A Survey of Infection Control Teaching in U.S. Dental Schools

Agencies and Professional Organizations
- Regulatory Agencies – OSHA, EPA, FDA
- Non-regulatory Agencies – CDC, NIH, NIOSH
  - ADA
  - State Agencies (TSBDE)

Background
2008 survey of dental practitioners
- One-quarter had implemented at least 3 of 4 CDC recommendations:
  - having an infection control coordinator,
  - maintaining dental unit waterline quality,
  - documenting percutaneous injuries,
  - using safer medical devices, such as safer syringes and scalpels
- One-third had implemented 0 of 4 in clinical practice
- Those who implemented recommendations were more likely to:
  - acknowledge the importance of infection control.
  - be in practice for less than 30 years.

Dental Schools
- Commission on Dental Accreditation (CODA)
  - Standard 4: Educational Support Services
  - Standard 5: Patient Care Services
- American Dental Education Association (ADEA) Competencies
  - Domain 5: Practice Management and Informatics
  - Domain 6: Patient Care

Background
Previous surveys of IC in U.S. and Canadian dental schools
- 1983 - after the advent of AIDS and before OSHA BBP Standard
  - focused mainly on sterilization of instruments and PPE
- 1989
  - no significant progress made in IC implementation in dental schools
- 1999
  - IC practice had changed substantially
  - most schools were in compliance with OSHA and other requirements
Purpose of Study
1. the extent of the IC curriculum
2. teaching methods used
3. monitoring IC compliance
4. perceptions about IC compliance
5. reported bloodborne pathogen (BBP) exposure incidents

Methods and Procedures
• 24-question multiple choice questionnaire; 1 open-ended question
• Pilot tested among faculty and staff at UTHSCSA dental school
• Announcement
• Survey e-mailed to 60 U.S. dental schools via Survey Monkey link
• Three follow-up reminders

Statistical Analysis
• All information was de-identified
• Descriptive statistics
• Chi-square tests
  ◦ Small, non-parametric sample size
  ◦ Relationship between variables
    • e.g. IC committee and # teaching methods
• Pearson’s product correlation coefficients
  ◦ Relationship between predictor variables and several outcome variables

Results
• Thirty-four responses
• Three schools unable to participate
• Effective response rate 60%

Class Size

Semester IC taught and # student contact hours in First and Second Years

<table>
<thead>
<tr>
<th></th>
<th>1st Year</th>
<th>2nd Year</th>
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<tbody>
<tr>
<td>Fall semester</td>
<td>19 (55.9)</td>
<td>14 (41.2)</td>
</tr>
<tr>
<td>Spring semester</td>
<td>4 (11.8)</td>
<td>3 (8.8)</td>
</tr>
<tr>
<td>Summer semester</td>
<td>3 (8.8)</td>
<td>4 (11.8)</td>
</tr>
<tr>
<td>&gt;1 semester</td>
<td>1 (2.9)</td>
<td>3 (8.8)</td>
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6-10 hours 16 (47.1) 25 (73.5)

<table>
<thead>
<tr>
<th>IC Teaching Methods used</th>
<th>YES</th>
<th>NO</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Online Learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>19</td>
<td>2</td>
<td>0.05</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>5</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>&gt;4 IC teaching methods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15</td>
<td>1</td>
<td>0.05</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>6</td>
<td>&lt;0.005</td>
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<tr>
<th>Monitoring student compliance</th>
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<th>Association between presence of IC coordinator and grade reduction</th>
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<tbody>
<tr>
<td>IC Coordinator YES</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Grade reduction</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
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<thead>
<tr>
<th>Association between presence of IC committee education variables</th>
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<tbody>
<tr>
<td>IC Committee YES</td>
</tr>
<tr>
<td>Written warning</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>&gt;3 Disciplinary methods</td>
</tr>
<tr>
<td>Yes</td>
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<td>No</td>
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<tr>
<th>Perceptions about IC Compliance and Promotion</th>
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| Nuala Porteous BDS, MPH

2014 Annual Symposium
Perceptions about IC Compliance and Promotion

- Significant association between respondents’ satisfaction with IC curriculum and:
  - dental students’ IC compliance \( p<0.001 \)
  - faculty compliance \( p<0.05 \)
- Significant association between faculty compliance and
  - graduating students’ satisfaction with IC curriculum \( p<0.001 \)

Reported number of BBP exposure incidents annually

- Significant association between #BBP exposure incidents and class size \( p<0.005 \)
- Significant association between #BBP exposure incidents and semester in first year that small group discussions were held \( p<0.05 \)
- Negative association between #incidents and online learning in first year \( p<0.005 \)

Open-ended question

- 15 responses
- 80% wanted to see more active faculty involvement in IC policy enforcement
- Suggestions included:
  - all students should have mandatory, annual OSHA training same as is required for faculty and staff;
  - part-time faculty should adhere to school’s policy;
  - monitoring policy should be consistently enforced at a “high” standard
  - Dental Deans should be involved in non-compliance issues.

Discussion

- Study limitations
  - Response rate 60%
  - Comparisons with previous studies
- IC Coordinator in 91% of schools
- Blended approach to IC teaching in most schools
- Findings on executive support consistent with previous survey on QA and risk management
  - Fredekind RE et al., J Dent Ed 2002
- Findings on BBP incidents and online learning consistent with previous survey
  - Lockart DE et al., BDJ 2009

Conclusion

- General satisfaction with IC curriculum, student and staff compliance
• Less satisfaction with faculty IC compliance and promotion
• IC committee can positively influence the standards of IC teaching and compliance monitoring in dental schools
• High # BBP exposure incidents should be further investigated

Porteous NB et al., J Dent Ed 2014;78(2):187-194

Thank You for your attention

Questions?