







Q



IIE Transactions >

Volume 42, 2010 - <u>Issue 5</u>

980 90 3

Views CrossRef citations to date Altmetric

ORIGINAL ARTICLES

Sequential clinical scheduling with patient no-shows and general service time distributions

Santanu Chakraborty, Kumar Muthuraman & Mark Lawley

Pages 354-366 | Received 01 Sep 2008, Accepted 01 Jun 2009, Published online: 26 Feb 2010













Reprints & Permissions

Read this article



Abstract

A sequential clinical scheduling method for patients with general service time distributions is developed in this paper. Patients call a medical clinic to request an appointment with their physician. During the call, the scheduler assigns the patient to an available slot in the physician's schedule. This is communicated to the patient before the call terminates and, thus, the schedule is constructed sequentially. In practice, there is very limited opportunity to adjust the schedule once the complete set of patients is known. Scheduled patients might not attend, that is, they might "noshow," and the service times of those attending are random. A myopic scheduling algorithm with an optimal stopping criteria for this problem assuming exponential service times already exists in the literature. This work relaxes this assumption and develops numerical techniques for general service time distributions. A special case in

which service times are gamma distributed is considered and it is shown that computation is significantly reduced. Finally, exhaustive experimental results are provided along with discussions that provide insights into the practical aspects of the scheduling approach.

Keywords:

Overbooking appointment scheduling patient no-shows outpatient clinics

Notes

 $^{\text{a}}\,\text{t}_{\text{ i}}\,\text{is}$ appointment time for patient i.

 $^{\text{b}}\,\mu$ and σ are the mean and standard deviation of service time.



Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources by email



Sign me up











Accessibility



Copyright © 2025 Informa UK Limited Privacy policy Cookies Terms & conditions



Registered in England & Wales No. 01072954 5 Howick Place | London | SW1P 1WG