

FRIDAY 8th MAY, 2009:

Location: University Residential Centre Bertinoro
Address: Via Frangipane, 6 - 47032 Bertinoro (FC) - Italy

08.50 - 09.10: 1st Keynote Speaker: Professor Jean-Karl Soler MSc – Malta.

Theme: “Research using EPR: The Potential of ICPC in Primary Care Research”.

The theme of the EGPRN Bertinoro, Italy, meeting in May 2009 is “Data analysis of electronic patient record databases in general practice”. The theme is important because data from electronic patient records is a potentially valuable source of empirical information about day-to-day general practice, and which is collected routinely about millions of patients around the world every day. Such data should inform quality assurance, education, training and research. The potential applications of such data and its analysis are truly endless, and include epidemiology of general practice (studying patients’ reasons for encounter, doctors’ diagnostic labels, and interventions to provide care), computerised decision support systems, drug adverse event surveillance, studying the process of diagnosis in general practice, studying co-morbidity, and many others.

We have published recently ¹ on the necessity of precision in measuring events in such databases in order to capture the maximum amount of information with reliability and validity. The International Classification of Primary Care fulfils all the requirements of a modern and precise tool for organising data in primary care for clinical care, practice management, and analysis at the micro, meso and macro level for research, education and quality assurance. Its purpose is to order the domain of family practice in the format of episodes of care. It provides a single terminology for the patient’s RFE and the family physicians diagnosis, thus representing both sides of the same coin. It captures the changes (transitions) in the content of episodes of care over time. It follows strict taxonomic rules, and so its classes are mutually exclusive. It offers—if possible—one class for common (occurring >1 per 1000 patient years) reasons for encounter and diagnoses. Less common classes are included in ‘ragbags’. Its biaxial structure (chapters for body systems/problem areas and components identical throughout all chapters) results in three-digit mnemonic, alphanumeric codes. Its reliability and validity are supported by its coding rules and a growing comparative international database. In the coding process, localization takes precedence over aetiology. Symptom diagnoses take precedence over disease diagnoses that are uncertain (i.e. do not fulfil the inclusion criteria). It does not cater for mind-body metaphors: ‘psychosomatic’ and ‘somatoform’ disorders are not included.

The presentation will look at data collected with ICPC in an episode of care model from three countries, and analyse utilisation, frequencies of reasons for encounter, interventions and diagnoses (episodes), and research relationships between reasons for encounter and episode titles (research into diagnosis) and between episode titles themselves (co-morbidity) using pre- and post-test probabilities expressed as odds ratios.

References:

1. Soler JK, Okkes I, Wood M, Lamberts H. “The coming of age of ICPC: celebrating the 21st birthday of the International Classification of Primary Care.” *Family Practice* 2008; **25**: 312-317.

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09.10 – 09.30: 2nd Keynote Speaker: Professor Marco Cambielli – Italy.

Theme: “Problems related to data collection from Electronic Patient Records in Primary Care: reliability of data”.

Family practitioners and other staff working in primary care require comprehensive and accurate data on patients at the point-of-care if they are to provide high quality health services to their patients. Electronic patient records (EPR) are an effective method of achieving this objective, by dispensing with the need to use difficult to access, and often illegible, paper-based records. Electronic patient records underpin many information technology initiatives in primary care, such as screening for identifying patients at high risk of cardiovascular disease, call–recall systems for asthma and other long-term disease management programmes, computerized decision support systems for prescribing, electronic ordering of tests and electronic referral systems to secondary care. These are all, however, dependant on comprehensive and accurate coded data.

There are known to be large variations in the accuracy and completeness of the clinical information stored in electronic patient records. In some systematic reviews it was found that the recording of consultations was generally high (typically greater than 90%), but assigning a morbidity code during each consultation was more variable. Some Authors identified major omissions in the diagnoses. The recording of diagnoses in primary care was less complete and, when a diagnosis of disease was recorded, it was generally less detailed than in the data held by various National Registries.

Soler et al. (1)described the progress of the International Classification of Primary Care (ICPC): the wide use of the ICPC facilitates international comparisons of clinical practice and coding in primary care.

Key areas for further work are the development and evaluation of data quality standards for use in electronic patient records; and the evaluation of methods for improving data quality. Electronic patient records offer enormous benefits, not only for patient care but also, when aggregated, for secondary analysis; and when linked with other health and social care datasets, for outcomes measurement, quality improvement, public health surveillance, and research. These benefits cannot be fully realized without high quality data. Systems in which ‘free text’ natural language (reflecting clinicians thought processes) could be coded and used for additional functionality are still far in the future.(2)

Markers of quality should comprise internal reference standards based on objective and diagnostic EPR elements that have high positive predictive value (3)

References

1. Soler JK, Okkes I, Wood M, Lamberts H. The coming of age of ICPC: celebrating the 21st birthday of the International Classification of Primary Care. *Fam Pract* 2008; 25: 312–317.
2. Majeed A. et al. Accuracy and completeness of electronic patient records in primary care. doi:10.1093/fampra/cmn047
- 3.Thiru K et al. Systematic review of scope and quality of electronic patient record data in primary care. *bmj.com* 2003;326:1070-4

SATURDAY 9th MAY, 2009:

Location: University Residential Centre Bertinoro
Address: Via Frangipane, 6 - 47032 Bertinoro (FC) - Italy

08.45 – 09.05: 3rd Keynote Speaker: *Professor Giampiero Mazzaglia* – Italy.

Theme: “Computerized Patient Database in General Practice: experience in Italy and Europe”.

Before the advent of automated databases, the identification and appropriate follow-up of large cohort of patients required a major effort to ensure complete and accurate collection of the required information. To date, the increasing number of general practitioners (GPs), which use computers for administrative purposes, to keep patient records, and to generate prescriptions, allows researchers to conduct epidemiological studies in a highly efficient approach. The Health Search-Thales database (HSD) was set up by the Italian College of General Practitioners (SIMG) in 1998 with the primary aim of carrying out epidemiological research in a community-based setting.

The HSD contains data from the computer-based patient records from a selected group of GPs distributed across Italy who voluntarily agreed to collect data for the database and attend specified training courses. The database contains information on the age, gender and identification of the patient, and GP registration information, which is linked to the prescription information, clinical events and diagnoses, hospital admission and causes of death.

The HSD has been the source for a number of peer-reviewed publications on the prevalence of disease conditions, drug safety, and prescription patterns in Italian primary care. At national level, the information from the HSD is used for developing prescribing indicators for appropriate use of drug. Such indicators are annually published by the National Department of Health and National Medication Agency in their annual report. At international level, the HSD is involved into several projects, including EU-ADR project funded by the European Commission within the 7th Framework Programme. Such project federates clinical records and claims databases of 30 million Europeans in Denmark, Italy, the Netherlands, and the UK with two main aims: (1) to discover new drug safety signals; (2) to substantiate signals, using causal reasoning based on Bradford-Hill criteria, semantic mining of the biomedical literature, and computational analysis of biological and chemical information (drugs, targets, anti-targets, pathways etc.). In conclusion, although proper utilization of such databases requires multi-disciplinary skills, these information are invaluable source of data for epidemiological studies.

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09.05 – 09.25: 4th Keynote Speaker: *Professor Mike Pringle* – Nottingham, United Kingdom
Theme: “Unlocking the potential of the GP electronic record: experience in the UK.”

In this presentation I will explore the UK experience of using GP electronic records for research and health services delivery. In particular I will cover:

1. Data quality: supporting and improving it using PRIMIS+

I am Service Director of PRIMIS+, a state funded initiative to cascade training to family practices in order to improve clinical data recording and use. PRIMIS+ provides a voluntary analysis tool for practices to assess their data quality (CHART) and a facility to compare their data quality with other practices (CHART Online). The evidence on data quality will be presented.

2. Service delivery support: through QSurveillance and QRisk

These two projects are run in my department in Nottingham. QSurveillance can monitor epidemics (a Flu pandemic etc) and the effects of disasters (the Buncefield fire for example). QRisk is a new risk score for cardiovascular disease which includes deprivation.

3. Research: using large databases such as QResearch, GPRD, THIN and UK Biobank

These databases are gathering more extensive and more useful data. I will give an update on progress in UK Biobank, of which I am on the Board, towards its recruitment of 500,000 people.

4. European collaboration: the results of eHID

This recently completed research project looked at the potential for using GP datasets for comparison of prevalences of common diagnoses across Europe. I will illustrate some of the findings.

Through these four examples I will try to illustrate the potential and challenges in using routine GP data for secondary purposes.