Alcohol based hand rub

Essential medicine status ✓

Section: 15. Antiseptics and disinfectants > 15.2. Disinfectants

EMLc | ATC codes: D08AX08

Indication	Denatured alcohol ICD11 code: XM3094
Medicine type	Chemical agent
List type	Core (EML) (EMLc)
Formulations	Local > Topical > Solution: 80% v/v ethanol ; 75% v/v isopropyl alcohol
EML status history	First added in 2015 (TRS 994)
Sex	All
Age	Also recommended for children
Therapeutic alternatives	The recommendation is for this specific medicine
Patent information	Patents have expired in most jurisdictions Read more about patents.
Wikipedia	Alcohol based hand rub
DrugBank	Alcohol based hand rub (Ethanol)

Summary of evidence and Expert Committee recommendations

An application was submitted by Dr Benedetta Allegranzi, Service Delivery and Safety, HIS Cluster, WHO, Geneva, for inclusion of alcohol-based hand rub (ABHR) in the EML and EMLc to contribute to the establishment and maintenance of safe essential health services and prevention of infection in both patients and health workers. Comments in support of the application were received from the Infection Control Africa Network, Cape Town, South Africa. Health-care-associated infections (HCAIs) are infections that patients acquire while receiving treatment for medical or surgical conditions and are the most frequent adverse event during care delivery (1). They are a major problem for patient safety and can result in prolonged hospital stays, long-term disability, increased resistance of microorganisms to antimicrobial agents, an additional financial burden for the health system, high costs for patients and their families, and excess deaths (2, 3). This is a key public health problem, with a disproportionately high burden of disease in low- and middle-income countries (LMICs) (3). Hand hygiene is the leading measure for preventing the transmission of HCAI pathogens and reducing HCAIs (4) and ABHR is considered the gold standard for hand hygiene in most clinical situations. The 2009 WHO guidelines on hand hygiene recommend ABHR for routine hand antisepsis in all clinical situations, except when hands are visibly dirty or visibly soiled with blood or other body fluids or after using the toilet, when they should be washed with soap and water (5). Organisms are removed more effectively and quickly by ABHR than by soap or other antiseptic agents and water (6). Moreover, hand rubbing with alcohol-based products is better tolerated than hand-washing with soap and water. The Expert Committee noted that, during the 2014 west African filovirus disease outbreak, WHO guidelines (7) made a strong recommendation – based on high-quality evidence – for the use of either ABHR or soap and water. The guidelines also recommended that ABHR, as the standard of care, be made available at every point of care. WHO provides a range of tools to support education on the use of ABHRs, to promote awareness of when AHBRs should be used, and for monitoring use of these products in practice (http://www.who.int/gpsc/en/). The main ingredients of the WHO-recommended ABHR formulations are isopropyl alcohol 99.8% or ethanol 96%, formulated to produce final concentrations of 75% v/v and 80% v/v respectively (5). Commercially available products meeting WHO standards are produced mainly in Europe and the USA. Production and availability of ABHRs are lowest in African and southeast Asian regions. When ABHR is made locally, for example in hospitals rather than industrial settings, quality assurance is needed. This requires either that alcoholmeters be available on site or that a sample of the

product be sent to an approved facility for testing. The production cost per 100-mL bottle of ABHR was US$ 0.37 in Kenya, US$ 0.30 in Bangladesh and US$ 0.30 in Mali. Prices of some commercially available ABHRs may be much higher and vary greatly (5). Effective action to facilitate local procurement of some raw ingredients for the production of the WHO-recommended ABHR formulations would probably lead to a further reduction in the cost of the end product. The Committee noted United Kingdom estimates that cost–benefits could be achieved if use of ABHR resulted in HCAI rates being reduced by as little as 0.1% (5). The Expert Committee acknowledged that health-care workers' hands are a frequent means of transmission of pathogens and agreed that hand hygiene measures and use of ABHR can lead to significant reductions in avoidable infections in both adults and children. Given the obvious public health need and the potential for promoting the availability of ABHR globally, the Expert Committee recommended the addition of ABHR to the WHO Model Lists of Essential Medicines for adults and children. ABHRs may be commercially available products (meeting recognized ASTM or EN standards for microbicidal efficacy) or WHO-recommended formulations for local production (ethanol 80% v/v, isopropyl alcohol 75% v/v). References : 1. Report on the burden of endemic health care-associated infection worldwide. Geneva: World Health Organization; 2011. 2. Burke JP. Infection control - a problem for patient safety. N Engl J Med. 2003;348(7):651-6. 3. Allegranzi B, Bagheri Nejad S, Combescure C, Graafmans W, Attar H, Donaldson L, et al. Burden of endemic health-care-associated infection in developing countries: systematic review and meta-analysis. Lancet. 2011;377(9761):228-41. 4. Allegranzi B, Pittet D. Role of hand hygiene in healthcare-associated infection prevention. J Hosp Infect. 2009;73(4):305-15. 5. WHO guidelines on hand hygiene in health care: a summary. Geneva: World Health Organization; 2009. 6. Picheansathian W. A systematic review on the effectiveness of alcohol-based solutions for hand hygiene. Int J Nurs Pract. 2004;10(1):3-9. 7. Guideline on hand hygiene in health care in the context of filovirus disease outbreak response: rapid advice guideline, November 2014. Geneva: World Health Organization; 2014.