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Information Magazines for Healthcare Workers

HosCom Hospital Communication International

2025 vol.2

HosCom stands for Hospital Communication.

We aim to provide useful information to healthcare workers globally by sharing knowledge and experiences especially about Infection Prevention and Control.

SARAYA

contents

HosCom Int'l
2025 vol. 2

Phalaenopsis Orchid

Phalaenopsis orchid, also known as the moth orchid, is one of the most popular and widely cultivated orchids in the world. It's well-known for its long-lasting, elegant blooms and relative ease of care, making it a favorite for both beginners and experienced plant enthusiasts.

The Role of Decolonization Strategies in Preventing Healthcare-Associated Infection (HAIs)

Professor. Sasheela Ponnampalavanar
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The Landscape of Healthcare-Associated Infections (HAIs)

The pathogenesis of HAIs involves complex interactions between the host, the pathogen, and the healthcare environment. Patients in hospitals, particularly those who are immunocompromised or undergoing invasive procedures, are at increased risk of acquiring infections.

Colonization refers to the presence of bacteria on the body without causing disease.In hospitals, patients can be colonized or infected with both multidrug-resistant organisms (MDROs) and non-MDRO pathogens. Patient secretions and excretions can contaminate their surroundings, including surfaces and medical equipment. These pathogens can then be transmitted to susceptible patients via direct contact (e.g., healthcare workers' hands) or indirect contact (e.g., contaminated surfaces or shared equipment) (Figure). MDRO patients and their environments are both a reservoir and a source of further transmission. Various studies have shown that patients with MDRO contaminate their environments (Lerner et al.,2023; Schechner et al., 2023; Chia et al., 2020). A systematic review published in the *Journal of Hospital Infection* (Gu et al., 2023) shows that the exposure of bed occupants to infedted or colonized MDROs significantly increases the risk of MDRO acquisition in subsequent bed occupants. The use of antimicrobials further complicates this dynamic by selecting for resistant organisms, altering the patient's microbiome and potentially facilitating the emergence of new MDROs.

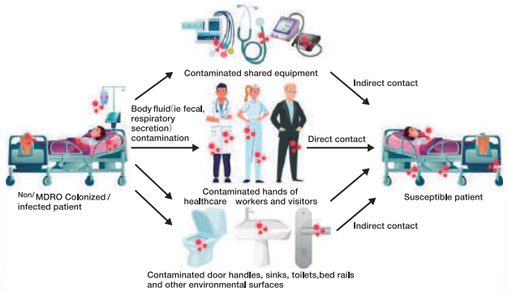

Figure. Modes of transmission of micro-organisms in hospitals

Once a patient is colonized with a pathogen, they are at increased risk of HAIs, which arise through two distinct pathways. *Endogenous infections* occur when an infection is caused by the patient's own colonizing organisms, which can include normal flora or organisms acquired during the hospital stay and become invasive under conducive conditions. For example, the cumulative incidence of infection after 30 days of colonization with vancomycin-resistant enterococci (VRE) was 8% and multidrug-resistant Gram-negative rods was 14% (Septimus & Schweizer, 2016). Patients who had nasal colonization with *Staphylococcus aureus* were 2–4 times more likely than others to develop an infection. (Honda et al., 2010). *Exogenous infections* result from pathogens introduced into the patient's body from the hospital environment, such as through contaminated devices, healthcare workers' hands, or surfaces.

Decolonization Strategies

Considering that colonized patients can act as reservoirs for the transmission of pathogens and are at an increased risk for infection, decolonization plays a significant role in infection prevention.

Decolonization refers to any intervention that eliminates detectable pathogen carriage from any site on the body. The primary goals of decolonization are to reduce the bioburden on body surfaces, thereby minimizing environmental contamination, subsequent transmission, and exogenous infections. Additionally, decolonization lowers the risk of endogenous infections, particularly in cases where skin integrity is compromised due to the use of medical devices (Edmiston et al., 2008; Rhee et al., 2018).

Universal decolonization (horizontal strategies) involves applying decolonization measures to all patients, especially in settings where co-colonization with multiple MDROs is common— such as in ICUs or among patients with medical devices in situ. This typically includes skin decolonization, with or without nasal decolonization.

Targeted decolonization (vertical strategies) involves active screening for specific pathogens followed by targeted interventions, such as skin decolonization and nasal decolonization for *S. aureus*.

Skin decolonization typically involves the use of antiseptics like chlorhexidine gluconate (CHG). The contact time of application is crucial for maximizing the reduction of microbial load and achieving successful decolonization. Nasal decolonization is commonly achieved using mupirocin ointment or povidone-iodine to eradicate the nasal passages.

Effectiveness of Decolonization in Infection Prevention

The efficacy of decolonization strategies varies depending on several factors, including the type of pathogen, the site of colonization, and the adherence to decolonization protocols.

Numerous studies have demonstrated the effectiveness of CHG bathing in reducing the incidence of HAIs, particularly in high-risk patient populations. A prospective, sequential-group, single-arm clinical trial in an ICU by Vernon et al. (2006) found that cleansing patients with chlorhexidine-saturated cloths reduced VRE contamination of patients' skin (2.5 log reduction), the environment (34% to 11%), and health care workers' hands (56% to 37%), in addition to decreasing patient acquisition of VRE (20% to 8%).

Systematic reviews have highlighted the efficacy of CHG bathing in reducing hospital-acquired bloodstream infections (HA-BSI), VRE carriage, and incidences of CLABSI, VAP, CAUTI, and SSI (Derde et al., 2014; Denny & Munro, 2016; Huang et al., 2016; Musuuza et al., 2019). Although there is little evidence in these reviews for the efficacy of CHG bathing against multidrug-resistant gram-negative bacteria (MDR GNB), quasi-experimental studies have shown significant reduction in MDR GNB colonization after CHG bathing, including carbapenem-resistant enterobacterales (CRE) and carbapenem resistant Acinetobacter baumani (CRAB) (Borer et al., 2007; Abboud et al., 2016; Apisarnthanarak et al., 2014a; Ruiz et al., 2017). Many of these studies were conducted in endemic settings, especially ICUs. Of note, the impact of decolonization in decreasing gram-negative multi-drug resistant organism (GN MDRO) was found to be greater if the hospital wards had higher rates at baseline and if other interventions were used concurrently, such as hand hygiene, environmental cleaning, contact precautions, and education (Ruiz et al., 2017; Gall et al., 2020).

With regard to whether universal or targeted decolonization is better, a cluster randomized controlled trial (RCT) (REDUCE MRSA Trial) in the United States found that routine universal decolonization in ICUs was more effective than targeted decolonization or screening and isolation in reducing rates of methicillin-resistant *S. aureus* (MRSA) clinical isolates (33% reduction) and bloodstream infection from any pathogen (44% reduction) (Huang et al., 2013).

The impact of decolonization is not well studied in patients outside of the ICU. The ABATE cluster RCT showed that, although decolonization with universal CHG bathing and targeted mupirocin for MRSA carriers did not significantly reduce multidrug-resistant organisms in non-critical-care patients, it was effective in reducing MRSA, VRE, and all-cause bloodstream infection in patients with medical devices (Huang et al., 2019).

Use of CHG also generates substantial cost savings for healthcare facilities. Dixon and Carver (2010) reported that, when compared to standard soap and water, the introduction of CHG bathing in a nine-bed surgical ICU led to a cost savings of $728,820 over a 17-month period.

Challenges and Considerations

One of the most significant challenges associated with decolonization is the potential for promoting antimicrobial resistance. In a study by Apisarnthanarak et al. at a Thai hospital, there was a correlation between CHG consumption and an increase in *Acinetobacter baumannii* chlorhexidine MIC, although it did not achieve the threshold for the emergence of chlorhexidine-resistant extensively drug-resistant (XDR) *A. baumannii* detection. Furthermore, the incidence of XDR *A. baumannii* did not increase across hospital units or specimen sources in this study (Apisarnthanarak et al., 2014b). In the United States, where CHG decolonization strategies have been implemented, MRSA isolates with increased MICs and/or qacA/B genes have seldom been reported (<1%) despite increasing CHG use (Babiker et al., 2021). Therefore, the concern about resistance should not hinder the use of CHG, especially given the substantial evidence supporting its effectiveness in preventing HAIs. However, it is essential to maintain ongoing and active surveillance for chlorhexidine-resistant pathogens in order to monitor and evaluate the potential emergence of resistance. This will ensure that decolonization strategies remain both effective and safe in preventing HAIs.

The effectiveness of decolonization relies on the correct application of CHG, particularly ensuring adequate contact time as well as strict adherence to established protocols. Without strict compliance, the benefits of decolonization efforts can be significantly diminished, highlighing the need for continuous training, education, and monitoring.

Conclusion

Decolonization plays a critical role in infection prevention, particularly in high-risk populations such as ICU patients, those with medical devices, or individuals colonized with MDROs. As the healthcare landscape continues to evolve, ongoing research and innovation are essential to refine decolonization strategies and optimize their effectiveness in preventing infections.

By integrating decolonization with other infection prevention measures, such as antimicrobial stewardship, environmental cleaning, and hand hygiene, healthcare facilities can create a comprehensive approach to reducing the burden of HAIs and controlling outbreaks, thereby safeguarding the health of both patients and healthcare workers.

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和訳要約

医療関連感染症（HAI）の予防における除菌戦略の役割

医療関連感染（HAI）の発生には、宿主、病原体、環境等が複合的に関連しています。患者の湿性生体物質による環境表面や医療機器等の汚染、特に多剤耐性菌患者やその周辺は、HAIの原因となりえます。病原微生物の感染経路を遮断するための介入を指す「除菌」は、HAIの減少に有効で、鼻腔や皮膚除菌などで微生物を除去します。

一例として、クロルヘキシジングルコン酸塩（CHG）清拭で、患者の皮膚、環境表面、医療従事者の手におけるVRE（バンコマイシン耐性腸球菌）汚染が減少したという研究結果があります。また、HA-BSI（医療関連血流感染症）、CLABSI（中心静脈ライン関連血流感染）、VAP（人工呼吸器関連肺炎）、SSI（手術部位感染）の抑制効果も報告されています。これらは、同時に他の介入（手指衛生、環境衛生など）があった際には、より効果が大きくなることも分かっています。また、CHGを適切に使用し、十分な接触時間を確保すること、継続的な教育やモニタリングも重要なポイントです。

【注】日本では、4%CHG製剤の適用は手指衛生のみで、それ以外の部位への適用は認められておりません

SARAYA Activity Report

SARAYA Supports Global Efforts for World Hand Hygiene Day

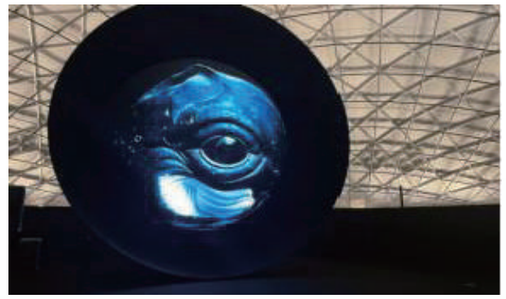
SARAYA proudly supports the global initiative of World Hand Hygiene Day and continues to engage in related activities across various countries. The slogan for 2025's campaign is: "It might be gloves, it's always hand hygiene." In line with this message, SARAYA has developed original posters, stickers, and file folders to promote the importance of proper hand hygiene and appropriate glove use, helping to support the daily efforts of healthcare workers.

Healthcare facilities around the world also held a variety of events on May 5 to mark the occasion. As a leading company in hand hygiene, SARAYA remains committed to supporting these initiatives and producing useful products and information to healthcare workers worldwide.

Posters from past campaigns are available for free download.
https://saraya.world/healthcare/pages/clean-your-hands-5-may/#downloads

SARAYA's Commitment to Combating Ocean Pollution at EXPO 2025

At Expo 2025 Osaka Kansai, as a company committed to environmental responsibility, SARAYA is supporting the BLUE OCEAN DOME, which serves as a powerful reminder of our collective role in protecting the ocean. The BLUE OCEAN DOME is a stunning, innovative structure consisting of three interconnected domes, each constructed using different sustainable materials and designed to provoke thought and inspire action. Unlike traditional buildings, these domes require no supporting pillars, symbolizing both structural and environmental ingenuity.



At SARAYA, we believe that solving environmental challenges requires collaboration. That's why we chose to support this project in partnership with ZERI JAPAN, an NPO dedicated to sustainability. We hope that visitors will leave with a lasting impression one that sparks reflection and inspires change in everyday actions to protect the ocean and its inhabitants.

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Improving Hand Hygiene Compliance in Infectious Disease Hospitals

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Hand hygiene is the basis for medical quality and an important part of patient safety. Specifically, ensuring and strengthening healthcare workers' implementation of hand hygiene can reduce the incidence of healthcare-associated infection significantly and support staff and patients' health and safety. Improving hand hygiene compliance with that goal requires comprehensive education and training measures, facility improvement, monitoring and feedback, and a culture of safety.

Definition of hand hygiene

Hand hygiene is the general term for hand washing and hygienic or surgical hand disinfection performed by healthcare workers during their professional activities. Hand washing is the process of rubbing and washing the hands with running water and hand soap to remove dirt, debris, and some microorganisms from the hands. Hygienic hand disinfection refers to rubbing the hands with disinfectant to reduce their transient flora, while in surgical hand disinfection, healthcare workers use running water and hand soap to rub and wash their hands, forearms, and the lower one-third of each of their upper arms before surgical operations, followed by hand disinfectant to remove or kill transient flora and reduce permanent bacteria in each of these locations. These processes are crucial to reduce the spread of pathogens and ensure the safety of patients and medical staff.

Importance of hand hygiene

Hand hygiene is irreplaceable in preventing and controlling healthcare-associated infections, as hands are one of the main organs of the human body and the main way for pathogens to spread. In clinical environments, healthcare workers frequently make contact with patients, their families, and other personnel, creating a risk of cross-contamination. In that context, hand hygiene reduces the number of pathogens carried on healthcare workers' hands, thereby lowering the risk of cross-contamination. Hand hygiene can also prevent the spread of pathogens in healthcare environments, reduce the incidence of infection in the field, and provide a simple, effective, convenient, and economical measure to prevent and control healthcare-associated infection. Its two-way effect not only protects patients but also staff, which improves the work efficiency and medical quality of healthcare.

(I) Hand hygiene is the first line of defence in preventing healthcare-associated infection: In hospital environments, pathogens can be easily transmitted through hand contact. Therefore, keeping hands clean is the first step in preventing healthcare-associated infection. Moreover, healthcare workers can effectively reduce the number of pathogens carried on their hands through standardised hand hygiene practices, thereby reducing the risk of cross-contamination.

(II) Hand hygiene compliance affects the effectiveness of healthcare-associated infection prevention: The degree to which staff follow the standards for hand hygiene has been shown to directly affect the incidence of healthcare-associated infection. When healthcare workers strictly adhere to hand hygiene standards, the incidence of infection will be significantly reduced. On the contrary, the risk of infection will increase if hand hygiene compliance is low.

(III) The quality of hand hygiene determines the level of hospital infection prevention and control: The quality of hand hygiene is based not only on its performance but also on its standardisation and effectiveness. Only by strictly following the standard hand hygiene practices can the cleanliness of hands be ensured, thereby achieving the purpose of preventing infection. Therefore, improving the quality of hand hygiene is an important measure to raise healthcare-associated infections' prevention and control.

(IV) Measures to improve hand hygiene compliance

1. Strengthening training and feedback
   ① Formulate training plans every year: The content of these plans should cover hand hygiene standards, such as the six-step hand washing method; the appropriate timing of hand hygiene (such as before and after touching a patient, before clean/aseptic procedures, etc.); and the significance of compliance and carrying out diversified training. Regularly hold hand hygiene knowledge lectures for all staff, including actual cases that illustrate the importance of hand hygiene, the correct hand hygiene methods, and their timing. Organise hand hygiene competitions every year, such as ones where staff develop hand hygiene slogans and practice videos. Publish a new hand hygiene computer desktop background on the hospital intranet each year and require its use on all computers. Play hand hygiene promotion videos on the wards to educate staff and patients.
   ② Strengthen the induction training for new workers: New employees must receive training and undergo a strict assessment by infection control professionals. Only those who pass the assessment can take up their posts.
   ③ Training and special education for different positions: Carry out targeted and strengthened training for different positions, such as doctors, nurses, administrative office staff, and logistics personnel. For example, for cleaning and security personnel who frequently come into contact with pollutants, a special emphasis should be placed on the key points of hand hygiene in environmental cleaning, to improve their knowledge and standardise their practices.

2. Optimising hand hygiene facilities and resource allocation
   ① Appropriate configuration of hand-washing facilities: Review the layout of hand-washing sinks and quick-drying hand disinfectant facilities (on wards, in consulting and treatment rooms, etc.), ensuring there is a sufficient quantity and that they are reasonably located. Set up non-touch dispensers in corridors and at ward doors to avoid reduced compliance due to time constraints or long distances. Provide warm water for hand washing and skin-protecting disinfectant gel in winter to reduce skin irritation.
   ② Convenient products: Induction faucets, high-quality hand soap, and disposable hand towels, among others, can improve convenience and the comfort of use.
   ③ Material support and financial support: The hospital must ensure a continuous supply of hand hygiene products (such as alcohol disinfectants and hand towels) to prevent departments from reducing their use due to cost concerns.

3. Establishing monitoring, management, and a feedback system
   ① Establish a monitoring team: These full-time staff from the infection control department and members of the infection control teams of each department should regularly check the implementation of hand hygiene according to the Rules for the Monitoring and Assessment of Hospital Infections.
   ② Scientific monitoring methods: Use direct observation, random sampling, bacteriological testing, and other such methods to monitor the implementation of hand hygiene before and after operations. Avoid formalism such as 'surprise hand washing' before sampling and instead emphasise dynamic monitoring in real scenarios.
   ③ Establish a feedback and reward and punishment system: Communicate the monitoring and inspection results to each department and record those in a ledger. Rectify existing problems, reward those who excel, and warn or punish those who don't follow the rules.

4. Create a hand hygiene culture atmosphere
   ① Leaders take the lead: Hospital leaders at all levels and department heads should take the lead in maintaining good hand hygiene, setting an example for all employees and demonstrating its importance.
   ② Multi-channel publicity: Popularise hand hygiene knowledge through the intranet Hospital Information System (HIS), promotional videos, and in-hospital bulletin boards and regularly organise themed activities (such as presentation or skill competitions) to enhance the sense of participation and increase the attention all employees pay to hand hygiene.
   ③ Team supervision and patient encouragement: Full-time staff from the infection control department and the clinical infection control team should nominate hand hygiene observers, who encourage colleagues to practice hand hygiene or remind them when they seem to forget it. Furthermore, disseminating hand hygiene knowledge to patients and their families can prompt them to encourage and supervise the hand hygiene behaviour of staff, creating a good atmosphere of joint participation.

5. Institutional guarantee and continuous improvement
   ① Leadership attention and policy support: The hospital should include hand hygiene as a priority for infection prevention and control, formulate a clear management system, and supervise the progress toward achieving hand hygiene through hospital infection management committee meetings.
   ② Long-term planning and iterative optimisation: Evaluate the effectiveness of the plan every quarter and gradually implement management with sustainable improvement.
   ③ Intervention to improve hand hygiene compliance can reduce healthcare-associated infection rates by 30%. Through the systematic implementation of the above measures, healthcare facilities can build a complete chain from 'enhanced awareness' to 'solidified behaviour' and ultimately achieve a long-term improvement in hand hygiene compliance.

Implementing hand hygiene is an important but considerable task, one with a long-term scope and requiring continuous maintenance. Only by introducing reasonable and effective measures, identifying accurate monitoring methods, conducting comprehensive and systematic evaluations, and insisting on continuous improvement can we gradually improve the quality of hand hygiene and thus guarantee the smooth development of work in the hospital.
Regardless of the monitoring method adopted, the ultimate goal is to improve the hand hygiene compliance rate through intervention. Only when a behaviour is transformed into a habit, and then elevated to a cultural concept, can compliance be improved. In this case, the cultural concept to be instilled among the staff is that everyone is an infection control practitioner.

日本語要約

手指衛生遵守率の改善について

手指衛生を適切に行うことは、医療の質を保つための基本的で重要なポイントです。また、医療関連感染を予防・抑制するための最も簡単、効果的、且つ便利で経済的な対策でもあります。手指衛生遵守率を改善するためには、次のような総合的対策を講じる必要があります。1.研修教育の強化、2.物品設備と資源配分の最適化、3.測定評価の仕組み、4.施設全体の雰囲気作り、5.制度策定。介入を通じて手指衛生遵守率を向上させることで、院内感染率を30%削減できます。上記の対策を体系的に実施することで「意識の向上」から「行動の定着」までの完全な流れを構築し、最終的に手指衛生遵守の長期的な改善に繋がります。それは施設全体の業務効率向上にも貢献するものです。

Nutrition Management for the Elderly

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Introduction

The progression of global aging stands as one of the most significant social transformations of the 21st century, exerting profound effects on healthcare and long-term care systems, economies and social security frameworks. According to United Nations estimates, [1] the global population ages 65 and up surpassed the number of children under age 5 for the first time in 2018. In 2022, the worldwide population of individuals ages 65 and up reached 771 million, approximately tripling the figure from 1980.

Projections indicate that this trend will continue, reaching 994 million by 2030 and 1.6 billion by 2050 (Figure 1). This acceleration in aging is not confined to high-income nations and also is occurring rapidly in low- and middle-income countries, necessitating comprehensive responses in nutrition, healthcare and welfare. Despite being a highly prevalent issue among older adults, malnutrition frequently has been underestimated, and implementation of appropriate screening and intervention strategies remains inadequate. Reports from the European Society for Clinical Nutrition and Metabolism (ESPEN)[2] indicate that less than 10% of community-dwelling older adults and up to two-thirds of hospitalised older patients are malnourished or at risk of malnutrition. Malnutrition is not merely a deficiency in nutrients, but also a critical health concern directly linked to diminished physical function, impaired immunity, sarcopenia, increased susceptibility to infections, pressure-ulcer development and elevated mortality risk (Figure 2). The recently proposed concept of oral frailty suggests that age-related decline in oral function influences the progression of systemic frailty and sarcopenia.

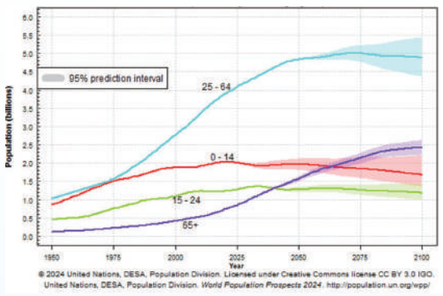

Figure 1. Trends and Projectionsof the World Population by Broad Age Groups

Adapted from 2024 United Nations, DESA, Population Division. World Population Prospects 2024. This line graph illustrates the historical trends and future projections of the global population from 1950 to 2100, categorised into four broad age groups: 0–14; 15–24; 25–64 and 65 and up. The data indicate that around 2018, the global population ages 65 and up surpassed the population ages 0–14 for the first time. The graph further projects a continued increase in the elderly population and a decline in the younger population in the coming decades.

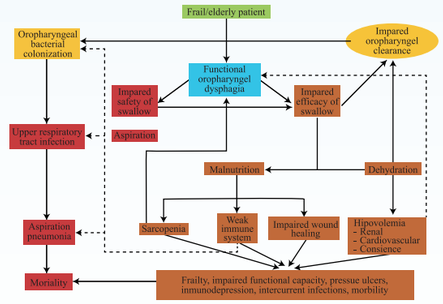

Figure 2. Proposed algorithm for management of oropharyngeal dysphagia in the elderly

Adapted from Rofes, L., Arreola, V., Almirall, J., Cabré, M., Campins, L., García-Peris, P., Speyer, R., & Clavé, P. (2011). Gastroenterology research and practice, 818979, Figure 2, Copyright © Hindawi Publishing Corporation (2011).

In frail or elderly patients, oropharyngeal bacterial colonisation, impaired oropharyngeal clearance and dysphagia can lead to decreased swallowing safety and efficiency, resulting in aspiration, malnutrition and dehydration. If these conditions persist, they potentially can lead to sarcopenia, a weakened immune system, delayed wound healing, hypotension (affecting the kidneys, cardiovascular system and consciousness) and ultimately, exacerbation of frailty, reduced functional capacity, pressure ulcers, opportunistic infections, increased morbidity and mortality.

Oral function and malnutrition in older adults

The decline in oral and swallowing function associated with aging is a significant contributor to malnutrition in older adults, representing a global public health challenge. A 2023 systematic review and meta-analysis[3] reported a global malnutrition prevalence of 18.6% in older adults, with the highest rates in the African region (35.7%), followed by the Americas (20.3%). Furthermore, the prevalence of malnutrition (32.5%) and the risk of malnutrition (46.8%) are notably high among older adults with dementia.[4] Deterioration of oral and swallowing function with age, often termed oral frailty,[5] entails a complex interplay involving reduced muscle strength, decreased tongue pressure, impaired masticatory ability and diminished salivary secretion, leading to decreased food intake and restricted dietary choices. This results in insufficient nutrient intake, contributing to reduced physical function, weakened immunity and overall deterioration in health status. The prevalence of oral frailty in older adults has been reported at 32%,[6] underscoring the importance of its prevention and management. Therefore, maintaining oral and swallowing function is an indispensable element in preventing malnutrition and extending healthy lifespan in older adults, necessitating early assessment and a comprehensive support system involving multidisciplinary collaboration.

Assessment methods

Standardised screening tools have been developed for early detection of malnutrition in older adults, with the following tools in particular used widely.

Nutritional status assessment

Mini Nutritional Assessment (MNA)
The MNA is a tool developed for rapid and comprehensive assessment of nutritional risk in older adults. It is simple and quick to administer, non-invasive and provides a holistic evaluation of nutritional status.[7] It comprises 18 items across four components: anthropometric assessment (weight, height, weight loss); general assessment (lifestyle, medication, mobility); dietary assessment (number of meals, food and fluid intake, independence in feeding) and self-assessment (self-perception of health and nutrition). Individuals are categorised into one of three groups: normal nutritional status; at risk of malnutrition or malnourished.

Global Leadership Initiative on Malnutrition (GLIM)
Criteria: In 2019, major global nutrition societies – including ESPEN, ASPEN, PENSA and JSPEN – collaborated to establish the Global Leadership Initiative on Malnutrition (GLIM) criteria.[8] These criteria provide a unified diagnostic framework for malnutrition, requiring fulfilment of criteria from two categories. In older adults, implementation of GLIM criteria is considered to improve diagnostic accuracy and the timing of interventions (Figure 3).

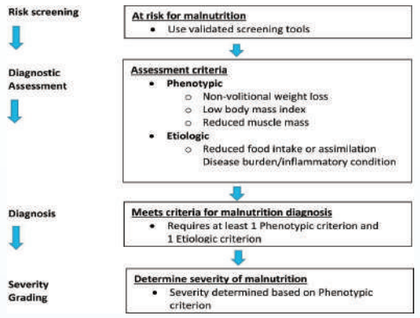

Figure 3. GLIM diagnostic scheme for screening, assessment, diagnosis and grading of malnutrition.

From Cederholm T. et al. (2019). GLIM criteria for the diagnosis of malnutrition – A consensus report from the global clinical nutrition community. Clinical Nutrition, 38(1–9). https://doi.org/10.1016/j.clnu.2018.08.002.

This illustrates the diagnostic process for malnutrition based on the GLIM criteria. A positive result in risk screening leads to the evaluation of phenotypic (weight loss, low BMI, reduced muscle mass) and etio logic (reduced food intake, malabsorption, disease burden/inflammation) factors . A diagnosis of malnutrition is made if at least one criterion from each category is met.

Swallowing function screening

Modified Water Swallowing Test (MWST)
The MWST is a safe and early method developed to screen swallowing function in acute patients and those suspected of severe dysphagia.[9] It involves having the patient swallow a small amount of water (3 ml) at once, while observing for signs of choking, coughing or wet vocal quality.

Eating Assessment Tool (EAT-10)
The EAT-10 is a self-administered questionnaire that scores 10 items related to subjective symptoms of swallowing difficulties. It assesses the extent to which patients experience problems with eating and swallowing, and their severity. A score of 3 or higher indicates a high probability of dysphagia.[10] In addition to screening for potential swallowing disorders, it also can be used to evaluate the effectiveness of interventions, such as swallowing training, over time.

Prevention and intervention strategies

Comprehensive interventions are essential for preventing and improving the decline in oral and swallowing function in older adults. First, regular oral care is known to reduce the risk of aspiration pneumonia,[11] and dental visits, denture management and thorough oral hygiene are recommended. Swallowing rehabilitation aims to improve swallowing function using strengthening exercises for swallowing muscles and compensatory swallowing techniques. In particular, adjusting food texture is crucial.

The International Dysphagia Diet Standardisation Initiative (IDDSI) provides a globally consistent classification and stepwise modification of solid foods and liquids, promoting appropriate dietary management for individuals with dysphagia.[12] Adjusting to appropriate food textures reduces the risk of aspiration and enables safe and efficient eating. Specifically, thickening liquids plays a vital role in controlling flow rate and ensuring safe pharyngeal transit. The concentration of thickening agents should be adjusted appropriately based on individual swallowing function, and caution should be exercised, as excessive thickening can increase the risk of aspiration and reduce intake motivation. Furthermore, use of oral nutritional supplements (ONS) is effective in reducing the risk of malnutrition (Figure 4).[13] Supporting these efforts requires collaboration among a multidisciplinary team, including physicians, dentists, speech-language pathologists, registered dietitians and nurses. Furthermore, social support measures, such as communal dining and meal assistance programmes, are important strategies to prevent social isolation.

Figure 4. The IDDSI Framework (the Standard)

Adapted from © The International Dysphagia Diet Standardisation Initiative 2019 @ https://iddsi.org/. Licensed under the Creative Commons Attribution Sharealike 4.0 License https://creativecommons.org/licenses/by-sa/4.0/legalcode. Derivative works extending beyond language translation are NOT PERMITED.

The IDDSI framework comprises a continuum of eight levels (0 - 7), in which drinks are measured from Levels 0–4, while foods are measured from Levels 3–7. The IDDSI framework provides a common terminology to describe food textures and drink thickness.

Optimisation of food texture

Older adults with dysphagia often require more time and effort for eating compared with those consuming a regular diet, consequently increasing the risk of reduced food intake. Texture-modified diets (TMDs) are dietary interventions that alter food hardness, adhesiveness, cohesiveness and particle size to mitigate the risks of aspiration and choking. However, inappropriate selection of food texture has been reported to not only decrease safety, but also lead to insufficient nutrient intake, thereby increasing the risk of malnutrition.[14] In particular, choosing foods that are too hard for adequate chewing and swallowing, or conversely, excessively soft foods with low nutrient density, can result in decreased intake of energy and macronutrients. Furthermore, alterations in food texture have been reported to decrease mealtime satisfaction.[15] Meals are not merely a means of nutritional sustenance, but also impact quality of life (QOL) significantly. Diminished mealtime satisfaction can decrease patients' motivation, potentially initiating a negative cycle of further reduced food intake. Therefore, in addition to selecting an appropriate food texture tailored to the patient's swallowing function, it is crucial to consider nutritional aspects and devise strategies that preserve enjoyment of eating as much as possible.

Future perspectives and challenges

Addressing malnutrition and impaired swallowing function in older adults necessitates introduction of new technologies and social systems. In recent years, the use of artificial intelligence (AI) for swallowing function screening and remote swallowing rehabilitation (telerehabilitation) have attracted attention, with the potential to expand support for home-dwelling older adults. Furthermore, the World Health Organisation's Integrated Care for Older People (ICOPE) guidelines advocate for integration of nutritional, oral and swallowing management into community-based integrated care systems.[16] Particularly in low-resource settings, widespread adoption of simple and low-cost assessment tools and development of support systems involving community residents are needed urgently. Moreover, development of intervention strategies that are sensitive to multicultural contexts is indispensable, requiring provision of individualised nutritional support while respecting diverse food cultures and values. Construction of new models for nutritional management in older adults, thereby integrating scientific evidence with digital technologies and social collaboration, is essential.

Conclusion

As the global population continues to age, malnutrition and related health issues in older adults are becoming increasingly significant public health challenges. Addressing these problems requires more than simply improving nutritional intake; it necessitates integration of comprehensive assessment and intervention to integrate oral and swallowing function into healthcare and long-term care systems. Maintaining oral and swallowing function is not merely about survival, but is the 'key' to enabling older adults to maintain their dignity, live independently and enhance their quality of life.

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SARAYA

Thickening adjuster for Dysphagia

Thickening control food by simply mixing it into drinks or mixer meals.

SARAYA Thickener feature
- Does not change the flavor.
- Does not make a form lumps.
- Thickens both cold and hot food.

TOROMI MEIJIN
- Does not spoil the flavor.
- Recommended for tea and mixer meal.

TOROMI MEIJIN
Multi Quick
- The same amount used for any food.
- Recommended for milk and enteral nutrition.

Instant jelly mix, no heating and no cooling

Instant Jelly Powder
Simply mix with your favorite beverage to make jelly.

How to make jelly

* Does not solidify at high temperatures.
* Some beverages do not turn into jelly at room temperature, such as milk, lactic acid beverages adjusted cocoa,100% vegetable and fruit juice drinks, soy milk, and concentrated liquid foods.

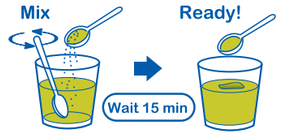
Ready to make when you need it

Instant Jelly Powder Green Tea
Just dissolve quickly in water or hot water and mix. Instant tea jelly that requires no heating or cooling.

Ready for emergencies

In addition to daily rehydration, it can be made quickly and safely when dehydration is suspected due to fever, diarrhea, or vomiting.

Easy to make!



Can make jelly with any ingredients

Jelly Master Neo
Jelly meals with easy preparation
- Enzyme formula makes porridge and potatoes non-sticky.
- Can be served warm because it does not dissolve at temperatures up to 60℃.

Nutritional supplement for those who are eating less

Protein Master
- Provides protein, vitamins, and minerals that are often lacking.
- Recommended for porridge.

practical resources

The Importance of PPE in Oral Care Procedures

The oral cavity contains many pathogenic microorganisms, such as *Candida Staphylococcus aureus*, and *Pseudomonas aeruginosa*.[1] During oral care procedures, there is a risk of splashing moist biological substances such as saliva and blood. Therefore, adherence to standard precautions is essential.

Investigation of Splash Dispersion of Cleaning Solution During Oral Care[2]

Method

<ATP Measurement Method>
ATP was measured before and after oral care by swabbing the nurse's wrist, face shield, and apron surface with a dedicated swab.
The amount of ATP collected was quantified as RLU (Relative Light Units).

What is the ATP Measurement Method?
Adenosine triphosphate (ATP) is a chemical compound found in all living organisms.
It serves as an energy source for vital biological activities and is present in biological substances such as blood and bodily fluids.
The ATP measurement method utilizes a luminescent reaction between ATP and an enzyme called luciferase to measure the relative light units (RLU).
A higher amount of ATP results in stronger luminescence (higher RLU values), which is interpreted as a higher level of contamination by biological substances such as blood or bodily fluids.

Result
- RLU values significantly increased after oral care on all measured surfaces: the wrist, face shield, and apron.

Subject	Before Oral Care (Mean Value)	After Oral Care (Mean Value)	p value
Wrist	636.21	836.16	0.0003***
Face shield	9.96	70.42	0.0076**
Apron	10.22	354.58	0.0027**

Unit: RLU $^{**}p<.01$ $^{***}p<.001$

- Higher RLU values were observed when oral care involved the use of a toothbrush, sponge brush, suctioning, head elevation, and care lasting more than 5 minutes.
- Oral bleeding was confirmed in 40 out of 106 oral care sessions.

Sites with a significant increase in RLU after Oral Care

Due to factors such as brushing, suctioning, and the elevated head position during oral care, moist biological substances such as saliva and blood may be dispersed not only to the eyes and mouth but also onto clothing. Therefore, it is necessary to **wear gloves, masks, eye protection, and aprons/gowns** during oral care procedures[2-4].
- Gloves and aprons/gowns should be changed for each care recipient. Since eye protection and masks do not come into direct contact with the care recipient, they should be replaced whenever contamination is observed[3].
- Gloves must be worn when cleaning oral care instruments after use[4].

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SARAYA

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Alsoft Hand Cream C
Alsoft Hand Cream P
Alsoft Hand Cream R

A complete hand care range to protect, care for and regenerate your hands.

1- Care
2- Protect
3- Repair

Alsoft

Alsoft Hand Cream C | Alsoft Hand Cream P | Alsoft Hand Cream R

Without fragrances, colorants, paraffins and preservatives

Product Features

A complete range of hand creams for daily hand care to prevent and improve skin damage caused , by the frequent use of disinfectants and cleaning agents.

- Nourishes and moisturizes the skin.
- Quickly absorbed without leaving any residue.
- Dermatologically tested.
- Suitable for use in the food industry.

Storage

Keep in the original package in temperature 15-25 C°.

Physical and Chemical Properties

Fragrance free, milky-white lotion.

Alsoft Hand Cream C — Daily Care for your Skin

- Nourishes and moisturizes the skin.
- Supports the elasticity of the skin.
- Absorbs quickly and leaves no greasy film.

Application:

Apply a small amount to the hands several times a day.

Alsoft Hand Cream P — Protecting Hand Cream

- Protects the skin and strengthens the natural skin barrier.
- Reduce skin dryness.
- Visibly improves damaged skin.
- Reduce nail brittleness and cuticle dryness.

Application:

Apply before starting work and after washing your hands with soap, approximately every 4 hours.

Alsoft Hand Cream R — Regenerates and Repairs the Skin

- Regenerates, nourishes, moisturizes and repairs the skin.
- Leaves hands feeling soft and smooth.
- Leaves the skin feeling smooth and soothed.
- Absorbs quickly without leaving any residue on the skin.

Application:

Apply to the hands several times a day.

	Alsoft Hand Cream C			Alsoft Hand Cream P			Alsoft Hand Cream R		
Product									
Article Number	27010	27030	27050	25010	25030	25050	26010	26030	26050
Content	75 ml Tube	300 ml Bottle with pump	500 ml Bottle with pump	75 ml Tube	300 ml Bottle with pump	500 ml Euro bottle	75 ml Tube	300 ml Bottle with pump	500 ml Euro bottle

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