

Consultations, home visits and short communications with patients have special codes, as well as collaborative contacts with other health and social services. There are also fees for consultations lasting  $\geq 20$  minutes, laboratory test and other medical procedures. The claims for each patient contact must include the patient's personal number and a diagnosis, based on the ICPC coding system.

Since 2006 the claims are stored in an administrative database including more than 25 million yearly contacts from nearly 4000 regular GPs. Although designed to administer the reimbursements, the database is increasingly used as a source for research on the GPs' practices. The authors have published studies using claims data linked to data from registers with information on GPs and their list populations, and have investigated the GPs' work related to a defined denominator. The use of data was accepted by the Data Inspectorate and the personal numbers made anonymous for researchers.

A major strength using claims from a health care system with universal coverage is the completeness of data on the whole population.

The validity of diagnoses may also be questioned. 90 % of these claims include only one ICPC code, and the GPs may select a code to justify the use of the tariffs, rather than to report the main medical issues on a scientific basis.

Variation in the use of the tariff could bias findings concerning contact types and the content of the GPs' services. However, the use of codes can be validated to some extent by comparing data from different GPs and different years. Combinations of codes are restricted, reducing the activity information in claims. Facilitating the tariff for research should be an aspect with revisions of the GP tariff.

### The Spanish Minimum Basic Data Set

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The Spanish Minimum Basic Data Set (MBDS) includes personal and clinical information from patients discharged in

almost 300 hospitals in Spain. The variables included in this data set were approved in December 1987 by the Inter-Territorial Council and gather information regarding the characteristics of patients treated (age, sex and place of residence), the episode of hospitalization, the patient diagnoses and procedures performed during hospitalization, coded using ICD9CM.

MBDS was used to estimate the impact of severe sepsis in the Region of Madrid. Severe sepsis cases were defined as discharges with a combination of organic failure and presence or suspicion of infection through a combination of codes. 6,968 episodes were identified representing an incidence of 14.1/10,000 inhabitants, being highest for those 84 and older. Mortality was 33%. The cost of those cases was over 70 million €.

These data could be used to compare the performance of hospitals in treating specific conditions obtaining risk-adjusted mortality rates. Using MBDS 5,306 cases of myocardial infarction were studied. Mortality rate was 10.8%. Multivariable analysis showed that increase in age, presence of arrhythmias, congestive heart failure, renal failure, cardiogenic shock and cerebrovascular disease were associated with in-hospital mortality, while admission in centres attending between 100 and 300 cases appeared to be a protective factor. Other methodologies, like CART, or Artificial Neural Networks (multilayer perceptron) could also be used with this data base. Data from 33,203 patients admitted to hospitals with myocardial infarction were analysed using those methodologies. The CART inductive model was based on Breiman's algorithm, with a sensitivity analysis based on the Gini index and cross validation.

This data set could also be linked to other health services data bases, as with information extracted from the electronic medical record of primary care. A study with this linked data base investigated hospital readmission in a 6 month period in patients 75 year and older. There were 22.6% readmissions. Variables associated with higher risk of readmission were, hospital stay, the total number of medicines prescribed, having hypertension, heart failure or ischemic heart disease.

## J.4. Workshop: An Optimal European Chronic Care Framework: Towards Implementation and Benchmarking

Organised by: EUPHA Section on Chronic Diseases and Eposi - European Platform for Patients Organisations, Science and Industry  
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European countries have achieved major improvements in public health over recent decades. Life expectancy at birth in the EU-27 countries has increased over the last 50 years by about 10 years. Europeans are also living to just over 60 years without poor health or disabilities affecting their lives. Whether longer life expectancy is accompanied by good health and functional status among ageing populations has important implications for health and social care systems. Healthcare systems are under financial and human resources pressures and facing the challenge of building prevention strategies while addressing the rapidly growing number of patients with chronic conditions and diseases who all need information, on-going self-management support and integrated person-centered care to stay healthy and productive and achieve optimal quality of life. However, the current European

medical models are mainly oriented towards acute and short-term treatments and often overlook the complex basis of chronic diseases, the possible active role of patients in treatment procedure and the need for coordination and cooperation between the different units of healthcare and social care systems organization.

The primary objective of the workshop is to address this growing need to support changes in current healthcare delivery systems which would lead to the provision of integrated, patient-centered care models that consider the realities of multi-morbidity and take into account the medical, socio-economic and technology dimensions in a holistic continuum of care. It intends to raise awareness about the current situation in the field of chronic conditions management (CCM) in Europe and highlight some good practice examples to showcase the value and importance of working with a CCM framework. The workshop also aims to outline key learning and policy recommendations to the practical implementation of CCM models in Europe.

After the first introductory presentation on a multi-stakeholder, consensus-driven Optimal European Chronic Care Framework, highlighting the key policy recommendations for

its practical implementation, three related topics will be presented. The second presentation illustrates the EU perspective on CCM, in particular how the European Innovation Partnership on Active and Healthy Ageing (EIP-AHA) helps to support necessary changes in the present medical and financial healthcare delivery models. The third presentation gives a multi-national perspective and learning on patient-centered chronic illness care for people with diabetes, emphasizing patients' perspectives on the value and need to implement worldwide patient-centered care models. The fourth presentation offers good practice example on the effectiveness of CCM models by illustrating a new care model for elderly people living in the community and its effectiveness concerning well-being and complexity of care needs of the elderly. An audience discussion concludes the workshop.

#### Key messages

- Common vision and framework for action to address the growing need of truly patient-centered CCM models.
- Awareness and sharing of good practice examples on the value of working with and for the patients to implement CCM models.

### An Optimal European Chronic Care Framework and Key Policy Recommendations for its Implementation

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#### Background

The evidence suggests that the introduction of integrated care models can improve the chronic care process. Improvements in clinical care affect intermediate outcomes, disease control and adherence to evidence-based guidelines. The evidence in the role of self-management support and delivery system, particularly when combined with decision support, clinical information systems and community linkages, is also growing. This research was performed to: (1) validate the relevance of CCM framework in Europe (2) identify and raise awareness about the existing gaps in the CCM in Europe; (3) promote initiative to tackle the alarming situation and impacts of chronic diseases; (4) provide policy recommendations to the implementation of CCM models.

#### Methods

The research on an Optimal European Chronic Care framework started with mapping of the EU-27 countries in terms of prevalence of CCM national plans across 5 disease areas. Secondly, 10 EU countries were selected for the evaluation of their CCM national plans. The identification of commonalities across good practice examples as well as weakness in the current CCM resulted in the formulation of evidence-based policy recommendations, summarized in the form of White paper. Recently, "in-situ" testing of this CCM framework has been launched in order to assess the interoperability and scalability of such a framework across the EU member states.

#### Results

The components of Eposi Optimal European Chronic Care framework have proved to be closely linked and interconnected. The framework thus suggests that improving and integrating these components is the key towards improving the CCM in Europe. In addition, the formulation of key policy recommendations is an important tool to help to address the challenge of chronic conditions and areas of potential action and initiatives for its implementation at policy, community and individual levels.

#### Conclusions

Eposi's research findings suggest that introduction of integrated chronic care models can improve the chronic disease care process. It is becoming increasingly clear that the focus of chronic care models should not be solely to manage diseases and treat the sick, but to improve the prognosis of chronic disorders and work to prevent illness.

### European Innovation Partnership on Active and Healthy Aging (EIP-AHA) within the context of necessary changes in the present medical and financial healthcare delivery models in Europe

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#### Background

The EIP-AHA pursues a triple win for Europe: (1) enabling EU citizens to lead healthy, active and independent lives while ageing; (2) improving the sustainability and efficiency of social and health care systems; (3) boosting and improving the competitiveness of the markets for innovative products and services, responding to the ageing challenge at both EU and global level, thus creating new opportunities for businesses. This is realised in the three areas of prevention and health promotion, care and cure, and active and independent living of elderly people. The overarching target of this pilot partnership is to increase the average healthy lifespan by two years by 2020.

#### Methods

The EIP-AHA is about pooling resources and projects, coordinating and scaling-up actions, sharing best practice and developing standards and guidelines at European level to reach the critical mass that will turn the ageing challenge into an opportunity and transform the delivery of care for older EU citizens. It brings together a variety of stakeholders ranging from patient organisations, science, industry and healthcare delivery organisations to work in collaborative multi-stakeholder partnership in six key areas: (1) prescription and adherence; (2) falls prevention; (3) prevention of functional decline and frailty; (4) Integrated care; (5) Interoperable independent living; (6) age friendly environments.

#### Results

The EIP-AHA aims at improving the framework conditions for uptake of innovation, leveraging financing and investments in innovation and improves coordination and coherence between funding for research and innovation at European, national and regional level in Europe.

#### Conclusions

The concrete examples of effective and successful integrated care models, based on stakeholders' commitments submitted for the EIP-AHA and works of the B3 Integrated Care Action Group show that the EIP-AHA initiative can support in putting forward innovative solutions and ideas for more efficient and sustainable care models whilst responding to the needs of ageing societies. The success of this initiative highly depends on the active involvement of, and collaboration among a broad range of committed stakeholders.

### An international multi-stakeholder study to assess the core dimensions of the person-centred Chronic Care Model as they apply to diabetes in 17 countries from the perspective of people with diabetes, their family members, and healthcare professionals

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#### Background

Diabetes is a major and rapidly growing burden in Europe and it usable as a model condition for research aimed at advancing implementation of a person-centred chronic care model in Europe.

#### Methodology

The DAWN2 (Diabetes Attitudes, wishes and needs) study surveyed people with diabetes, family members and diabetes healthcare professionals in 17 countries to assess humanistic outcomes of diabetes care and establish key barriers and

drivers for provision of person-centred diabetes care. Through the exploration of results from this study, the relevance and usability of the person-centred chronic care model framework in individual conditions can be established.

#### Results

The DAWN2 study highlights significant gaps and better practices in relation to self-management support and team-based chronic illness care for people with diabetes world-wide. The results provide a first systematic framework for benchmarking countries through survey responses from people with diabetes, family members, healthcare professionals as well as from policy and patient organisation experts.

#### Conclusions

A comprehensive scientific benchmarking framework has been developed for diabetes, including multi-national psychometrically validated population surveys and national policy and programme assessments relevant to person-centred diabetes care. The results reveal important opportunities for cross-fertilisation between cross-disease and disease-specific efforts for the advancement of person-centred chronic care which take a starting point in the voice of people with the condition and of the family members living with them.

### Effects on well-being, quality of care and costs of the combined Chronic Care Model and a population health management model: Embrace

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#### Background

Embrace is a new care model for elderly people living in the community, which combines the Kaiser Permanente (KP) triangle with the Chronic Care Model (CCM). The KP triangle

is a population health management model that divides patients with chronic conditions into three distinct groups based on their degree of need. Embrace encompasses an Elderly Care Team per General practitioner (GP), an Electronic Elderly Record System, decision support instruments, and a self-management support and prevention program. Its intensity of care and support varies per profile: Robust, Frail and Complex needs.

#### Methods

We assessed the effectiveness of Embrace concerning well-being and complexity of care needs of the elderly, quality of care, service use and costs with a Randomized Controlled Trial among elderly people (aged 75 years and older) living in the community. The intervention occurred from January 2012 to April 2013. Embrace was delivered by Elderly Care teams led by a GP and further consisted of an elderly care physician, a district nurse, and a social worker (both district nurse and social worker acting as case managers).

#### Results

In total 1476 elderly people registered in 15 GP practices in the province of Groningen were included in the study and were stratified to the three Embrace profiles: 59% to the Robust profile, 16% to the Frail profile and 25% to the Complex needs profile. Next patients were randomized to the control group (n = 719) that received care-as-usual, or to the intervention group (n = 757) that received Embrace care and support. The results after one year of intervention will be presented. We expect improved well-being and decreased care needs for the elderly people, improved quality of care and decreased – or at least stable – overall levels of service use and costs.

#### Conclusions

We succeeded to develop and to realize a promising new care model that includes all CCM key-elements in combination with a population health management model (KP-triangle). Effectiveness of this model was examined with a strong design. The follow-up period may be too short to demonstrate cost effectiveness because of the so-called ‘investment effect’. Therefore, the intervention period is prolonged in order to measure the real long-term effectiveness of Embrace.

## K.4. Nutrition and eating disorders

### Identifying the most effective public health nutrition policies: The views of policy-makers and thought-leaders across 14 EU countries

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#### Background

EuroHeart 2 is a European research programme led by the European Heart Network and European Society of Cardiology. One aspect of the project aimed to identify the most effective public health nutrition policies, in order to inform future evidence-based strategies to promote cardiovascular health.

#### Methods

We mapped national nutrition policies across 30 European countries. We identified contacted and recruited potential participants in 14 diverse countries. Policy-makers, thought-leaders and others active in the field of public health nutrition at the national level were interviewed. Questions were developed and piloted with senior stakeholders in the United Kingdom. The interviews were conducted in English, either by person, telephone or Skype. The interviews typically lasted 45 to 60 minutes. Interviews were transcribed and

entered into NVIVO. The Framework approach was used for analysis.

#### Results

66 interviews were conducted in 14 countries across Europe. The interviews enabled more up to date and accurate information than was provided on websites or in reports. Responses revealed important differences between official lists of food policies and their actual implementation. European countries are at very different stages of addressing public health nutrition issues. Most are promoting dialogue, recommendations and guidelines. Voluntary reformulation of foods is also common, especially for salt, sugar and total fat. However, legislation regulation or fiscal interventions targeting salt, sugar, fat or fruit and vegetable consumption are still uncommon. Many interviewees expressed a preference for regulation and fiscal interventions and generally believed they were more effective, albeit politically more challenging. Conversely, information-based interventions were often seen as being more politically feasible.

#### Conclusions

Public health nutrition policies in Europe represent a complex, dynamic and rapidly changing arena. Encouragingly, the majority of countries are engaged in activities intended to increase consumption of healthy food, and decrease the intake of junk food and sugary drinks. Exemplar countries