Results of qualitative research on implementation of infection control best practice in European hospitals

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PROHIBIT Study Group

Hosted by Prof. Yves Longtin
McGill University, Montreal

Quantitative

Numbers

11.5% (p=.3)
Qualitative Research

Qualitative Research is intended to deeply explore, understand and interpret social phenomena within its natural setting.

[...] to explore the why and how of a situation, not only what, where, when.

Qualitative research

[...] rather than adopting a simplified, reductionist view of the subject in order to measure and count the occurrence of states or events, qualitative methods take a holistic perspective which preserves the complexities of human behavior.


Qualitative methods aim to make sense of, or interpret, phenomena in terms of the meanings people bring to them.

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<table>
<thead>
<tr>
<th>Qualitative</th>
<th>Quantitative</th>
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</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>Methods</td>
</tr>
<tr>
<td>In context</td>
<td>Reductionist</td>
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<tr>
<td>Emerging</td>
<td>Context independent</td>
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<tr>
<td>Purposeful sampling</td>
<td>A priori</td>
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<td></td>
<td>Random, statistical power</td>
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<tr>
<td>Triangulation</td>
<td>Validity</td>
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<tr>
<td>Reflexivity</td>
<td>Rigorous</td>
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<td>Member checking</td>
<td>Statistical significance</td>
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<tr>
<td>Time in the field</td>
<td>Confounding/bias exclusion</td>
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<tr>
<td>Negative cases</td>
<td></td>
</tr>
</tbody>
</table>

In parallel
Transcription
Coding
Themes

Analysis
A posteriori
Statistical analysis

Validity
Reflexivity
Member checking
Time in the field
Negative cases


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Triangulation

Reflexivity

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Member checking

Submit results of the analysis to participants for verification.

Quality of qualitative research

Mixed-methods studies

| Qualitative | Quantitative |

**Box 1** Qualitative and quantitative methods can be integrated at different stages in a research project:
- Design—eg, using qualitative interviews to develop a quantitative measure
- Sampling—eg, using an initial survey to determine or provide a sampling frame for qualitative interviews
- Analysis—eg, using qualitative research to inform priors for bayesian statistical analysis
- Interpretation—eg, integrating the findings in chapter, papers, reports

O’Cathain suggests that health services research tends to be weakest at integrating at the analysis stage.²⁰

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The objective of PROHIBIT is to understand the variations of healthcare-associated infection prevention in Europe and to test the success of a catheter-related bloodstream infection prevention strategy.
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## Table 1 PROHIBIT work packages and their objectives

<table>
<thead>
<tr>
<th>Work package (WP)</th>
<th>Title</th>
<th>Objective</th>
</tr>
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<tr>
<td>WP 1</td>
<td>Project Management</td>
<td>Ensure that the project’s main scientific objectives are realized on schedule and on budget.</td>
</tr>
<tr>
<td>WP 2</td>
<td>Systematic review of European guidelines for HAIs, surveillance and reporting</td>
<td>Detect and analyze current guidelines and recommendations in European countries for HAIs; the work package will focus on surveillance activities and schemes and public HAIs reporting efforts in European countries.</td>
</tr>
<tr>
<td>WP 3</td>
<td>Survey of policy and practice for HAIs in European hospitals</td>
<td>Assess the activity of European hospitals in HAIs prevention using a questionnaire of key determinants in a sample of hospitals in all European countries.</td>
</tr>
<tr>
<td>WP 4 (In Depth)</td>
<td>In-depth qualitative investigation of success factors for adoption and implementation of infection prevention practices</td>
<td>Identify facilitators and barriers for successful adoption and implementation of evidence-based infection prevention practices by European hospitals.</td>
</tr>
<tr>
<td>WP 5</td>
<td>Randomized effectiveness trial of interventions to reduce catheter-related bloodstream infections</td>
<td>Demonstrate the effectiveness of implementation of two interventions to prevent CRBSI: 1) the WHO hand hygiene promotion strategy and 2) a CRBSI prevention bundle.</td>
</tr>
<tr>
<td>WP 6</td>
<td>Synthesis and dissemination</td>
<td>Provide tools for HAIs prevention to be used by stakeholders at multiple levels of health care systems.</td>
</tr>
</tbody>
</table>

CRBSI, catheter-related bloodstream infection; HAIs, healthcare-associated infection(s); WHO, World Health Organization.

## Restricted use

- Clean insertion and maintenance
- Both together
- General use of hand hygiene
- CVC insertion performance
- Hand hygiene performance
- Rate of catheter-related bloodstream infections

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Case study method

Case = hospital; Intensive Care Unit

Cross-case analysis
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Interviewees

- Top leaders
  - CEO
  - Head nurse
  - Head physician

- Infection control
  - Head nurse
  - Head physician
  - Practitioner

- ICU
  - Front line physician
  - Front line nurse

Figure 1 Temporal scheme of study procedures.

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‘Baseline’ visit
Institutional context
Past implementation stories
Implementation fitness

‘One-Year’ visit
Institutional context
PROHIBIT implementation story
PROHIBIT implementation success

Results
12 two-day site visits
129 interviews
6000 pages of verbatim transcripts
41 hours of observations in ICU
photography
artefacts
Boundary Spanning

Horizontal vs. Vertical Boundary Spanning

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Horizontal vs. Vertical Boundary Spanning

Informal networking:
“I have a lot of persons above me that decide, but the persons that I consider my real leader/chief are directly connected with me and are friends of mine. So it’s quite easy for me to work with them. We go to the restaurant.” (ICU Physician)

Joint appointment:
“The physician went to the CEO of the hospital and persuaded [the CEO] that this is something that we really need.” (IPC physician)

Institutional silos:
“if you want to change things … even if you have the agreement that we’re going to do this, there’s so many different bodies to be asked … it’s a little bit like… Kafka.” (IPC physician)

Implementation Fitness

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Implementation Fitness

Leadership on board:
"I read the protocol, and to head of department, and said [this is] another intervention study, and this is about the PROHIBIT. This makes sense to me. And he said that it makes sense to him as well because it's the quality improvement, and we did another study before, and that also led to some quality improvements." (IPC Physician)

Existing protocols:
"We actually produced a protocol some years before that time point for CVC insertion, and to have a program that proposed to do research on that topic was very timely… So PROHIBIT has found prepared ground" (Head Nurse)

Identified champions:
"[The ICU physician] had been involved in the national pilot project of surveillance… that's why he was picked [to participate in PROHIBIT]. You know, why we dealt with him, because he had… supported that project. And we thought it was the natural follow on for him to get involved with this." (IPC Physician)
Implementation Fitness

(Perceived) lack of experience:
“I don’t think they’re really experienced in implementing bundles because we make the bundles.”

( ICU Physician)

Disruptive Events

Disruption Ahead
Results summary

• **Boundary spanners:** individuals who have multiple roles with in an organisation, and who traverse institutional boundaries to accelerate change.
  - Inter-organisational and Intra-organisational
  - Horizontal boundary spanning: between departments
  - Vertical boundary spanning: up organisational hierarchy
  - Lack of boundary spanners is a barrier particularly when an organisation has silos – (a.k.a. different departments function independently)

• **Implementation fitness:** how suitable an organisation is to integrate research findings and evidence into practice.
  - Implementation is like a muscle – the more you flex it, the stronger it becomes!
  - Previous participation in quality improvement initiatives is a facilitator to future initiatives
  - Lack of experience (or perceived lack of experience) may be a barrier
Results summary

- **Disruptive events**: circumstances that interrupt the routine functioning of an organisation.
  - Disruptive events may increase awareness surrounding IPC issues (e.g. outbreaks)
  - Disruptive events may take priority and shift focus away from IPC issues (e.g. hospital relocation)
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References


July 21 BEHAVIOURAL AND ORGANIZATIONAL DETERMINANTS OF SUCCESSFUL INFECTION PREVENTION AND CONTROL INTERVENTIONS
Dr. Enrique Castro-Sánchez, Imperial College London, England

August 10 (Free South Pacific Teleclass) CAN PATIENT EMPOWERMENT BE USED AS A STRATEGY TO IMPROVE INFECTION CONTROL COMPLIANCE?
Dr Holly Seale, School of Public Health and Community Medicine, UNSW Australia

August 18 (Free Teleclass) USE OF HYPOCHLORITE (BLEACH) IN HEALTHCARE FACILITIES
Prof. William Rutala, University of North Carolina Hospitals

August 25 APPLICATIONS AND LIMITATIONS OF DIPSIDES AND PCR FOR REAL-TIME ENVIRONMENTAL CONTAMINATION EVALUATION
Dr. Tobias Ibfelt, Copenhagen University Hospital, Denmark
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