Background
An important concern of health systems facing scarce resources is to cover the care needs with lower costs.
As population based surveys are less and less affordable, to use hospital data currently gathered for financial purposes and other statistics already available could result in update information and important savings for planning health care.
Methods
By using the national hospital database (hospitalization days, inpatient cases), statistical reports about incidence, hospital morbidity and populations, relied on multivariate statistics, correlation and multi-linear regression, patterns of use were identified, defining either gaps or overuse in 42 districts and 8 regions.
Results
The data included 5763652, 24157793 hospitalization days in chronic, acute care wards spent by 262300 and 3876170 inpatients. Correlation coefficient showed lower values (0,1-0,4) for acute and chronic wards of psychiatry, palliative care, higher (0,7-0,8) for laparoscopic surgery, oncology and gynecologic oncology and extremely high (0,91-0,97) for other acute care wards while a low or medium correlation was found for the majority of chronic wards. After a matching between type of disorders and the wards where most likely these could be assisted, rates by 1000 persons of target population (children, adults, fertile women, new born) were computed. Disparities between reported inpatients days and those expected were established so the services were qualified as appropriately, over or under used.
Conclusions
Using the hospital data on number of cases and hospitalization days plus resident population, incidence and hospital morbidity is a way of providing update and useful assessment of needs and their coverage. The main uses of multilinear regression - causal analysis, forecasting an effect and trend forecasting - are discussed.

Key messages:

- Hospital data collected for other purposes than needs assessment could be used in order to measure the care needs and care use patterns
- When such exploitation (of dabases already available, gathered for other purposes) is performed, efforts for corroboration of information and cautions for biases identification become compulsory

Clinical audit as a quality improvement tool in emergency care. A systematic literature review

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Background
Clinical audit is a healthcare quality improvement process based on systematic review of care, implementation of change and further monitoring over time. The aim of this study was to investigate the level of application and effectiveness of clinical audit in the particular field of healthcare emergency.
Methods
A systematic literature search was carried out, from 2004 to 2015, by a specific search algorithm through PubMed and CINAHL databases. Resulting studies were selected by two reviewers independently according to title, abstract and full text. Inclusion criteria were: clinical audits in emergency area at both primary and secondary care level. Audits focused on training, healthcare professionals' perception or compliance to procedures/protocols, health economics or death analysis only were excluded from the review. From each article the following information were extracted: first author and year of publication, study design, country and duration, study population, setting, main and specific objectives, indicators used and main results.
Results
Out of the 6164 retrieved studies 62 were finally selected, which were mainly carried out in Europe (51,61%) and Oceania (27,42%); 64,51% of audits were performed by a multidisciplinary team and 51,61% were focused on process, 33,87% on outcomes and 14,52% on both aspects; 88,71% were conducted at hospital and 11,29% at primary care level with various fields (e.g. cardiology, neuroscience) of application. Out of the 62 studies about 15% were complete audits (assessment and comparison with standard phase followed by improvement actions and monitoring over time).
Conclusions
Even in emergency clinical audit can be a valuable tool to assess clinical practice both in terms of process and outcome and improve healthcare quality, mainly at hospital level. Indeed in hospital medical records and data flows are available, hospital team are more cohesive than territorial ones and hospital is more organized than primary care.

Key messages:

- The culture of clinical audit as a healthcare quality improvement tool needs to be widespread and its systematic application to be implemented in all clinical areas and fields, and in all settings
- Clinical audit is an irreplaceable and indispensable part of clinical practice. All health professionals should share this idea and be motivated to act consistently with the results to be pursued

Overview on Diabetes' interspace mortality and hospitalization in Central Italy

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Background
Cronic diseases, diabetes in particular, are a major problem of Public Health for what concern mortality and hospitalization rates. The aim of this study is to evaluate the weight of it comparing death and hospitalization rates for cardiovascular problems between diabetic and non-diabetic populations.
Methods
We extracted from current Health data all the deaths and hospitalizations for cardiovascular diseases from 2010 to 2012 in the Local Health Unit 9 of Grosseto in Tuscany, Italy. We identify the diabetic population using hospital discharge and emergency care diagnosis, drugs consumption and outpatient clinics data. Then we calculated death and hospitalization rates of cardiovascular diseases for diabetics and non-diabetics. Finally we used odds ratio to compare the rates between the two groups.
Results
Mortality rates, for all cardiovacular diseases, are higher in diabetics than in non-diabetics (OR 4.82, $p < 0.01$), in particular for cardio-ischaemic and cerebrovascular diseases, respectively OR 4.56 and 3.39, both $p < 0.01$. The hospitalization rates are higher too in diabetics than in non-diabetics: for all cardiovascular diseases OR 15.90 $p < 0.01$, and in particular for cardio-ischaemic diseases OR 13.56 $p < 0.01$, atherosclerosis OR 19.90 $p < 0.01$, cerebrovascular diseases OR 8.07 $p < 0.01$, kidney diseases OR 13.11 $p < 0.01$, hypertension OR 4.16 $p < 0.01$.
Conclusions
Diabetes appears to be a major health problem against which it could be important to focus the attention of health policies

because of its impact on mortality and hospitalization rate, not only for well known problems like cardio-ischaemic diseases and cerebrovascular accidents, but also for others health problems like atherosclerosis, kidney diseases and hypertension.

Key messages:

- Mortality rates for cardiovascular diseases in diabetics are about 5 times higher than non-diabetics
- Hospitalization rates in diabetics are really higher than non-diabetics:kidney, cardio-ischaemic and cerebrovascular diseases: OR 13.1, 13.6 and 8.0, hypertension and atherosclerosis: OR 4.2 and 19.9

Medical needs in the treatment of paraplegic people in acute care hospitals

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Background
The topic of nursing paraplegic persons is very important in all clinics (acute care hospitals and rehabilitation) in Austria, especially regarding patient outcome. Its importance is due to significant communication and interface problems between acute care hospitals and rehabilitation clinics. The study aims at answering the question whether it is necessary to fulfill a so-called 'Care Pass' and pass it on to patients to guarantee improved care and treatment information. Patients are to have this ''Care Pass'' with them at all times, especially when going to acute care hospitals.
Methods
A standardized questionnaire was created and sent to 544 former patients of rehabilitation clinics. The response rate was 29.1 %. The respondents were selected according to their diagnoses (ICD-10 classification). In addition to statistical data and individual nursing needs, it was queried whether these needs were identified upon admission to an acute care hospital and whether or how these requirements were implemented after notification had been made by the patient or his/her relative.
Results
34.5 % of patients admitted in acute care hospitals were not asked for their specific needs. 55.4 % of patients and relatives provided only partial or no information. Answering the question of when this information had been implemented, 58.4% responded with immediately, 35.1% responded with after repeated requests and 6.5% with never. The survey analysis shows significant problems with bowel management, personal care, bladder management, transfer, positioning, pressure ulcer prevention and food intake.
Conclusions
Only a deficient collection of data regarding individual care needs was collected at admission. The care needs mentioned by patients or their relatives were inadequately implemented.

Key messages:

- The quality in terms of communication and qualifications in terms of the care for this particular group of patients in acute care hospitals must improve
- Concrete support from the professional area which has so far provided high-quality care for these patients is desirable

Hospital patient safety culture and beyond: Incident reporting trends in an Italian academic hospital

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Background
Incident Reporting (IR) is one of the most widely accepted tools for identifying and analyzing healthcare related risks; it is directly related with improvement of patient safety culture in healthcare workers. According to literature, doctors are known for being less committed to IR than nurses.
Objects and Methods
The aim of the study was to analyze professionals attitude to report and potential reporting trends during years 2010-15, comparing them to other more general risk indicators supported by existing routine databases, such as patients complaints/praises and professionals accidents at work.
Reporting rates, stratified by year and reporter profession, were estimated using the reported events/full time equivalent ratio. Personnel attitude toward self-reporting was also analyzed. Univariate and multivariate analysis were computed.
Results
A total of 8809 IRs were collected, corresponding to 1 every 77.7 discharges; reporting rates were 0.44 (95% CI: 0.42-0.46) for doctors, 0.40 (95% CI: 0.39-0.41) for nurses and 0.17 (95% CI: 0.16-0.18) for other professionals.
Among professionals, only doctors reporting rate increased significantly ($p = 0.04$) from 0.29 (95%CI: 0.25-0.34) in 2010 to 0.67 (95%CI: 0.60-0.73) in 2015. In the same period, patients complaints decreased from 384 to 224 ($p < 0.001$), while praises increased from 199 to 232 ($p = 0.04$) and work-accidents remained constant. Multivariate logistic regression showed that self-reporting was more likely among nurses than doctors (OR 1.51; 95%CI 1.31-1.73) and for severe events than near misses (OR 1.78; 95%CI 1.11-2.87).
Conclusions
Contrary to previous literature, in our study doctors seemed to be more prone to report adverse events than nurses although nurses showed higher proportions of self-reported events. Doctor reporting rates increased significantly during the study period; as the other analyzed risk indicators suggest, this trend was probably due to personnel growing attention to patient safety issues.

Key messages:

- Incident Reporting is a direct marker of attention to patient safety
- Doctors can become more committed to IR than nurses, improving their level of attention to patient safety

The impact of accreditation for excellence on patient safety culture in an Italian hospital

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Background
The promotion of safety culture in hospital care is a requisite to reduce errors and to continuously improve the quality of care. Alongside patient safety programs, a quantitative evaluation of the safety culture in hospitals is essential to understand strengths and weaknesses of the system and to set up future investments. Therefore, Udine Academic Hospital (UAH) joined the Patient Safety Collaborative Alliance (PaSCAl) national survey in order to assess safety climate and evaluate the impact on it of the Joint Commission International (JCI) accreditation process.

Methods
The PaSCAl survey is based on a questionnaire made by the Agency for Healthcare Research and Quality (AHRQ), made by 52 items grouped in 12 areas. Sampled wards (medical, surgical and diagnostic) could differ between years. The survey was done in 2009 and 2015 with a sampled workforce of 793 and 587 respectively. The delivery was both electronic and paper based. The surveys were set before and after the first JCI accreditation (2010) and the second round (2014).
Results
Response rates increased from 16.6% (132/793) to 21.9% (129/587). 10 areas out of 12 had better scores. A significant ($p < 0.05$) increase of favorable opinions after the accreditation was found in the perception of patient safety (+16.1%); feedback and communication (+12.0%); adverse event reporting (+23.6%); teamwork between units (+12.7%). In 2015 no area was statistically far from the national benchmark, while previously patient safety (-11.1%) and teamwork between units (-14.7%) were significantly worse.
Conclusions
The questionnaire inquired the trust put by workforce in the hospital management and their wards. Before accreditation, key weaknesses were shown. Significant improvements on reporting culture were achieved. Education, followed by standardization of procedures and communication were the main efforts by our management. A ''silos'' mindset and a blaming attitude towards errors are still open challenges.

Key messages:

- The analysis of patient safety culture is a useful tool to monitor the effects of patient safety programs on workforce attitudes
- Among other strategies, accreditation for excellence can help increase patient safety culture in the context of public hospitals

Heavy costs of diabetic population in Central Italy for cardiovascular diseases hospitalization

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Background
iabetes is one of the biggest challenges for Public Health nowdays, because of the great impact of this cronic diseases on comorbidity, deaths, and of course costs. The aim of this study is to evaluate the costs of diabetes in terms of hospitalization expenditure for cardiovascular diseases and compare them between diabetic and non-diabetic populations.
Methods
For this study we extracted from current Health data all the hospitalizations with related costs for cardiovascular diseases and diabetes-related issues from 2010 to 2012 in the Local Health Unit 9 of Grosseto in Tuscany, Italy. We identify the diabetic population using hospital discharge and emergency care diagnosis, drugs consumption and outpatient clinics data. Then we calculated costs for diabetics and non-diabetics. Finally we used Mann Withney test to compare the costs between these groups.
Results
Overall the total hospital expenditure for cardiovascular diseases from 2010 to 2012 was more than 63 millions of euro, 51,4% of which was spent for diabetics' hospitalization. Patients with diabetes had more frequently multiple hospitalization (OR 1.75 $p < 0.01$). Moreover hospitalization costs are higher for diabetics than in non-diabetics, expecially for hypertensive cardiopathy, eye diseases, cerebrovascular diseases, infertility and kidney diseases (all of them $p < 0.05$).
Conclusions
More than half of the hospitalization costs for cardiovascular diseases are spent for diabetic patients. Hospitalization costs are only a part of the health expenditure for diabetes. Reducing the prevalence of this disease with prevention and health promotion should be a major target of public health, not only for the health of the citizens, but also for saving lives and resources.

Key messages:

- More than half of the hospitalization costs for cardiovascular diseases are spent for diabetic patients
- Diabetic patients have more frequently multiple hospitalization for cardiovascular disease (OR 1.75 $p < 0.01$). The average hospitalization costs are higher for diabetics then in non-diabetics ($p < 0.01$)

Hand hygiene compliance in an Italian hospital

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Background
Hand Hygiene (HH) is the most important factor of preventing health care-associated infections. We investigated the healthcare workers' HH behaviour
Methods
The research was conducted in all wards (medicine, oncology, out-patients departments, blood transfusion centre, cardiology, intensive care, surgical unit, surgery, hospice, first aid and maternal-child area).Four trained observers evaluated the HH practice of: physicians, nurses, healthcare assistants and other healthcare workers in 8 moments: before the visit without gloves, after visit, after body fluids contact, after removing gloves, before eating, before invasive and non-invasive procedures, after contact with patient's skin. The handwashing were divided according to: type (social/antiseptic) and the product used (soap/gel). To avoid observational bias we selected observers involved in ward's practices which gathered the data ''secretly''.We used $\chi 2$ test for comparisons between healthcare workers and wards
Results
The HH compliance rate achieved by all healthcare workers was 76.84%.The nurses showed better HH compliance than physicians ($p = 0.043$). Surgery had better performance than all units ($p < 0.05$), except intensive care and surgical unit. These latter showed higher performance compared to all other wards ($p < 0.001$). In addition: I)medicine showed HH compliance lower than: oncology ($p = 0.001$), out-patients departments ($p = 0.025$) and hospice ($p = 0.032$); II)cardiology lower than: oncology ($p < 0.001$), out-patients departments ($p = 0.018$), hospice ($p = 0.022$); III)first aid lower than: oncology ($p < 0.001$), out-patients departments ($p = 0.015$) and hospice ($p = 0.022$); IV)blood transfusion centre lower than oncology ($p = 0.004$). The antiseptic washes were 14.1%, the alcoholic gel was used for 7,4% handwashing
Conclusions
In the Center Italy hospital studied the HH compliance would seem better than national and international literature data. Nevertheless the differences between wards and healthcare workers should be overcome

Key messages:

- We found differences in hand hygiene compliance between healthcare workers, in particularly between nurses and physicians
- Our studied showed a lower use of alcoholic gel than soap

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