



Health care without avoidable infections

The critical role of infection prevention and control



World Health
Organization



No one should get sick seeking care. Yet globally, hundreds of millions of people are affected every year by health care-associated infections (HAIs), **many of which are completely avoidable**. No country or health system, even the most developed or sophisticated, can claim to be free of HAIs.

Preventing HAIs has never been more important. HAIs significantly impact the ability of health systems to adapt, respond and manage infection risk alongside the ongoing clinical care of patients.

Infection prevention and control (IPC) is a **practical, evidence-based approach** preventing patients and health workers from being harmed by avoidable infections. Effective IPC requires constant action at all levels of the health system, from policy-makers to facility managers, health workers and those who access health services.

What are HAIs?

An HAI is an infection that is acquired by a patient during care delivery in a hospital or other health care facility that was not present or incubating on admission. Visitors, family members and health workers can also be affected by HAIs.

HAIs are mostly caused by microorganisms resistant to one or more commonly-used antibiotics. Common HAIs include urine, chest, blood and wound infections.

Common HAI determinants

In all settings

- Inappropriate use of invasive devices and antibiotics
- High-risk diagnostic or therapeutic procedures
- Immuno-suppression, other severe underlying illnesses and conditions affecting newborns and older people
- Sub-standard application of IPC precautions

In settings with limited resources

- Poor water, sanitation, waste management and environmental cleaning
- Insufficient equipment
- Understaffing, as well as overcrowding
- Poor knowledge of all IPC measures including injection and blood transfusion safety
- Absence of local/national IPC guidelines, policies and programmes

Why preventing HAIs is important

While each year hundreds of millions of patients are affected by HAIs, this problem usually receives public attention only when there is an outbreak or epidemic, as with the recent Ebola virus disease outbreak in West Africa. Although often hidden from public attention, the endemic, ongoing problem is very real and no institution or country can afford to ignore it.



- HAIs cause **unnecessary death**
- HAIs result in a **human and economic burden**
- HAIs **prolong hospital stays**, create **long-term disability** and **increase the burden of antimicrobial resistance (AMR)**
- Without regular HAI surveillance, as part of an IPC programme, recognizing the burden locally and nationally in order to prioritize action is impossible

HAI burden – key facts



HAI frequency

On average, **1 in every 10 patients is affected by HAIs worldwide**. In acute care hospitals, out of every 100 patients, 7 in developed and 15 in developing countries will acquire at least one HAI



Intensive care

In high-income countries, **up to 30% of patients are affected** by at least one HAI in intensive care units; in developing countries the frequency is at least 2–3 times higher



Injection safety

16 billion injections are administered every year worldwide, up to 70% of which are given **with reused syringes and needles** in some developing countries



Hand hygiene

On average, **61% of health workers** do not adhere to recommended hand hygiene practices



Neonatal care

Among hospital-born babies, infections are responsible for **4%-56% of all causes of death** in the neonatal period



Maternal care

In Africa, up to **20% of women** get a wound infection after a caesarean section, affecting their health and ability to care for their baby



AMR

Patients infected with methicillin-resistant *Staphylococcus aureus* (MRSA) are about **50% more likely to die** than those infected with non-resistant strains

Why IPC is so important

IPC is unique in the field of patient safety and quality of care, as it is **universally relevant to every health worker and patient**, at every health care interaction.

IPC contributes to achieving the following global health priorities:

- I. Sustainable development goals (SDGs) 3.1-3, 3.8, 3.d and 6



- II. AMR global and national action plans
- III. Preparedness and response to outbreaks
- IV. International health regulations
- V. Post-ebola recovery plans
- VI. Quality universal health coverage
- VII. Patient and health worker safety
- VIII. WHO framework on integrated people centred services

Defective IPC causes harm and can kill. **Without effective IPC it is impossible to achieve quality health care delivery.** At a time of threat from AMR and when most countries are working to ensure access to integrated, people centred health services for all, IPC has a tremendous contribution to make.



If we are to achieve strong health systems we must work together to integrate infection prevention and control at every level of the system. This is an important public health issue.

Dr Marie-Paule Kieny, Assistant Director-General,
Health Systems and Innovation, WHO

How does IPC lead to health care without avoidable infections?

There is overwhelming evidence that the implementation of IPC best practices leads to significant reductions in HAIs and patient harm. Best results are achieved when IPC is supported by political and management support, integrated within clinical services and a patient safety culture.

Evidence of IPC effectiveness

>30%
Reduction

Effective IPC programmes lead to more than a 30% reduction in HAI rates

25-57%
Reduction

Surveillance contributes to a 25-57% reduction in HAIs

50%
Reduction

Improving hand hygiene practices may reduce pathogen transmission in health care by 50%

13-50%
Reduction

Strong IPC plans, implemented across the USA between 2008 and 2014, reduced central line-associated bloodstream infections by 50%, surgical site infections (SSIs) by 17% and MRSA bacteraemia by 13%

56%
Reduction

MRSA declined by 56% over a four-year period in England in line with a national target

44%
Reduction

A safety culture and prevention programme reduced SSI risk in African hospitals by 44%

80%
Compliance

Between 2010 and 2015 Australia achieved and sustained 80% hand hygiene compliance in hospitals nationwide

Ten years of Clean Care is Safer Care

Of the 193 WHO Member States, **139 have committed to ongoing action** to improve IPC. WHO's "Clean Care is Safer Care" (CCiSC) programme was established in 2005 to provide technical support and leadership to strengthen IPC commitment and action around the world. It was the first *Global Patient Safety Challenge*, symbolizing the importance of IPC and motivated Member States to act.



Participation in the Hand Hygiene Australia programme is now a mandatory requirement for public and private hospital accreditation in Australia. Embedding and sustaining this important patient safety culture change is a key focus of health care policy.

Professor Chris Baggoley AO, Chief Medical Officer,
Department of Health, Australia



A combined effort of raising awareness about the burden of HAIs, technical guidance, multifaceted implementation strategies and global campaigning (SAVE LIVES: Clean Your Hands), has achieved marked behavioural change in hand hygiene. Top scientific experts have been involved and broader aspects of IPC addressed, including infections caused by invasive procedures and unsafe injections, as well as combatting AMR.



If we were successful in our efforts to stop health care-associated infection, we would never need to talk about infection prevention and control. However, in every country of the world we are a long way from achieving such a situation. In fact, concerted action and the implementation of sustainable solutions, remain an important part of the patient safety and quality improvement agenda. Over the last decade, the Clean Care is Safer Care Programme is testimony to the power of global solidarity and the resulting action that spread around the world.

Sir Liam Donaldson, WHO Envoy for Patient Safety

Key CCiSC accomplishments



Nearly **19 000 health facilities in 177 countries** across the world have supported hand hygiene improvement through the SAVE LIVES: Clean Your Hands campaign



CCiSC catalysed a **pan-European-African improvement programme involving 17 countries** to tackle patient safety with IPC as the starting point (WHO African Partnerships for Patient Safety)



Four Ebola-affected countries supported during the Ebola response with follow-up to ensure IPC capacity-building and recovery planning



Four African hospitals supported to implement SSI surveillance and a surgical-unit safety programme, demonstrating significant sustained reduction of SSI



Seven global surveys conducted to understand hand hygiene progress, alcohol-based handrub availability and local production, AMR burden and inappropriate use of surgical antibiotic prophylaxis

SAVE LIVES: Clean Your Hands



Hand hygiene is as effective as vaccines, even more than some vaccines.

Professor Reida El Oakley, Minister of Health, Libya

As part of the major WHO effort to improve hand hygiene in health care, the **SAVE LIVES: Clean Your Hands** global campaign was launched in 2009 and continues to secure phenomenal support both at the facility and country level. The campaign's success can be attributed to strong scientific foundations and innovative implementation approaches supported by the WHO Collaborating Centre on Patient Safety at the University of Geneva Hospitals, Geneva, Switzerland.



Key outcomes include

- A campaign redefining **hand hygiene advocacy**, achieving a social media reach on a par with, if not better than, other global public health initiatives
- Over **50 countries** delivered national hand hygiene campaigns
- **Fifty-five hospital departments across five countries** provided scientific evidence on successful implementation of the hand hygiene multimodal improvement strategy
- Over 30 countries implemented the local **production of alcohol-based handrub** using WHO guidance
- Influencing the policy agenda, with **WHO's alcohol-based handrub formulation included on WHO List of Essential Medicines** since 2015

WHO is leading the way to support IPC improvement

WHO has demonstrated that calling for and taking action is a huge leap forward in the approach to HAI prevention and illustrates the power of global solidarity. Our commitment on behalf of Member States is universal, transcending geographies and wealth.

WHO's IPC Global Unit is leading a new approach to strengthen national and international capacity, improve practices and change behaviour to make health care safer, of a higher quality and free from avoidable infections. To support Member States, the team is collaborating with others in global health, in particular those in the field of patient safety and quality, building on the strong relationships developed with technical experts, health workers, policy-makers, patients and the community.

The IPC team strives to ensure health care without avoidable infections. Its work supports the six core functions of WHO as well as the vision and mission of its Service Delivery and Safety Department (SDS)*. Its focus is safe, high quality integrated health services delivered through knowledge, innovation, collaborations and most importantly, people-centeredness.

Six core functions of the World Health Organization

Leadership

Providing leadership on matters critical to health and engaging in partnerships where joint action is needed

Research

Shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge

Norms and Standards

Setting norms and standards and promoting and monitoring their implementation

Policy Options

Articulating ethical and evidence-based policy options

Technical Support

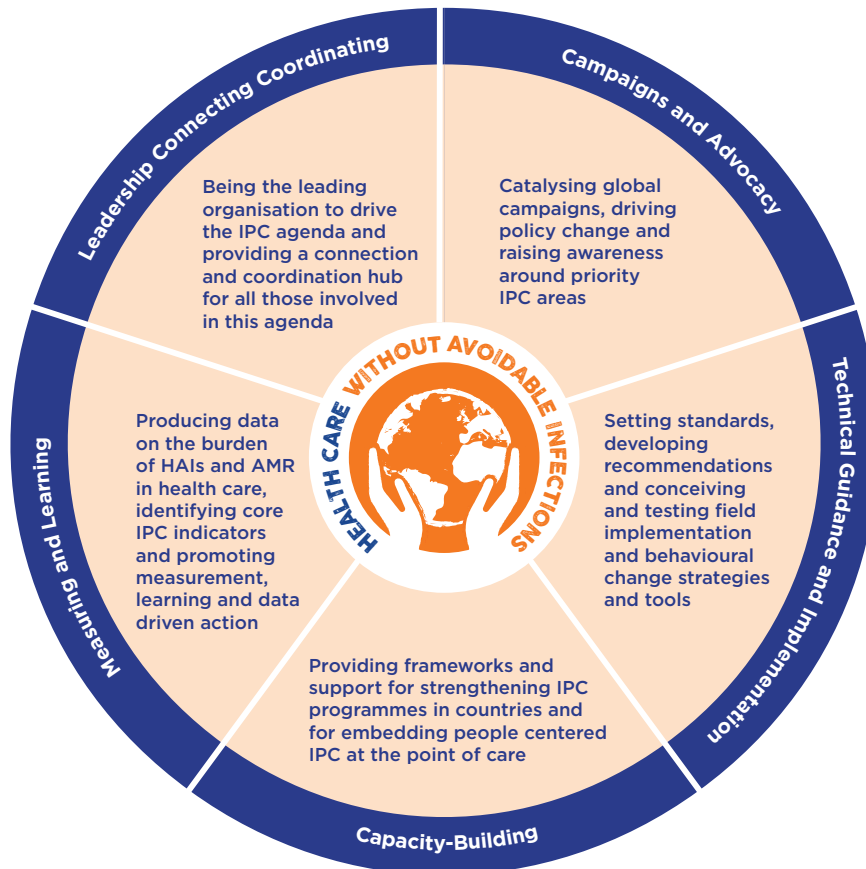
Providing technical support, catalysing change, and building sustainable institutional capacity

Monitoring

Monitoring the health situation and assessing health trends

What is the IPC team doing to support your work?

In order to deliver consistent and credible action that meets the needs of varying health systems and users, the team is focusing on five strategic pillars that reflect WHO's six core functions.



Defining new success in IPC

Our vision is to protect the lives of patients and health workers across the world through excellence in IPC.

Our mission is to drive IPC to the top of national health agendas, by providing innovative, effective technical guidelines and strong coordination, with the goal of reducing infections and AMR in health care and revolutionizing the way IPC is applied.

To succeed in IPC, WHO is developing new policies, evidence-based recommendations and strategies and tools to support governance, knowledge improvement, implementation at the point of care and enhanced collaborations. An example of this is the SSI prevention guidelines.

Looking to the future, mobilising resources and supporting development of action and implementation plans must be a key focus. Involving senior leaders and experts to give regular advice and mentorship, especially from the WHO Envoy for Patient Safety as well as a Technical Steering Group and a multidisciplinary External Advisory Board, aims to support long-term success.

Key technical areas of work:

- IPC country capacity-building
- Surveillance and burden of HAIs
- IPC to combat AMR
- Hand hygiene in health care
- Injection safety
- IPC associated with invasive procedures (e.g. surgery and catheters)



There are many examples of excellence at the country level. WHO will continue to break new ground and support successful innovations, ensuring stakeholders are engaged at the right time, in the right way and that ultimately, people – patients, health workers and the community – are protected from avoidable infection.

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Strong measures for infection prevention and control support some of our most important global health goals. Infection prevention and control is the backbone of good hygiene and all its preventive power. Patients and staff deserve safe health care settings. Preventing infections in the first place reduces the need for antibiotics and cuts the risk that we will lose these fragile medicines.

Dr Margaret Chan, Director-General, WHO



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