

## Tests, treatments and procedures at risk of inappropriateness in Italy that Physicians and Patients should talk about.

### Five Recommendations from The Italian Association of Doctors of the Hospital Directions - ANMDO in collaboration with SItI - Italian Society of Hygiene, Preventive Medicine and Public Health

1	<p><b>Don't replace hand hygiene with the use of non-sterile disposable gloves. Use alcohol-based product as a first choice for hand hygiene routine.</b></p> <p>Proper hand hygiene reduces the skin microbial population, representing the basic measure to ensure hand decontamination. In healthcare settings, non-sterile disposable gloves - or "gloves" - do not replace hand hygiene, as they have different functions. In fact, gloves reduce the probability of microorganism transmission from healthcare workers to patients ("patient protection"); constitute a barrier to prevent hands contamination of healthcare workers in case of contact with blood, biological materials, and devices or contaminated surfaces ("healthcare workers protection").</p> <p>However, gloves do not provide complete protection against hand contamination. Indeed, microorganisms can reach the hands of healthcare workers through small defects in the gloves or hands contamination during their removal.</p> <p>The use of gloves can lead to a failure of hand hygiene practices. In the latter case, several studies report a significant reduction of proper hand hygiene, especially if the use of gloves is incorrect, suggesting that their inappropriate use can be a component of poor hand hygiene compliance.</p> <p>Once removed, gloves must not be reused even after decontamination. Compared to social and antiseptic handwashing, alcohol-based hand rubs increase healthcare workers adherence to routinely hand hygiene.</p>
2	<p><b>Never administer antibiotics for perioperative prophylaxis before 60 minutes prior to surgical incision<sup>*</sup>; the ideal time is upon induction of anesthesia.</b> * subject to exceptions</p> <p>Perioperative Antibiotic Prophylaxis (PAP) is an effective measure for the prevention of Surgical Site Infections (SSI), where indicated. However, its inappropriate use contributes significantly to total antibiotic consumption in hospitals and has been associated with increases in antimicrobial resistance (AMR) and health care costs. Antibiotic administration within 30-60 minutes from the beginning of the skin incision determines an effective antibiotic concentration both in the serum and in the tissues involved, reducing the risk of post-operative infections. The guidelines state that some antibiotics require administration over 1-2 hours, such as fluoroquinolones and vancomycin, restricting their prophylactic use only when local antimicrobial stewardship programs recommend their administration. Therefore, the administration of these antibiotics should exceptionally begin within 120 minutes prior to the surgical incision.</p>
3	<p><b>Never administer antibiotics for perioperative prophylaxis beyond 24 hours after surgery. Antibiotic prophylaxis should be limited to the perioperative period. The choice to continue prophylaxis beyond the first 24 postoperative hours is not justified.</b></p> <p>Perioperative Antibiotic Prophylaxis (PAP) is an effective measure for the prevention of Surgical Site Infections (SSI), where indicated. However, its inappropriate use contributes significantly to total antibiotic consumption in hospitals and has been associated with increases in antimicrobial resistance (AMR) and health care costs. The World Health Organization (WHO) recommends not prolonging PAP beyond the end of surgery to prevent SSI. It is generally not recommended to continue PAP beyond 24 hours after surgery. The importance of the appropriate PAP for the prevention of SSI has been confirmed by several epidemiological studies, including a systematic review of 21 meta-analyses, a recent technical report and a systematic review of the European Center for Disease Prevention and Control (ECDC).</p>
4	<p><b>Do not open the doors of the operating room during the surgical activity, except where necessary for the passage of patients, staff and equipment.</b></p> <p>The prevention strategies for Surgical Site Infections (SSI) are focused on three areas: patient, surgical technique and environmental conditions of the operating room. Among the latter, it is important to refer to the air quality (particle and microbial contamination, temperature, humidity, etc.). According to previous studies, the opening of the doors can compromise the air quality by changing the microclimate of the operating room and by causing an increase in the microbial air contamination. Particularly, a multicenter study conducted by GISIO-SItI highlighted a positive correlation between the number of door openings and the values of the Microbial Air Index (IMA), during hip and knee arthroplasty surgeries. Furthermore, the opening of the doors affects the performance of surgical activity, favouring the distraction of the operators and the related risk of errors. The reasons for the opening of the doors are often inappropriate, suggesting the need for corrective actions and educational interventions aimed at reducing their frequency.</p>
5	<p><b>Do not forget to indicate in the patient health documentation (discharge letter or document for transfer to another healthcare facility) any positivity to alert microorganisms *</b></p> <p><i>*Methicillin-resistant Staphylococcus aureus (MRSA), Clostridioides difficile, Klebsiella pneumoniae and other carbapenem-resistant Enterobacteria, carbapenem-resistant Acinetobacter baumannii, carbapenem-resistant Pseudomonas aeruginosa, Vancomycin-resistant Enterococci (VRE), and any further microorganisms locally identified as alert.</i></p> <p>The indication of the positivity to alert microorganisms in the letter of discharge or in the transfer document to another healthcare facility represents an essential information to ensure the correct patient management both at home and in healthcare facility.</p> <p>The indication of the patient positivity allows healthcare professionals, general practitioner and family members to take the appropriate precautions and to use the most appropriate antibiotics.</p>

## How this list was created

ANMDO joined the project named **“Doing more does not mean doing better”**. It is also committed to providing its own original contribution to it, by drawing up lists concerning organization and hygiene areas of competence, including performances of dubious value, and instead promoting effective interventions based on available evidence, consistent with the context in which they must be carried out. Being aware of its specific nature, it was decided to focus on Hospital Hygiene: an issue with a significant impact on health, although mostly in an indirect way. In an intercompany spirit and with a view to involving the largest possible number of stakeholders, this activity was carried out together with the Italian Society of Hygiene, Preventive Medicine and Public Health (SItI) through the creation of an ANMDO-SItI working group. The choice of practices considered the relevance of infection risks in health facilities. The working group intends to carry out a twofold task: to identify the most relevant practices supported by scientific evidence and, at the same time, to make them operational within healthcare facilities across the country through the Public health perspective, professionalism and determination. All recommendations were revised in June 2022.

## Sources

<b>1</b>	<ol style="list-style-type: none"> <li>1. Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (last update: July 2019).</li> <li>2. World Health Organization. WHO guidelines on hand hygiene in health care: first global patient safety challenge: clean care is safer care. Geneva, Switzerland: World Health Organization, Patient Safety; 2009.</li> <li>3. Agenzia Sanitaria e Sociale Regionale, Emilia-Romagna. “Cure pulite sono cure più sicure”. Rapporto finale della campagna nazionale OMS. Dossier 189-2010.</li> <li>4. Regione Emilia-Romagna. Servizio Assistenza Territoriale - Direzione Generale Cura della Persona, Salute e Welfare – Area Farmaco e Dispositivi Medici. Linee di indirizzo sull'utilizzo appropriato dei guanti monouso non sterili. Luglio 2020.</li> <li>5. CDC. Strategies for Optimizing the Supply of Disposable Medical Gloves. <a href="https://www.cdc.gov/coronavirus/2019-ncov/hcp/pe-strategy/gloves.html">https://www.cdc.gov/coronavirus/2019-ncov/hcp/pe-strategy/gloves.html</a></li> </ol>
<b>2</b>	<ol style="list-style-type: none"> <li>1. European Centre for Disease Prevention and Control. Systematic review and evidence-based guidance on perioperative antibiotic prophylaxis. Stockholm: ECDC; 2013.</li> <li>2. SNLG 17. Antibiotico profilassi perioperatoria nell'adulto. Linee guida 2008, aggiornamento 2011. Disponibile su: <a href="http://www.snlg-iss.it/cms/files/LG_AntibioticoP_Unico_2008.pdf">http://www.snlg-iss.it/cms/files/LG_AntibioticoP_Unico_2008.pdf</a>.</li> <li>3. World Health Organization. Antimicrobial Resistance Global Report on surveillance 2014. Disponibile su: <a href="http://www.who.int/drugresistance/documents/surveillancereport/en/">http://www.who.int/drugresistance/documents/surveillancereport/en/</a>.</li> <li>4. World Health Organization. Global Guidelines for the Prevention of Surgical Site Infection, second edition. WHO 2018. Disponibile su: <a href="https://www.who.int/publications/item/global-guidelines-for-the-prevention-of-surgical-site-infection-2nd-ed">https://www.who.int/publications/item/global-guidelines-for-the-prevention-of-surgical-site-infection-2nd-ed</a></li> <li>5. Berríos-Torres SI, Umscheid CA, Bratzler DW, et al. Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection, 2017. <i>JAMA Surg.</i> 2017;152(8):784–791.</li> <li>6. Adekoya I, Maraj D, Steiner L, Yaphe H, Moja L, Magrini N, Cooke G, Loeb M, Persaud N. Comparison of antibiotics included in national essential medicines lists of 138 countries using the WHO Access, Watch, Reserve (AWaRe) classification: a cross-sectional study. <i>Lancet Infect Dis.</i> 2021 Oct;21(10):1429-1440.</li> <li>7. Barchitta M, Sabbatucci M, Furiuzzi F, et al. Knowledge, attitudes and behaviors on antibiotic use and resistance among healthcare workers in Italy, 2019: investigation by a clustering method. <i>Antimicrob Resist Infect Control.</i> 2021 Sep 10;10(1):134.</li> </ol>
<b>3</b>	<ol style="list-style-type: none"> <li>1. European Centre for Disease Prevention and Control. Systematic review and evidence-based guidance on perioperative antibiotic prophylaxis. Stockholm: ECDC; 2013.</li> <li>2. SNLG 17. Antibiotico profilassi perioperatoria nell'adulto. Linee guida 2008, aggiornamento 2011. Disponibile su: <a href="http://www.snlg-iss.it/cms/files/LG_AntibioticoP_Unico_2008.pdf">http://www.snlg-iss.it/cms/files/LG_AntibioticoP_Unico_2008.pdf</a></li> <li>3. World Health Organization. Antimicrobial Resistance Global Report on surveillance 2014. Disponibile su: <a href="http://www.who.int/drugresistance/documents/surveillancereport/en/">http://www.who.int/drugresistance/documents/surveillancereport/en/</a>.</li> <li>4. World Health Organization. Global Guidelines for the Prevention of Surgical Site Infection, second edition. WHO 2018. Disponibile su: <a href="https://www.who.int/publications/item/global-guidelines-for-the-prevention-of-surgical-site-infection-2nd-ed">https://www.who.int/publications/item/global-guidelines-for-the-prevention-of-surgical-site-infection-2nd-ed</a></li> <li>5. Berríos-Torres SI, Umscheid CA, Bratzler DW, et al. Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection, 2017. <i>JAMA Surg.</i> 2017;152(8):784–791.</li> <li>6. Global Alliance for Infections in Surgery. Principles of antibiotic prophylaxis in surgery. Disponibile su: <a href="https://infectionsinsurgery.files.wordpress.com/2019/02/prophylaxis-principles-1-1.pdf">https://infectionsinsurgery.files.wordpress.com/2019/02/prophylaxis-principles-1-1.pdf</a></li> </ol>
<b>4</b>	<ol style="list-style-type: none"> <li>1. Mangram AL, Horan TC, Pearson ML, Silver LC, Jarvis WR; The Hospital Infection Control Practices Advisory Committee. Guideline for the prevention of surgical site infection, 1999. <i>Am J Infect Control</i> 1999;27(2): 97-134.</li> <li>2. World Health Organization. Best Practice Safety Protocols - Clinical Procedures Safety. Ginevra 2004, riformattato 2012. Disponibile online: <a href="http://www.who.int/surgery/publications/s15976e.pdf?ua=1.2">http://www.who.int/surgery/publications/s15976e.pdf?ua=1.2</a></li> <li>3. Association of Operating Room Nurses. RP summary: Recommended practices for a safe environment of care, part II. <i>AORN Journal</i> 2014; 100(3): 294-297.</li> <li>4. Agodi A, Auxilia F, Barchitta M, et al. Italian Study Group of Hospital Hygiene. Operating theatre ventilation systems and microbial air contamination in total joint replacement surgery: results of the GISIO-ISChIA study. <i>J Hosp Infect.</i> 2015 Jul;90(3):213-9.</li> <li>5. Birgand G, Saliou P, Lucet J-C. Influence of Staff Behavior on Infectious Risk in Operating Rooms: What Is the Evidence? <i>Infect Control Hosp Epidemiol</i> 2015;36(1):93–106.</li> <li>6. Pasquarella C, Balocco C, Colucci ME, et al. The Influence of Surgical Staff Behavior on Air Quality in a Conventionally Ventilated Operating Theatre during a Simulated Arthroplasty: A Case Study at the University Hospital of Parma. <i>Int J Environ Res Public Health</i> 2020; 17(2): 452.</li> <li>7. Regione Emilia-Romagna. Agenzia sanitaria e sociale regionale. Prevenzione delle infezioni del sito chirurgico. Dossier 261-2017.</li> </ol>
<b>5</b>	<ol style="list-style-type: none"> <li>1. Siegel JD, Rhinehart E, Jackson M, Linda Chiarello L, the Healthcare Infection Control Practices Advisory Committee. Management of Multi-Drug Resistant Organisms in Healthcare Settings, 2006 (last update: February 15, 2017). Disponibile su: <a href="https://www.cdc.gov/infectioncontrol/guidelines/mdro">https://www.cdc.gov/infectioncontrol/guidelines/mdro</a></li> <li>2. Guidelines for the Prevention and Control of Multidrug-resistant Organisms (MDRO) excluding MRSA in the healthcare setting. Royal College for Physicians of Ireland, 2012.</li> <li>3. Canterbury Guidelines for the Control of MDRO; review 2014.</li> </ol>

**Slow Medicine ETS**, an Italian Third Sector organization of health professionals, patients and citizens promoting a Measured, Respectful and Equitable Medicine, launched the campaign **“Doing more does not mean doing better-Choosing Wisely Italy”** in Italy at the end of 2012, similar to Choosing Wisely in the USA. The campaign aims to help physicians, other health professionals, patients and citizens engage in conversations about tests, treatments and procedures at risk of inappropriateness in Italy, for informed and shared choices. The campaign is part of the Choosing Wisely International movement. Partners of the campaign are the National Federation of Medical Doctors' and Dentists' Orders (FNOMCeO), that of Registered Nurses' Orders (FNOPI), the Academy of Nursing Sciences (ASI), National Union of Radiologists (SNR), Tuscany regional health agency, PartecipaSalute, Altroconsumo, the Federation for Social Services and Healthcare of Aut. Prov. of Bolzano, Zadig.  
[www.choosingwiselyitaly.org](http://www.choosingwiselyitaly.org); [www.slowmedicine.it](http://www.slowmedicine.it)

**The Italian Association of Doctors of the Hospital Directions - A.N.M.D.O.** promotes the continuous improvement of health and welfare services in terms of planning, business management and organization, hygiene- health organization, technical assistance and health management. For more details please contact: [anmdo.segreteria@gmail.com](mailto:anmdo.segreteria@gmail.com)

**The Italian Society of Hygiene, Preventive Medicine and Public Health - S.It.I.** promotes scientific and cultural progress in the field of Hygiene, Epidemiology, Public Health, Preventive and Community Medicine, Planning, Organization, Management and Health Economics, as well as in all their possible functional combinations.