

'Manual of infection prevention and control' Third Edition, by Nizam Damani

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doi: 10.3396/ijic.v8i3.031.12

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by Nizam Damani

Oxford University Press

Great Clarendon street, Oxford OX2 6DP

UK

ISBN 978-0-19-969835-6

Paperback

22 December 2011

£39.99

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Network) guideline sub-group to develop guidelines for central venous catheters in children. He is a member of the Education committee of the Healthcare Infection Society and is also on the programme and examinations committee of the Diploma and MSc in Infection Prevention and Control (IPC) in the UK. He has also served on the Royal College of Pathologists Regional Council, N. Ireland and for nine years he was a member of the British Society of Antimicrobial

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Chemotherapy sub-group of the *National Working Party of Antibiotic Sensitivity Testing method*. He is on the advisory panel of the European Union 'IMPLEMENT' project on HCAIs and was a member of the core group for the 1st Global Patient Safety Challenge and was the country coordinator for the pilot site in Pakistan for the implementation of the WHO Hand Hygiene guidelines. He was a member of the working party on the 'Injection Safety and Related Infection Control' sub-group of the WHO Safe Injection Global Network (SIGN) and is a member of the WHO working group on Safe Processing of Medical Devices. He is the founding member of the Infection Control Society of Pakistan and was a member of the International Faculty Board Infection Control Programme, Ministry of Health, Egypt and has trained and helped develop the IPC programme in Egypt. For eight years, he has served as the Treasurer of the International Federation of Infection Control (IFIC) and is now chair of the IFIC Membership sub-committee. He has published numerous papers in peer-reviewed journals and published books '*Information Resources in Infection Control*' and '*Manual of Infection Prevention and Control*' which have been translated into Polish (First edition), Croatian (Second edition), and Croatian and Japanese translation of Third edition is underway. He made numerous presentations at many national and international meetings as an invited speaker.

The Book

"Manual of Infection Prevention and Control" is the third edition of the book that had the name of "Manual of Infection Control Procedure" in the first two editions. The change of the title is by itself indicating the difference between these editions: the author's approach in the third edition is more general, more comprehensive, while in details the author has stayed equally precise and concrete. The third edition came after 8 years, and during that time a lot has changed in healthcare associated infection (HCAI) prevention and control, and all of that has been incorporated in this new edition. This third edition is revised, very much expanded and updated in all chapters, many new parts and one new chapter added too. The foreword to the third edition has been written by Professor Didier Pittet.

The book has 374 pages, 20 chapters, List of abbreviations, Glossary of infection control terms, and a comprehensive Index. The book is rich in figures

(43), tables (37), summary or procedure boxes (37) and appendixes (3).

The titles of chapters are: 1 Basic concepts, 2 Administrative arrangements, 3 Surveillance, 4 Outbreak management, 5 Epidemiology and biostatistics, 6 Disinfection and sterilization, 7 Isolation precautions, 8 Hand hygiene, 9 Personal protective equipment, 10 Control of multiresistant microorganisms, 11 Special pathogens, 12 Intravascular catheter-related infections, 13 Catheter-related urinary tract infections, 14 Prevention of ventilator-associated pneumonias, 15 Surgical site infections, 16 Staff health, 17 Primary and community health care facilities, 18 Support services, 19 Health estates, 20 Internet information resources.

Each chapter begins with often very funny quotations in which we can see microorganisms and infections with the eyes of known physicians, poets, scientists, actors or politicians. Chapters are mostly divided by subtitles, with tabulated material, often with illustrations in figures and with essentials in boxes, so it is very easy to read and to quickly find some specific issue or detail you may need in particular situation. At the end of every chapter a list of key newest references for additional reading is included.

First chapter describes the very basics of microbiology, host defence and pathogenesis of infectious diseases, as well as shortly the main strategies for infection control, including bundle approach as the newest one.

Second chapter introduces the reader to the organization of infection prevention and control in hospital, to the significance of infection control programme and the duties and responsibilities of different staff towards the infection prevention and control.

In the third chapter, there is detailed description of surveillance methods, with very clear and in the same time comprehensive tables about surveillance methods and strategies.

Fourth chapter goes deep into the outbreak investigation, control measures and overall outbreak management.

In the fifth chapter, basics of epidemiological methods and biostatistics are described thoroughly but in a

simple way, understandable to medically educated persons, stressing advantages and disadvantages of different epidemiological studies.

Chapter six brings the basics of disinfection and sterilization methodology, with several boxes with clear guidance of how to store sterile products, how to maintain bench-top sterilizers, how to perform terminal cleaning of the room and how to clean blood spills. At the end there is an extremely useful Appendix in which there is a detailed list of different items in hospital (in alphabetical order) starting with “airways” and ending with “x-ray equipment”, and a method of disinfection procedure for each individual item/equipment, on seven pages.

Chapter seven discusses isolation precautions, risk assessment and methods and procedures of isolation. Again, as in previous chapter, there is a comprehensive and very detailed Appendix about type and duration of isolation precautions for different infectious diseases (alphabetically – from “AIDS” to “Viral hemorrhagic fever” – altogether 26 pages!). In the Appendix, infectious agent and incubation period, type of isolation, transmission route, source of infection and period of infectivity and some additional information are all tabulated – so one can very quickly find what is needed.

Chapter eight is about hand hygiene, based on WHO approach (Nizam Damani was one of the critical contributor in preparing WHO Hand Hygiene Guidelines in 2009), describing theoretical background and practical issues. There is a detailed figure presenting hand hygiene technique as well as a figure illustrating the most frequent parts of the hands that are missed if correct hand hygiene technique is not applied.

Chapter nine contains not only description of personal protective equipment (PPE), but one box and three tables with detailed indications and ways PPE has to be used, and – what is very useful for educating staff – illustrations of how to put on and remove PPE, remove single-use gloves, wear and remove plastic apron and protective gown, face mask and a respirator.

At the beginning of Chapter 10 antibiotic stewardship is shortly explained, then antibiotic resistance and the role

of hospital drug committee is described; the impact of control of antibiotic resistance is elaborated, including one box (risk factors for emergence of multidrug resistant organisms [MDRO]) and a detailed table (strategies for prevention and control of MDRO). After that MRSA, VRE and MDR Gram-negative bacteria are described, with risk factors and known procedures for prevention and control.

Chapter 11 is all about special pathogens. This chapter we could name as first special chapter as it is dealing with specific areas in infection prevention and control. Here most HCAI specific organisms are described with all details necessary for infection control staff to fight against them – how to prevent that HCAs occur and how to control their spread. The pathogens are: *Clostridium difficile* (two boxes: risk factors and *C. difficile* bundle), and other causes of gastrointestinal HCAI including very comprehensive tables containing possible pathogens and characteristics of incubation periods, pathogenesis, clinical syndromes and transmission. Special part of this chapter is devoted to norovirus infections with a very useful summary box. After that blood borne viral infections, tuberculosis (including extremely drug resistant strains), respiratory viral infections including types of influenza, legionnaires’ disease, meningococcal infections, varicella zoster infections, viral haemorrhagic fevers, prion disease, and at the end scabies and pediculosis are worked out. This is the biggest chapter of the book, written with many details yet very easy to be surveyed due to many tables, figures and boxes showing details and summaries of specific pathogens.

Next four chapters are dealing with prevention and control of infections during specific procedures: intravascular catheter-related infections, urinary catheter-associated infections, ventilator associated pneumonias and surgical site infections. In chapter 12 detailed description of insertion of peripheral and central intravascular catheter are given (in text and in boxes) so everyone can prepare such protocol for his/her own hospital; bundles of care and of maintenance are presented and other factors discussed. In Chapter 13 the same principle of presentation of urinary catheter related infection prevention and control is presented. Chapter 14 is composed in the same way, with bundle table and table of major interventions to prevent ventilator associated pneumonia. In the chapter

15 risk factors and CDC definitions of SSI (in box) are described. Furthermore, the very detailed description of how to work in the operating room, together with the illustration of surgical hand preparation and how to don sterile gloves is shown in figures and in a box. SSI care bundle is also presented.

Chapter 16 goes to another issue – staff health, equally important part of HCAI prevention and control. We have here details about pre-employment assessment, responsibilities when exposed to serious communicable diseases (in a box and a table with diseases and work restrictions which is so often a question to infection prevention and control personnel). Measures to protect staff are precisely presented. Post-exposure prophylaxis of HIV, HBV and HCV is elaborated (box, table). Prevention of tuberculosis is separately discussed. Prevention of infections in pregnant health care workers is also elaborated in detail, with algorithm showing follow-up of pregnant health care worker exposed to a patient with rash.

Chapter 17 is completely new, not present in previous editions of the book. It is in accordance with the new concept of healthcare associated infections, not only associated with hospitals. The chapter encompasses GPs' surgeries, long-term facilities, hospices, and other primary and community healthcare facilities. This is a short chapter, only outlining the most important problems encountered in primary health care facilities but referring reader to the corresponding parts of other more detailed chapters.

Chapter 18 deals with support services: management of clinical waste, separately sharp items. It is recommended that hospital kitchen take hazard analysis critical control point (HACCP) approach. Then detailed procedures about food preparation and distribution are described. Problems with laundry and pest control are included, and at the end of the chapter very important part about the prevention of infections after death is included (a table with detailed guidance of handling cadavers with specific infections).

Health estates are the topic of chapter 19. All important parts of hospital are discussed, with clear guidance of how to maintain them from the standpoint of infection prevention. Special part is devoted to the operating theatres.

Chapter 20 gives us internet resources for information about HCAI prevention and control, divided in three parts: Evidence based practice, Journals and newsletters and Organizations and regulatory bodies. This last chapter actually opens to the reader a window to the whole world of new information that will be useful for everyday life.

I have witnessed the huge usefulness of the Second edition in everyday hospital practice, as we have translated it in Croatian language: most infection control personnel, not only in Croatia but also in other surrounding countries like Bosnia & Herzegovina and Macedonia, did use it very successfully from 2004 onwards. We are now eagerly waiting for Third edition to be translated too.

The lay-out of the book is very convenient: text divided with clear subtitles in two categories, easy readable tables and clearly highlighted boxes. The cover page has a photograph of washing hands on the bottom half and a syringe on the top – both symbolizing an essential infection prevention procedure and at the same time a hospital with its immanent risk for patients and risk for healthcare workers too.

I will finish my review with the quotation found at the beginning of the second chapter. I think it is most important for infection control personnel today, and its importance was also pointed out in the Foreword: "If you think you're too small to make a difference, try sleeping in a closed room with a mosquito" (Anonymous). In a busy ward, with every day more and more expensive medicine, in a big shortage of staff all over the world, many things in the patient care seem more important to the clinicians than infection control, especially in developing countries. Infection control personnel are so many times disappointed with the inability of doing what they think would be needed and we think we do not contribute enough to the patients' health. In that case, we have to be persistent like a mosquito, and that perseverance will bring improvement for our patients. This book with very specific guidance for most situations known today in infection prevention and control will be of enormous help in this work.