Health First Europe Workshop

DATA FOR SAFER CARE
Digital solutions & surveillance systems for patient safety

European Health Forum Gastein
2nd October 2019
INTRODUCTION
The disruptive role of health data for patient safety Digital solutions & surveillance systems for patient safety

Melina Raso, Executive Director, Health First Europe
Josep Figueras, Director, European Observatory on Health Systems and Policies
The role of surveillance systems and data management to tackle HAIs and foster patient safety
The role of surveillance systems and data management to tackle HAI and foster patient safety

Andrea Ammon, Director, ECDC
HFE/ENSH Workshop ‘Digital solutions & surveillance systems for patient safety’
European Health Forum Gastein, 2 October 2019,
ECDC HAI-Net surveillance modules

**Intensive care units (ICU)**

**HELICS/IPSE**

- 2000: HELICS: ICU and SSI
- 2005: IPSE

**C. difficile infections (CDI)**

- Council recommendation 9 June 2009

**ECDC**

- 2008: PPS in LTCFs
- 2010: PPS in acute care
- 2011-2012: PPS in acute care
- 2015: CDI
- 2016-2017: 2nd PPS in acute care and 3rd PPS in LTCFs

**Surgical site infections (SSI)**

- 2010: PPS in acute care
- 2011-2012: 2nd PPS in acute care and 3rd PPS in LTCFs
Results: ECDC point prevalence surveys (PPSs) in acute care hospitals and LTCFs, 2016-2017: prevalence and estimated incidence of healthcare-associated infections (HAIs)

<table>
<thead>
<tr>
<th></th>
<th>PPS in acute care hospitals</th>
<th>PPS in long-term care facilities (LTCFs)</th>
</tr>
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<tbody>
<tr>
<td>Number of facilities, EU/EEA countries</td>
<td>1209 hospitals, 28 countries</td>
<td>1788 LTCFs, 23 countries</td>
</tr>
<tr>
<td>Number of included patients/residents</td>
<td>310 755</td>
<td>102 301</td>
</tr>
<tr>
<td>Patients/residents with at least one HAI on any given day*</td>
<td>6.5%&lt;sup&gt;1,2&lt;/sup&gt;  &lt;br&gt;1 in 15 patients</td>
<td>3.9%&lt;sup&gt;1&lt;/sup&gt;  &lt;br&gt;1 in 26 residents</td>
</tr>
<tr>
<td>Estimated total number of HAIs each year in EU/EEA</td>
<td>4.5 million</td>
<td>4.4 million</td>
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<tr>
<td></td>
<td><strong>Total</strong>: 8.9 million HAIs per year</td>
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<sup>1</sup>Country-weighted and corrected after validation; <sup>2</sup>before correction 5.5% vs 5.7% in PPS 2011-2012;

Correlations composite index of AMR in HAIs, ECDC PPS of HAIs and antimicrobial use in acute care hospitals, 2016-2017

Source: ECDC PPS 2016-2017; 1 dot=1 country
How are surveillance data collected?

**EARS-Net**  
(antimicrobial resistance)  
Electronically, from laboratory information system (LIS)

**ESAC-Net**  
(antimicrobial consumption)  
Electronically, from medicines agencies / pharmacies / national insurance system

**HAI-Net**  
(healthcare-associated infections)  
In the wards, at patient bed
Electronic surveillance of AMR and HAIs

Opportunities

• Timely detection of alert microorganisms and outbreaks
• Reduce surveillance workload
• Automated case detection of HAIs would improve comparability (elimination of subjective interpretation of case definitions)
• Also useful for surveillance of other infectious diseases

Challenges

• Comparability depends on availability of electronic data
• Multiple combinations of software in 8000+ EU/EEA hospitals
• Legal problems (GDPR) with Patient ID for data linkage, e.g.:
  • Linking lab and other data problem if lab is outside of the hospital
  • Linking local lab data with reference lab data at national level
Specific recommendations from ECDC PPS 2016-2017

1) Harmonise microbiological diagnostic testing of HAIs in EU/EEA hospitals (e.g. test reimbursement, clinical algorithms)
2) Increase IPC nurse staffing levels to (ideally) one IPC nurse per 100 occupied beds
3) Install alcohol hand rub dispensers at the point of care
4) Ensure adequate nursing staffing levels in accordance with workload to improve hand hygiene compliance
5) Increase the percentage of single rooms to improve isolation capacity
6) Increase post-prescription review of antimicrobial treatment, deescalating when possible
7) Ensure dedicated time for antimicrobial stewardship consultancy
8) Methods: validation, training, promote electronic surveillance of HAIs
DEBATE WITH PARTICIPANTS

TOPIC FOR DISCUSSION

Barriers and solutions
DEBATE WITH PARTICIPANTS

TOPIC FOR DISCUSSION

What are the main barriers for the implementation of data-driven solutions for safer care?

Go to SLIDO.COM and enter the event code #Data4PatientSafety to participate to the poll.
Why doesn’t happen?

- Culture eats strategy for breakfast
- Daily activities eat culture and strategy forever
- Organizations (people) are naturally inclined to be «problems-driven»
  - Negative event
  - External supervision
  - Internal champion
A job for everyone

• Leadership at all levels should develop focus and commitment for:
  × Unfreezing (and the importance of stories)
  × Psychological safety – «obligation to dissent»
  × Stay on the shop floor – walkarounds
  × Walk the talk
  × Organizational well-being

• Empower line managers/staff to manage critical situations with their collaborators

• «Safe» informal reporting systems
A collective ambition (and responsibility)

- Beyond satisficing
- Beyond isomorphism – competitive benchmark
- Group payoff / interprofessional cooperation

Celebrate

- Fight the «one shot» trap
- Ride the momentum
- Give credits
Drivers for individual learning

• Reflection and sense-making
• Comparison and contamination
• Responsibility and empowerment
• Support and identity
• Crisis-challenge
Smart Hospitals

Paul Garassus
European Union of Private Hospitals (UEHP)

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#Data4PatientSafety
Less hospital beds, shorter stays but more patients
Increasing proportion of private sector, actually about 20% of beds in EU28 (Eurostat)
Investment strategy for innovation including IT
European Private Hospitals

The challenge of Sustainable Healthcare Systems, including innovation

- UEHP represents Private for profit Hospitals under contract with National Social Security in EU
- 93% of European Hospital Expenditures are covered by Government and compulsory insurance spending (OECD Health At A Glance 2018, p.177).

- The challenge we face is the sustainability of healthcare systems to limit waste, to optimize costs, and to improve quality of care preventing adverse events and complications. **Efficiency is the goal.** New technologies are necessary for the measurement, the evaluation and the assessment of outcomes ("HTA" like).

- A new relationship with a more informed and involved patient
- To improve the global efficiency, smart Hospitals are connected with caregivers, patients, data bases offering new services recruiting new professionals

- Strategic investments in IT are required, to develop a new offer and to assume positive outcome for patient
- We observe a shift from “a single hospital stay” to “a global service”, connecting professionals in the hospital network
European Private Hospitals
The challenge of Sustainable Healthcare Systems, including innovation

- Risk management includes now cyber security against malware, cyberattacks, etc.
- UEHP is in contact with DG SANTE, DG CNECT, ENISA

- We have to work with a new generation of healthcare professionals
- We develop new functions including communication on Social Network

- New tools are available to inform patients and professionals on quality of services (e.g. Qualitätskliniken in Germany) but many national agencies already offer information on standards and outcomes in European Private Hospitals (for example, HAS in France)
- According to the EU Directive on patient mobility, patients seek greater transparency and high-level health care, increasing the attractiveness of private hospitals.

- A positive attitude is necessary to study advantages and possibilities given by IA, data bases analysis for optimal services
- We are preparing now the Hospital of the future
Drivers and barriers to HAI Surveillance in Europe

Fiona Garín Mc Donagh
BD

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Barriers

1. Technology/Infrastructure

2. Resources/Investments
Drivers

1. Commitment/Prioritization

2. Leadership/Culture
Role of industry

1. Risk assessment and auditing tools
2. Experience and expertise
3. Safe, innovative, and optimized technology and systems
4. Training and education
Data-driven innovation for patient safety
The patient perspective

Neda Milevska Kostova
International Alliance of Patients’ Organizations (IAPO)
Data-driven innovation and Patients

Can we use big data for decision making towards safer patient care?

1. Personal and health data has become an economic asset – can we make it health asset too?
2. At molecular level, human body deals with large amount of ‘data’ every day
3. New trends in digital technology for health - Connected care, AI
4. Personalized decision-making based on big data?
Building a safety culture

What is the role of each health care stakeholder in building a safety culture?

**Government** – commit, develop and evaluate health technologies and practices, convene stakeholders across the health care system, ensure blame-free policies…

**Providers** – support acquisition of new knowledge, exchange, learn, accept praise but be open to critique

**Patients** – participate constructively, accept the role of partner and equal player, not victim
Patient safety reporting

How can we encourage cultural change and foster a blame-free approach to patient safety reporting?

1. Communicate success stories – errors and near-miss can be prevented from others' experience
2. Celebrate action – best learning comes from mistakes (unfortunately…)
3. Make it easy to report a problem – digital solutions and ICT
4. Don’t be afraid to get feedback – positive or negative

Challenges will remain….

Health literacy
Information asymmetry

Digital divide
E-literacy

Involvement vs. commitment ('ham and eggs')
EU-JAMRAI quarterly surveillance system on antibiotic use and antimicrobial resistance

Germán Peñalva
Representative of EU-JAMRAI and Institute of Biomedicine of Seville

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#Data4PatientSafety
What are the main barriers for the implementation of surveillance systems for AMR?

Surveillance systems on a more frequent basis than annual

1. Institutional commitment and support
2. Dedicated human resources, time and finance for data collection and management in health centres
3. Dedicated resources in national / regional health systems for aggregated data
4. IT and connectivity
5. Benchmarking
EU-JAMRAI quarterly surveillance pilot project

Develop and test a near real-time surveillance system of antimicrobials and resistant bacteria

Aim → Quarterly surveillance of basic indicators at national / regional level → Shortening the gap between AMC and AMR surveillance to a quarterly basis, in addition to current yearly-based surveillance systems.

1. AMC: DDD per 1000 occupied bed days for Hospital Care and DDD per 1000 inhabitants for Primary Care

2. AMR: incidence density. Number of isolates in clinical samples per patient/1000 stays (occupied bed days) in Hospital Care or 1000 inhabitants in Primary Care

PIRASOA
Institutional Programme for the Prevention and Control of Healthcare Associated Infections and Appropriate Use of Antimicrobials in Andalusia, Spain

http://pirasoa.iavante.es/
dx.doi.org/10.17504/protocols.io.r3bd8in

EU-JAMRAI
EU Joint Action on Antimicrobial Resistance and Healthcare-Associated Infections
https://eu-jamrai.eu/

Antimicrobials: use, quality use, cost
Resistance: incidence density from clinical samples
Nosocomial infections: prevalence & incidence
Clinical: mortality of patients with bacteraemia
Quarterly and yearly basis

171 indicators about...

Antibiotic Use: 29 indicators
- 19 indicators for Hospital Care
- 10 indicators for Primary Care

Antimicrobial Resistance: 12 indicators
- 7 indicators for Hospital Care
- 5 indicators for Primary Care

41 indicators Quarterly basis

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<thead>
<tr>
<th>HOSPITAL CARE</th>
<th>COMMUNITY CARE</th>
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<tr>
<td>Carbapenemase-Producing Enterobacteriaceae</td>
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<tr>
<td>ESBL  E. coli</td>
<td>Ciprofloxacin-resistant  E. coli</td>
</tr>
<tr>
<td>ESBL  K. pneumoniae</td>
<td>ESBL  E. coli</td>
</tr>
<tr>
<td>Carbapenem-resistant  A. baumannii</td>
<td>ESBL  K. pneumoniae</td>
</tr>
<tr>
<td>Carbapenem-resistant  P. aeruginosa</td>
<td>Meticillin-resistant  S. aureus</td>
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<tr>
<td>Meticillin-resistant  S. aureus</td>
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<tr>
<td>Vancomycin resistant enterococci</td>
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Scaling up best practices
DEBATE WITH PARTICIPANTS
TOPIC FOR DISCUSSION

What data-driven solutions are already in place?

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Scaling up best practices: Spain

Fernando Simón
Centro de Coordinación de Alertas y Emergencias Sanitarias, Spain
HAI Surveillance in Spain

30 years of prevalence surveys
35% reduction (in hospitals)
HAI Surveillance in Spain

30 years of prevalence surveys
35% reduction (in hospitals)
Surveillance framework in 2015
Incidence, prevalence, outbreaks
Protocols in 2016-17
Data Management System 2017-
Support Lab. Network 2018

Aging, fragile society
Increased use of services
Invasive intensive therapies
Antimicrobial resistences
– Pathogenes
– Transmission mechanisms
Patient safety strategies
Implementation key points

Multiple stakeholders
Misperceptions
Quality indicator
Hospital vs national issue
Different outcomes
Unconnected data bases
Varying development levels
From Infection Prevention and Control towards Infection Prevention and Control
Scaling up best practices: Finland

Sinikka Salo
Ministry of Social Affairs and Health, Finland

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Digital solutions and surveillance systems for patient safety

ICT, digitalization, big data and new technologies - like AI - enable to improve patient safety.

Common standards and platforms for the collection and sharing of information within EU would be beneficial.

Safety culture includes leadership, values, attitudes and practices that support safe operation.
DEBATE WITH PARTICIPANTS

TOPIC FOR DISCUSSION

What data-driven solutions are already in place?

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Thanks for participating & keep in touch!

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