

## ORchestra: an online reference database of OR/MS literature in health care

**Citation for published version (APA):**

Hulshof, P. J. H., Boucherie, R. J., van Essen, J. T., Hans, E. W., Hurink, J. L., Kortbeek, N., Litvak, N., Vanberkel, P. T., van der Veen, E., Veltman, B., Vliegen, I., & Zonderland, M. E. (2011). ORchestra: an online reference database of OR/MS literature in health care. *Health Care Management Science*, 14(4), 383-384. <https://doi.org/10.1007/s10729-011-9169-4>

**DOI:**

[10.1007/s10729-011-9169-4](https://doi.org/10.1007/s10729-011-9169-4)

**Document status and date:**

Published: 01/01/2011

**Document Version:**

Publisher's PDF, also known as Version of Record (includes final page, issue and volume numbers)

**Please check the document version of this publication:**

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

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# ORchestra: an online reference database of OR/MS literature in health care

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Received: 1 June 2011 / Accepted: 5 June 2011 / Published online: 7 July 2011  
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**Abstract** We introduce the categorized reference database ORchestra, which is available online at <http://www.utwente.nl/choir/orchestra/>.

**Keywords** Health care services · Operations Research and Management Science (OR/MS) · Reference database · Bibliography

With this note, we introduce a reference database for Operations Research and Management Science (OR/MS) literature in health care, named ‘ORchestra’ [6]. ORchestra is available online and can be searched by both medical and OR/MS keywords.

OR/MS is an interdisciplinary branch of applied mathematics, engineering and sciences that uses various scientific research-based principles, strategies, and analytical methods including mathematical modeling, statistics and algorithms to improve an organization’s ability to enact rational and meaningful management decisions [4]. OR/MS has been applied widely to support management decisions in manufacturing. Since the 1950s, OR/MS also yields significant contributions in the health care sector.

Due to the interdisciplinary nature of OR/MS applied to health care, there is an extensive base of literature published across various academic fields. Tailored reference databases prove to be valuable in retrieving references from this broad availability. For example, Dexter provides a comprehensive bibliography on operating room management articles [1]. ‘ORCHID’ is a reference library, which was maintained until 2007 by the University of Toronto and Monash University [7] and remains available at our website [6].

Members of the Center for Healthcare Operations Improvement and Research (CHOIR) of the University of Twente, the Netherlands, develop, update and maintain ORchestra. References in ORchestra are in the first place categorized by medical topics and OR/MS technique. The medical topics are derived from Medical Subject Headings (MeSH) [5]. In addition, references are classified in the hierarchical levels of *strategic*, *tactical*, *offline operational* and *online operational* planning [2].

In [3] a taxonomy is proposed that incorporates the aforementioned hierarchical planning levels to support and integrate decision making in resource capacity planning and control in health care. This taxonomy is used to identify, break down and classify these de-

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cisions. For each identified decision in six different care services, relevant OR/MS literature is reviewed. An other CHOIR survey reviews OR/MS literature to determine the extent to which model scopes encompass multiple hospital departments [8]. All articles referred in [3, 8] are included in ORchestra.

Summarizing, ORchestra provides a reference resource for health care managers, clinical staff and OR/MS researchers in health care. It can be a valuable starting point for other literature reviews within the scope of OR/MS in health care. We invite everyone to contribute to ORchestra by submitting references through our website [6]. Members of CHOIR then verify and add these contributions to ORchestra. We welcome any contributions, suggestions or remarks that help us to further improve ORchestra.

**Acknowledgements** This research is supported by the Dutch Technology Foundation STW, applied science division of NWO and the Technology Program of the Ministry of Economic Affairs.

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