Joint Action
Antimicrobial Resistance and
Healthcare-Associated Infections

Co-funded by the
Health Programme
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EU JAMRAI
WP6.1:Policies for prevention HAIs and their implementation

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Health-Care-Associated Infections

Approximately 700,000 health-care–associated infections (HAIs) occurred in 2011, affecting approximately 1 in 25 hospitalized patients

Beyond the numbers, personal stories and lives matter, one of them could be you!

CDC National Health Report: Leading Causes of Morbidity and Mortality and Associated Behavioral Risk and Protective Factors— United States, 2005-2013

HAIs in Europe

ECDC estimated that approximately 4 million patients acquire a HAI each year in all EU Member States and that approximately 37,000 deaths directly result from these infections

In November 2001, the EU Health Ministers adopted the Council Recommendation on the prudent use of antimicrobial agents in human medicine (2002/77/EC)
In June 2009 they adopted the Council Recommendation on patient safety, including the prevention and control of healthcare associated infections (2009/C 151/01)

These Recommendations ask Member States to adopt and implement specific strategies for the prudent use of antimicrobial agents - aiming at containing antimicrobial resistance, and for the prevention and control of healthcare-associated infections - aiming at improving patient safety.

Key facts: *HAIs is a timeless Public Health crisis*

HAIs usually receive public attention only when there is an epidemic.

Although they are often hidden from public attention, the real endemic, ongoing problem, no institution or country can claim to have solved, despite many efforts.

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES — Clean Your Hands

Key facts: Are HAIs preventable events?

Estimating the Proportion of Healthcare-Associated Infections that Are Reasonably Preventable and the Related Mortality and Costs
Craig A.et al Infection Control and Hospital Epidemiology (2011)

Reviewed 434 from 4.847 studies

International Bibliography reports that **65%–70%** of CABSI & CAUTI and **55%** of VAP & SSI could be prevented by **implementing the appropriate protective measures**.

The estimated number of preventable Infections & deaths annually are:

Preventable infections

CAUTI	95,483 - 387,550
CABSI	44,762 – 164,127
VAP	95,078 – 137,613
SSI	75,526 – 156,862

Human lives saved

CAUTI	2,225 – 9,031
CABSI	5,520 – 20,239
VAP	13,667 –19,782
SSI	2,133 – 4,431

Direct Associated costs

CAUTI	$115 million - $1.82 billion
CABSI	$960 million - $18.2 billion
VAP	$2.19 billion - $3.17 billion
SSIs	$166 million - $345 million

Key facts: The impact of HAIs linked to the patient safety and the viability of Healthcare Systems

Category of Costs*			
	Fixed Costs	Variable Costs	
Direct Hospital Costs	Buildings Utilities Equipment/ Technology Labor (Laundry, Environmental Control, Administrator)	Medications Food Consultations Treatments	Procedures Devices Testing Supplies
Indirect Costs	Lost/ Wages Diminished worker productivity on the job Short term & Long term morbidity Mortality Income lost by family members Forgone leisure time Time spent by family/ friends for hospital visits/ travel costs/ home care		
Intangible Cost	Psychological Costs (anxiety, grief, job loss) Pain & Suffering Change in social functioning/ daily activities		

HAI's impact both in Patient & Healthcare System are multiple, direct & indirect

*Adapted from Haddix AC & Shaffer PA. Cost- Effectiveness analysis. Prevention Effectiveness: A Guide to Decision Analysis & Economic Evaluation, 1996

Key facts : *The HAIs prevention needs an holistic approach*

What are the solutions to this problem?

- Infection prevention and control measures
- Appropriate Hand Hygiene
- Correct application of basic precautions during invasive procedures

are **simple & low-cost**

but require **Staff Accountability & Behavioral Change**

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

Antimicrobial Resistance: The reality now…

Antimicrobial Resistance poses an enduring threat to the global community and, in our days,

a Major Public Health risk to developed countries

Even more alarming, is the fact that we are heading towards

the era of Pan-drug Resistance – PDR

Already in countries with extensive spread of Carbapenem-Resistant *Enterobacteriaceae* (CRE), resistance to all available antibiotics is a reality.

The salvage of the last available antibiotics for treating infections caused by

Carvapenem Resistant pathogens disseminating even through the food chain

is a major issue at a time when resistance even to colistin appears to be on the increase worldwide.

EU-JAMRAI: Background

GOAL: To bridge the gap between declarations and concrete actions

Propose concrete steps enabling European countries to strengthen the implementation of efficient and evidence-based measures to tackle AMR & HAIs

EU-JAMRAI

- ✓ Supported by the Health Programme of the Health and Food Safety Directorate- General
- ✓ One Health response to AMR
- ✓ Global Action Plan on AMR (By WHO, FAO, OIE)

EU-JAMRAI: Primary Objectives

1st Bring together different networks of policy makers, experts and organizations on AMR and HCAI

2nd Identify and test evidence-based measures to address AMR and HCAI in different contexts and provide recommendations to policy makers.

3rd Produce concrete recommendations and promote awareness and commitment by governments and stakeholders for a European contribution to international initiatives.

4th Promote:

"One Health" approach

"One Health in all policies" concept

"Health in all policies" concept

EU-JAMRAI: WPs

- ✓ 27 Member States
- ✓ 44 Partners
- ✓ International Organisations
- ✓ More than 40 Stakeholders

WP1: Coordination

WP2: Dissemination

WP3: Evaluation

WP4: Integration in National Policies & Sustainability

WP5: Implementation of One Health national strategies

WP6: Policies for prevention of HAIs & their implementation

WP7: Appropriate use of antimicrobials in humans & animals

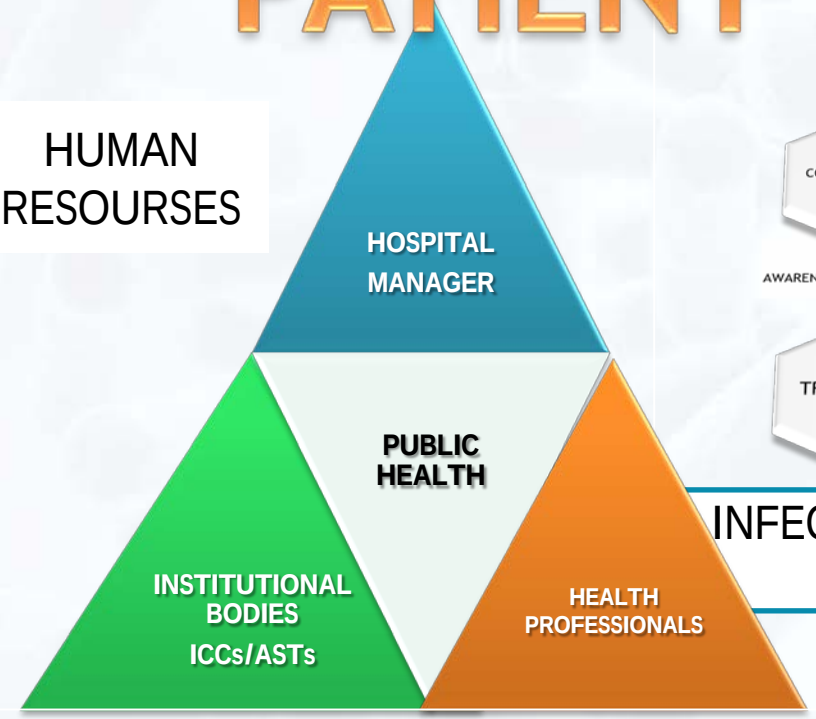
WP8: Awareness raising & Communication

WP9: Prioritizing & Implementing research & innovation for PH needs

WP6.1: Is Infection Control Program's implementation an *easy task*?

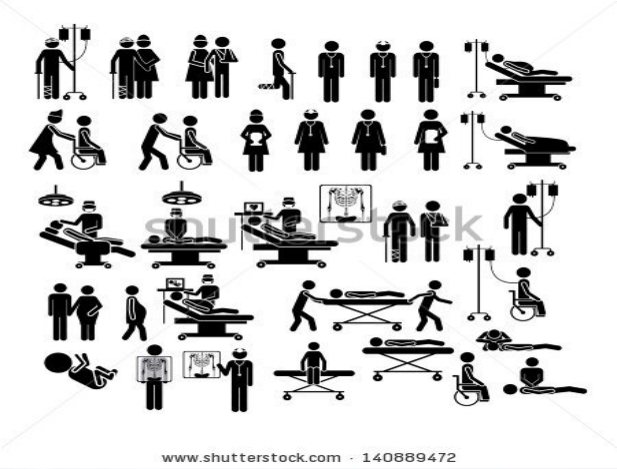
PATIENT SAFETY

HUMAN RESOURSES



INFECTION CONTROL PROGRAM

WORKING ENVIRONMENT



EUJAMRAI WP6.1: INITIAL IDEA

The initial idea of the WP6.1 based on the global acceptance that IC implementation needs:

- **Holistic approach**
- **Commitment of all organization's stakeholders**

Additionally, we must have in mind how IC pyramid acts in:

- Different countries,
- Healthcare systems
- Completely different cultures

Regardless of the healthcare structure and resources,
the organizational & the health professionals' behavior
arise as key factors for an effective implementation of IC

WP6.1:
A top-down approach for preventing HCAIs through the **implementation of agreed infection control programs and institutional behavior change**

Organizational Culture: The role of OC in Infection Control Policies

Organizational culture

ICP-goals

GUIDELINES
TRAINING
SRVEILLANCE
FEEDBACK
AUDIT

Recourses

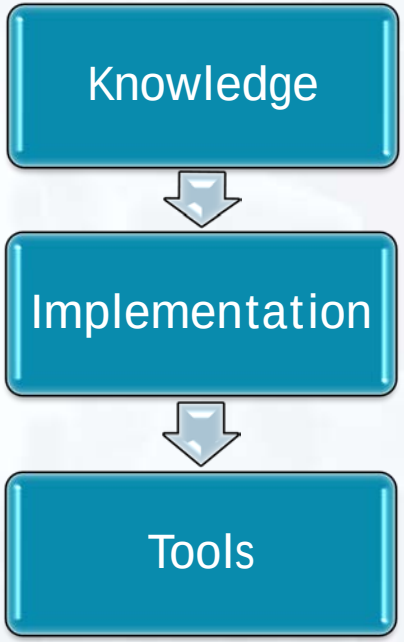
Successful multimodal interventions should be associated with an overall organizational culture change as effective IPC can be a reflector of:

1. Quality care
2. Positive organizational culture
3. Enhanced patient safety climate

Guidelines on Core Components of Infection Prevention and Control Programmes at the National and Acute Health Care Facility - WHO 2016

WP6.1 OBJECTIVE: SPECIFIC GOALS

1. **Determine** the necessary institutional structures and resources for the implementation of infection control programs and promote adequate hospital organization, management and structure for the prevention of HCAI.
2. **Incorporate** Infection control programs into clinical practice for the improvement of health professionals' compliance with infection control routine using the institutional behavior change as a tool to accomplish it.
3. **Develop** the tools for increasing awareness and improving the training of health professionals to infection control and prevention.



WP6.1: STRUCTURE

W6.1 is divided into 3 main tasks which are **a sequence of activities aimed at the development of a Universal Infection Control Framework (UICF)** for health professionals according to which roles, responsibilities and accountability will promote teamwork strengthening towards improved health professionals compliance and, consequently, patient safety. The same partner-countries will be involved in all three tasks.

TASK 1

INFECTION CONTROL POLICIES

What we are doing

Surveys A,B

TASK 2

INSTITUTIONAL BEHAVIOR

What we can improve

Pilot Implementation of an Universal Infection Control Framework

TASK 3

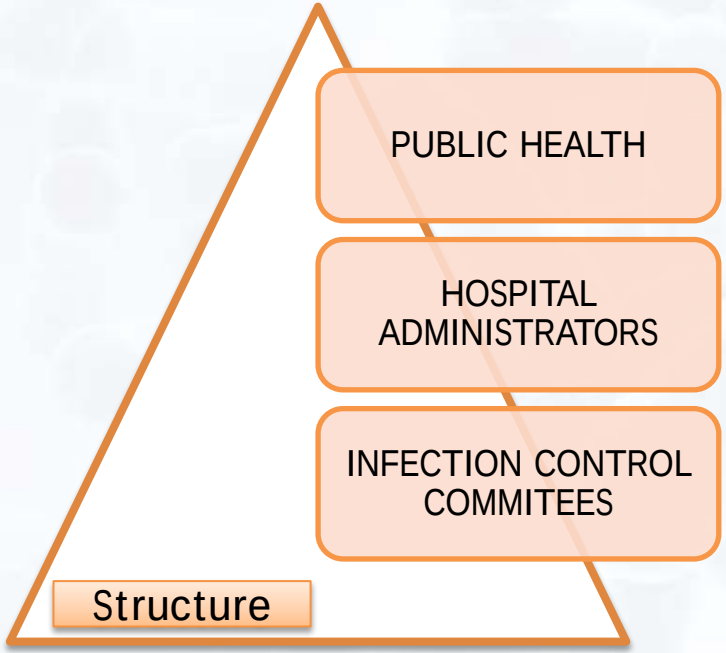
AWARENESS TRAINING

How we can improve

Training tools

WP6.1: Surveys -target groups

SURVEY A



SURVEY B

WP6.1: Surveys Background

Activity 6.1.1.1: Survey A

- Based on the key components of an ICP of recent guidelines by WHO
- Domains examined: IC policy implementation at national and hospital level, Institutional bodies dedicated to IC, HAI surveillance, Training & Guidelines, audit, Communication & cooperation procedures.
- Disseminated to ICCs, HA, PHA

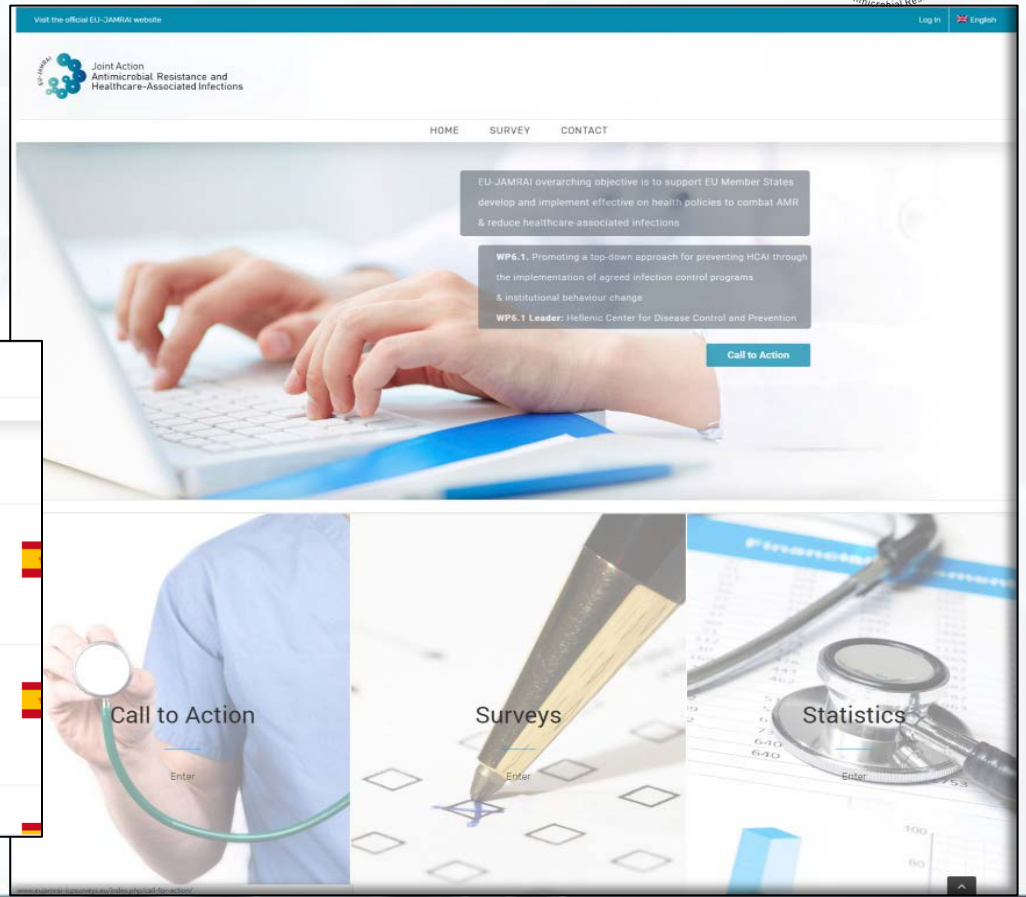
Activity 6.1.2.1: Survey B

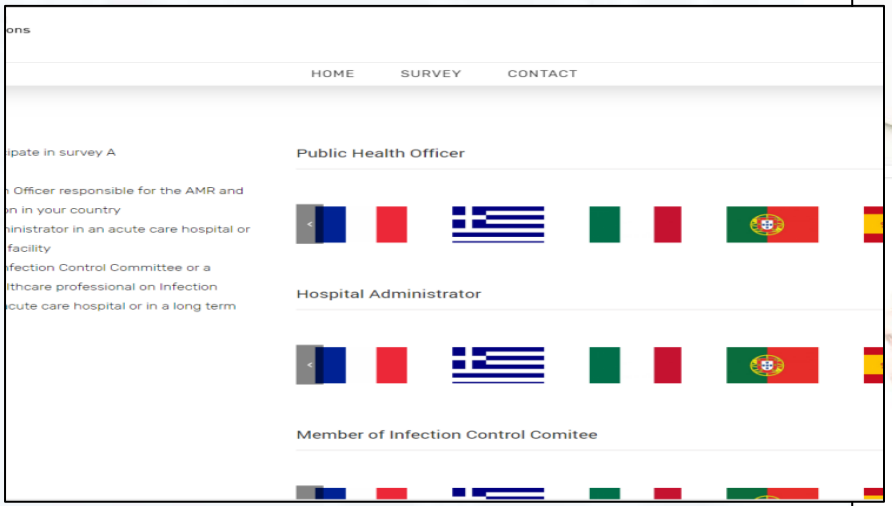
- Based on Health Belief Model
- Domains examined: Susceptibility, Severity, Benefits, Barriers, Cues to action
- Disseminated to ICCs, HA, HCWs

WP6.1: Surveys A and B

A digital multilingual platform that gives access to the survey material was developed and 42 questionnaires were uploaded in 7 European languages

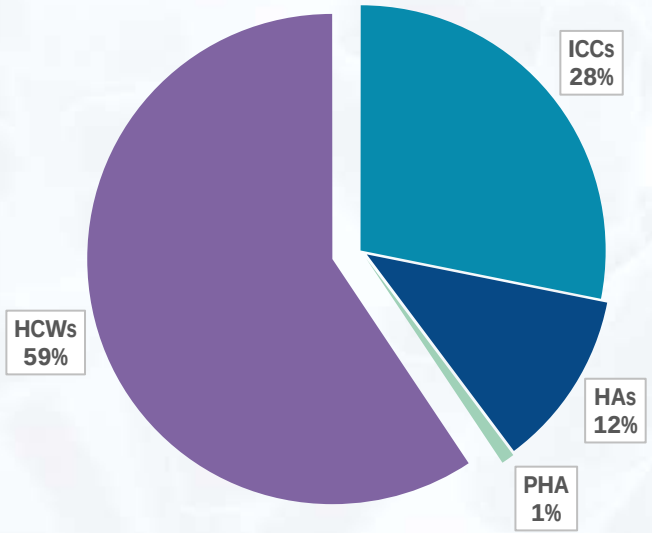
http://www.eujamrai-icpsurveys.eu





WP61: Participation in Surveys A + B

Responders in Survey A + B



- Responders in Survey A+B (n=2650)
  - HCWs= 1573
  - ICCs=746
  - HAs= 308
  - PHA= 23
- Countries (8): Austria, Denmark, Italy, France, Greece, Portugal, Spain & the Netherlands

WP6.1: SURVEYS RESULTS

In the majority of hospitals, the basic structures and procedures exist and are functional

1. **A national policy** on the prevention of HAIs with specific objectives exist, to whose progress Public Health Authorities and Governments are regularly updated.
2. **Infection Control Programs** at hospital level have been put into practice with specific objectives.
3. **Competent bodies**, such as the Infections Control Committees, have been formed and have undertaken the task of monitoring the implementation of Infection Control Programs.
4. **HAI Surveillance Systems** have been developed at national level in which the majority of hospitals participate.
5. **Training programs** about Infection Control for Health Professionals have been implemented.

WP6.1: SURVEYS RESULTS: THE GAPS

DEFINED AUTHORITIES THE **RESPONSIBILITY** AND THE LEADERSHIP OF HERARCHY

DISSEMINATION OF INFORMATION AND ITS TRANFORMATION TO THE CLINICAL REALITY

RISK MANAGEMENT AND THE PROMOTION OF A SAFER **WORKING ENVIRONMENT**

RESOURSES

IC AS A PRIORITY OF HOSPITAL ADMINISTRATION

TRAINING ALL THE PARTIES

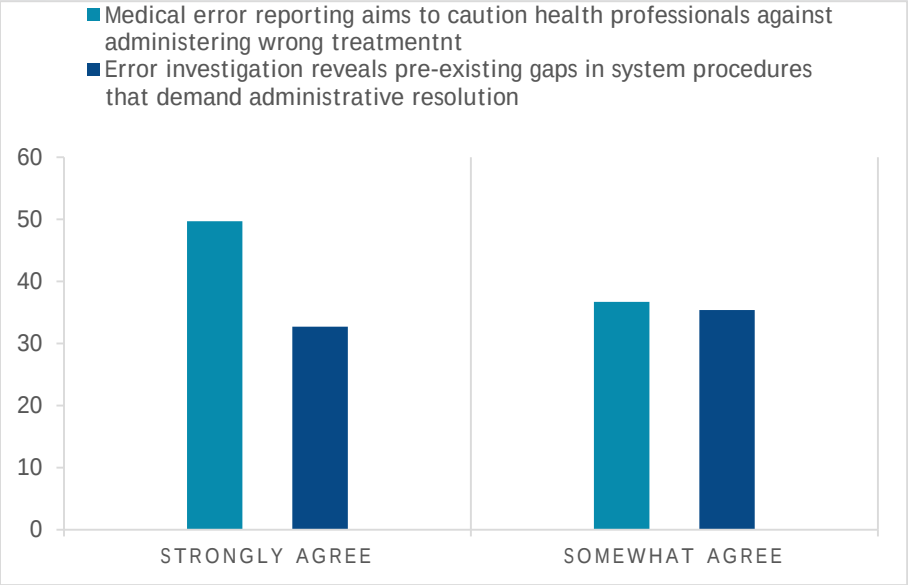
TRAINING TO THE BASIC IC PRINCIPLES

WP6.1: RESULTS: Safe working environment

- 42% of the ICCs reported **that they** strongly **feel safe** to work in their hospitals and 30% their patients are safe.
- 34% of the HCWs strongly **feel safe to work** in their hospital.
- 62% of HAs strongly **prefer to be hospitalized** in their hospital as patient, while only half of them strongly believe that the hospital personnel work in a safe environment.

WP6.1: RESULTS: Safe Care

- 60% of ICCs reported that hospital culture promotes **staff expression on errors**/ limitations regarding IC implementation in daily practice (only 24 % strongly agree)
- Having IC implementation always in **the agenda of staff meetings** in their ward is a fact only for 44% of the HCW
- 86% of the HAs agree that **medical error** reporting aims to caution health professionals against wrong treatment
- 68% of HAIs agree that **error investigation** reveals pre-existing gaps in system procedures that demand administrative resolution



WP6.1: RESULTS: Training of Healthcare Professionals

- 48% of ICCs members have received **certified training** on IC
- 66% of the healthcare workers believe that are **properly trained** on the implementation of the precautions, while only 29% of them strongly disagree
- 64% of HAs reported that have been **educated on the ICP implementation**

WP6.1: RESULTS: Factors influence the HCWs compliance to IC measures

If limitations are not related to recourses, workload and knowledge, which are the real factors that influence the compliance of HCWS to IC measures?

Reasons for not performing HH Compliance (Answers by HCWs, % disagreement, n= 1573)		
	Strongly Disagree	Somewhat Disagree
Lack of time	61%	24%
Using gloves due to convenience	56%	21%
Unavailability of the appropriate materials	58%	26%

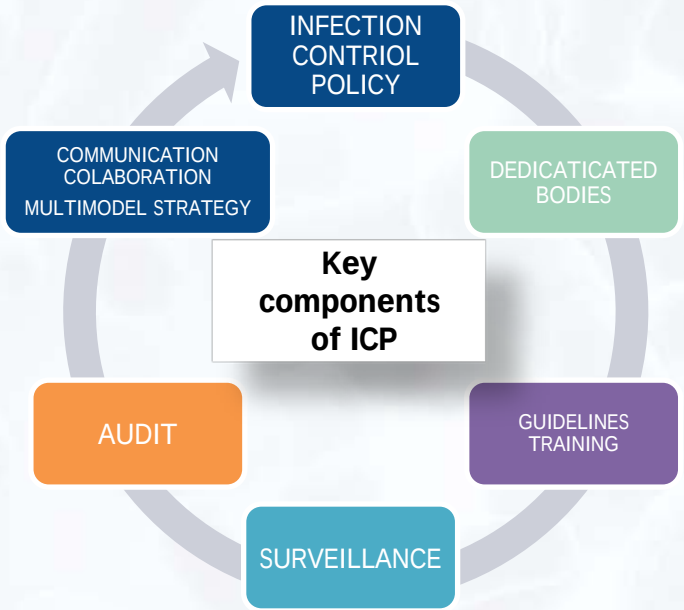
Benefits of Infection Control (Answers by HCWs n=1573 & ICCs n= 411, % agreement)	
	Agree
High staff compliance with the IC measures results in having less patients with HAI risk	98% (ICC) 97% (HCW)
AMR rates results in having more effective antimicrobials available	86% (ICC) 81% (HCW)
Low incidence of HAIs due to MDROs results in less workload & better function of the ward	86% (HCW)
Low HAIs rates results in having less occupied and more functional wards	90% (ICC)
IC measures' implementation results in an easier & safer routine practice	94% (ICC)

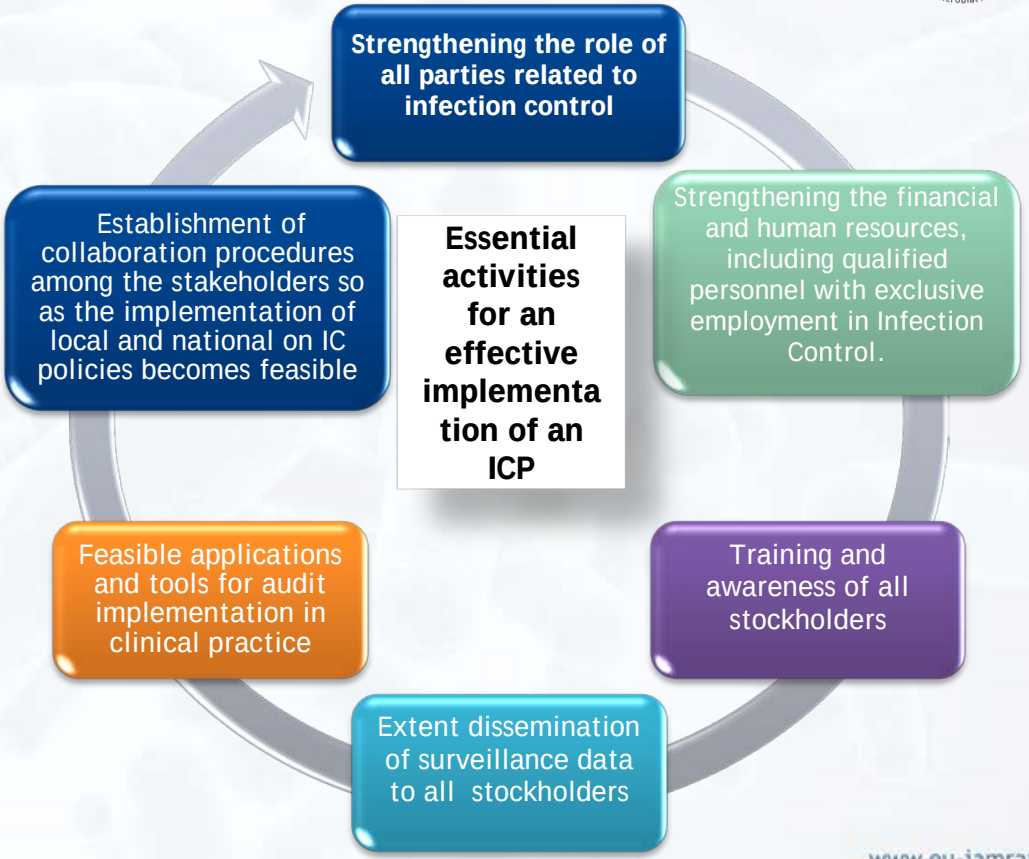
WP.6.1 SURVEY RESULTS

Which of the following measures do you consider as important steps for the improvement of the ICP implementation in your hospital?

HCW	ICC	HA
Practical National Guidelines	Practical National Guidelines	Practical National Guidelines
HCWs Training Improvement	HCWs Training Improvement	Institutional Framework / Roles And Authorities
Institutional Framework / Roles And Authorities	Institutional Framework / Roles And Authorities	HCWs Training Improvement
Resources/Cost Assessment	Resources/Cost Assessment	Resources/Cost Assessment
Support ICC & IC Nurse Role	Support ICC & IC Nurse Role	Surveillance - Feedback Improvement
Support from PHA	Support from PHA	Evaluation Of Interventions
Evaluation Of Interventions	Evaluation Of Interventions	Support ICC & IC Nurse Role
Surveillance - Feedback Improvement	Surveillance -Feedback Improvement	Support from PHA

WP6.1: SURVEYS RESULTS: Key findings and areas for improvement





EU-JAMRAI: THE VISION

The vision is to **Understand and Act**.

Because even if we don't manage to fill the gap between guidelines and clinical reality, we will have succeeded in **bringing the opposite sides closer** and thus making a significant step towards **patient safety.**

Thank you!

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