Practical experiences of implementation of surveillance and control of nosocomial infections

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- AGEL Group is the largest private provider of health-care in the Central Europe
- In Czech Republic – 11 hospitals and other health institutions
- In Slovakia 4 hospitals since 2006
- All health institution successfully passed the process of accreditation
- Headquarters regulates steering and decision-making processes in entire group. Common denominator of all processes are effectivity, quality and patient safety
- **Main targets:**
  - Increasing the level, quality and safety of provided health-care
  - Standardization of all processes in all parts of the group
  - Continuing support of health-care development and targeted prevention focused at effectivity, quality and safety

- One of these processes focused at increased health-care quality and safety:
  „Programme of prevention and control of nosocomial infections (NI)“
Programme Implementation

- **2006-2007** start of the pilot project in Přerov Hospital
- **2007** Two more hospitals joined the project
- **2008** Project approved by the Agel Medical Council in Czech Republic under the leadership of central manager for NI (coordination, subsequent surveillance and control of NI)

**Project divided into 3 phases**

- **1.phase** – implementation – creation of main conditions
- **2.phase** – adaptation – increasing quality of processes
- **3.phase** – operational

- **Between 2008-2010** the programme is joined by 8 more hospitals
The programme of prevention and control of nosocomial infections

Main quality manager Agel
Main NI Manager Agel

Quality manager of integrated hospital

NI manager of integrated hospital
1. Phase - implementation
creation of basic conditions

• **Targets:**
  – Introducing project to integrated hospitals
  – Building local teams for NI surveillance
  – Set the process of monitoring, gathering, recording and analysis (verification) of data
  – Educate team members and other personnel, methodical visits
  – Entry audit to analyze current level of NI surveillance of integrated hospitals

• **Problems at the beginning:**
  – Different level of NI surveillance, formal surveillance only in some cases
  – NI surveillance team existing only in some hospitals
  – No relevant standards, hand-written reporting
  – No monitoring of undesirable microbial strains and their proportion in NI
  – No hospital hygienist/epidemiological nurse, contact nurse

*No unified country-wide methodology and rules*
NI control - internal process of quality management
NI management scheme

Hospital management
Managing position

NI control team
Executive body

NI hospital manager
Expert team leader
Processing and evaluation of data

Epidemiological nurse
Epidemiology in practice

Authorized physician
Contact dept. nurse
Department activities

Cooperating:
✓ Clinical microbiologist
✓ Representative of ATB Centre
✓ Representatives of Clinical Departments
✓ Representative responsible for the quality of health care in hospital
2. Phase – adaptation
increasing quality of the process

• **Targets:**
  – Focusing on functionality, quality, usefulness and effectivity of implemented system
  – Setting main indicators of NI surveillance – regular reports
  – Creating position of hospital hygienist/epidemiology nurse
  – Creating manual of NI, golden standard of control and prevention of NI, unify other related standards
  – Integrate created standards into process of general managing and quality increase
  – Implement electronical system of reporting and evidence of NI
  – Analyse the level and functionality of process (audits)

• **Problems at the beginning**
  – Ensuring quality data collection and surveillance control on time (too many duties and working activities of NI team members)
  – Personal changes of NI team
  – No analysis and follow-up of all epidemic outbreaks
  – No data analysis and feed-back – NI team/clinical department
  – Epidemiology nurse/hospital hygienist not present in all hospitals
  – Lack of information on results of observations
3. Phase – functional operation

**Issuance of methodical instructions MZD 2/2013 – countrywide rules set**
Programme of prevention and control of infections (PCI) – optimal parameters

- **Targets:**
  - Verify compliance with Methodical instructions 2/2013 - checklist
  - System of control and prevention of NI included in quality management standards
  - Regular evaluation of system of control and prevention of NI in all integrated hospitals
  - Continuous updating of measures to decrease risks of external influences and of current legislation
  - Setting PCI plan of control and prevention – long-term strategic priority of Agel Group hospitals

- **Problems at the start**
  - Representative of NI team is not a member of the Quality Board in all hospitals
  - PCI plans, monitoring professional infections in health-care workers
  - Low effectivity of cooperation of authorized physician with head of department
  - Insufficient quality of performance of authorized physicians in 1/3 of hospitals
  - Position of hospital hygienist in 6 hospitals
  - Deficiency in regular semiannual evaluation of NI occurrence (no detailed analysis, missing trends)
Main documents

• Unified standard „Prevention and control of NI“ and individual relevant standards
• Rules and basic indicators of surveillance and analysis of NI
• Manual of NI
• Defining spectrum of activities of NI control team
• Standard enforcing special hygienic regime
• Standard of monitoring dangerous bacterial strains (MRSA, Clostridium difficile, ESBL strains)
• Hand hygiene manual
• Ethical codex of patients and staff
• The new hospital information system - includes electronic reporting and monitoring NI
Conclusion

• Introduction of targeted measures due to the Programme of the prevention and control of NI increases internal processes of the quality control of provided health-care
• Continuous evaluation of usefulness and effectivity of adopted measures and achieved results of data collection constitute groundwork for further development of the Programme and are used within internal controls
• Targeted prevention aimed at effectivity, quality and safety – verifiably positive results:
  ➢ Decreases risk rate of occurrence of NI
  ➢ Rationalizes and increases effect of preventive regimes and measures
  ➢ Provides data for targeted operational changes
  ➢ Decreases occurrence of undesirable epidemic episodes as well as occurrence of dangerous hospital strains (MRSA, ESBL ...)
  ➢ Decreases their cost
  ➢ Increases level, quality and safety of provided health-care and patient safety
Programme of prevention and control of nosocomial infections in Agel a.s.

• Introduced in all Agel group hospitals

• New IT system and computer NI reporting introduced in all integrated hospitals

• Currently 11 hospitals are integrated as well as several other health institutions

• Resulted into decreased likelihood of NI and their complications
Achieved results

• Significant decrease of:
  - Total occurrence of NI
  - Nosocomial infections of exogenous origin
  - Wound infections (SSI)
  - Total occurrence of NI related to operation procedures
  - Occurrence of NI following clean surgery procedures

• Hygiene and epidemiology – Implementation of the programme led to rationalization and higher effectivity of special hygiene regimes and to decrease of undesirable epidemic episodes

• Reduction of NI caused by ESBL strains as well as by MRSA
Trend of NI

- Start of program implementation
- Decrease by 1.9%

Trend of exogenous NI

- Start of program implementation
- Decrease by 13.6%
Post-operative nosokomial infections in total - trend

Decrease by 4.7%

start of program implementation

Trend of wound infections in total

Trend - clean surgery infections

Decrease by 16.6%

Decrease by 4.5%

start of program implementation
Take home message

• The process of prevention and control of NI requires:
  
  – Narrow cooperation of NI team members with heads of clinical departments as well as with hospital management team
  – Strict control of level of NI reporting and continuous monitoring validity of reported NI
  – Regular evaluation and analysis of achieved results
  – Targeted control of preventive measures
  – Ensuring availability of information
  – Continuous education of NI team members as well as of health-care staff
Thank you for attention