Personel ve Eğitimizin Etkisi

Demet Aydın
How Infections Spread

Germs are a part of everyday life and are found in our air, soil, water, and in and on our bodies. Some germs are helpful, others are harmful. Many germs live in and on our bodies without causing harm and some even help us to stay healthy. Only a small portion of germs are known to cause infection.

How Do Infections Occur?

An infection occurs when germs enter the body, increase in number, and cause a reaction of the body.

Three things are necessary for an infection to occur:

- **Source**: Places where infectious agents (germs) live (e.g., sinks, surfaces, human skin)
- **Susceptible Person**: With a way for germs to enter the body
- **Transmission**: A way germs are moved to the susceptible person
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Source

A Source is an infectious agent or germ and refers to a virus, bacteria, or other microbe.

In healthcare settings, germs are found in many places. People are one source of germs including:

- Patients
- Healthcare workers
- Visitors and household members
Infection Prevention and Control Training for Healthcare Professionals

Healthcare professionals (HCPs) are the first line of defense against healthcare-associated infections (HAI) and the cross-transmission of germs in healthcare settings. These trainings will empower HCPs to better identify and mitigate HAI risks and occupational exposures.

Let’s Talk Patient Safety: Reducing HAI Transmission Risk

- **Module 1: “What's the Risk?”**
  In this interactive scenario, HCPs must identify infection risks and take action to protect patients, colleagues, and visitors.

- **Module 2: “Chain of Infection”**
  This story-based interactive module challenges professionals to break the chain of infection in a busy healthcare environment and educates them on the consequences of not following infection prevention and control recommendations.

**Topic:** Infection prevention and control in healthcare

**Audience:** administrators, advanced practice nurses, licensed practical/vocational nurses, medical assistants, other health educators, registered nurses, and any healthcare professionals involved in patient care

**CE:** CNE, CEU

**Course link:** [Let's Talk Patient Safety: Reducing HAI Transmission Risk](#)
CME from CDC: What You Need to Know About Infection Control

Each year in the U.S., at least 2.8 million people get an antibiotic-resistant infection, and more than 35,000 people die. It's critical that all healthcare workers understand proper infection control procedures and use them every day.

Although healthcare facilities and infection control experts have made significant progress in preventing some types of infections, there is still a great deal of work to do.

CDC and Medscape have launched a series of six CME/CE activities addressing the key issues surrounding infection prevention in healthcare facilities. These courses feature discussions with CDC and external experts in infection prevention.

The series includes:

1. Risk Recognition in Healthcare Settings [Available Now]
2. Environmental Services and Infection Prevention [Available Now]
3. Recognizing Infection Risks in Medical Equipment [Available Now]
4. Infection Transmission Risks Associated with Nonsterile Glove Use [Available Now]

Target audience:

- Primary care physicians
- Public health and preventive medicine specialists
- Emergency medicine physicians
- Pharmacists
- Nurses

FREE CME/CE Infection Prevention and Control Series
CDC/STRIVE Infection Control Training

States Targeting Reduction in Infections via Engagement (STRIVE)

Courses

- Foundational Infection Prevention (IP) Strategies
  - Competency-based Training, Audits and Feedback – WB4220
  - Hand Hygiene – WB4221
  - Strategies for Preventing HAIs – WB4223
  - Environmental Cleaning – WB4224
  - Personal Protective Equipment – WB4225
  - Patient and Family Engagement – WB4226
  - Building a Business Case for Infection Prevention – WB4227

- Targeted Prevention Strategies
  - Catheter-Associated Urinary Tract Infection (CAUTI) – WB4222
  - MRSA Bacteremia - WB4228
  - Central Line-Associated Blood Stream Infection (CLABSI) – WB4229
  - *C. difficile* Infection (CDI) – WB4230

The CDC/STRIVE curriculum was developed by national infection prevention experts led by the Health Research & Educational Trust (HRET) for CDC.

Courses address both the technical and foundational elements of healthcare-associated infection (HAI) prevention.

Courses can be taken in any order. Each course has 1 or more modules.
CDC/STRIVE Infection Control Training

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Edit [February 2017]

**Edit:** These recommendations contain minor edits in order to clarify the meaning. The edits do not constitute any change to the intent of the recommendations.

* Indicates a change to the numbering system.
~ Indicates a text change.

<table>
<thead>
<tr>
<th>#</th>
<th>Recommendation</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>C.II.A.</td>
<td>Establish a multidisciplinary team that includes infection-control staff to coordinate demolition, construction, and renovation projects and consider proactive preventive measures at the inception; produce and maintain summary statements of the team’s activities. (AIA: 5.1)</td>
<td>IB, IC</td>
</tr>
<tr>
<td>C.II.B.</td>
<td>Educate both the construction team and the health-care staff in immunocompromised patient-care areas regarding the airborne infection risks associated with construction projects, dispersal of fungal spores during such activities, and methods to control the dissemination of fungal spores.</td>
<td>IB</td>
</tr>
</tbody>
</table>
Program Overview

Are you an RN wishing to expand your current skill set and knowledge base, enabling you to provide care for patients with complex multisytem health issues? Do you thrive in a high-intensity environment and desire to be a part of a multidisciplinary team that seamlessly blends knowledge and technology, all while delivering holistic, evidence-based patient care? If so, a career in critical care nursing might be the path for you.

The program integrates information through a step-by-step approach, building on a comprehensive knowledge base. Through online classes, skills labs, simulation experience and clinical practicums, you’ll broaden your knowledge and skills in:

- What it means to work in critical care and concepts such as patient- and family centered care, infection control, and working with a team.
- Anatomy and physiology with a critical care focus.
- Assessment and diagnosis in critical care.
- Disorders and management in critical care.
- Multisystem dysfunction and management in critical care.
- Exploring the impact of critical care on you, the long-term outcomes on patients, future concepts in critical care, and the process of change.

Why Saskatchewan Polytechnic?

Saskatchewan Polytechnic is one of the most respected providers of nursing education in Canada. Our Critical Care Nursing program follows standards set by the Canadian Association of Critical Care Nursing.
Enfeksiyon Kontrolü ve Eğitim

Eğitim neden gerekli
– Özel alanlarda enfeksiyon kontrolü eğitimi yeterince verilmemektedir
– Çalışma alanlarında personel, kıdemliler yetersiz hatalı uygulamalar yapabilirler
– Zaman içinde uygulamalar, önlemler, rehberler değişebilir

Kimler eğitilmeli
– Tüm sağlık personeli (Temel enfeksiyon kontrol eğitimi)
– Doktor
– Hemşire
– Radyolog
– Fizyoterapist
– Diyetisyen
– Resepsiyonist, sekreter
– Personel temizlik, mutfak, atölye, taşıma

Çalışma alanlarına yönelik özel konular ağırlıklı öğretilmeli
Enfeksiyon Kontrolü ve Eğitim

Nasıl Planlanmalı

• Yeni personel üniteye geldiğinde önceliğe temel eğitim alınmalı
• Kurslar yıllık planlanmalı ve servis içi eğitimlerle beceri – bilgi pekiştirilmeli
• Eğitim küçük gruplar halinde yüz yüze olmalı (en ideal yöntem)
• Klinikte usta çırak ilişkisi içinde sürekli eğitim-gözlem-değerlendirme desteklenmelidir
• Uzaktan eğitim sağlanmalı
  - Bireye yönelik eğitim setleri
  - Video - slayt setleri
  - e eğitim (online kısa kurslar)
Enfeksiyon Kontrolü ve Eğitim

Eğitimi kim vermeli

– Enfeksiyon kontrol komitesi hekimleri
– Enfeksiyon kontrol komitesi hemşireleri
– Klinik sorumlularının ve kıdemli personelin öneri – katkılarının değerlendirilmesi
– Klinik kordinatörleri (eğitim merkezi personeli)
Effectiveness of bundled behavioural interventions to control healthcare-associated infections: a systematic review of the literature

S.W. Aboelela, P.W. Stone and E.L. Larson

Summary
Attempts to address the growing problem of healthcare-associated infections (HAIs) and their impact on healthcare systems have historically relied on infection control policies that recommend good hygiene through standard and enhanced precautions (e.g. barrier precautions and patient isolation). In order for infection control strategies to be effective, however, healthcare workers’ behaviour must be congruent with these policies. The purposes of this systematic review were to evaluate studies testing the effectiveness of interventions aimed at changing healthcare workers’ behaviour (in reducing HAIs) and to summarize the findings of the studies with the highest quality scores. A total of 33 published studies met the inclusion criteria and were evaluated. Four of these earned a study quality score of ≥80%. In all four significant reductions in HAI or colonization rates were reported. Behavioural interventions used in these high quality studies included an educational programme (in four), the formation of a multi-disciplinary quality improvement team (three), compliance monitoring and feedback (two), and a mandate to sign a hand hygiene requirement statement (one). In all 33 studies, bundles of two to five interventions were employed, making it difficult to determine the effectiveness of individual interventions. The usefulness of ‘care bundling’ has recently been recognized and recommended by the Institute for Healthcare Improvement. Considering the multi-factorial nature of the HAI problem and the logistical and ethical difficulties of applying the randomized clinical trial approach to infection control research, it may be necessary to study interventions as sets of practices.
33 yayın
4 tanesinde eğitim enfeksiyonlarının önlenmesinde rehberlere uyumu arttırmış

| Higuera et al. (2005) | Two level III adult intensive care units in public university hospital in Mexico | Non-randomized intervention (pre–post comparison) | Education programme and performance feedback in the form of monthly charts of compliance with HH and invasive device care | Significant increase in compliance with HH and device care (99.24 vs 86.69%;  \( P < 0.0001 \)).

| | Significant decrease in IVD BSIs (19.5 vs 46.3/1000 IVD days;  \( P = 0.0001 \)) |

In the four studies that received the highest quality scores, significant reductions in HAI or colonization rates were reported. One study demonstrated a reduction in the incidence of *Klebsiella pneumoniae* colonization while the other three reported significant reductions in bloodstream infection rates (8, 15).
<table>
<thead>
<tr>
<th>Study</th>
<th>Setting and study population</th>
<th>Design</th>
<th>Intervention(s)</th>
<th>Major findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown et al. (2003)</td>
<td>Four 6-bed units in a neonatal intensive care ward in Russia</td>
<td>Non-randomized intervention</td>
<td>Three time periods (average 60 days each). First period: baseline. Second period: addition of ethanol-based hand antiseptic and a single mandatory education session. Third period: formation of a multi-disciplinary quality improvement team, individual hand hygiene (HH) staff instruction, feedback on HH compliance, and staff mandated to sign HH requirement statement.</td>
<td>No significant change in hand hygiene (HH) compliance (period 1 vs 3 of study) before direct or invasive contact with patients. Significant increase in the use of alcohol antiseptic use (period 1 to 2, $P = 0.001$; period 2 to 3; $P &lt; 0.00001$). Incidence of colonization with Klebsiella pneumoniae markedly reduced.</td>
</tr>
<tr>
<td>Reference</td>
<td>Setting Description</td>
<td>Study Design</td>
<td>Intervention Details</td>
<td>Results</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------</td>
<td>-----------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Coopersmith et al. (2002)</td>
<td>Eighteen-bed surgical/burn/trauma intensive care unit in an urban US teaching hospital</td>
<td>Non-randomized intervention (pre–post comparison)</td>
<td>Formation of a multidisciplinary quality improvement team, design of an educational module based on observed staff practices, focus of education on a self-study module, and a 20-question exam taken before and after self-study module</td>
<td>A significant reduction in primary bloodstream infections (66% reduction, ( P &lt; 0.0001 ))</td>
</tr>
<tr>
<td>Coopersmith et al. (2004)</td>
<td>Surgical intensive care unit in an urban US teaching hospital</td>
<td>Non-randomized intervention (pre–post comparison)</td>
<td>Formation of a multidisciplinary quality improvement team, development of an auditing tool based on observed staff practices, education programme including lectures and hands-on demonstrations</td>
<td>Decreased rate of Catheter-related-bloodstream-infection (CRBSI) (3.4–2.8/1000 catheter days; ( P = 0.40 )). Mixed compliance findings: significant decreases in documenting dressing dates and stop-cock use (10 and 46% increases respectively; ( P = 0.001 )), non-significant trends in HH and barrier precaution use</td>
</tr>
</tbody>
</table>
• 20 yoğun bakım hemşiresi
• Belli konularda eğitim önce ve sonrası gözlemsel değerlendiriliyorlar
  – 20 konuda ‘check list’ dolduruluyor
• Eğitim sonrası genel bilgi ve becerileri artıyor
  – %75 - %89
Data Article

The effect of education on the nursing care quality of patients who are under mechanical ventilation in ICU ward

Sahar Geravandi a, Farhad Soltani b, Mohammad Javad Mohammadi c, Rashin Alizadeh d, Ali Asghar Valipour c, Abedin Hoseini a, Babak Rastegarimehr c, Ahmad Reza Yari c, Azimeh Karimyan a, Ali Ghomeishi b, e

Table 3

Ranking the factors on quality of nursing care of patients under mechanical ventilation in ICU ward in Razi Hospital after education.

<table>
<thead>
<tr>
<th>Basic care from patients under mechanical ventilation</th>
<th>Scale (Agree) F (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly agree</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td>(%)</td>
<td>(%)</td>
</tr>
<tr>
<td>Communication with the patient</td>
<td>12(65%)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(15%)</td>
<td></td>
</tr>
<tr>
<td>Suctioning correctly</td>
<td>15(75%)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(10%)</td>
<td></td>
</tr>
<tr>
<td>Compliance of aseptic techniques</td>
<td>14(70%)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(10%)</td>
<td></td>
</tr>
<tr>
<td>The correct discharge tube cuff</td>
<td>12(60%)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(15%)</td>
<td></td>
</tr>
<tr>
<td>Chest physiotherapy</td>
<td>13(65%)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(10%)</td>
<td></td>
</tr>
<tr>
<td>The correct Change Positions</td>
<td>14(70%)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(15%)</td>
<td></td>
</tr>
<tr>
<td>Health food gavage</td>
<td>14(70%)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(10%)</td>
<td></td>
</tr>
<tr>
<td>Back rub</td>
<td>16(80%)</td>
<td>1(5%)</td>
</tr>
<tr>
<td></td>
<td>(20%)</td>
<td></td>
</tr>
<tr>
<td>Prevent of foot drop</td>
<td>14(70%)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(20%)</td>
<td></td>
</tr>
<tr>
<td>Oral hygiene</td>
<td>15(75%)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(18%)</td>
<td></td>
</tr>
<tr>
<td>The eyes hygiene and protect the cornea</td>
<td>15(75%)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>(15%)</td>
<td></td>
</tr>
</tbody>
</table>
• 389-633 Katılımcı / Modül
  – Hemşire, Personel, Teknik personel, Fizyoterapistler, Mutfak
• 4962 test değerlendirilmiştir
• İnteraktif temel modüller eğitim
  – 10 modül, 30 dk
  – 3 yıl/ yılda 2-3 aylık eğitim
• Pre – Post testle değerlendirme
Making Infection Prevention Education Interactive Can Enhance Knowledge and Improve Outcomes: Results from the Targeted Infection Prevention (TIP) study

Generalized linear mixed model predicting knowledge score improvement in intervention healthcare personnel from pre-test to post-test.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Estimates</th>
<th>Standard Error</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>79.5</td>
<td>1.21</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Pre-test</td>
<td>0</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Post-test</td>
<td>8.5</td>
<td>0.30</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CNA</td>
<td>0</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Nurse</td>
<td>5.9</td>
<td>0.55</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>6.1</td>
<td>1.48</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Food services</td>
<td>4.5</td>
<td>1.89</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Other</td>
<td>2.5</td>
<td>1.32</td>
<td>0.054</td>
</tr>
<tr>
<td>Environmental services</td>
<td>–1.12</td>
<td>1.28</td>
<td>0.38</td>
</tr>
<tr>
<td>Missing</td>
<td>–2.1</td>
<td>0.60</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

* Estimates are how a particular groups (variable) score percentage would change when compared to the chosen comparison group (where estimates=0) for that category (cont vs. int; position type).

** P-values are significant at P<0.05, in which estimates are significantly higher or lower than comparison group.

*** The position variables is a covariate.
Making Infection Prevention Education Interactive Can Enhance Knowledge and Improve Outcomes: Results from the Targeted Infection Prevention (TIP) study

Results—4,962 tests were returned over the course of the intervention with 389–633 HCP/module. Participants were mostly female certified nursing assistants (CNAs). Score improvement was highest for modules emphasizing hand hygiene, urinary catheter care and MDROs (15.6%, 15.95%, and 22.0%, respectively). After adjusting for cluster study design, knowledge scores were significantly higher after each educational module, suggesting the education delivery method was effective. When compared to CNAs, nursing and rehabilitation personnel scored significantly higher in their knowledge tests.
Educational interventions for prevention of healthcare-associated infection: A systematic review

Nasia Safdar; Cybéle Abad;

Data Synthesis: A total of 26 studies used a number of different educational programs targeting varied study populations of healthcare providers to determine their effect on HCAI rates. Most were pre–post intervention studies and were implemented in the intensive care setting. There was a statistically significant decrease in infection rates after intervention in 21 studies, with risk ratios ranging from 0 to 0.79. The beneficial effect of education was apparent in teaching and nonteaching institutions and in lesser-developed countries and developed nations.
• 125 Hemşire
• Pretest – Eğitim – Posttest
• Bilgi düzeyi yükselmiştir
  – Nozokomial enfeksiyon tipleri  %76.8  %94.4
  – Nozokomiyal enfeksiyon kontrolü  %68  %89.6
  – Enfeksiyon risk gurupları  %86.4  %95.2
  – El yıkama  %91.2  %99.2
• 12 yıllık eğitim
• Belli periyodla yılda 2 kez eğitim ve check list
• Kateter ilişkili üriner sistem enfeksiyonu %14.92 - %1.1