Strategies to Control Preventable Infections in Long Term Care Facilities
Prof. Bjørg Marit Andersen, Oslo University Hospital, Norway
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Strategies to control preventable infections in long-term care facilities

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Nosocomial* infection in Long-Term Care is

- A major source of morbidity and mortality (Spaulding Nursing Homes 2006)
- Accounts for 30% of hospital admissions from nursing homes in USA (Irvine et al. Am Ger Soc 1984;32:103)
- Is the most common immediate cause of death in nursing homes (Rudman et al. J Am Ger Soc 1987;35:496)
- Significantly associated with higher categories of dependency

*Nosocomial" means "house-common"—living together, for instance in healthcare institutions. Nosocomial infection = Healthcare-associated infection (HAI)

Prevalence of infections in nursing homes in different countries

Prevalence of infections: 5 - 33%

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Incidence/d Hospital</th>
<th>Incidence/d Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>2005</td>
<td>7.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td>USA</td>
<td>2006</td>
<td>12%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Canada</td>
<td>2008</td>
<td>10%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

The burden of nosocomial infections is high

- More than 7% have infections
- 1% higher than in hospitals!
- 0.8% of the Norwegian population live in nursing homes with
  - Complex medical problems
  - 77% > 80 years old and median age 84 years
  - 95% needs assistance for daily living

- and infections may have severe consequences-
  - A follow-up study in Norway during 30 days after the infection started, demonstrated that infections may have severe consequences
  - Including debilitation, hospital admission and death.”

The global elderly population is increasing

- It is estimated that in 2050
  - 20% of the global population is > 65 years old
  - 2.5 billion people (>65 years) (Strausbaugh Emerg Inf Dis 2001;7)
- European population > 80 years
  - 20 mill in 2006
  - 57 mill in 2050
- USA population > 65 years
  - 20% of the population in 2030 –and it is estimated that 30 mill more than today may need LTCare (US Census)
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The population development is shown in “pyramids” 1956, 2006 and 2050- for Germany

Estimated consequences of the “elderly boom”

- There will be more and older patients in long-term care
- More patients with chronic diseases - may live longer
- There may be more infections, often caused by more resistant strains (“global microbiology”)
- Surgical treatment on older persons may increase (heart and orthopedic surgery etc) and thereby more postoperative infections
- This may challenge economy, facilities and care givers
- Ongoing financial crisis and a lower national resource/ income – may have a severe impact on this future for older people


Infections in long term care are -

Ordinary healthcare-associated infections like

- Urinary tract infection with symptoms: 3-4++%
- Lower respiratory tract infections: 1.5-2%
- Infections in skin and wounds (pressure/diabetes wounds): 1.5-2%
- Postoperative wound infections: 1%, (-20% of operated)
- Eye and nail infections, and other infections: 0.5-2%

Staphylococcus aureus and Gram negative rods predominates; more or less resistant to antibiotics

In addition,

Seasonal or endemic/local outbreaks are also common

- Gastrointestinal infections (Clostridium difficile, Noro-, rota-, adenovirus etc)
- Influenza virus, Mycoplasma, Chlamydia pneumoniae, pneumococci etc
- Resistant bacteria – endemic- epidemic (MRSA, VRE, ESBL, etc)
- Scabies and other small animals may also create some problems!

Lower respiratory tract infection – is the main cause of mortality

- It may often show a marked seasonal pattern
- Associated with dysphagia and aspiration among elderly
- Infectious agents are transmitted by contaminated swabs, hands, air, food/water etc.
- Transmitted from other sick persons like staff, other patients, visitors
- Resulting in
  - Pneumonia
  - Bronchitis
  - Influenza-epidemics, followed by bacterial invasion of
    + Pneumococci
    + Staphylococcus aureus
- In 50% of the cases, the antibiotic use is inappropriate

PATTERNS OF INFECTIONS

IN LONG-TERM CARE FACILITIES II

Urinary tract infection is the main problem in nursing homes (3-4++%)

- 40% of all LT care infections; both gender – associated with
  - Urinary incontinence (stress/urge/mixed/overflowfunctional)
  - Immobilization
  - Dehydration
  - Dementia
  - Often asymptomatic
  - Indwelling catheter
  - Catheter use during diarrhoea: 9 x risk for UTI
  - Cross contamination via hands, catheter use, textiles etc.

- This is the “antibiotic-consuming illness” which often results in development of very resistant bacteria


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Invasive pneumococcal disease – pre-conjugate vaccine era. Seasonality and age groups
Trotter et al. JHI 2010;60:200-208

Pandemic influenza 2009 was no problem for elderly in Norway or elsewhere,
but ordinary influenza is!

There are still many questions like:
• Who should be protected against influenza?
• Who should be vaccinated – every year?
• Who should use PPE?
• What kind of PPE?

Decubitus ulcer, bedsore
• From pressure --> to ulcer may take 4-5 days, - or a few hrs in high risk patients
• Pressure sores in nursing homes in USA (National Nursing survey 2004):
  - 11% (159 000)
  - 60 000 die/year from complications - mostly infections
  - “…a life-threatening nursing home injury”
• Prevalence in Norwegian nursing homes: 4-9%
• Prevalence of infected bedsores: 1-2%
  - Andersen, Rasch, BM 2008; 4:28-294, Andersen, Rasch Tidsskr Nor legeforen 2002;122:2371-2373
• This is one important indicator of quality of care in all nursing homes !

Postoperative chronic wound infections after unsuccessful surgery - often ends in nursing homes:
• Ca 1% of patients in nursing homes have postoperative wound infection
• Staphylococcus aureus is the predominant bacteria

Other skin infections
Erysipelas, cellulitis and other skin infections, often in diabetic patients

Clostridium difficile infections (CDI) increases in Long term care
• Elderly are at a special risk (Bashton et al. X JCG, J March 2005;193:2450-2456)
• Up to 40% of gastroenteritis cases have CD (Pa Patient Saf Advis 2010;18:10-5)
• Antibiotics with a special CD-risk are: Clindamycin, 3th gen. Cephalosporins, Fluoroquinolones
• CD increases in incidence and severity in North America and Europe- with the development of toxin-producing, hyper - virulent strains; BI/NAP1/027 ao. (Mulvey et al Emerg Inf Dis 2010;16.)
• There is a transmission risk from asymptomatic carriage –from skin and hands - and tube feedings
• CD may be airborne (Best et al.Clin Infect Dis 2010; 50: 1450-1457, Donskey)
• The economic healthcare cost - is incremental in hospitals – the cost in nursing homes is unknown
  - 3,000-8,000 USD per primary case and 13,500 USD per recurrent case in hospitals (Kao et al. BMJ J Infect Dis 1999; 31: 10-5)

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Clostridium difficile Infections in Pennsylvania Nursing Homes

Pennsylvania Nursing Home Gastrointestinal Infection and Associated Clostridium difficile Rates by Unit, July 1 through September 30, 2009

Norovirus – attacks patients and staff in nursing homes in epidemic outbreaks

- Length of outbreak: 14-20 days
- Attack rate in patients: 46-52%
- Attack rate in staff: 35-37%

Often repeated infections and outbreaks. A robust and resistant virus!

Excretion – may be up to 32 days in elderly

MRSA – is a global public health threat

Reservoirs of MRSA in nursing homes may increase

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Both patients and staff are affected ----

- Some studies from
  - Italy 2009: 19.3%, and 5.8% in staff
  - Northern Ireland 2009: 23.3%, and 7.5% in staff
  - Norway 2009: 0.2%, and <0.1% in staff

- The index person may often be a staff
- Special problems are: decubitus ulcers, catheters and skin infections – and multiple - site colonization

- The epidemiological impact of MRSA – is related to hospital admissions and severe infections

In France, a reduction of MRSA is observed - also in LTCF

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The MRSA-trend- may also fall in some EU –countries and in USA

MRSA skin infections are increasing –and therefore also an increasing problem for healthcare workers and their relatives

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The MRSA-trend- may also fall in some EU –countries and in USA

Other resistant microbes may increase in Long term care

- Resistant cocci- other than MRSA
  - Vancomycin-resistant enterococci,
  - Penicillin - resistant pneumococci

- Gram negative rods with extended beta-lactamase production (ESBL)
  - E coli –ST131 (O25:H4) worldwide - community-associated UTI and bacteremias. Resistant to most antimicrobials.
  - Klebsiella, Enterobacter (wounds, UTI)
  - Citrobacter, Serratia—(wounds, UTI)

- Other very resistant rods
  - Pseudomonas sp,
  - Acinetobacter

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But is still increasing in Norway

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But is still increasing in Norway
Very resistant Gram negative rods—like NDM-1 (New Delhi metallo-beta-lactamase-1) 

Main problems are:

- Resistant to all beta-lactam antibiotics and often to most other antibiotics
- Few treatment options and severe outcome
- Spread of resistance by:
  - Resistant genes
  - Cross-contamination via patients and staff
  - Environmental contamination
  - Transfer of patients and personnel within and between healthcare institutions, networks and countries
- Lack of molecular global surveillance networks
- Lack of infection control

Distribution of mobile metallo-beta-lactamase = bacteria resistant to all penicillins, cephalosporins and carbapenems

The risks of medical tourism is transmission of antibiotic resistance

NDM-1 superbug mutation shows up in New Delhi drinking water

A girl collects drinking water at a tank

Reasons for hospitalization in India or Pakistan

14 UK source patients infected with super resistant NDM-1 bacteria in India or Pakistan—

- Renal or bone marrow transplantation
- Dialysis
- Cerebral infarction
- Chronic obstructive pulmonary disease
- Pregnancy
- Burns
- Road traffic accidents
- Cosmetic surgery

The basic problem of resistance is the overuse of antibiotics — “bought on the street”

In USA - the amazing misuse and therapeutic nihilism concerning antibiotics "serve as efficient multiplier of these isolates"

The specific infection control problems that arise in this setting--
We are sharing the same patients, microbes, visitors, and often the same staff--

Nursing home
- Other patients
- Visitors
- Personnel
- Family

Hospital
- Other patients
- Visitors
- Personnel
- Family

Home care
- Other patients
- Visitors
- Personnel
- Family

Non-contaminant infectious cycles

The specific infection control problems in nursing homes
- The patient: with reduced physical and psychological condition, mixed medical clinical illnesses, breaks in the skin, invasive devices--
- Needs close and repeated assistance: personal hygiene, toilet, nutrition, dressing-undressing, walk-training etc (Sie et al 2008)
- Long-duration of patient contact - strongly associated with bacterial contamination on the staff's hands
- Contact transmission is a special problem – but also airborne transmission without isolation possibilities
- Shared living quarters with other patients, personnel and visitors
- Exposed to shared equipment, often not properly sanitized between residents
- The transmission problem may be poorly understood - personnel, patients and visitors - and
- Shortage of hand hygiene and glove use (Thompson et al. ICHE 1997;18:97-103)
- Infections/colonization may under such conditions spread quickly

Hand hygiene compliance is a problem, and the use of jewellery inhibits good hand hygiene. There are also more bacteria on hands when wristwatches are used! (Jeans et al. JHI 2010;74:16-21)

Risk of infection from the wedding ring!

Study by infection control nurses, OUS-Ullevål 2009

There are many guidelines- and consensus conferences for LTCFs ----
- International guidelines; WHO, CDC, EU--
- National guidelines
- HICPAC guidelines
  - UTI 2009
  - Disinfection and sterilization 2008
  - Isolation 2007
  - Multidrug resistant organisms 2006
  - Influenza vaccination of HCW
  - Environmental infection control
  - Hand Hygiene 2002
  - Infection control in HCW 1998
  - Immunization of HCW
- SHEA/APIC guidelines for LTCFs 2008
- IDSA guideline for clinical symptoms of infection in LTCFs 2008
- Consensus conferences for use of antibiotics in LTCFs; ICHE 2000, 2001
- Definitions of infections for surveillance in LTCFs; AJIC 1991

CDC March 15, 2010, Division of healthcare quality promotion

Low staffing rate, low education and missing guidelines/routines?
- Norwegian nursing homes have a low staffing rate of nurses and doctors per resident
- 70% of the staff are without training in infection control work and 30% have no health care qualifications at all

Part-time work: Hospital staff with part-time job in nursing homes; “may transmit pathogens in both ways” (Sie et al. JHI 2009)

But long-term care don’t have the resources available
- “But long-term care don’t have the resources available” Dr Andrew Simor, Canada 2009
- Canada: Most of the nursing homes did not conduct all recommended infection surveillance and control activities
  - Dr Dick Zoutman, Queen’s University in Kingston, Am J Infect Control 2009. Canada 2006
- Norway 2010: low staffing rate
- Staff without training in infection control work
  - (Sie et al. JHI 2009)

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Overcrowded and understaffed nursing homes may:

- Increase the infection pressure
- Increase levels of MRSA infections and of other “super bugs”
  - Clements et al. The Lancet Inf Dis 2008; Australia
  - Dr. Zoutman, Queen’s University, Canada. Hamel et al. Am J Inf Control 2010;38:173-181

“Each time you get a new roommate your risk of acquiring these serious infections (like Clostridium difficile, MRSA, vancomycin-resistant enterococci) increases by 10 %.”

Are nursing homes built for modern infection control?

- 50% of nursing homes in Oslo are not suitable for modern patient care - the oldest is from 1860
- Are there isolation facilities? – also for airborne infections?
- Is the structure and environment adapted to effective infection control?
- Are the patients beds in the corridor? Not usually, but common in our hospitals!

Uncleaned areas may transmit agents like pandemic influenza A (H1N1) virus -

- Surface swab specimens from patients with confirmed influenza A showed living virus on
  - Computer mouse
  - Hands
  - Bed rail
  - Wall
  - Sofa
  - Clothes
  - Macias et al. JIH 2010;73: 280-281

What about hygiene?

- “Infections thrive in dirty places—.”
- “People bring infection on their hands into work – “
- During the day, pathogens are added to desk surfaces, the arms of office chairs, keyboards and equipment.” UK 2010 Health Care Education blog Feb 15.2010

The environment is often dirty - the simplest way to spare money?
Are we using contaminated equipment?

In some UK hospitals, MRSA is detected on 25% of computers what about MRSA in LTCFs?

Are blood borne infections increasing?

- Because of failure to adhere to fundamental principles of infection control?
- "Sharing fingerstick devices and/or glucometer among diabetic residents" is a risk
  - New emphasis on glucometer cleaning/disinfection - 2010 (CDC guideline)

Are we using contaminated textiles and paper?

Is there cross-contamination via food and water by "self service"?

- Can the patient/visitors/others touch the food and drink of other patients?

Isolation – is the specific infection control problem- because of

- Shortage of isolates and resources for isolate treatment
- Shortage of nurses, knowledge and personal protective equipment (PPE)
- Patients need more contact and treatment

However, patients in short-term isolation in hospitals has shown a positive attitude towards isolation. Wasserborg JHI 2010;75: 124-127

MRSA; a challenge to Norwegian nursing home personnel

- Thorstad M, Sa, I, Andersen BM. Interdisciplin Perspect Infect Dis 2011, Article ID 197683
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Persistent MRSA predominates
- More than half (60-65%) are persistent colonized
- Nearly 1/3 colonized develop serious infections
- Long-lasting carriage/infection
- Can transmit MRSA to others

Body site colonization may vary
- Distribution of MRSA between anatomical sites

How infection control problems may be addressed
IN LONG-TERM CARE FACILITIES

Infection control is more difficult to perform in the LT care and homecare than in hospitals
- It is important to identify the infectious patient before he/she cross-contaminates

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Infection control and report by law

- Health care associated infections should be reported - to control the quality and safety of care.
- Prevalence survey are done in 5 of 33 countries in Europe. Moro et al. ICHE 2010;31:59-62
- Infection control – by law (act) - is present in 8 of 33 countries in Europe. Moro et al. ICHE 2010;31:59-62

Information and communication is needed

- Report infections and outbreaks to whom it may concern, dependent on the infectious agents:
  - to own staff (nursing handoffs), the hospital, other nursing home, or homecare that have treated the patient
  - and to the staff that may have been exposed to infection (MRSA)
  - and serious infections/large outbreaks – to the authorities- local- country

Prevent spread of infection

- Prevent exposure to infections; resident, employee, family and visitor - by isolation and disinfection
- Educate and train all personnel in the basics of infection control and prevention
- Surveillance; by prevalence, incidence or separate outbreaks, with report to the public and local authority
- Screen patients and personnel exposed to MRSA
- Screen patients exposed to VRE and other multi-drug-resistant (MDRO)
- Isolate infected/probably infected patients and disinfect contaminated rooms and equipment

Prevent antibiotic-resistant “superbugs “ by-

- Preventing infections; hand hygiene, personal hygiene, clean caring, isolation, etc.
- Following good quality hygienic procedures for care and treatment; avoid catheters and pressure ulcer; good hygiene when handling food, medicines, eye-drops, etc.
- Dedicated doctor in charge. Regular and continuous supervision by a dedicated practitioner (1-5 days/week in the long-term institution)
- Antibiotic exposure is significantly associated with MDR gram-negative bacteria! (Sale et al. ICHE 2010;31:148-153)
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Identify - and “treat infection, not colonization or contamination” (CDC campaign March 2004)
- Identify microbes with resistance patterns
- Avoid unnecessary use of antibiotics
- Avoid use of broad spectrum antibiotics
- Do not treat viral infections with antibiotics

Increase and control hand hygiene for the staff and the patients!

Hand hygiene programmes are important!
- Staff education reduces respiratory illness in LTCF
  (Falsey et al. ICHE 1999;20:200-201)
- There is a simple linear relationship between MRSA and hand-hygiene compliance
  (Nicolau et al. JHI 2010)
  “The public right to know”– and to ask concerning hand hygiene
- World Health Organization (Sus et al. WHO Am J Infect Control 2009;37:827-834)
  - “Clean care is safer care”
  - “My five moments for hand hygiene”
  - “Hand hygiene into health care practice”

- If there was at least 40% compliance with hand hygiene this would protect against outbreaks!
  (Talos et al. JHI 2009; 72: 76)
- But the compliance rate should be >>>100%!

Avoid “medical tourism” with negative effects for inhabitants – and risk for import of very resistant strains
- Thailand’s experience
  - “The negative effect for the Thai society stem from having to provide health-care services for 420 000 to 500 000 medical tourists annually with the same number of health-care staff”
  - “these negative effects are evidenced by both a shortage of physicians and by increased medical fees for self-paying Thais, which are likely to undermine their access to quality medical services.
  - In India, similar adverse effects have been detected”

Avoid other important risks of microbial transmission
- Avoid unnecessary transport of patients between many departments and healthcare institutions
- Avoid part-time jobs for the staff; staff in work at many healthcare institutions at the same time
- Avoid personnel and visitors with infectious diseases until they do not transmit infections

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#### Prevent urinary tract infections by preventing catheters!
- Remove “hospital-catheters”!
- Use urinary catheter reminders or stop orders!
- Avoid long-term catheter -> prefer single use, sterile catheter, if necessary
- Regular toilette training and use of incontinence equipment
- Ask the doctor in charge!

**Prevent respiratory infections by:**
- Enhanced oral hygiene: may reduce pneumonia and death!
- Vaccination: dual pneumococcal and influenza vaccination may even prevent infarct and stroke? (Macion et al. CID 2010:51:1007)
- Isolation (contact+airborne) - until – at least- 24 h free of symptoms – single rooms or kohort
- Use personal protective equipment when needed
- Mask for the patient outside room - separated from others
- Cough/sneeze etiquette – Not in your sleeves!
- Access control. Sick persons should stay at home
- Screening, diagnostic testing
  - CDC Interim Guidance Influenza October 14, 2009.

#### Reduce respiratory infections – associated with infected equipments
- By cleaning outer and inner parts of respiratory equipment regularly
- Always before reuse!
- Ventilation assistance
- CPAP 98 Inner parts

#### Prevent spread of gastrointestinal infections
The patient should be treated
- In single room isolation – early
- Personal should use gloves, gowns and room-bound shoes/overshoes – and mask/cap if suspected norovirus
- Daily cleaning and disinfection is important

Residents, visitors and personnel should follow written advises
- Access control. Sick persons should stay at home
- Hand hygiene and personal hygiene before and after
- Outbreak (more than 2): close for new admissions

Staff with gastroenteritis – suspect norovirus: stay at home until 2 days after the last symptoms

#### Reduce/change antibiotics and reduce CDI!

**There are few MRSA studies from nursing homes - Cochrane review 2008-2010**

- "In the meantime, nursing homes can take advantage of lessons learned from hospital research."
Prevent MRSA in Long term care!
Patients and personnel should not be the “twenty-first century lepers!”
(Mozzillo et al. JHI 2010; 132-134)

- Hand hygiene and the use of personal protective equipment
- Isolate (or remove from duty) MRSA-positive cases and start decolonization
- Disinfect contaminated environment and equipment
- Screen all staff and patients expose to MRSA, multiple- sites: nose, throat, perineum and hands/wrists (drains, wounds, eczema etc)
- Restrict work and visit of MRSA-positive persons until MRSA - negative
- Flag MRSA in the journal-as critical information
- Minimize use of medical devices and decontaminate after use
  - Andersen et al. J Infection 2007;55:531-538,
  - Institute for Healthcare Improvement, USA

Decolonize MRSA cases - and follow up
- Recommended to inhibit infection and transmission
  - Skin disinfection: Whole-body washing or butting with an antiseptic-detergent, including hair (2% chlorhexidine, 7.5% povidone-iodine, 2% triclosan, or octenidine hydrochloride, –)
  - Topical intranasal treatment (mupirocin, polyhexanide (prontoderm),octenidine dihydrochloride or other local)
  - Environmental decontamination (chloramine 5%, persaife, or local by chorhexidine-alcohol--), followed by cleaning with soap and water
  - And additional measures, see Andersen et al. J Infection 2007;55:531-538

- May fail – repeat and take care of environmental MRSA
  - Mupirocin resistance may develop
  - Throat colonisation – often difficult to treat
  - Age > 80 years
  - 45-85% effective?

Reduce cross-contamination by good general infection control routines
- 30% of air samples in the environment of MRSA-carriers may be MRSA positive
- MRSA thrives up to 10months in dirty areas

Cleaning and good care of the patient is important!
- But here may bacteria also thrive if not cleaned ----!

Personal hygiene is not a personal decision in healthcare
Who would you prefer?

Personal hygiene – the staff should use uniforms
- Clean textiles – prevents infections-should be washed in the institutions laundry

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There should be a good infection control for textiles in the laundry
Dirty side
Washing
Clean side
85-95°C

Increase the general hygiene
"Clean care is safer care!"
- Environmental hygiene (floor, tables, beds, bathroom--)
  - Reduces spread of infection
  - A good quality indicator
  - Reputation - related
- Contaminated rooms –
  - Good terminal disinfection
  - Followed by cleaning

Clean rooms and furniture
Every day- at least 5 days a week

Clean and disinfect equipments –
hot water (>85°C) is the best disinfection method!
-but control bedpans!

Prevent equipment-carried infections!
Clean and desinfect equipments!
Stethoscopes, blood pressure app, blood sugar app, infusion pumps, aso

Equipment hygiene is important!
keyboards, mobil, respiratory equipment--

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Gas disinfection – the use of 5% hydrogen peroxide mist
References
Ray A et al. Infect Control Hosp Epidemiol 2010; 31: 1236-1241

Food and water (and drug) hygiene
- Hand hygiene for all, included staff, before and after meals
- Patients with active infections or carrier state should not eat together with others
- Visitors should not serve food or drink to other patients (unless spec agreement)
- “Self service” should be omitted – because of norovirus and resistant bacteria - unless
  * “single packed food”
- The dish washer should not produce aerosols and the temperature should be at least 85°C because of norovirus and enterococci

Learn to work with patients that are isolated and to use PPE - when needed
- negative air pressure isolate for airborne infections

Learn/train to dress and undress PPE! –

Infection control in nursing homes – the future?
- “Preventable infections are unacceptable” –the “consumer empowerment” Healthcare Francist 2/18: 2010
- Still—Infections in LTCFs are increasing - to monitor is important because of globalisation of patients, staff and microbes. Harmonisation of measures are therefore needed
- Infection control problems may be more difficult and expensive to solve in the future
- Basic learning of infection control in medicine and other healthcare education is faulty. A more practical learning and training of doctors and care givers is very important
- Isolates and single rooms are needed – to avoid spread of infections
- Laboratory services are needed for diagnosis and good antibiotic stewardship!
- The quality of care and infection prevention should be similar in all types of healthcare and adjusted to the special need in nursing homes and home care

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Is there any strategy for preparedness of epidemic crises in LTCF??

What about elderly in existing nursing homes if a serious pandemic turn up next time-like avian influenza or SARS?

A nursing home is not “a home” – it is a

- A place for care and treatment
- Together with a lot of other people
- In hands of more or less educated personnel
- With a more and less economic power
- With increasing intolerance for preventable infections

- The control of present and new infectious diseases is dependent on reduction of transmissions and infections
  - In primary health care
  - In long term care and home care
  - In hospitals
  - we are sharing the same patients – and
  - the weakest part of the infection control chain may perhaps healthcare –

- Nosocomial infection control

"It’s critical that vulnerable long-term care residents be protected from largely preventable infections”
- Queen’s University, Dr Zoutman, Canada, 2010

"Nursing homes should prepare now for new infection control expectations”
- MacKenzie Kimball 24 July 2009

Thank you for listening!