
This is the author's manuscript

Original Citation:

Availability:
This version is available http://hdl.handle.net/2318/1795084 since 2022-01-25T12:35:04Z

Published version:
DOI:10.1016/j.ijsu.2020.10.029

Terms of use:
Open Access
Anyone can freely access the full text of works made available as "Open Access". Works made available under a Creative Commons license can be used according to the terms and conditions of said license. Use of all other works requires consent of the right holder (author or publisher) if not exempted from copyright protection by the applicable law.

(Article begins on next page)

--Manuscript Draft--

<table>
<thead>
<tr>
<th>Manuscript Number:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Article Type:</td>
<td>Uninvited Reply Letter</td>
</tr>
<tr>
<td>Keywords:</td>
<td>Surgical site infections; bundle; hip arthroplasty; implementation science</td>
</tr>
</tbody>
</table>
| Corresponding Author: | Costanza Vicentini, M.D.  
                        | University of Turin  
                        | Torino, ITALY |
| First Author:      | Costanza Vicentini, M.D. |
| Order of Authors:  | Costanza Vicentini, M.D.  
                        | Carla Maria Zotti |
International Journal of Surgery Author Disclosure Form

The following additional information is required for submission. Please note that failure to respond to these questions/statements will mean your submission will be returned. If you have nothing to declare in any of these categories, then this should be stated.

**Please state any conflicts of interest**

<table>
<thead>
<tr>
<th>None to declare.</th>
</tr>
</thead>
</table>

**Please state any sources of funding for your research**

<table>
<thead>
<tr>
<th>None.</th>
</tr>
</thead>
</table>

**Please state whether Ethical Approval was given, by whom and the relevant Judgement’s reference number**

<table>
<thead>
<tr>
<th>Not applicable.</th>
</tr>
</thead>
</table>

**Research Registration Unique Identifying Number (UIN)**

Please enter the name of the registry, the hyperlink to the registration and the unique identifying number of the study. You can register your research at http://www.researchregistry.com to obtain your UIN if you have not already registered your study. This is mandatory for human studies only.

1. Name of the registry:

2. Unique Identifying number or registration ID:

3. Hyperlink to your specific registration (must be publicly accessible and will be checked):
**Author contribution**
Please specify the contribution of each author to the paper, e.g. study design, data collections, data analysis, writing. Others, who have contributed in other ways should be listed as contributors.

CV: writing. CMZ: review and editing.

**Guarantor**
The Guarantor is the one or more people who accept full responsibility for the work and/or the conduct of the study, had access to the data, and controlled the decision to publish. Please note that providing a guarantor is compulsory.

Costanza Vicentini (Costanza.vicentini@unito.it)
Dear Editors,


In our study, we analysed the effect of the introduction of a simple, four-element evidence-based bundle on surgical site infection (SSI) rates after hip arthroplasty. Our institution is responsible for coordinating data collection for the region of Piedmont, in the north-west of Italy, as part of the national surveillance system for SSIs (SNICh). We introduced the bundled intervention in 2012 with the objective of improving surgical care quality and conducted a prospective study in the 49 hospitals in our region participating in SNICh. We found compliance significantly increased with time and a significant association between full compliance with the bundle protocol and reduced SSI rates.

Our study suggests the simple and relatively resource-sparing protocol applied in our region could be effective in improving surgical care quality, and our results compare favourably with those of larger and more complex bundles. We believe this intervention could lead to sustained results over time through the systematic integration of evidence-based practices into routine care. Through our response to the invited commentary, we hope to clarify certain aspects regarding the implementation of infection control practices within a bundled intervention in resource-limited settings.

Thank you for your time and consideration,

Costanza Vicentini

Department of Public Health and Paediatrics, Università di Torino,
Via Santena 5 bis, 10126, Turin, Italy
+39 011 6705830
Costanza.vicentini@unito.it

Authors: Costanza Vicentini\textsuperscript{a}, Carla Maria Zotti\textsuperscript{a}.

Affiliation:

\textsuperscript{a}Department of Public Health and Paediatrics, University of Turin, Via Santena 5 bis, 10126, Turin, Italy

Corresponding author contact details

Costanza Vicentini

Department of Public Health and Paediatrics, Università di Torino,

Via Santena 5 bis, 10126, Turin, Italy

Tel: +39 011 6705830

Fax: +39 011 6705889

costanza.vicentini@unito.it

Co-author’s email address: carla.zotti@unito.it

Declaration of interest

None to declare.

Dear Editor,

In recent literature, bundles of increasing size and complexity are gaining traction, contrary to the Institute for Healthcare Improvement’s definition [1] and, in our opinion, reducing their potential for widespread applicability. Our recently published study suggests a relatively simple and resource-sparing bundle protocol applied in our region could be effective in reducing surgical site infections (SSIs) following hip arthroplasty and could help improve surgical care quality [2].

The elements constituting our bundle protocol were selected as they are “highly recommended” SSI prevention practices according to the WHO Guidelines on Safe Surgery [3]. These guidelines were developed as part of the 2007-2008 Global Patient Safety Challenge, which focused on improving the safety of surgical care in all environments and settings. Recommendations and interventions were reviewed and tested at pilot sites in each of the six WHO regions, in order to assess resource requirements and to evaluate their feasibility, validity, reliability and cost-effectiveness. However, implementing guidelines in clinical practice is an inherently complex issue in any setting [4]. Further, we agree with the authors of the invited commentary to our paper that in addition to the resources required for the single elements, the successful implementation of a bundled intervention requires significant efforts in terms of time, staff training and surveillance efforts, as demonstrated by the challenges we faced in achieving high levels of compliance [5].

Granted that limited-resource settings face greater challenges in ensuring surgical safety, a recognized issue common to developed and developing countries alike is the unreliable application of existing safety practices. Proven measures are inconsistently followed, not because of lack of resources but because of poor systemization [3]. The objective of a bundled intervention is the systematic...
integration of evidence-based practices into routine care. In our region, implementing a bundle protocol allowed to optimize available resources through the consistent and uniform application of well-established practices.

Considering the significant burden of SSIs and other preventable surgical complications, and the increasing volume of major surgery worldwide, surgical safety has emerged as a global public health concern [3]. Further research efforts are needed to understand what kind of barriers exist to effect sustained behavioural change in this context and to explore the feasibility and cost-effectiveness of implementing infection-control protocols in limited-resource centers. Hopefully, our relatively simple bundle will prove effective and sustainable in other settings other than our own.
References


