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Short Textbooks for Nursing Education - Focus on Elderly Care

Theo Ahrens

Hygiene and Infection Control in Elderly Care

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Bibliographic Information

Theo Ahrens – Short Biography

Theo Ahrens, born in 1979 near Munich, is a vocational training teacher for nursing professions and a dedicated nursing educator. After a voluntary social year in a hospital, he completed training as a health and nursing professional, gaining valuable work experience in the intensive care unit. Driven by his desire to share knowledge, he studied nursing education and began teaching at a vocational school in Munich in 2009. Theo is known for his practical and empathetic teaching, preparing future nurses for their demanding profession. Privately, he lives with his wife and two children in Berlin and volunteers to improve conditions in nursing education.

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Table of Contents

1 Introduction 4	
1.1 Objectives of This Concise Textbook 4	
1.2 Importance of Hygiene in Elderly Care 4	
1.3 Role of Nurses in Infection Control 5	
2 Fundamentals of Hygiene 6	
2.1 Definition and Goals of Hygiene 6	
2.2 Types of Hygiene 6	
2.3 Legal Foundations of Hygiene 7	
2.4 Role of the Robert Koch Institute (RKI) in the Field of Hygiene and Infection Control 8	
3 Microbiological Basics 9	
3.1 Bacteria, Viruses, Fungi, and Parasites – Characteristics and Differences 9	
3.2 Transmission Routes of Pathogens 9	
3.3 Chain of Infection 10	
3.4 Difference between Infection, Colonization, and Contamination 11	
4 Infectious Diseases in Elderly Care 12	
4.1 Common Colds and Influenza 12	
4.2 Noroviruses and Gastrointestinal Infections 12	
4.3 Pneumonia and Preventive Measures 13	
4.4 MRSA, VRE, and Multidrug-Resistant Pathogens 14	
4.5 Tuberculosis (TB) and Preventive Measures 15	
4.6 Covid-19 (SARS-CoV-2) – Specific Protective Measures and Vaccinations 16	
5 Personal Hygiene of Caregivers 18	
5.1 Importance of Personal Hygiene 18	
5.2 Hand Hygiene 18	
5.3 Personal Protective Equipment (PPE) – Protective Clothing, Masks, Gloves, Safety Goggles 19	
5.4 Importance of Skin Care and Prevention of Skin Diseases for Caregivers 20	
6 Hand Hygiene – The Most Important Measure in Infection Control 22	
6.1 Importance of Hand Hygiene in Preventing Infections 22	
6.2 5 Moments of Hand Hygiene 22	
6.3 Handwashing vs. Hand Disinfection – Differences and Areas of Application 23	
6.4 Practical Guide to Proper Hand Disinfection 24	
7 Handling Personal Protective Equipment (PPE) 26	
7.1 Definition and Importance of Personal Protective Equipment (PPE) 26	
7.2 Types of PPE 26	
7.3 Putting on and Taking off PPE 27	
7.4 Disposal of PPE 28	
8 Cleaning, Disinfection and Sterilization 29	
8.1 Differences between Cleaning, Disinfection, and Sterilization 29	
8.2 Disinfection Methods 29	
8.3 Sterilization Procedures 30	
8.4 Application of Disinfectants 31	
9 Hygiene Measures in Daily Nursing Routine 32	
9.1 Hygiene Measures in Personal Care 32	
9.2 Wound Care Hygiene 32	
9.3 Hygiene Measures for Injection and Medication Administration 33	
9.4 Hygiene Measures When Serving Food and Drink 34	
10 Room and Environmental Hygiene in Care Facilities 36	
10.1 Importance of Environmental Hygiene for Infection Prevention 36	
10.2 Cleaning and Disinfection Plans 36	
10.3 Handling of Textiles and Laundry 37	
10.4 Waste Disposal 38	
11 Infection Prevention in Special Care Activities 39	
11.1 Managing Catheterized Patients 39	
11.2 Hygiene in Enteral and Parenteral Nutrition 40	
11.3 Hygiene in the Care of People with Infectious Diseases 41	
11.4 Measures for Preventing Pneumonia 42	
12 Isolation Measures and Protective Isolation 43	
12.1 Indications for Isolation 43	
12.2 Types of Isolation 43	
12.3 Implementation of Isolation 44	
12.4 Role of Caregivers in Isolation 45	
13 Documentation and Reporting in the Field of Hygiene 47	
13.1 Importance of Documentation in the Field of Hygiene 47	
13.2 Documentation of Disinfection Measures 47	
13.3 Reporting Outbreaks of Infections 48	
13.4 Reporting and Handover of Hygiene-Relevant Information 49	
14 Ethical and Legal Aspects of Hygiene and Infection Protection 51	
14.1 Right of Self-Determination of Residents and Coercive Measures for Hygiene 51	
14.2 Legal Regulations 52	
14.3 Responsibility of Caregivers in Complying with Hygiene Regulations 52	
14.4 Dealing with Ethical Conflicts in the Field of Hygiene and Infection Protection 53	
15 Roles and Responsibilities in Hygiene Management 55	
15.1 Role of the Hygiene Officer in the Care Facility 55	
15.2 Responsibility of Nursing Staff for the Implementation of Hygiene Measures 55	
15.3 Importance of Teamwork for Implementing Hygiene Standards 56	
15.4 Collaboration with External Hygiene Experts 57	
16 Training and Continuing Education in Hygiene 58	
16.1 Importance of Training and Continuing Education on Hygiene Measures 58	
16.2 Contents of Hygiene Training 58	
16.3 Training Formats 59	
16.4 Significance of Training in Quality Assurance 60	
17 Case Studies and Practical Applications 61	
17.1 Case Study: Dealing with a Resident with MRSA 61	
17.2 Case Study: Measures in Response to a Norovirus Outbreak in a Care Facility 62	
17.3 Case Study: Performing Surface Disinfection Following an Outbreak of Infection 63	
17.4 Reflection on Nursing Practice Based on Case Studies 64	

1 Introduction

1.1 Objectives of This Concise Textbook

This concise textbook aims to provide aspiring geriatric nurses with a solid foundation in hygiene and infection control, thereby contributing to the enhancement of care quality. It seeks to develop a practical understanding of the necessary daily hygiene measures and highlight their importance for both residents and caregivers.

It offers both theoretical foundations and detailed guidelines for implementation in daily care practice. Relevant topics such as personal hygiene, environmental hygiene, infection prevention, and the handling of personal protective equipment are prepared in a practical manner.

Furthermore, the textbook promotes an awareness of the legal and ethical aspects of hygiene practice. Another focus is on imparting knowledge about specific infectious diseases and their prevention through targeted measures.

The training and continuing education content in the field of hygiene is intended to ensure the continuous development of care staff. This knowledge supports caregivers in making responsible decisions and actively contributing to the health and safety of residents.

Ultimately, the book is intended to serve as a reliable resource to make the professional routine safer and more effective and to improve the quality of care in all areas.

1.2 Importance of Hygiene in Elderly Care

Hygiene plays a central role in elderly care because older people are more susceptible to infections due to their weaker immune systems. A wide range of pathogens, including bacteria, viruses, fungi, and parasites, can spread within care facilities, increasing the risk of outbreaks.

Adhering to strict hygiene measures protects not only the residents but also the caregivers from communicable diseases. Infections in care facilities can have serious consequences, such as extended hospital stays, increased morbidity, and, in the worst case, mortality.

Effective infection control begins with the personal hygiene of caregivers and includes the consistent use of hand disinfection and wearing personal protective equipment. Environmental hygiene, such as regular cleaning and disinfection of premises, is also crucial to eliminating sources of pathogens.

Hygiene is not only a preventive measure but also contributes to the promotion of residents' well-being and quality of life. It ensures that residents can live in a clean, safe, and dignified environment.

In addition to physical protection, hygiene also ensures social security. Residents and their families gain trust in the quality of care through adherence to hygiene standards. These standards also enhance the professional and sense of responsibility among caregivers.

Overall, the importance of hygiene significantly contributes to the safety and quality of elderly care and is an indispensable tool for safeguarding the health of all those involved in the care facility.

1.3 Role of Nurses in Infection Control

Caregivers as key players in infection control

Caregivers are central actors in infection control. They are responsible for the implementation and monitoring of hygiene measures in daily care routines. In this role, they act as role models and multipliers. Their behavior influences the hygiene practices of all staff in a care facility.

The daily practice begins with the thorough implementation of hand hygiene. Understanding and applying the five moments of hand hygiene are crucial. Caregivers must ensure that protective clothing is used and disposed of correctly. This minimizes the spread of potentially dangerous pathogens.

Caregivers are also responsible for conducting training and raising awareness of hygiene standards. Through continuous education, they keep their knowledge of hygiene up to date. They must be able to identify potential hazards and reduce infection risks through appropriate preventive measures.

Documentation of hygiene measures, such as disinfection cycles, is essential to demonstrate compliance with standards. Comprehensive documentation also supports traceability in the event of infection outbreaks.

Caregivers are in direct communication with hygiene officers and cooperate in the development of hygiene concepts and guidelines. They contribute to decision-making in care by sharing their practical experiences and expertise from their daily work.

Finally, caregivers are crucially responsible for ensuring that residents and relatives understand the importance of hygiene. They inform and educate in order to implement infection prevention measures together. Protecting the health of residents is always at the center of their actions.

2 Fundamentals of Hygiene

2.1 Definition and Goals of Hygiene

Hygiene refers to measures for the prevention of diseases, particularly to avoid infections. The focus is on protecting vulnerable groups, such as the elderly, by limiting the spread of pathogens. In elder care, hygiene measures are essential not only for the health of residents but also for the caregiving staff.

Central goals of hygiene are ensuring cleanliness and preventing infectious diseases. Through targeted measures, the risk of transmission of pathogens is reduced. This includes adhering to personal hygiene standards, using protective equipment, and correctly cleaning and disinfecting surfaces and objects.

Hygiene follows preventive and reactive approaches: Preventively, outbreaks should be avoided through continuous application of hygiene measures. Reactively, hygiene involves containment and treatment when infections occur. In the long term, optimal hygiene serves to enhance the quality of life for the elderly and reduce sick leave among staff.

In elder care, adherence to specific hygiene standards is crucial. These standards protect not only against everyday infections but also severe ones, such as those caused by multi-resistant pathogens. In addition to these measures, raising awareness and training for caregivers are essential to ensure that current and effective hygiene measures are maintained and continuously adapted.

2.2 Types of Hygiene

Hygiene encompasses various areas, each requiring specific measures. In elderly care, personal, social, institutional, and environmental hygiene play a central role.

Personal Hygiene focuses on self-care and cleanliness of both caregivers and residents. This includes regular hand hygiene, careful personal care, and the use of personal protective equipment. These measures protect both caregivers and residents from the transmission of pathogens.

Social Hygiene pertains to cohabitation and interaction within the care facility. It promotes measures that protect health in communities, such as avoiding close contact during infectious illnesses and observing etiquette when coughing or sneezing. Information campaigns and training strengthen the understanding and acceptance of these measures.

Institutional Hygiene refers to systematic measures within care facilities. It involves the establishment and enforcement of hygiene guidelines, which must be regularly updated. This includes cleaning and disinfection plans, staff training, and monitoring compliance with hygiene standards.

Environmental Hygiene focuses on the cleanliness and maintenance of the physical environment of care facilities. This includes regular cleaning and disinfection of surfaces and equipment as well as proper waste disposal. A well-maintained physical environment reduces the spread of pathogens and creates a safe environment for both residents and the care staff.

These various types of hygiene are interconnected and require a holistic approach to be effectively implemented. Only through coordinated application can they optimally contribute to infection prevention and the protection of all parties involved in elderly care.

2.3 Legal Foundations of Hygiene

The Infection Protection Act (IfSG) forms the basis for all hygiene measures in elderly care. It aims to prevent communicable diseases in humans and to stop their further spread. For care facilities, § 36 IfSG is particularly important as it outlines specific requirements for community facilities to ensure an adequate level of hygiene.

The hygiene regulations of the federal states specify the general provisions of the IfSG. These state regulations detail the measures to ensure hygiene in care facilities. They obligate the facilities to create a hygiene plan that includes measures for infection prevention and management. The hygiene plan must be regularly reviewed and adjusted to current scientific standards.

Caregivers are required to implement the standards set out in the IfSG and in the hygiene regulations. This also includes participating in regular training and continuing education to stay informed about current hygiene-related developments and measures. Facilities must ensure that all employees are thoroughly informed about applicable hygiene guidelines and apply them in practice.

Furthermore, the legal foundations stipulate that upon the admission of new residents, precise hygiene instructions must take place to ensure the individually required infection protection measures. In the event of a notifiable infection, an immediate report to the health department is mandatory to enable the rapid containment of potential outbreaks.

Failure to comply with legal hygiene standards can have legal consequences. Violations of the IfSG or hygiene regulations are penalized as administrative offenses and can result in fines. Therefore, precise knowledge of the legal provisions is indispensable for every caregiver.

2.4 Role of the Robert Koch Institute (RKI) in the Field of Hygiene and Infection Control

The Robert Koch Institute (RKI) plays a central role in the field of hygiene and infection control in elderly care. As the central institution of the federal government for disease monitoring and prevention, the RKI develops recommendations and guidelines to control and minimize the spread of infectious diseases.

One of the main tasks of the RKI is to develop and update hygiene guidelines. These guidelines are based on current scientific knowledge and serve as the foundation for creating hygiene plans in care facilities. They cover various aspects of infection control, including hand hygiene, disinfection measures, and the use of personal protective equipment.

In the area of surveillance, the RKI monitors the epidemiological status of infectious diseases. This is done by collecting, analyzing, and evaluating relevant data. The insights gained help to identify current infection risks and enable targeted measures to prevent the spread of pathogens in everyday care.

The RKI works closely with health offices and other public health services to quickly identify and contain outbreaks. When a notifiable infectious disease occurs in a care facility, the RKI provides expertise and support to implement effective control measures.

Training and informational materials from the RKI are important resources for nursing staff. These materials raise awareness of existing risks and provide practical recommendations. They contribute to the continuous education of care personnel and support the correct implementation of hygiene measures in daily practice.

Additionally, the RKI promotes research in the area of infection control and hygiene. Scientific studies generate new insights that lead to the improvement of hygiene standards. These research findings are incorporated into the RKI's recommendations, ensuring that measures are based on the latest scientific evidence.

Overall, the RKI ensures that care facilities have the necessary information and tools to guarantee effective infection prevention. It serves as an important interface between science, health policy, and nursing practice, to protect the health of both residents and care staff in the long term.

3 Microbiological Basics

3.1 Bacteria, Viruses, Fungi, and Parasites – Characteristics and Differences

Bacteria are single-celled microorganisms that are prokaryotic, meaning they lack a nucleus. They reproduce by cell division and can survive and grow independently. Many bacteria are harmless or beneficial, but some can cause diseases. Antibiotics can be effective against bacterial infections by blocking growth or killing bacteria.

Viruses are much smaller than bacteria and consist of genetic material, either DNA or RNA, surrounded by a protein coat. They are obligate parasites, meaning they require a host cell for replication. Viruses invade cells and use the cellular machinery to replicate, often at the expense of the host cell. Antiviral medications exist, but their development is more challenging than that of antibiotics.

Fungi are eukaryotic organisms that can be unicellular like yeasts or multicellular like molds. They have a nucleus and reproduce by forming spores or budding. Fungi can cause both opportunistic infections in immunocompromised individuals and superficial infections like skin and nail fungus. Antifungal treatments are used for management.

Parasites are organisms that live at the expense of a host and can be unicellular like protozoa or multicellular like worms. They often target the human body to obtain nutrients, which can cause diseases. Treatments for parasitic infections often involve antiparasitic agents specifically targeted to the type of parasite.

Key differences exist in the cell structure, replication, and treatment possibilities of the various pathogen types. Bacteria are more complex with structures like cell walls; viruses are simpler and require a host; fungi and parasites are varying complex eukaryotes with specific life cycles and defense mechanisms. Understanding these differences determines the strategies for infection prevention and treatment in elderly care and is crucial for effective infection control.

3.2 Transmission Routes of Pathogens

Pathogens can be transmitted in various ways. Fundamentally, direct and indirect transmission routes are distinguished.

Direct transmission occurs directly from an infected individual to another. Examples include:

- **Contact transmission:** Infections through touch or skin contact, such as with herpes simplex or scabies.
- **Droplet infection:** Pathogens are transferred through saliva droplets to the mucous membranes of others by coughing, sneezing, or speaking, as in the case of influenza or Covid-19.

Indirect transmission occurs via contaminated intermediaries:

- **Fomites:** Objects or surfaces that have come into contact with infectious material can transfer pathogens. Typical examples are door handles or bed linens.
- **Vectors:** Insects or animals that transport pathogens from one host to another. An example is malaria transmission through mosquitoes.

Aerosols play a special role in transmission. They are fine particles that remain airborne for a longer time and can be inhaled over greater distances. This is relevant for diseases such as tuberculosis or measles.

Understanding these transmission routes is essential for developing effective hygiene measures in elderly care to prevent infections and protect the health of residents and care staff.

3.3 Chain of Infection

Chains of Infection

Chains of infection describe the path of a pathogen from the source, through a transmission route, to the recipient. To prevent infections, at least one link in this chain must be interrupted.

The **source of infection** represents the origin of the pathogen. This can include infected people, animals, or contaminated objects and materials. Simple examples are infected residents in care facilities or contaminated medical devices.

The **transmission route** is the path by which the pathogen travels from the source of infection to the recipient. There are direct transmissions, such as direct contact when caring for a resident, as well as indirect transmissions through contaminated objects or air, such as via aerosols.

The **recipient** is the person who can become infected. In care facilities, these are mainly the residents, who often have weakened immune systems due to age or pre-existing conditions and are therefore particularly susceptible to infections.

Effective hygiene measures in elderly care aim to interrupt the chain of infection. Important measures include surface disinfection, adherence to hand hygiene, and the use of personal protective equipment. Training care staff to recognize and implement necessary measures also contributes to breaking the chain of infection, thereby minimizing the risk of infection spread. Any strategic intervention that specifically neutralizes the source of infection, disrupts the transmission route, or protects the recipient significantly reduces the likelihood of infection spread.

7 This is just a preview

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