitis B Virus (HBV)

- Vaccine-preventable infection
- 800,000–1.4 million persons with chronic infection in the US
- 38,000 new infections in 2010

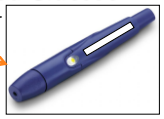


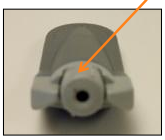
Hepatitis B Outbreaks in Long-term Care Facilities

- Increasing problem
- 30 HBV outbreaks in long-term care settings reported to CDC during1996–2011
- >90% linked to assisted monitoring of blood glucose (AMBG)

Practices Associated with HBV Transmission During Assisted Monitoring of Blood Glucose

Use of fingerstick devices or insulin pens on multiple persons





Failure to clean and disinfect blood glucose testing meters between each use

Failure to change or use gloves, or perform hand hygiene between procedures

Patel et al. ICHE 2009; 30:264-70
Thompson et al. JAGS 2010

MMWR 2005; 54:220-3 www.cdc.gov/injectionsafety

Tuesday, October 12, 2010

- County health department notified by infection preventionist at local hospital
- 4 cases of acute hepatitis
- Residents of the same assisted living facility

Acute HBV Cases

Cases identified	8
Mean age	70.6 years
Hospitalized	8 (100%)
Died	6 (75%)

Health Care Exposures

	Attack rate (%)	
Exposure	Exposed	Not exposed
Assisted BGM	8/15 (53)	0/25 (0)
Injected medication	4/16 (25)	4/22 (18)
Phlebotomy	4/25 (16)	4/15 (27)
Blood transfusion	0/1 (0)	8/38 (21)
Wound care	1/8 (13)	6/28 (21)

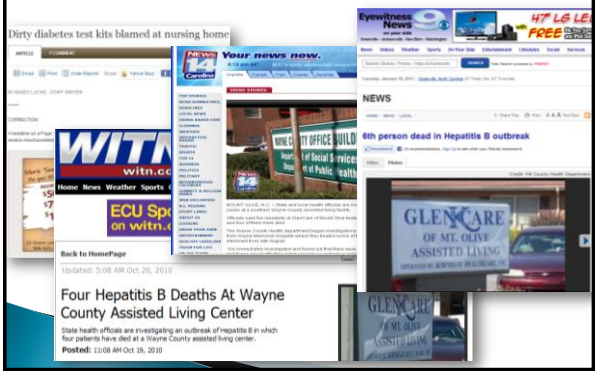
Infection Control Observations

- Glucose meters used for more than one resident; not disinfected between uses
- Adjustable lancing devices used for more than one resident

Outcome

- 8 acute HBV infections and 6 deaths occurred due to infection control lapses during assisted blood glucose monitoring

Media Attention



Attention on Adult Care Homes – What is an Adult Care Home?

- Assisted living residence
- Management provides 24-hour personal care services directly or through home care or hospice agencies.
- Medication may be administered by designated, trained staff
- Adult care homes shall not care for individuals requiring continuous licensed nursing care

Legislative Attention

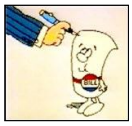
GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

SESSION LAW 2011-99
HOUSE BILL 474

AN ACT TO PROTECT ADULT CARE HOME RESIDENTS BY INCREASING MINIMUM CONTINUING EDUCATION, TRAINING, AND COMPETENCY EVALUATION REQUIREMENTS FOR ADULT CARE HOME MEDICATION AIDES, STRENGTHENING ADULT CARE HOME INFECTION CONTROL REQUIREMENTS, AND REQUIRING THE DEPARTMENT OF HEALTH AND HUMAN SERVICES, DIVISION OF HEALTH SERVICE REGULATION, TO ANNUALLY INSPECT ADULT CARE HOMES FOR COMPLIANCE WITH SAFE INFECTION CONTROL STANDARDS.

"Act to Protect Adult Care Home Residents"

- Signed into law May 31st, 2011
- Requires
  - Increased infection prevention training and competency evaluation
  - Stronger infection prevention policies
  - Reporting of suspected outbreaks
  - Annual inspection for compliance with safe infection control practices



Training Requirements

- **State Approved Infection Prevention Course**
  - Supervisors
  - Medication Staff
  - Nonsupervisory staff designated to direct facility's infection prevention activities
  - Website: http://www.ncdhhs.gov/dhsr

DHSR Response to Infection Prevention Breaches

- Type A2 or Type B Violations may be cited
- Plan of Protection may be required
- Penalties may result from non-compliance
- Reported to the Department of Public Health

Identification and Reporting of Infection Prevention Breaches

Surveyors conduct inspections

Breaches reported to central office

Central office notifies NC DPH

NC DPH notifies local health department

Local health department reports findings

Public Health Response to Infection Control Breach

- Primary objective: Determine whether transmission has occurred
- Secondary objective: Provide/reinforce education regarding safe practices

Methods

- Reviewed all infection prevention breaches reported from adult care homes during first 12 months after HB 474 enacted
- Describe investigation findings and public health actions

Identification of Breaches: July 1, 2011–June 30, 2012

- Routine surveys conducted in 876 adult care homes
- Breaches relating to diabetes care identified in 51 (6%)

Frequency of Specific Infection Prevention Breaches

Sharing glucose meters without cleaning and disinfection	49
Sharing of lancing devices	7
Sharing of insulin pens	1

Public Health Response

- Local Health Department reports completed for 27 (54%) of 50 adult care homes with breaches

Public Health Actions Documented in LHD Reports (n=27)

Action Taken	N	(%)
Education regarding best practices	27	(100)
Visits to adult care home	22	(81)
Assessing for evidence of acute hepatitis among exposed residents	19	(70)
Searching surveillance database for reported HBV among exposed residents	17	(63)
Laboratory testing of exposed residents	3	(11)

Conclusions

- Opportunities for bloodborne pathogen transmission were found during routine assessment of diabetes care in adult care homes
  - No transmission events identified
- Collaboration between regulatory and public health agencies provides opportunity to improve practices

Limitations

- New program – expectations and protocols changed during the 12-month period
- High proportion of missing Local Health Department reports, due to
  - Unclear expectations
  - Lack of resources
  - Delayed or no notification from DPH
- High degree of variability in frequency of breach notifications from surveyors

Discussion

- North Carolina DPH and DHSR refining protocols and supporting materials
- Excellent chance for interagency collaboration
- Need to expand to other facility types

Extra Slides

Breach in Infection Prevention: (circle or check the noncompliance identified; provide applicable information below; if multiple issues identified and duplicate information is requested – you only need to provide the information once.)

A. □ **A glucometer used for more than one resident and facility not disinfecting meters. OR**

□ **INR Monitor used for more than one resident and facility not disinfecting meters**

- # of residents receiving fingersticks: _____
- Each resident has own glucometer: □Yes □ No
- Facility has CLIA Certificate □Yes □ No
- # of residents receiving fingersticks also have diagnosis of blood borne infectious disease such as Hepatitis and HIV: _____

For B, C, D and E - Facility needs to contact local health department and fax names and birthdates of residents who receive finger sticks to Division of Public Health. Fax to the ATTN of Zack Moore at 919-733-0490.

B. □**Lancing device/pen used for more than one resident** (new lancet used each time)

- # of residents receiving fingersticks: _____
- # of residents w/finger sticks obtained w/same lancing device/pen: ___
- Facility has CLIA Certificate □Yes □ No
- # of residents receiving fingersticks also have diagnosis of blood borne infectious disease such as hepatitis and HIV: _____

Protocol

- NC DHSR will provide initial infection prevention breach information to the HAI staff at DPH
- HAI staff at DPH will provide information to the LHD.
- LHD will apply the following guidelines:
  - Sharing of glucose meters for multiple residents without cleaning and disinfection between uses
    - Speak directly with the administrator/director of the adult care home to determine if
      - any of the potentially exposed residents are known to be hepatitis B positive or
      - any of the potentially exposed residents have shown clinical or laboratory evidence suggestive of acute hepatitis in the past 12 months.
    - If yes to either of the above, contact a member of the HAI staff at 919-733-3419 for further guidance.
    - Recommend glucose meter that was shared be disposed of immediately and a replacement purchased. **NOTE:** Glucose meters that are shared **must** have directions for disinfection from the manufacturer and specific directions **must** be followed by the facility.
  - Sharing of lancing devices or other shared equipment, e.g., insulin pens, insulin syringes
    - Contact HAI staff at 919-733-3419 to discuss additional follow-up steps
- Additional best practice guidelines
  - Ensure facility has a copy of handout titled "Diabetes and Viral Hepatitis: Important Information on Safe Diabetes Care"
  - Advise facility that each resident should have their own glucose meter and lancing devices.

Follow Up Report of Infection Control Breach Notification

County: _____
Date of report to LHD: _____
Notified by: _____
Facility name: _____
Facility contact: _____

Breach identified: (check all that apply)

- ☐ Sharing of blood glucose meters without cleaning and disinfection between residents
- ☐ Sharing of fingerstick devices
- ☐ Sharing of injection equipment (e.g., insulin pens, needles, or syringes)
- ☐ Other: _____

Specific information (e.g., timeframe, number of residents exposed)

Actions taken: (check all that apply)

Note: Appropriate actions will vary depending on the nature of the breach and setting; not all actions listed are required in all cases

- ☐ Visit to facility
- ☐ Surveillance for evidence of clinical or lab findings suggestive of acute hepatitis among exposed residents
- ☐ Search NC EDSS for reported HBV events among exposed residents
- ☐ Lab testing of exposed residents for bloodborne pathogens
- ☐ Education re: best practices for assisted blood glucose monitoring & insulin administration
- ☐ Education re: infection prevention requirements for adult care homes (Session Law 2011-99, available at www.ncleg.net/Sessions/2011/Bills/House/PDF/H474v6.pdf)
- ☐ Other: _____

Specific information

Findings:

Is there clinical and/or laboratory evidence that transmission has occurred? ☐ Yes ☐ No

Outbreak identified? ☐ Yes ☐ No

Additional notes:

Three Simple Rules for Assisted Blood Glucose Monitoring and Insulin Administration

1 FINGERSTICK DEVICES SHOULD NEVER BE USED FOR MORE THAN ONE PERSON

- Restrict use of fingerstick devices to a single person. They should never be used for more than one person.
- Select single-use lancets that permanently retract upon puncture. This adds an extra layer of safety for the patient and the provider.
- Dispose of used lancets at the point of use in an approved sharps container. Never reuse lancets.

2 BLOOD GLUCOSE METERS SHOULD BE ASSIGNED TO ONLY ONE PERSON AND NOT BE SHARED

- Whenever possible, assign blood glucose meters to a single person.
- If blood glucose meters must be shared, they should be cleaned and disinfected after every use, per manufacturer's instructions, to prevent carry-over of blood and infectious agents.
- If the manufacturer does not specify how the device should be cleaned and disinfected then it should not be shared.

3 INJECTION EQUIPMENT SHOULD NEVER BE USED FOR MORE THAN ONE PERSON

- Insulin pens should be assigned to only one person and labeled appropriately. They should never be used for more than one person.
- Multiple-dose vials of insulin should be dedicated to a single person whenever possible.
- Medication vials should always be entered with a new needle and new syringe. Never reuse needles or syringes.
- For information and materials about safe insulin pen use, visit www.ONEandONLYcampaign.org.

Always practice proper hand hygiene and change gloves between each person.

BE AWARE DON'T SHARE

Insulin pens that contain more than one dose of insulin are only meant for one person.

They ***should never be used for more than one person***, even when the needle is changed.

ONE INSULIN PEN, ONLY ONE PERSON

The One & Only Campaign is a public health campaign aimed at raising awareness among the general public and healthcare providers about safe injection practices.

For more information, please visit: www.ONEandONLYcampaign.org