APIC 2015
INFECTION PREVENTION
LIVE ON STAGE

APIC 42nd Annual Conference
JUNE 27-29, 2015
NASHVILLE, TN
What do Infection Preventionists want to know? Queries of IP Talk and apic.org

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APIC Research Committee
Disclosures

The authors have nothing to disclose.
Learning Objectives

• Identify common topics for more information in APIC data collected from members using IP talk and searches on APIC.org
• Discuss how this data reflects priorities of APIC and the APIC Research Committee
• Apply this information to develop facility and chapter-specific research ideas
Request from APIC Board of Directors

• Identify steps to address key gaps in:
  » Information
  » Research
  » Practice
Request from APIC Board

• Using IP list serve, identify priority clinical questions from IPs and develop consensus-based responses to questions that lack standard guidelines or an evidence base.

• Research Committee will report back to the Board with questions and responses for review/input.
Methods

1. Classified IP Talk contents
2. Classified apic.org searches
3. Compared IP Talk and apic.org content
4. Developed and prioritized research topics
Background: IP Talk

15,556 members
34,400 discussions
1,300 Library items

community.apic.org/home/
2 Questions for EVS Cleaning - Mop Bucket Labeling and Using Vinegar for Mirrors/Windows

22. OSHA’s rule on secondary containers (i.e.,

Identification of Clean Equipment

23. We are using a sticker that has tabs for clean,...
24. Our ventilators are covered with a clear bag and...
25. We use a band of white tape, loosely around the...
26. We were using a green clean sticker. Just...

Vascular catheter (Cath Lab) and pre-procedure antisepsis guidelines

27. Hi Heather, I have attached a document that is...

Ambulatory Care Infection Control Training

28. Mary: do you have some type of computer based...

Does APIC have recommendations for maximum hang time post processing?

29. Another reference you should read is the new...
30. We did a brief assessment of this issue using...
<table>
<thead>
<tr>
<th>Eligible Discussion</th>
<th>Real Time</th>
<th>Daily Digest</th>
<th>Mobile Device</th>
<th>No Emails</th>
<th>Un Subscribe</th>
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<tr>
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</tr>
</tbody>
</table>
IP Talk Sample Presentation

Protect Yourself and Our Patients

Housekeeping’s Vital Role in Infection Prevention

Statistics
- 9 Favorited
- 1117 Views
- 1 Files
- 4 Shares
- 1652 Downloads
IP Talk Sample Video

Statistics
19 Favorited
576 Views
1 Files
10 Shares
428 Downloads
### CENTRAL LINE BLOODSTREAM INFECTION WORKSHEET

<table>
<thead>
<tr>
<th>Name</th>
<th>M#</th>
<th>Age</th>
<th>Admit date</th>
<th>Adm Dx</th>
<th>Physician</th>
<th>Disch date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of line</td>
<td>Insert date</td>
<td>DC date</td>
<td>Checklist used?</td>
<td>Yes</td>
<td>No</td>
<td>Inserted by: Location:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Culture Date</th>
<th># bottles positive</th>
<th>Pathogens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Background: www.apic.org
<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>Monthly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitors</td>
<td>1,511</td>
<td>37,728</td>
</tr>
<tr>
<td>Page views</td>
<td>4,533</td>
<td>404,407</td>
</tr>
</tbody>
</table>

**AlexaRank:** 477,739  
**PageRank:** 6  

Sources: D. Saunders (APIC) & www.statsurf.net
apic.org International Interest

Source: www.google.com/trends
Searches for “apic” over time
(Relative to highest point on graph)

Source: www.google.com/trends
Popularity of apic.org pages

APIC.org pages by unique pageviews, 2015 YTD

Source: D. Saunders (APIC IT)
Methods

1. Conduct a search, manually if necessary, of IP Talk to trace recurring and trending questions raised on topics identified
2. Track landing sites on the APIC website, download types, time-spent, and clicks for the six topics to determine type of information being sought
3. Compare and reconcile the two searches to the extent possible in order to narrow down questions being raised, information being sought, knowledge gaps being revealed
4. Revise and refine the list for priorities through committee member discussion and consensus
1. Postings on IP Talk

• 9-month period
  – Jan 2014 – Sep 2014

• Two reviewers identified key topics
  – IP Competency Model
  – “Other” categories

• Reviewed by members of Research Committee
APIC Competency Model for the Infection Preventionist

- Leadership and Program Management Domain
- Performance Improvement and Implementation Science Domain
- Infection Prevention & Control Domain
- Technical Domain
- Patient Safety

Green areas indicate critical competencies required for the expanding IP role.

* The CIC® Credential is available from CBIC®
  The Certification Board of Infection Control and Epidemiology, Inc.
Other categories

- Infection-organism
- Infection-type
- Practice-hand hygiene
- Practice-isolation
Results: IP Talk

• 34,683 keywords
• Some entries indexed in more than one category
• Most frequent keywords only accounted for 14% of all occurrences (4,833)
<table>
<thead>
<tr>
<th>Term</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk assessment</td>
<td>223</td>
<td>11.7%</td>
</tr>
<tr>
<td>Bed bugs</td>
<td>220</td>
<td>11.6%</td>
</tr>
<tr>
<td>MRSA</td>
<td>135</td>
<td>7.1%</td>
</tr>
<tr>
<td>Ebola</td>
<td>131</td>
<td>6.9%</td>
</tr>
<tr>
<td>Library</td>
<td>114</td>
<td>6.0%</td>
</tr>
<tr>
<td>Construction</td>
<td>109</td>
<td>5.7%</td>
</tr>
<tr>
<td>CAUTI</td>
<td>102</td>
<td>5.4%</td>
</tr>
<tr>
<td>Hand hygiene</td>
<td>98</td>
<td>5.2%</td>
</tr>
<tr>
<td>Rounds</td>
<td>93</td>
<td>4.9%</td>
</tr>
<tr>
<td>Infection Control Plan</td>
<td>91</td>
<td>4.8%</td>
</tr>
<tr>
<td>Ultrasound gel</td>
<td>90</td>
<td>4.7%</td>
</tr>
<tr>
<td>Stethoscopes</td>
<td>89</td>
<td>4.7%</td>
</tr>
<tr>
<td>Infection Prevention Week</td>
<td>66</td>
<td>3.5%</td>
</tr>
<tr>
<td>SSI</td>
<td>65</td>
<td>3.4%</td>
</tr>
<tr>
<td>Steriplex</td>
<td>64</td>
<td>3.4%</td>
</tr>
<tr>
<td>Fans</td>
<td>56</td>
<td>2.9%</td>
</tr>
<tr>
<td>Artificial nails</td>
<td>53</td>
<td>2.8%</td>
</tr>
<tr>
<td>Gel nails</td>
<td>51</td>
<td>2.7%</td>
</tr>
</tbody>
</table>
2. Searches of apic.org

• Two periods
  – Jan 2014 – Sep 2014
  – April 2015 - May 2015

• Two reviewers identified key topics
Jan-Sep 2014

www.apic.org search terms

Infections (56.4%)
  - Organisms (29.9%)
    - MRSA (7.8%)
    - Ebola (6.6%)
    - C diff (5.7%)
  - Specific Infections (28.9%)
    - CAUTI (24.3%)
    - CLABSI (4.2%)
  - Hand hygiene (16.7%)
  - Antibiotic stewardship (1.5%)

Practice (19.8%)
  - Construction/ICRA (9.9%)
  - Risk assessment (3.5%)

Management (13.3%)
  - APIC Text (1.8%)
  - Epi 101 (3.0%)

Education (8.7%)
Results: apic.org

• 1,905 searches
• Top 20 search terms accounted for 98.5% of searches (1,878)
<table>
<thead>
<tr>
<th>Term</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUTI</td>
<td>466</td>
<td>24.8%</td>
</tr>
<tr>
<td>Hand Hygiene</td>
<td>314</td>
<td>16.7%</td>
</tr>
<tr>
<td>Construction</td>
<td>152</td>
<td>8.1%</td>
</tr>
<tr>
<td>MRSA</td>
<td>147</td>
<td>7.8%</td>
</tr>
<tr>
<td>Ebola</td>
<td>124</td>
<td>6.6%</td>
</tr>
<tr>
<td>ESBL</td>
<td>106</td>
<td>5.6%</td>
</tr>
<tr>
<td>CLABSI</td>
<td>78</td>
<td>4.2%</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>65</td>
<td>3.5%</td>
</tr>
<tr>
<td>Clostridium difficile</td>
<td>107</td>
<td>5.7%</td>
</tr>
<tr>
<td>Epi 101</td>
<td>56</td>
<td>3.0%</td>
</tr>
<tr>
<td>Library</td>
<td>43</td>
<td>2.3%</td>
</tr>
<tr>
<td>APIC Text</td>
<td>33</td>
<td>1.8%</td>
</tr>
<tr>
<td>ICRA</td>
<td>33</td>
<td>1.8%</td>
</tr>
<tr>
<td>Bioterrorism</td>
<td>33</td>
<td>1.8%</td>
</tr>
<tr>
<td>Emerging Infections</td>
<td>32</td>
<td>1.7%</td>
</tr>
<tr>
<td>Certification</td>
<td>32</td>
<td>1.7%</td>
</tr>
<tr>
<td>Antibiotic stewardship</td>
<td>29</td>
<td>1.5%</td>
</tr>
<tr>
<td>Ebola Patient Care Protocol</td>
<td>28</td>
<td>1.5%</td>
</tr>
</tbody>
</table>
# Top 10 apic.org pages by views

<table>
<thead>
<tr>
<th>Page</th>
<th>Number of views</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homepage</td>
<td>76567</td>
<td>50.80%</td>
</tr>
<tr>
<td>Education/Certification course detail</td>
<td>15131</td>
<td>10.04%</td>
</tr>
<tr>
<td>Education/Certification Overview page</td>
<td>10923</td>
<td>7.25%</td>
</tr>
<tr>
<td>Store product detail page</td>
<td>9355</td>
<td>6.21%</td>
</tr>
<tr>
<td>Education/Certification CIC Certification</td>
<td>8804</td>
<td>5.84%</td>
</tr>
<tr>
<td>Monthly alerts for consumers detail</td>
<td>6563</td>
<td>4.35%</td>
</tr>
<tr>
<td>Education/Certification Online learning overview</td>
<td>6338</td>
<td>4.21%</td>
</tr>
<tr>
<td>Press release detail page</td>
<td>5797</td>
<td>3.85%</td>
</tr>
<tr>
<td>Member Benefits overview page</td>
<td>5636</td>
<td>3.74%</td>
</tr>
<tr>
<td>About Membership page</td>
<td>5597</td>
<td>3.71%</td>
</tr>
</tbody>
</table>

Source: D. Saunders (APIC IT)
Top apic.org pages, May 2015

- Homepage, 50.80%
- Education/Certification, 27.33%
- Membership, 7.45%
- Store, 6.21%
- Consumer alerts, 4.35%
- Press release, 3.85%
Top downloads, apic.org
May, 2015

1. Novice Roadmap *Infection Preventionist*
2. New member brochure
3. IP Competency Model quick reference guide
4. CAUTI implementation guide
5. Duodenoscopes and other endoscopes FDA letter

Source: D. Saunders (APIC IT)
3. Compare topics

• Data summarized and reviewed by members of the APIC Research Committee
### apic.org

- CAUTI
- Hand Hygiene
- Construction
- MRSA
- Ebola
- ESBL
- CLABSI
- Risk Assessment
- Clostridium difficile
- Epi 101
- Library
- APIC Text
- ICRA
- Bioterrorism
- Emerging Infections
- Certification
- Antibiotic stewardship
- Ebola Patient Care Protocol

### IP Talk

- Risk assessment
- Bed bugs
- MRSA
- Ebola
- Library
- Construction
- CAUTI
- Hand hygiene
- Rounds
- Infection Control Plan
- Ultrasound gel
- Stethoscopes
- Infection Prevention Week
- SSI
- Steriplex
- Fans
- Artificial nails
- Gel nails
Conclusions

• The top 20 keywords on IP Talk accounted for a small percentage of all content (14%)
• In contrast, the top 10 search terms on apic.org accounted for 37.3% of all searches
• There was a high level of congruence between topics identified through both methods
Conclusions

• IP Talk and apic.org search terms vary over time
• With some limitations, the IP Competency Model is a useful framework to organize research needs
Conclusions

• Congruence between topics identified through both methods

• Two topics identified for future work by APIC Research Committee:
  – Hand hygiene
  – Catheter-Associated Urinary Tract Infection
Limitations

• Potential for error with manual indexing of terms
• Did not account for “click-through” where users used the apic.org navigation bar
• Only addresses what many IPs want to know – not what an individual IP needs to know
Limitations

• IP Talk users may not be representative of all APIC members

• We did not account for seasonal variations in information needs
  • Annual Conference season
  • Flu season

• Special topics emerged during study period
  • Ebola
Limitations

• Except for when items were cross-listed from IP Talk or apic.org to AJIC, these topics were not included.

• This is especially important given that AJIC is the primary venue for scientific and research dissemination.
Next steps

• Coordination with other APIC committees to address education, practice and implementation gaps, as opposed to research gaps

• Research committee will periodically monitor IP Talk and apic.org for emerging topics

• APIC Research Committee work plan 2015-2016
## Next steps

<table>
<thead>
<tr>
<th>Category</th>
<th>Potential data sources</th>
<th>Possible solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice-related</td>
<td>Identified from list serves, APIC site searches, APIC consultancy requests and requests made to staff</td>
<td>Practice guidelines and dissemination vehicles</td>
</tr>
<tr>
<td>Scientific gaps</td>
<td>Identified from review of existing scientific literature, gaps identified in published guidelines, expert input</td>
<td>Formal research projects sponsored or coordinated by APIC</td>
</tr>
<tr>
<td>Policy and structure</td>
<td>Board-directed or developed in conjunction with other professional societies</td>
<td>Expert panels or work groups, development of complimentary research agenda</td>
</tr>
</tbody>
</table>
Figure 1. Flowchart of future research needs process

1. Systematic review is published with EPC determined evidence gaps
2. Orientation of stakeholders to comparative effectiveness research question, future research needs process, and prioritization criteria
3. Elaboration and consolidation of evidence gaps through iterative process with stakeholders
4. Transformation of evidence gaps into research questions using relevant framework
5. Ranking of research questions by stakeholders (potential value criteria) resulting in research needs
6. Addition of study design considerations and feasibility issues
7. Publication of future research needs document

Special thanks

Walter Josephs
Project Manager
Association for Professionals in Infection Control and Epidemiology
Washington, DC

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Association for Professionals in Infection Control and Epidemiology
Washington, DC

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Association for Professionals in Infection Control and Epidemiology
Washington, DC
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