



**Reduce antibiotic resistance and
healthcare-associated infections:**



**Antibiotic-smart tips for
hospitals** - Strama's 10-point program in
practice

Antibiotics are essential for human and animal health and for modern health care. Antibiotic resistance is a major global health threat.

Hospitals are high-risk environments for the emergence and spread of antibiotic resistance and healthcare-associated infections (HAIs), and the work to prevent these issues is central to patient safety. Everyone who works or stays in a hospital can contribute to preventing antibiotic resistance.

In Sweden, Strama, the Swedish strategic program against antibiotic resistance, has been working since 1995 to promote responsible antibiotic use.

Strama's 10-point program provides guidance on how to counteract antibiotic resistance in healthcare. The full document is available at www.strama.se.

This leaflet is a short version with the aim of providing practical tips in every patient meeting to reduce the development and spread of antibiotic resistance and healthcare-associated infections in hospitals.

This material was developed by NAG Strama in collaboration with NAG Infection Control and other relevant stakeholders as part of Antibiotic-smart hospitals initiative. Read more at www.antibioticssmartsweden.se

Contact your local Strama/stewardship group or infection control unit for more information.



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A PREVENT THE SPREAD OF INFECTIONS



Prevent the spread of infections

- Always apply basic hygiene routines in patient care
- Ensure good routines for cleaning, disinfection, laundry, and the handling of waste
- Screen for multi-resistant bacteria when indicated
- Encourage and motivate healthcare staff to get vaccinated according to current recommendations

Basic hygiene

Clean Hands

- Disinfect hands and forearms with hand sanitizer **before** and **after** contact with patients
- Wash hands with soap and water before disinfection if the patient vomits or has diarrhea, or if hands are visibly dirty

Gloves

- Use gloves if there is a risk of needlestick injury or contact with body fluids
- Disinfect hands before and after use of gloves
- Change gloves between different care tasks

Apron

- Use disposable plastic aprons when working close to patients, in contact with beds, or there is a risk of splashes

Splash protection

- Use a face mask in combination with protective glasses or a visor when there is a risk of splashes to the face

Dress code for healthcare workers

Short sleeves
to enable proper
hand hygiene

**Hair, beard, or
headscarf tied up**
if it hangs into the
work area

**Hands and
forearms free**
from watches,
jewelry,
dressings or
support rails etc

**Short, clean
nails** without
polish or artificial
nails



Change work clothes daily or when needed

**Clean hands are the
single most important factor**

**Overuse and misuse of gloves increases
the risk of spreading infection**

Example of indicators and goals:

Increase
adherence to
basic hygiene
routines

Increase regular
routine reviews
at staff
meetings

Introduce a
system for
evaluation of
cleaning quality



Use antibiotics wisely

- Use the right antibiotic, at the right time, for the right patient
- Reduce unnecessary antibiotic use
- Evaluate antibiotic treatment daily

What does “The right antibiotic, at the right time, for the right patient” mean?

- Prescribe antibiotics when necessary
- Assess the indication and choose empirical treatment according to recommendations in the app Strama Nationell
- Stop antibiotics if an infection requiring treatment is unlikely
- Adjust dosage to the individual
- Target therapy based on culture results
- Switch from intravenous to oral treatment when possible
- Aim for as narrow and short antibiotic therapy as possible
- Consult an infectious disease specialist when needed
- Do not treat colonization or normal flora
- Reassess reported antibiotic allergies



The Strama Nationell app (treatment recommendations in Swedish) is available where apps are found or at www.strama.se/en

Example of indicators and goals:

Do not treat asymptomatic bacteriuria

Increase the proportion of pneumonia treated with penicillin

Reduce the proportion of acute cystitis treated with quinolones*

Increase the proportion of antibiotic prophylaxis that is completed within 24 hours

Reserve quinolones and carbapenems* for when they are truly needed

**Quinolones are a group of antibiotics that include drugs such as ciprofloxacin, levofloxacin and moxifloxacin
Carbapenems are a group of antibiotics that include drugs such as meropenem, imipenem and ertapenem*

C OPTIMIZE INFECTION DIAGNOSTICS



Optimize infection diagnostics

- Take relevant cultures before starting antibiotics
- Take blood cultures routinely before intravenous antibiotic therapy
- Collect and handle cultures correctly
- Consider other microbiological diagnostics

Practical tips for blood cultures

- Disinfect the skin thoroughly before taking blood cultures and discard the first tube to reduce the risk of growth of skin bacteria (contamination)
- Fill all bottles from the same peripheral blood draw at the same time
- Fill blood culture bottles to the correct level
- Transport bottles to the lab (or incubator) as soon as possible to avoid diagnostic delays

See vardhandboken.se (*The Handbook for Healthcare*) for more details

Example of indicators and goals:

Increase the number of blood culture bottles that reach the lab within one hour

Increase the amount of blood cultures taken before IV antibiotics

Increase airway cultures for diagnostics of pneumonia

D REDUCE THE NEED FOR ANTIBIOTICS



Reduce the need for antibiotics

- Encourage and motivate patients to get vaccinated according to current recommendations
- Prevent healthcare-associated infections (HAIs) by minimizing risk factors

Examples of measures that can reduce HAIs

- Daily evaluation of the need for catheters
- Inspect all access sites
- Provide good nursing care: for example regarding mobilization and nutrition
- Preoperative preparation and timely antibiotic prophylaxis
- Avoid unnecessary antibiotic treatment
- Document correctly in the medical record

Risk factors for HAIs

Patient-related risk factors:

Smoking, malnutrition, poor oral health, immunosuppression, immobility, pressure ulcers, and other wounds

Catheter-related risk factors:

Urinary catheter, peripheral venous catheter, central venous catheter and dialysis catheter

Medicine-related risk factors:

Antibiotics, immunosuppressants and opioids

Other risk factors:

Surgery, drains, shunts and mechanical ventilation

See vardhandboken.se (*The Handbook for Healthcare*) for more details

Example of indicators and goals:

Reduce the number of HAIs

Improve diagnostics for HAIs

Reduce the number of postoperative infections

Reduce the number of CVC infections and CVC days

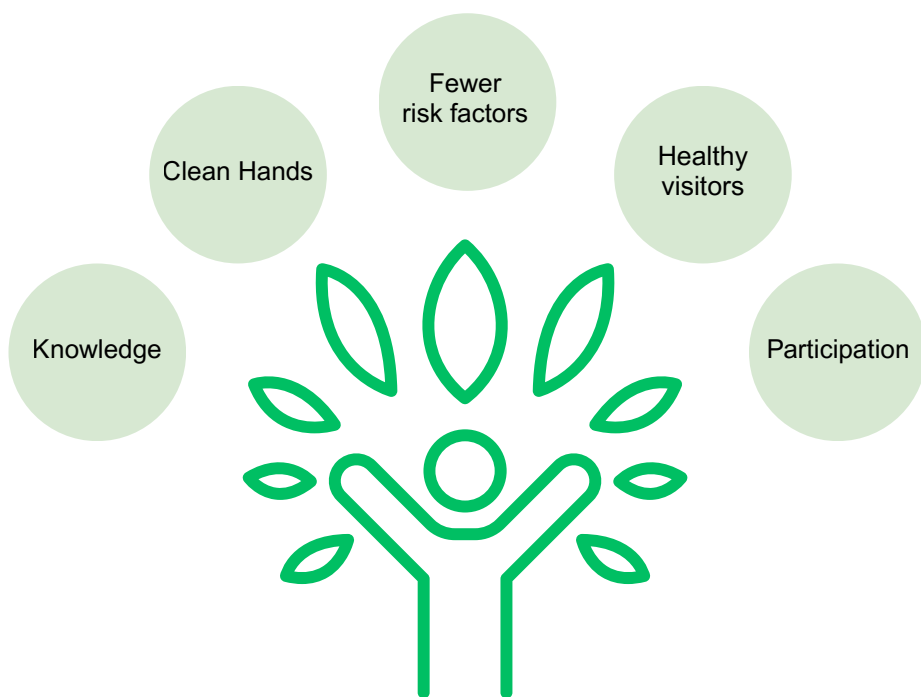
Reduce the number of urinary catheter infections and catheter days

*CVC = central venous catheter

How can patients contribute to reduce the development of antibiotic resistance and healthcare-associated infections?

- Good hand hygiene among patients and visitors
- Ensure visitors are healthy and do not spread infections
- Prevent infections through, for example, mobilization, good nutrition, and smoking cessation
- Follow vaccination recommendations
- Participate in reassessing antibiotic allergies to enable optimal antibiotic choice

Learn more about how everyone can help slow the spread of antibiotic resistance at www.skyddaantibiotikan.se/en (safeguarding antibiotics initiative)



Always consider the patient's individual circumstances and situation

Did you know that...

- ... effective antibiotics are vital for cancer treatment, survival of premature infants, and major surgery
- ... one-third of hospital patients in Sweden are treated with antibiotics
- ... use of broad-spectrum antibiotics risks selecting resistant bacterial strains
- ... one in ten patients acquires a healthcare-associated infection
- ... healthcare-associated infections prolong hospital stay by an average of four days
- ... HAIs cost the Swedish healthcare system billions of Swedish Crowns each year

**Antibiotic resistance affects several
of the UN Global sustainable development goals**

**Thank you for helping to keep
antibiotics working and saving lives!**

