

## ■ INFOGRAPHIC

# The delivery of an emergency audit response to a communicable disease outbreak can inform future orthopaedic investigations and clinical practice

## LESSONS FROM IMPACT HIP FRACTURE GLOBAL AUDITS



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The International Multicentre Project Auditing COVID-19 in Trauma & Orthopaedics (IMPACT) was established in March 2020 to provide information about COVID-19 in orthopaedic patients.<sup>1</sup> The IMPACT Hip Fracture Audits included two national and one international multicentre retrospective cohort studies, and a worldwide survey of clinical service disruption during the summer of 2020.<sup>2-4</sup> A systematic review and meta-analysis examined the existing literature,<sup>5</sup> and a number of observational studies examined COVID-19 in general and planned orthopaedics.<sup>6,7</sup>

IMPACT reported important findings that included: mortality risk associated with COVID-19 at the time of injury; risk factors for acquiring and dying of the disease; and the role of nosocomial transmission.<sup>8</sup> This global collaboration highlighted practical lessons that might guide the research and audit response to future specialty-wide issues. Reporting standards for future studies are suggested and include adequate reporting of pathogen, healthcare, and patient factors.

Rapid collaboration and effective data-sharing were central to producing a dataset of sufficient size and diversity to answer urgent questions relating to COVID-19. A strategy for establishing collaborative clinical audits is outlined in order to improve

the quality and robustness of future studies, facilitate audit-based investigation of topical issues using existing and common datasets, and permit a modern approach to health research using the meta-audit principles.<sup>9,10</sup>

These lessons are relevant to improving the evidence-based management of communicable disease outbreaks, including further COVID-19 waves, novel diseases, and seasonal viral illnesses such as norovirus and influenza. They will also inform the examination of wider topical issues, such as periprosthetic femur fractures, orthopaedic infection, and major geriatric trauma.

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- A. M. J. MacLulich: Writing – review & editing.
- A. H. R. W. Simpson: Writing – review & editing.
- A. Johansen: Writing – review & editing.
- T. O. White: Writing – review & editing.
- A. D. Duckworth: Conceptualization, Writing – review & editing, Supervision.

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# Delivery of an Emergency Audit Response to a Communicable Disease Outbreak Can Inform Future Orthopaedic Investigations and Clinical Practice:

Lessons from IMPACT Hip Fracture Global Audits

Hall AJ, Clement ND, MacLulich AMJ, Simpson AHRW, Johansen A, White TO, Duckworth AD. Bone Joint Res. 2022



# IMPACT

International Multicentre Project Auditing COVID-19 in Trauma & Orthopaedics



## Reporting Standards for studies of communicable disease



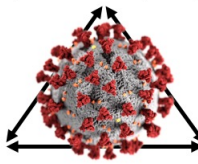
### Patient Factors

- Vaccination status
- Comorbidity reporting
- Post-COVID follow-up  $\geq 30$  days
- Adjusted mortality analysis



### Healthcare Factors

- Consistent diagnostic criteria
- Timing of diagnosis
- Infection prevention strategies
- Public health factors



### Pathogen Factors

- Background prevalence
- Mode of transmission
- Effects on host
- Dominant variant profile

## Key Principles of successful emergency clinical audit



### Coordination

- Rapid collaboration
- Effective data-sharing
- Agile & flexible approach



### Collection

- Utilise common datasets
- Ensure sufficient power
- Generalisability



### Communication

- Timely reporting
- Accessibility
- Stakeholder involvement

## Current Issues amenable to collaborative audit



### Communicable Disease

- COVID-19 outbreaks
- Novel pathogens or variants
- Seasonal viral illnesses



### General Orthopaedics

- Periprosthetic femur fractures
- Orthopaedic infection
- Major geriatric trauma

## Collaborative Audit Model for multicentre observational studies in Orthopaedics

