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Response to a commentary on “Surgical site infection prevention through bundled interventions in hip replacement surgery: A systematic review” (Int J Surg 2021; 106149)

This is the author's manuscript

Original Citation:

Availability:

This version is available <http://hdl.handle.net/2318/1835368> since 2022-01-25T12:26:29Z

Published version:

DOI:10.1016/j.ijssu.2021.106203

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International Journal of Surgery

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--Manuscript Draft--

Manuscript Number:	
Article Type:	Uninvited Reply Letter
Keywords:	Healthcare associated infections; surgical site infections; infection control; bundle; hip arthroplasty; joint replacement.
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International Journal of Surgery Author Disclosure Form

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Please state any conflicts of interest

None to declare.

Please state any sources of funding for your research

None.

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

Not applicable.

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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.

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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)

Turin, 09/12/21

Dear Editors,

We are submitting a response to the commentary on our recently published paper, “Surgical site infection prevention through bundled interventions in hip replacement surgery: A systematic review” (Int J Surg 2021; 106149).

Surgical site infections (SSIs) affect a relatively small fraction of patients undergoing hip arthroplasties every year, but they are associated with severe outcomes and significant clinical and economic burdens. Bundled interventions have shown to improve patient outcomes in several settings, including joint replacement. In our study, we aimed to determine the effectiveness of bundled interventions not specific for preventing SSIs caused by *S aureus* in reducing SSIs after hip arthroplasty procedures. We found bundles were associated with a significant reduction in SSI risk, which suggests non-pathogen specific bundles are important tools for SSI prevention in hip arthroplasty.

Through our response to the commentary, we hope to clarify certain aspects pertaining to the issue of heterogeneity in surveillance methodology, in particular concerning follow-up duration and data sources for post-discharge surveillance.

Thank you for your time and consideration,

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Response to a commentary on “surgical site infection prevention through bundled interventions in hip replacement surgery: A systematic review” (Int J Surg 2021; 106149).

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Declaration of interest

None to declare.

Response to a commentary on “surgical site infection prevention through bundled interventions in hip replacement surgery: A systematic review” (Int J Surg 2021; 106149).

Dear Editor,

A comment to our recently published systematic review highlighted the issue of heterogeneity in surgical site infection (SSI) surveillance methodology in the field of orthopaedic surgery, in particular pertaining to length of follow-up.[1,2] SSI surveillance systems are an important tool to guide quality improvement programs and promote patient safety. For surveillance systems to be effective, comprehensive, valid, and reliable data sources are necessary, as well as standardized methods for collecting and comparing SSI rates. [3] SSI rates generated through surveillance must be meaningful to make inter-hospital comparisons that will lead to improvements. Further, comparisons with international benchmark rates are problematic if data are not collected using the same methods.

Of the 11 studies included in our review, 3 did not report length of follow up, in 1 case surveillance was conducted for the duration of hospital stay, in 3 studies follow-up lasted 90 days, in 2 studies 30 days or 1 year if with an implant, and in 1 study 1 year. Additionally, few studies reported details on how post-discharge surveillance was conducted.[2] One of the included studies reported data collected through the Italian national surveillance system, which is based on the ECDC HAISSE network. In Italy, infection control staff perform post-discharge surveillance through postoperative visits in the same hospital of the index procedure, or through a standardized telephone interview.[4] Another study reported data collected according to Swiss guidelines, which require post-discharge surveillance to be performed through routine post-operative visits, questionnaires filled out by family practitioners, or patient contact.[5] Other reported approaches to post-discharge surveillance

included scheduled re-visits, analyzing postoperative Medicare claims data for ICD-9 codes suggestive of an SSI, and reviewing clinical charts of readmissions.

An important proportion of SSIs are detected post-discharge, although data concerning these infections is reportedly challenging to collect.[3,5] Currently, there is still no gold standard for post-discharge surveillance. Post-discharge surveillance which only includes cases readmitting to the same hospital as the index procedure may lead to underestimate SSI rates. Involving patients or family practitioners untrained in infection control in diagnosing SSIs can also prove problematic. Systems involving in-depth interviews and chart review are time and resource-consuming. On the other hand, using automatically collected administrative data may remove the beneficial “surveillance effect”.[4] Previous reports suggest multiple data sources should be used to ensure SSIs are correctly identified, collecting data from both hospital and outpatient care settings.[3,5]

Surveillance has proven effective in reducing SSI rates, but accurate measurement is crucial both to determine when performance improvement interventions are indicated, and to measure the effectiveness of these interventions. Particularly in light of several countries implementing mandatory public reporting of SSI rates, further efforts should be made to standardize surveillance methods, including follow-up period and data sources for post-discharge surveillance.

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