World Health Organization

GLOBAL GUIDELINES FOR THE PREVENTION OF SURGICAL SITE INFECTION

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Sources for the WHO SSI Prevention Guidelines and Associated Documents

عربي 中文 **English** Français Русский Español

- **http://www.who.int/gpsc/ssi-prevention-guidelines/**
- Allegranzi B, Bischoff P, de Jonge S, et al. New WHO recommendations on preoperative measures for surgical site infection prevention: an evidence-based global perspective. The **Lancet Infectious Diseases 2016;16:e276-e87**.
- Allegranzi B, Zayed B, Bischoff P, et al. New WHO recommendations on intraoperative and postoperative measures for surgical site infection prevention: an evidence-based global perspective. **The Lancet Infectious Diseases 2016;16:e288-e303.**

Why Bother with a New Guideline in Infection Control?

- The broad goal of health care is to safely improve the quality of life for our community
  - This is now phrased as creating a culture of safety
- Guidelines are intended to establish “best practices” to achieve this
  - Appropriate topics include:
    - The **structure** for administered services (Core Components)
    - The **communication skills** of health care workers
    - The **details of technical care**

Global Guidelines for the Prevention of Surgical Site Infection

- The World Health Organization (WHO) *Global Guidelines for the Prevention of Surgical Site Infections* provide a comprehensive range of evidence-based recommendations that take account of:
  - the global perspective
  - the evidence quality level
  - cost and resource implications (including for LMIC)

Transparency is the critical characteristic that defines guidelines that can be trusted

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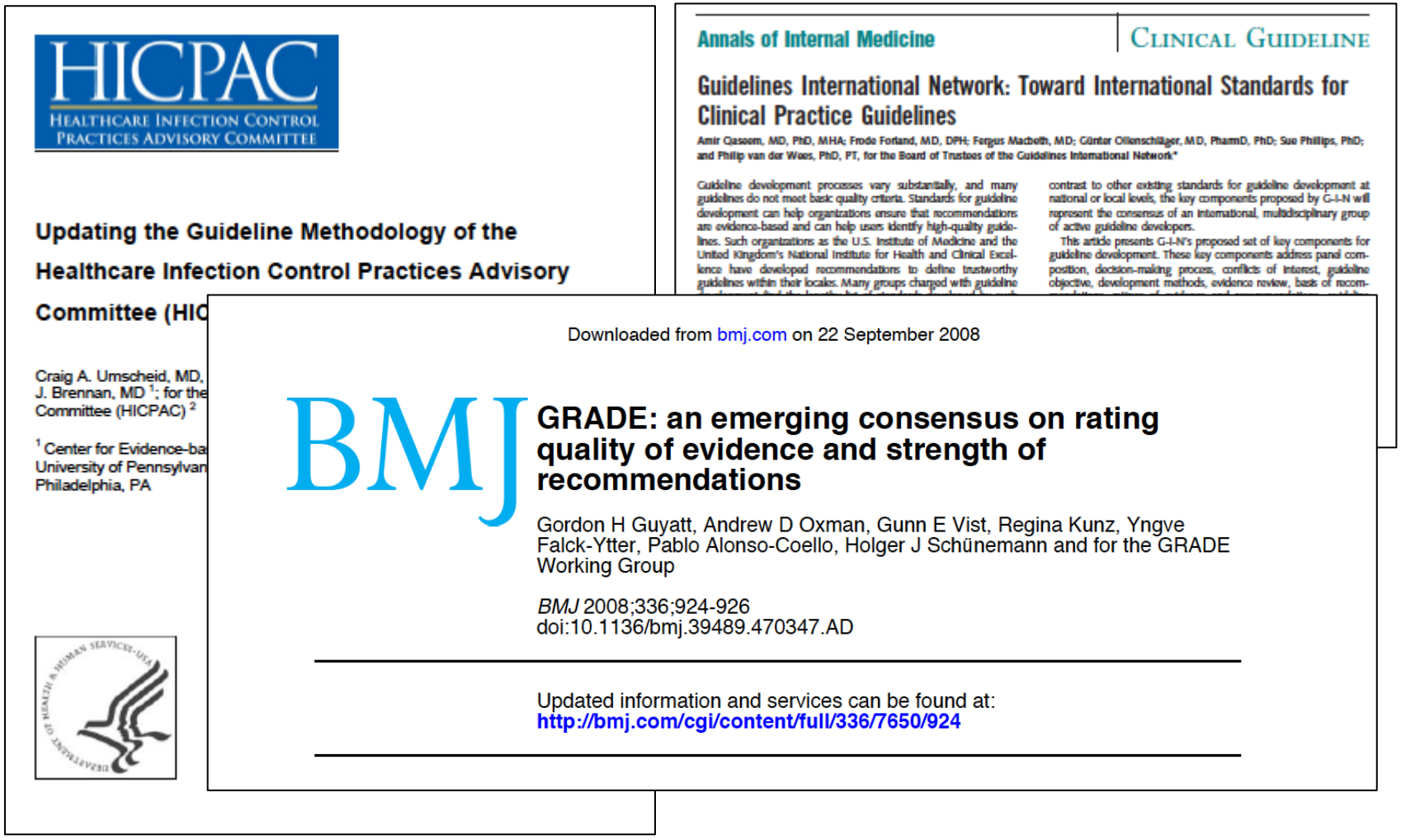
Clinical Practice Guidelines We Can Trust

Standards for Developing Trustworthy Clinical Practice Guidelines (CPGs)



Grading of Recommendations, Assessment, Development and Evaluation

Systematic Review, Meta-analysis, and GRADE

- Systematic reviews and meta-analysis are managed via the Cochrane Collaboration Handbook and software
- GRADE: *Grading of Recommendations, Assessment, Development and Evaluation*
- This system defines a way to evaluate **evidence** (clinical trials**),** and generate recommendations based on defined evidence quality
- The goal is transparency and reproducibility

Global Guidelines for the Prevention of Surgical Site Infection: Methods

- **The Role of the Guideline Development Group**
  - Members provided input for the drafting of the guideline scope and the PICO questions, participated in the identification of the methodology for the systematic reviews, appraised the evidence that was used to inform recommendations, advised on the interpretation of evidence, formulate the final recommendations (based on draft from the WHO steering group), and reviewed and approved the final guideline document

Guideline Development Group

The responsible WHO official and chief baby sitter Benedetta Allegranzi

Co-Chairs: Didier Pittet and Joseph Solomkin

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Jianan Ren
Akeau Unahalekhaka
Andreas Widmer
Matthias Egger

Global Guidelines for the Prevention of Surgical Site Infection: Methods

- **Eligibility Criteria:**
  - Inclusion and exclusion criteria for the literature was based on the evidence needed and available to answer the research questions
  - **The primary outcomes for all research questions were SSI and SSI-attributable mortality**

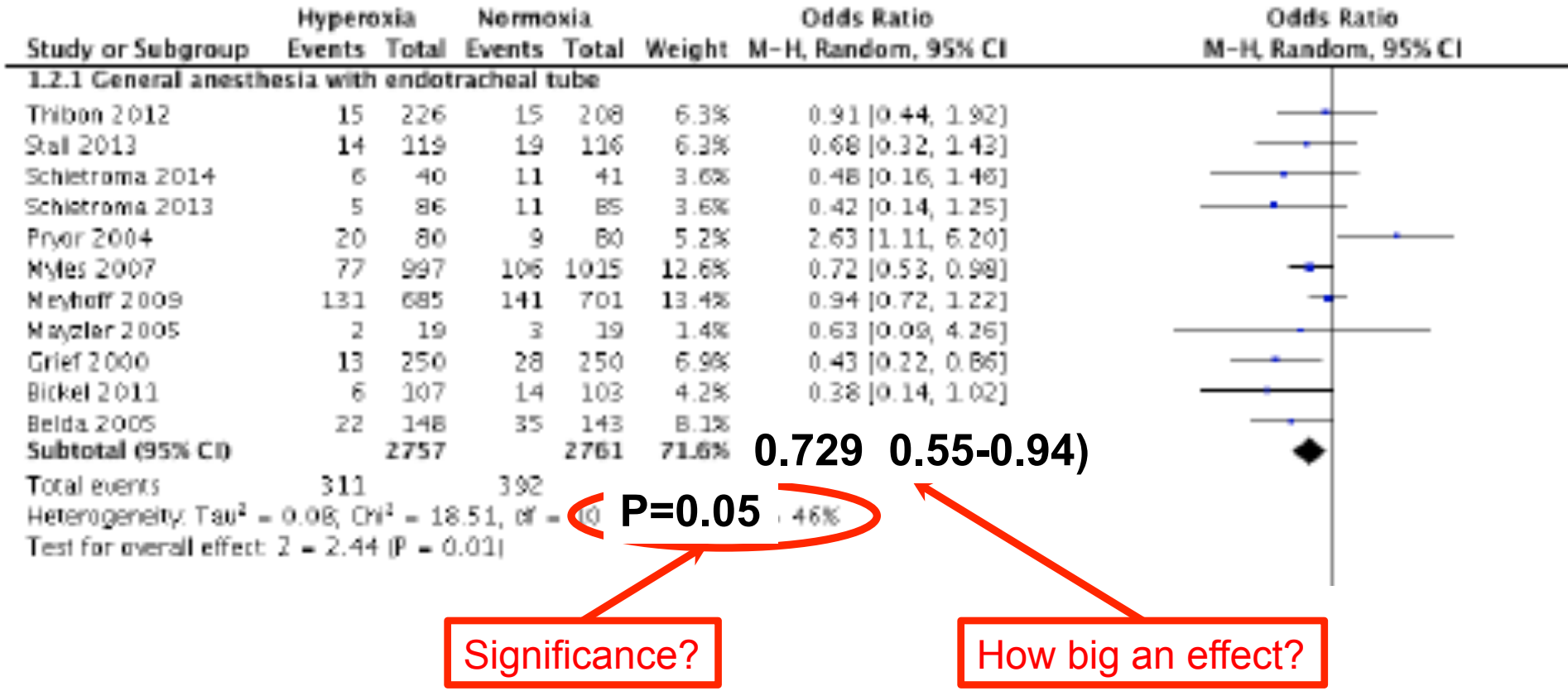
- **Information Sources:**
  - **27 systematic reviews were conducted between December 2013 and October 2015** in order to provide supporting evidence for recommendation development
    - The lower time boundary was 1 January 1990
  - The following databases were searched: Medline (Ovid); Excerpta Medica Database (EMBASE); Cumulative Index to Nursing and Allied Health Literature (CINAHL); Cochrane Central Register of Controlled Trials (CENTRAL); and WHO regional medical databases.

Global Guidelines for the Prevention of Surgical Site Infection: Methods

- **Development of recommendations:**
  - Guidelines were formulated in a global perspective, taking into account: balance between benefits and harms, the quality of evidence, cost and resource use implications, and user/patient values and preferences
  - The strength of recommendations was rated as:
    - "Strong" –the expert panel was confident that benefits outweighed risks
    - "Conditional" –the panel considered that benefits of the intervention probably outweighed the risks

The Ugly Details of Evidence

Use of Perioperative 80% Oxygen to Reduce SSI



The GRADE Analysis

Number of Patients		Effect		Quality
High Oxygen (80%)	Standard Oxygen (35%)	Relative (95% CI)	CI expressed in absolute numbers	
311/**2757** (11.3%)	392/**2761** (14.2%)	OR: 0.72 (0.55-0.94)	36 fewer per 1000 (from 7 fewer to 59 fewer)	⊕⊕⊕◯ Moderate

Summary of WHO Recommendations for SSI Prevention for the Preoperative Period

Topic	Recommendation	Strength Quality
Decolonisation with mupirocin ointment with or without CHG body wash for the prevention of *Staphylococcus aureus* infection in nasal carriers undergoing surgery	Patients undergoing cardiothoracic and orthopaedic surgery with known nasal carriage of *S. aureus* should receive perioperative intranasal applications of mupirocin 2% ointment with or without a combination of CHG body wash. Consider also treating patients with known nasal carriage of *S. aureus* undergoing other types of surgery with perioperative intranasal applications of mupirocin 2% ointment with or without a combination of CHG body wash.	Strong recommendation --- Moderate quality of evidence Conditional recommendation --- Moderate quality of evidence
Mechanical bowel prep (MBP) and the use of oral antibiotics	Preoperative oral antibiotics combined with MBP should be used to reduce the risk of SSI in adult patients undergoing elective colorectal surgery. MBP alone (without the administration of oral antibiotics) should not be used for the purpose of reducing SSI in adult patients undergoing elective colorectal surgery.	Conditional recommendation --- moderate quality of evidence Strong recommendation --- Moderate quality of evidence

Summary of WHO Recommendations for SSI Prevention for the Preoperative Period

Topic	Recommendation	Strength Quality
Hair removal	In patients undergoing any surgical procedure, either hair should not be removed or, if absolutely necessary, it should be removed only with a clipper. Shaving is strongly discouraged at all times, whether preoperatively or in the operating room.	Strong recommendation --- Moderate quality of evidence
Optimal timing for administration of surgical antibiotic prophylaxis	When indicated (depending on the type of operation), surgical antibiotic prophylaxis should be administered prior to the surgical incision. Surgical antibiotic prophylaxis should be administered within 120 minutes before incision, while considering the half-life of	Strong recommendation --- low quality of evidence Strong recommendation --- Moderate quality of
Surgical antibiotic prophylaxis prolongation	Surgical antibiotic prophylaxis administration should not be prolonged after completion of the operation for the purpose of preventing SSI.	Strong recommendation --- Moderate quality of evidence

Summary of WHO Recommendations for SSI Prevention for the Preoperative Period

Topic	Recommendation	Strength Quality
Surgical hand preparation	Surgical hand preparation should be performed using either a suitable antimicrobial soap and water or a suitable alcohol-based hand rub before donning sterile gloves.	Strong recommendation ---------- Moderate quality of evidence
Pre-operative bathing	It is good clinical practice for patients to bathe or shower before surgery. Either a plain soap or an antiseptic soap could be used for this purpose.	Conditional recommendation ---------- Moderate quality of evidence
Surgical site preparation	Alcohol-based antiseptic solutions, particularly based on chlorhexidine gluconate (CHG), are recommended for surgical site skin preparation in patients undergoing surgical procedures.	*Strong recommendation* ---------- *Low to moderate quality of evidence*
Perioperative oxygenation	Adult patients undergoing general anaesthesia with endotracheal intubation for surgical procedures should receive FiO2 80% intraoperatively and, if feasible, in the immediate postoperative period for 2-6 hours.	Strong recommendation ---------- Moderate quality of evidence

Other Recommendation Areas

- Laminar flow ventilation systems in the context of operating room ventilation
- Antimicrobial-coated sutures
- Incisional wound irrigation
- Prophylactic negative pressure wound therapy
- Wound protector devices
- Drapes and gowns
- Maintenance of adequate circulating volume control/ normovolemia
- Glucose control
- Dressings
- Drains

Obrigado

- **It has been a great pleasure to visit Sao Paulo and Brazil and to attend this great conference**
- **Foi um grande prazer para visitar São Paulo e Brasil e para assistir a este grande conferência**
- **Ha sido un gran placer visitar a Sao Paulo, Brasil y para asistir a esta gran conferencia**