



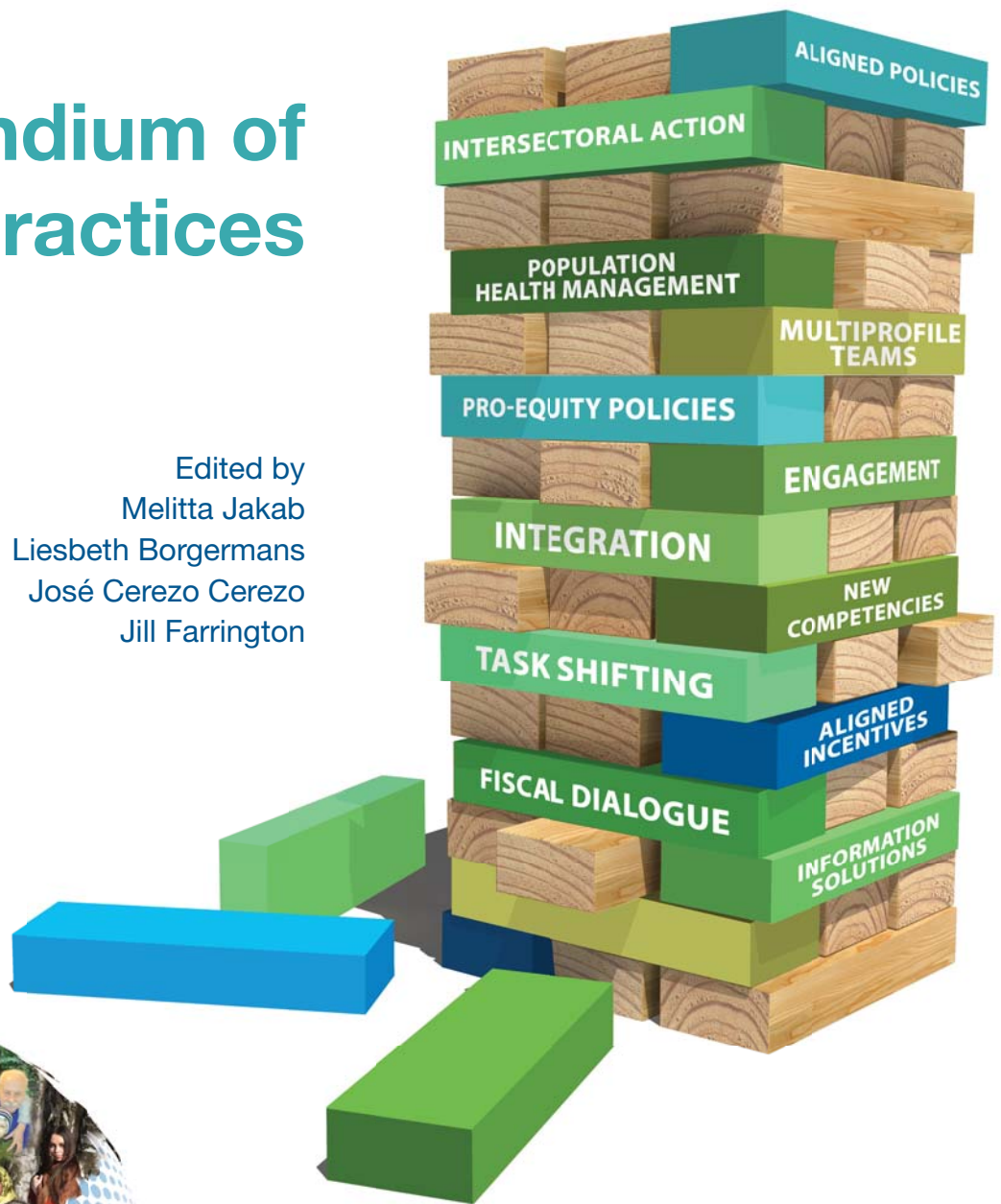
World Health
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Health systems respond to noncommunicable diseases

Compendium of good practices

Edited by
Melitta Jakab
Liesbeth Borgermans
José Cerezo Cerezo
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Abstract

This report is a compendium of 22 good practices that showcase successes in the health system response to noncommunicable diseases in the WHO European Region. It complements the report of the WHO Regional Office for Europe *Health systems respond to noncommunicable diseases: time for ambition*. The good practices highlight effective policy instruments from 16 Member States reflecting the diversity of the Region in terms of health system development and geographical, political and historical context. Lessons learnt from these good practices highlight the fact that there are no magic bullets or single solutions: good-practice tools reach their full potential if implemented in the context of a comprehensive and aligned systemic approach.

Keywords

NONCOMMUNICABLE DISEASES - PREVENTION AND CONTROL
CHRONIC DISEASE - PREVENTION AND CONTROL
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UNIVERSAL COVERAGE
HEALTH PROMOTION
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Introduction

The Compendium of Good Practices

This report is a compendium of 22 good practices showcasing successes in the health system response to noncommunicable diseases (NCDs) in the WHO European Region. The compendium complements the report of the WHO Regional Office for Europe *Health systems respond to noncommunicable diseases: time for ambition*. It aims to inspire action and boost cross-country learning and exchange of experiences through practical examples and lessons learnt.

Each chapter in the compendium was previously published as a policy brief. The briefs put the spotlight on policies and instruments for effective health system strengthening and tell a contextualized story about their motivation, design and impact. Each brief concludes with lessons learnt, facilitating a more in-depth understanding of the enabling and hindering factors behind the chosen approach

Background to the project “Strengthening the health system response to noncommunicable diseases”

The compendium is one of the outputs of a multidisciplinary and interdivisional work programme of the WHO Regional Office for Europe, “Strengthening the health system response to NCDs” (HSS NCD). The programme was motivated by increasing calls for a comprehensive health system response to NCDs and by the strong emphasis in the European health policy framework, Health 2020, on NCDs and health systems and on holistic approaches to tackle public health challenges.

A comprehensive set of outputs have been completed since 2012, when the programme was launched:

- multidisciplinary country support based on structured assessments;
- capacity-building and annual training courses;
- biennial consultative meetings testing emerging messages;
- a regional synthesis report summarizing key policy messages;
- good practice briefs collected in this compendium;
- a high-level regional meeting held in 2018 to celebrate successes, share experiences and inspire action.

Selection of good practices

Topics for good practices were actively sought during the period 2012–2017. An open call was issued through the WHO Regions for Health Network in March 2018 and at the high-level regional meeting “Health systems respond to NCDs: experience in the European Region” in April 2018. A number of criteria were established to accept proposed policies and instruments for inclusion in the series. The accepted policies and instruments should:

- reflect a health system policy or instrument that relates to one or more of the cornerstones of a comprehensive and aligned health system response featured in the synthesis report;
- be based on large-scale (national or regional) implementation of the instrument rather than isolated pilots or projects;
- demonstrate reasonable theory and evidence underpinning that the instrument is linked to scaling up the NCD best buys and improving outcomes;
- provide evidence of how implementation of the policy or instrument has scaled up core interventions/services and/or changed behaviour (population, patients, clinicians).

A multidisciplinary WHO expert team assessed the proposed topics and decided which ones should be included.

Geographical distribution of good practices

The briefs reflect practices in 16 countries or regions or cities of those countries (Belgium, Croatia (2), Estonia, Finland, Hungary (2), Ireland (2), Kazakhstan, Kyrgyzstan, Netherlands, Portugal, Russian Federation, Slovenia, Spain (3), Sweden, United Kingdom of Great Britain and Northern Ireland and Uzbekistan). Additionally, one of the briefs features the Meuse-Rhine Euroregion, a cross-border area covering parts of Belgium, Germany and the Netherlands. The geographical distribution reflects the diversity of the region in terms of health system development and geographical, political and historical context.

Featured policies and instruments

The 22 briefs put the spotlight on policy instruments covering one or multiple cornerstones of a comprehensive and aligned health system response to NCDs. It is essential to strengthen governance arrangements to ensure coherence across the different settings where NCD policies are developed, whether inside or outside the health system. Scaling up core NCD interventions and services in a people-centred manner requires an ambitious transformation in the way public health, primary care and specialist services are delivered, with an intensified focus on universality, multidisciplinary, comprehensiveness, coordination, continuity and outcomes. This service delivery transformation can be further supported through aligned strategies covering four health system functions: health workforce, health financing, pharmaceutical policy and information solutions.

Lessons learned – systemic thinking and alignment are critical

The instruments featured in this compendium are not magic bullets. Because NCDs are caught in a complex web of interrelated causal risk factors and health determinants, single instruments reach their full potential if implemented in the context of a comprehensive and aligned systemic approach. While some types of instruments are fairly robust in a variety of environments, others may be sensitive to the “local soil”. For this reason, the good practice briefs focus on numerous factors that must be in place if change is to occur and be sustained over time. These factors include quality and coherence of policy, creating strategic alignment, intersectoral collaboration, key people leading change, supportive organizational culture, creation of enabling environments, effective managerial-clinical relations, increasing patient and public engagement and supporting evidence-informed policy.

We hope that this compendium, together with the report *Health systems respond to noncommunicable diseases: time for ambition*, will further support Member States in their ambition to achieve sustainable improvements in NCD outcomes, thus meeting or even exceeding international commitments.



STRENGTHENING THE PRIMARY CARE RESPONSE TO DIABETES: A comprehensive early detection programme of vision impairment among people with diabetes in Andalusia, Spain

María Asunción Martínez-Brocca,¹ Eduardo Mayoral,² Rafael Rodríguez-Acuña,³
Ana M Carriazo,⁴ Carmen Lama,⁵ Josefa Ruiz Fernandez⁶

Summary

In 2004, a programme for early detection of diabetic retinopathy was introduced within the comprehensive plan for diabetes in Andalusia. The region has 8.4 million inhabitants and an estimated rate of diabetes mellitus of about 12%.

Currently, 424 648 patients have participated in the programme, with 753 523 retinographies performed, reaching 95% of the target population.

The programme enhances the participation of primary health care professionals and the use of digital solutions.

Preventing visual impairment in diabetic patients

Diabetes mellitus is one of the most prevalent noncommunicable diseases worldwide. It affects an estimated 1 million people in Andalusia.

Diabetic retinopathy (DR) is a major complication and one of the leading causes of blindness among people of working age in developed countries and affects most people with diabetes (1). Early detection and treatment are essential for preventing loss of vision. In this programme, digital retinography was made available in primary health care, ensuring access and reducing waiting times.

The early detection programme

A comprehensive health care plan for diabetes was set up in 2003 in Andalusia, not only to improve the care provided but also to reduce the incidence and impact in the region. The plan was designed to better coordinate the available resources, services and health actions for diabetes. It focuses on preventive activities, including early detection of major complications and health education, and promotes changes for a healthy lifestyle (balanced diet, frequent physical activity and tobacco cessation), organization of health care delivery, training of professionals and research (2, 3).

DR is the most frequent microvascular complication in people with diabetes, and its prevalence increases with the duration of the disease (overall rate, $\leq 30\%$), with a high risk of severe visual impairment (10%

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Key Messages

- Coordinating patient-centred care at primary and secondary levels facilitates continuity for all patients.
- Active involvement of primary care physicians and nurses ensured the success of this population-based programme on early detection of diabetic retinopathy.
- Comprehensive health care plans such as that for diabetes are strategic initiatives for matching population health needs and expectations with policies, services and resource distribution.
- Andalusia implemented this massive screening programme in a digital environment, sharing electronic health care records at all levels of care.
- The programme for early detection of diabetic retinopathy links organizational changes to innovative digital solutions.

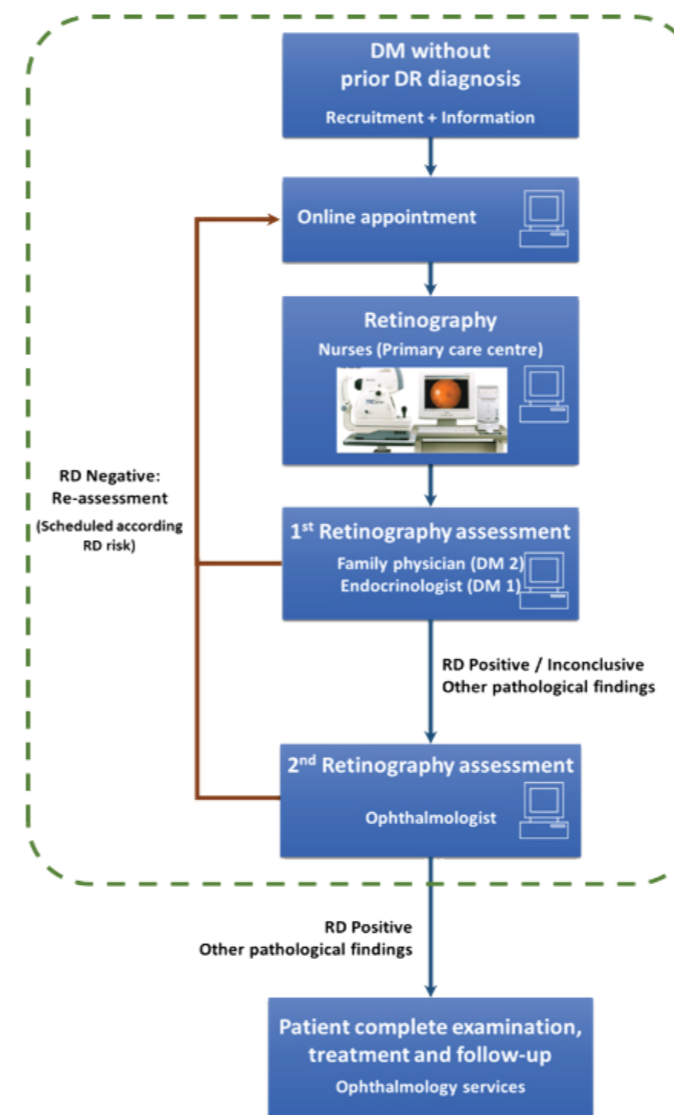
of patients). Early detection and treatment of DR is the best strategy for preventing (or delaying) loss of vision (1, 4). Digital retinography is widely recommended in screening protocols for early detection of retinal lesions prior to the onset of visual impairment (5, 6, 7). Therefore, a systematic, population-based programme for early detection of DR was incorporated into the Andalusian public health care system and within the comprehensive health care plan for diabetes one year later (2004) (4). It is a clear example of priority-setting by the Regional Ministry of Health as well as of coordination among different levels of health care (primary and secondary care and hospitals), putting the patient at the centre of the system.

The early detection programme is based on:

- shared primary and specialized or hospital care for patients with diabetes, ensuring patient-centred care;
- active involvement of primary care professionals; and
- shared electronic health records available throughout the Andalusian public health care system.

The early detection programme started with a pilot project in 2004 of 360 patients with diabetes, 11 primary care centres and 6 hospitals (for training, device provision and outcomes analysis) (4). After an initial assessment, the programme was extended progressively throughout the territory, improving professional competence and patient care. No economic incentives were used at the outset of the programme.

Fig.1. Work flow of the programme for early detection of diabetic retinopathy.



DM, diabetes mellitus; DR, diabetic retinopathy

The current early detection programme works as follows (Fig. 1):

- In primary care centres, trained nurses perform retinography, and the results are stored in the patient's electronic health record within the corporate system.
- DR screening is performed by assessment of the first retinography by a trained family physician in a primary care centre (for patients with type 2 diabetes) or an endocrinologist in a hospital (usually for patients with type 1 diabetes).
- Patients for whom the results are negative are scheduled for the next examination cycle according to their risk for DR.
- Retinographies that show positive or inconclusive results are reviewed by an ophthalmologist for re-assessment.
- Patients with DR (or any other pathological finding) are referred to an ophthalmologist for a thorough, complete examination, treatment and follow-up (when necessary).

There are currently 155 retinographers (143 in primary care centres and 12 in hospitals) in the region and 44 mobile retinography units covering certain rural areas. Therefore, the vast majority of patients are screened at primary care level, ensuring their access to the programme at the closest point of care. Patients with DR symptoms are referred to ophthalmology services through the digital platform for diagnosis of DR.

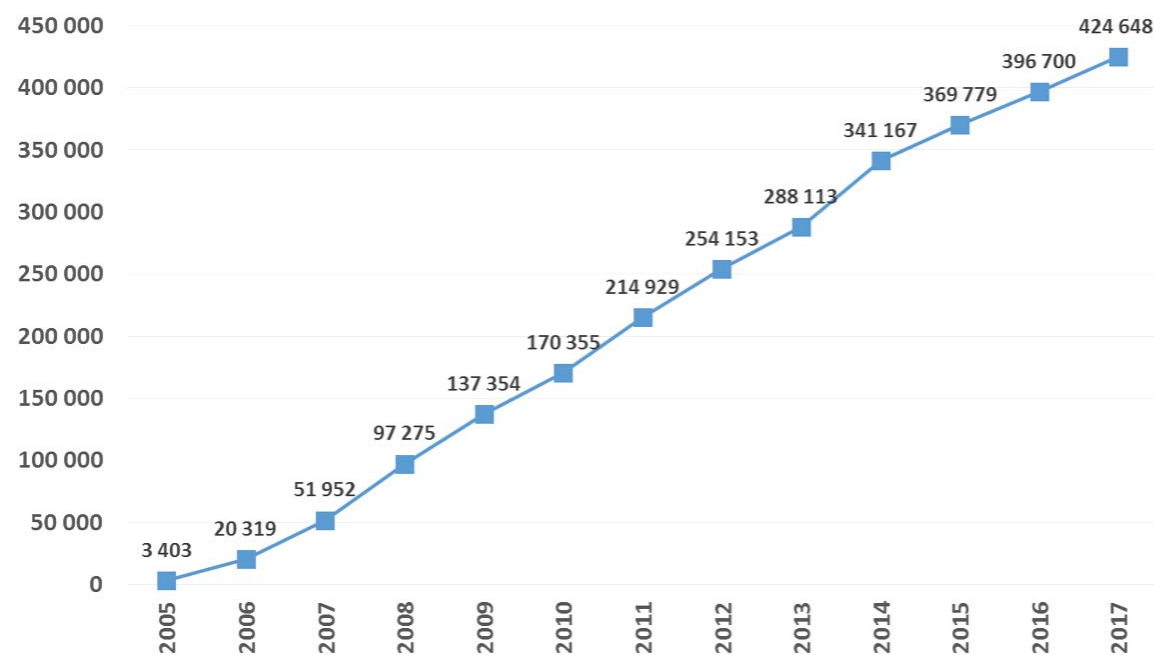
Several quality indicators, including target population coverage and response time, in the comprehensive plan for diabetes are used to assess professional performance, linked to incentives.

Impact

To date, 426 648 patients have benefited from the programme, with 753 523 retinographies performed (Fig.2). Asymptomatic DR has been detected and treated in 46 957 cases, preventing vision impairment. Of these, 44 196 were classified as “mild to moderate non-proliferative DR”. Most (84%) retinographies (632 959) were classified as “non-pathological”, minimizing the proportion of patients to be referred to ophthalmology services and therefore preventing unnecessary travel and reducing ophthalmologists’ workload and health care costs, with an estimated 30 million euros saved.

Since 2006, programme coverage has increased, to reach 95% of the target population (patients with diabetes without previously known DR) by the end of 2017. Severe visual impairment due to DR in Andalusia has decreased in absolute and relative terms, with an estimated 15.2% fewer cases of blindness registered between 2000 and 2014. Ad-hoc, innovative solutions have been found within the digital platform to assist in diagnosis of DR, including an algorithm for automated analysis of retinographies and one for optimizing follow-up frequency. Both are being evaluated. Benchmarking and use of indicators in the early detection programme allow assessment of outcomes, monitoring and quality control, ensuring continuous improvement.

Fig.2. Cumulative number of patients with diabetes included in the programme for early detection of diabetic retinopathy (2005–2017).



Implications for policy

The early detection programme is a systematic, population-based programme that covers almost the entire target population in Andalusia, with outstanding outcomes. It is embedded into current health care for diabetes, which was designed by a team of professionals at all levels of care, who took into account citizens’ expectations, and includes a method for assessment. Its results have helped to reduce the burden of a common noncommunicable disease in the region. It is the only programme with these characteristics in our environment.

The role and involvement of primary health care in the system facilitated the implantation and outcomes of the early detection programme, supported by corporate digital solutions. The success of the programme reinforces the comprehensive approach to population health care of the Regional Ministry of Health of Andalusia, implemented by the public health care system, which is a wide network of universal coverage with high-quality, patient-centred, accessible care.

Lessons learned

- **Coordinating patient-centred care at primary and secondary levels facilitates continuity for all patients.** This is particularly relevant in the case of patients with noncommunicable diseases such as diabetes and for those included in the early detection programme.
- **Active involvement of primary care professionals (physicians and nurses) is key for the success of a population-based early detection programme on diabetic retinopathy.** Screening at primary care level ensures access, reduces urban–rural inequality and helps to achieve the highest coverage (95% of the target population). Mobile units are useful for reaching dispersed population in the region.
- **Comprehensive health care plans such as that for diabetes are corporate strategic initiatives for matching population health needs and expectations with policies, services and resource distribution.** Such plans foster activities in prevention, health education and promotion, health care delivery organization, training and research, including follow-up and assessment. The early detection programme is part of this corporate strategy, ensuring better results and outcomes.
- **Andalusia implemented this massive screening programme in a digital environment, sharing electronic health care records at all levels of care.** In the corporate system, the necessary information is accessible at all points of care and provides the data required for quality control and assessment.
- **The early detection programme includes organizational changes linked to innovative digital solutions,** whereby data and information travel instead of patients and efficiency is improved. Automated algorithms for reading retinographies and optimizing work flows are being evaluated. Continuous training of health care professionals is essential for adoption of such innovations.

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MULTISECTORAL MENTAL HEALTH NETWORKS IN BELGIUM: An example of successful mental health reform through service delivery redesign

Liesbeth Borgermans¹, Bernard Jacob², Magda Coture³, Paul De Bock⁴

Summary

Belgium has opted for a nationwide reform of the mental health sector in response to the need for improved people-centred approaches for people with mental health conditions, an efficiency imperative. The reform aimed to strengthen the community-based supply of care and to reduce the number of psychiatric hospital beds; it improved care integration, social rehabilitation and service users' recovery, including users' and carers' quality of life. Central to the reform are multisectoral mental health care networks offering outreach services, prevention, in- and outpatient mental health services, primary care, day care, and vocational, housing and social care services.

The nationwide reform is in line with WHO's Mental Health Action Plan 2013–2020 (1), calling for a shift from institutional care to community services. The reform contributed to improving the long-term health of patients and reducing hospital stays. It also significantly reduced the number of psychiatric hospital beds in favour of outreach services to people with mental health conditions.

Towards people-centred mental health services

Belgium has traditionally relied on institutional psychiatric care to treat people with mental health and neurological disorders. With more than 150 psychiatric hospital beds per 100 000 inhabitants, Belgium ranked itself top three in the world. It has 68 psychiatric hospitals for a population of 11.3 million inhabitants (2015).

Mental illnesses are the primary cause of invalidity in Belgium, and 27% of long-term absenteeism is related to mental issues. The lifetime prevalence of at least one mental disorder is approximately 30%. Suicide rates (18.3 per 100 000 population) appear to be considerably higher in Belgium than in other European countries (2).

Furthermore, a significant treatment gap encompasses both people not getting treated and people receiving treatment far too late. Stigmatization, financial barriers, lack of collaboration between primary care and specialized care, poor accessibility and waiting lists are some of the factors that account for this situation.

Key Messages

- All federal, regional and community ministers competent in mental health and psychiatry have subscribed to the reform.
- The mental health reform was made possible by reallocating funds from long-term psychiatric beds to a collaboration between outpatient services and the community.
- Multisectoral mental health care networks are at the heart of the Belgian reform. The networks provide comprehensive care to adult mental health service users.
- The governance model is based on decentralized leadership and networks are free to include any type of partner within a chosen geographical area.
- The participation of users and their relatives is a central element of the reform, and the organization of care is built on the needs of users.
- The reform has significantly reduced the number of psychiatric hospital beds in favour of outreach services to people with mental health conditions.

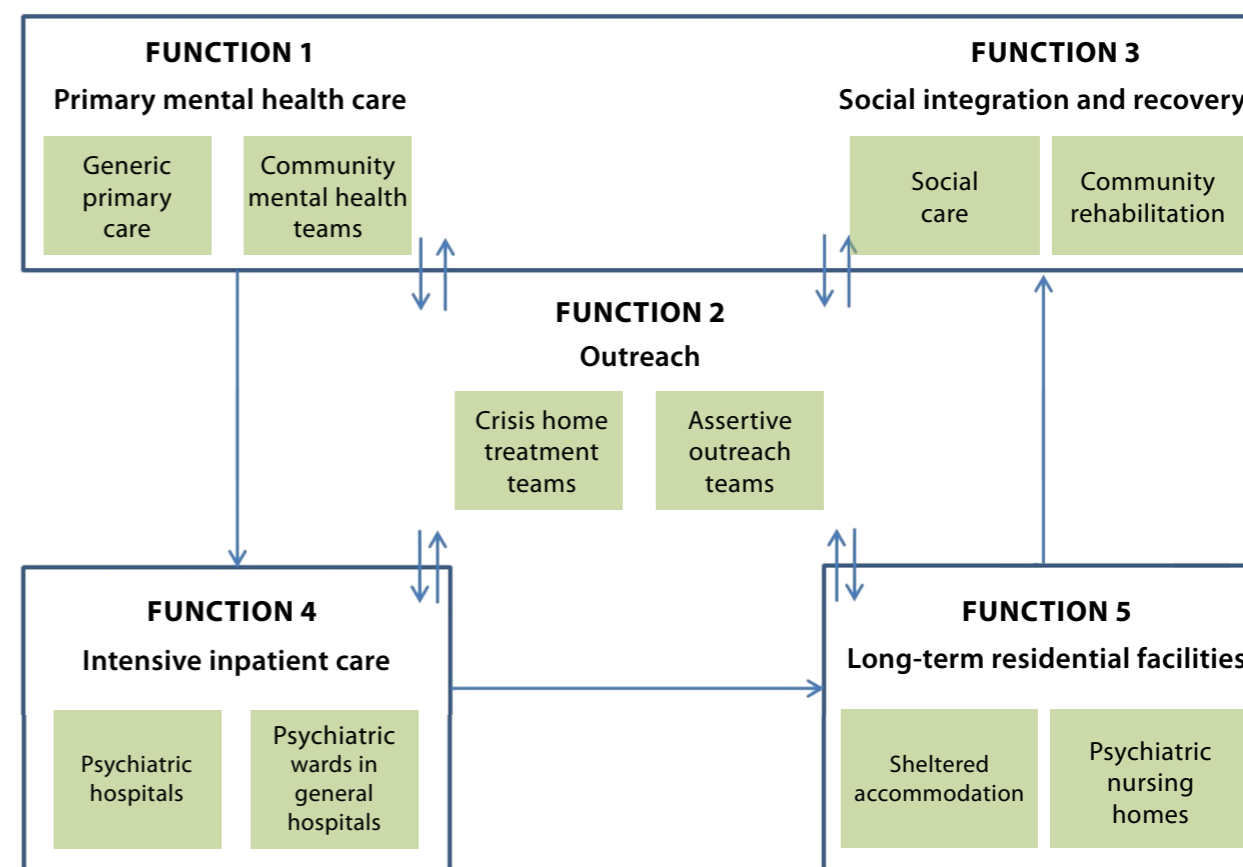
The federal government and the three communities (French-, Dutch- and German-speaking) share responsibility for mental health services in Belgium. Communities are qualified to promote services for mental health, prevention, rehabilitation and housing. In 2002, all ministers responsible for public health signed a joint declaration to provide acute and chronic mental health care through collaborating care networks and care circuits for three target groups (children and adolescents, adults and the elderly) (3). A care circuit is the whole provision of care programmes and care services for a specific target group of (chronically ill) psychiatric patients. This was an important step in the reform, making care more demand-oriented in addressing the needs of people with mental health problems. Starting with the adult group, the aim is to broaden and deepen the reform over the next years to all regions and target groups.

The mental health reform

In May 2010, public health authorities launched the *Guide to better mental health care through care circuits and care networks* (4), thereby setting in motion the mental health reform for adults. The Guide describes a programme and an organizational model with multisectoral mental health care networks at the heart of the reform.

The governance model is based on decentralized leadership and informed by interactions among all network members (5). The networks are free to include any type of partner and develop their own governance mechanisms within a defined geographical area. They provide

Fig. 1. Care functionalities offered by multisectoral mental health care networks



Source: adapted and reproduced by permission of the publisher from the *Guide to better mental health care through care circuits and networks* (4).

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comprehensive care to adult mental health service users, and care providers have extensive autonomy in prioritizing patients for network care (6). The care functionalities offered by the networks include (Fig. 1):

- prevention of mental health conditions and promotion of mental health care, early detection, screening and diagnostic activities (function 1);
- ambulatory teams offering intensive treatment for both acute and chronic mental health conditions (function 2);
- rehabilitation teams focusing on recovery and social inclusion (function 3);
- residential intensive treatment for people with both acute and chronic mental health problems (function 4); and
- specific housing facilities (function 5).

Mobile teams in action

By reallocating funds from institutional care, the reform aimed to reduce the high number of psychiatric hospital beds in favour of new mobile treatment teams (function 2). The teams are composed of hospital-based staff and are financed from the hospital budget, but fully operate in the community. The teams actively liaise with health care practitioners and organizations at the primary care level, and the service is free of charge for patients. Shared care protocols between the mobile teams, primary care practitioners and hospitals are applied.

From the perspective of hospitals, the reform has been cost-neutral in the short run, and thus there were no financial reasons to oppose it. In the long run, the reforms can be cost-saving and are expected to provide better quality of life and outcomes for those with mental health problems.

Multidisciplinary crisis teams provide crisis resolution for people with (sub)acute psychological problems, through short-term home treatment and the strengthening of social networks. Working closely with primary care workers and social services, the crisis teams prevent or shorten psychiatric admissions through practical support, medication and family therapy.

Multidisciplinary outreach teams provide recovery-oriented care in the home environment for people with long-term severe mental health conditions who are often difficult to reach, focusing on employment and accommodation. Although the teams serve all persons eligible for an acute psychiatric admission, data show that priority is given to people with schizophrenia, personality disorders and poor psychosocial functioning. The teams make use of individual care plans developed in consultation with the patients and their (family) care givers. The care plans include warning signs of relapse and crisis plans, and tasks and responsibilities of all persons involved.

Impact

In 2017, 22 operational networks were established. Approximately 59 mobile teams are currently active (including 24 mobile crisis teams and 35 mobile teams for chronic mental health problems). The implementation of the teams has resulted in a reduction of 1230 long-term psychiatric beds. During 2016, the teams followed more than 13 000 patients, and the treatment and care provided by these teams have been shown to prevent long-term hospitalization.

As a result of the reform, several additional ambulatory rehabilitation and recovery centres, focusing on housing and employment, were also founded.

The important attitude changes in the sector, combined with the new facilities in the community, have been associated with a significant reduction in the duration of hospital admissions. Furthermore, the accessibility of specialized care strongly benefitted from the intersectoral collaboration.

People with mental health conditions and their families value the opportunity to choose treatment options and generally prefer being treated and cared for in their home environment.

Lessons learned

- Any mental health reform should be driven by the need to reintegrate mentally disordered persons into society and by shifting from large psychiatric hospitals towards alternative services in the community.
- The availability of a policy guide that sets out the strategy of the reform, as well as the implementation, is essential.
- Reform of mental health takes time. Several waves of reform took place over several decades, characterized by a strong deinstitutionalization movement prior to the mental health reform.
- Despite the fact that networks have established all functions, an even more integrated approach is needed to further improve the accessibility and continuity of care. This requires a formalization and rethinking of the governance structure of the networks.
- Networks vary greatly in terms of size and service types, density of network ties and centrality of key services. Whether one particular network structure is most suited to reach the multiple reform aims simultaneously remains unclear.

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MULTIPROFILE PRIMARY HEALTH CARE TEAMS IN CATALONIA, SPAIN: A population-based effective model of services delivery

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Summary

Inspired by the principles of the WHO Declaration of Alma-Ata, multidisciplinary primary care teams were the cornerstone of the primary care reform initiated in 1985 and extended over 22 years progressively improving the satisfaction, quality and efficiency of primary care services in Catalonia. The reform process was pioneered by the specialty of family and community medicine with the support of the Catalan Scientific Society of Family Medicine. Each citizen is assigned to a multidisciplinary primary care team which consist of family doctors, paediatricians, dentists, primary care nurses, nurse aides, social workers and health administrative staff serving a basic health area of 20 000 people. The service basket has gradually expanded over the years matching the increased competencies of multidisciplinary teams and now also includes services previously delivered at hospital level. An integrated information system supports many functions including health management at community level through risk stratification and integration with specialist services through shared electronic records.

Good outcomes at low cost: pioneering multidisciplinary primary care centred health system

Multiprofile teams provide primary health care services in Spain. This model of care was designed in the 1985 Primary Health Care Reform Act which was inspired by the principles of the WHO Declaration of Alma-Ata. Implemented and operationalized across the autonomous communities at different paces, the reform aimed to increase the responsive capacity of primary care services, ensure equal access and improve the efficiency of the entire health system by expanding the scope of services provided by new multidisciplinary teams.

In Catalonia, a new generation of family doctors – recently trained in the new medical specialty of family and community medicine established in 1978 – pioneered the reform process with the support of the Catalan Scientific Society of Family Medicine. Although the benefits of the new model outweighed its costs, completing the reform process took 22 years.

Since 1985, new primary care models have emerged capitalizing on the role of nurses and information systems, as well as improving integration with community hospitals and other health services providers.

Key Messages

- Implementing an ambitious primary health care reform took time.
- Solid scientific background and engagement in academic societies strengthened and advanced the scope of primary care.
- The social reputation of primary care services and professionals improved through continuous investment in physical and information infrastructures and campaigns.
- The multidisciplinary nature of primary care teams led to improved responsiveness and health outcomes.
- Innovations in information technologies in primary care services are the cornerstones of both clinical practice and effective governance.
- Linking contracts and pay-for-performance mechanisms to quality improvement allowed health planners and managers to directly support health policy goals.
- Community orientation and public health integration was explicitly fostered.

Key components of multiprofile primary care teams

Population orientation

Primary care teams serve a basic health area, a new geographical distribution based on natural aggregates of people. These catchment areas helped to deploy the primary care reform emphasizing community orientation and holding primary care accountable to designated populations. An

average basic health area covers around 20 000 people. Each citizen is automatically assigned to a primary care team with a family doctor and nurse as referent professionals. Citizen choice has evolved over time allowing patients to change their doctor and nurse at least once a year.

Multidisciplinary teams

Primary care teams consist of family doctors, paediatricians, dentists, primary care nurses, nurse aides, social workers and health administrative staff to serve collaboratively a basic health area (Box 1). Teamwork is fostered by sharing care between doctors and nurses and by reserving one hour a day for team activities such as clinical, training or coordination sessions.

Box 1. A primary care team comprises:

- a family doctor and nurse (1 : 2000 adults);
- a paediatrician and paediatric nurse (1 : 1500 children under 14);
- a dentist (1 : 15000 people);
- a social worker (1 per team); and
- nurse aides and health administrative staff.

Team members share roles and responsibilities, where nurses have a key role in disease prevention, health promotion and health education. In these pioneering teams, nurses are the first point of care for emergencies resolving over 70% of acute cases and are expanding the capacity provided by the new specialty in family and community nursing (1).

Services package

The new family medicine specialty and the role of nurses helped to expand the scope of services towards a preventative approach. Comprehensiveness and responsive capacity have significantly increased in the last decades with the adoption of techniques and technologies which once were performed only at hospital level. Services like anticoagulant treatment, echography, spirometry or skin-prick tests are now offered closer to home in primary care centres (Fig. 1).

Working conditions

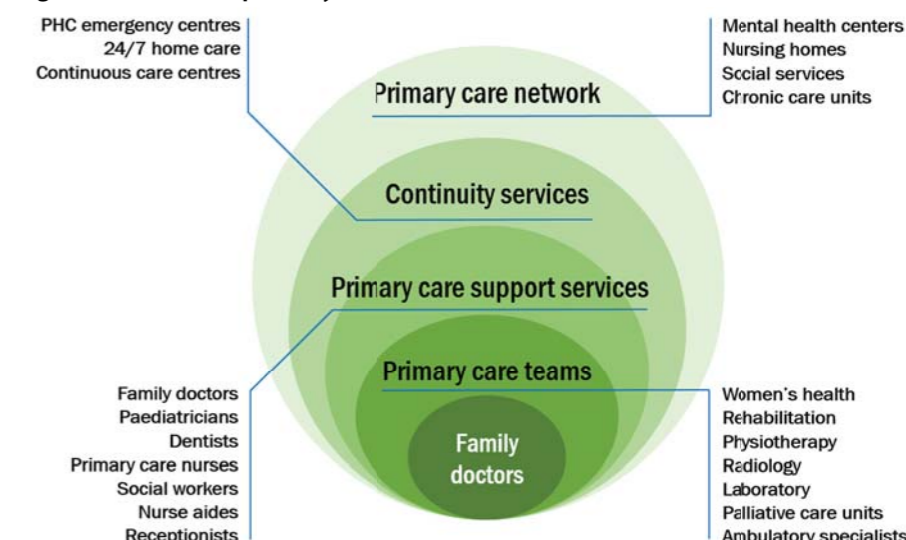
Accessibility was a key driver for changing the effectiveness of primary care services delivery. With the reform, family doctors and nurses increased their hours to work full-time (36 hours a week). This adjustment allowed them to serve communities from 08:00 to 20:00 in two working shifts. A strategic shift overlap of one hour a day – from 14:00 to 15:00 – secures time to schedule team activities such as clinical, training and organizational sessions that bring team building and group cohesion. In parallel, doctors' compensation shifted from a capita-based

salary to a basic salary with complements to acknowledge population characteristics like rurality or socioeconomic level. In 2003, pay for performance (P4P) based on annual goals and a four-level professional development programme were introduced in doctors' payment schemes and expanded in 2006 to the other team members. Although the P4P has recently lost incentive power (from 15% to 7.5% of annual salary), it remains a practical tool for health care managers to align clinical behaviours to the targets of regional or national health policies.

Health services contracting

CatSalut (Catalan Health Service Commissioner) is responsible for contracting of health services and primary care teams based on per capita, which has evolved, adjusting from demographic, socioeconomic and geographic variables to a morbidity and equity index aiming to redistribute resources, reduce health inequalities and acknowledge care complexity measured with a health risk stratification tool which weighs 30% of the total per capita funding.

Fig. 1. Evolution of primary care services



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Health information systems

At the time of the reform, nobody was able to foresee the transformative power health information systems would bring. Since 1999, the primary care information system (ECAP) equips primary care teams to ensure the principles of primary care: accessibility, continuity, longitudinality, quality and efficiency. ECAP allows family doctors and nurses to maintain patient records, prescribe diagnostic tests and medicines, follow clinical guidelines and communicate with patients in a secure e-consultation system. A bespoke risk stratification system (GMA) classifies patients according to risk and makes this information available to health care providers to facilitate proactive care of chronic patients (2). A business intelligence system (SISAP) built upon ECAP provides doctors and managers with information to track quality of care indicators and benchmark with peers and other territories. A Catalan e-health infrastructure complements ECAP and SISAP with an e-prescription service, a shared electronic health record (HC3) to access records from hospitals and other health care providers, and a personal health record (La Meva Salut) which allows patients to have access to their own health data and use services like e-consultation.

Evidence-based practice and quality improvement

Collaborative work between medical scientific societies and the Department of Health has contributed to develop an evidence-based clinical practice and quality improvement system based on the adoption of clinical guidelines and quality monitoring tools deployed by clinical decision support systems accessible through ECAP such as clinical recommendation reminders (3). Additionally, the Agency for Healthcare Quality and Evaluation of Catalonia (AQuAS) has developed the essential programme to improve clinical practice and reduce overdiagnosis and overtreatment, and address de-prescription. Using several quality benchmarking tools (SISAP, MSIQ, Results Central) and measures (Care and Prescription Quality Standards), which allow health managers to monitor quality improvement and incentivize individual and team performance, also promote transparency and competition based on quality and health outcomes. With the advent of chronic diseases, this structure has allowed primary care teams to identify and improve care of complex chronic patients, and deploy preventative campaigns for most prevalent conditions (diabetes, blood pressure, heart failure or asthma) and risk factors (smoking, alcohol, physical activity).

Impact of primary care multidisciplinary teams

The development of primary care multiprofile teams has progressively improved the satisfaction, quality and efficiency of primary care services in Catalonia. From 2003 to 2015, global satisfaction and fidelity scores have steadily increased with outstanding marks, respectively 7.94 out of 10 and 88.9%. However, improvements in telephone access, punctuality of visits and waiting time for diagnostic tests are needed (4). Both patients and doctors positively perceive the continuity and care coordination between primary and secondary care in terms of information transfer, consistency and accessibility to secondary care following a referral (5).

Preventive activities and an appropriate management of chronic patients foster quality of care when primary care professionals work effectively in teams. The performance of primary care services assessed by the pattern of potentially preventable admissions shows a significant decline in chronic obstructive pulmonary disease (from 24.5 to 15.5 per 10 000 person-years) and remarkable scores in diabetes mellitus as part of a continuous quality improvement programme (6,7).

In terms of efficiency, primary health care costs have remained stable accounting for approximately 15% of the total health expenditure while process and outcome indicators have improved due to quality monitoring tools and payment-by-results. In the last 10 years, this linkage has also contributed to control prescription costs while the quality of prescription has not declined.

Next steps

In 2017, the National Strategy for Primary Health Care and Community Health (ENAPISC) was launched driving primary care towards higher community orientation, person-centredness and care integration, and aligning efforts with other health and social policies (emergencies, chronic care and social services). To achieve the strategy goals, the main levers are the configuration of a new local governance structure responsible for clinical commissioning, a reformulation of the contracting model, the establishment of primary care networks and the expansion of multidisciplinary teams with better links to social services. Enlarging the service basket, improving

care processes with quality assurance, scaling-up e-health services (e-consultation and personal health record) and empowering patients with shared decision-making aids will strengthen primary health care services.

Lessons learned

- **Implementing an ambitious primary health care reform can be a long and arduous process.** Completing the implementation of the reform in Catalonia took 22 years of continuous effort, requiring sustained social and political consensus.
- **A solid scientific background developed in the family and community medicine specialty** and the supportive role of scientific societies have fostered family doctors' practices and have advanced the scope of primary care. The new family and community nursing specialty and its respective scientific society are expected to have a similar effect in the coming years.
- **The social reputation of primary care services, family doctors and nurses** have positively evolved thanks to a continuous investment in physical and information infrastructures, as well as health campaigns based on primary care.
- **The multidisciplinary nature of primary care teams has led to improved responsiveness and health outcomes.** Family doctors have benefited from the contribution of primary care nurses to increase the accessibility, comprehensiveness, continuity and coordination of services. An increased focus on other team members like social workers is meant to improve care to patients with chronic conditions and social needs.
- **Innovations in information technologies in primary care services are the cornerstone for both clinical practices and health services governance.** ECAP, the Primary Care Electronic Health Record, has become the information backbone to population health management, continuity and coordination of care, as well as the source of a colossal health database for primary care research. New e-health services such as e-consultation and personal health records are expected to transform the model of care and substantially increase accessibility and patient empowerment.
- **Linking contracts and pay for performance schemes to quality improvement allow health planners and managers to effectively implement health policy goals.** Behaviours of organizations, teams and individuals are aligned towards common goals which are easy to measure, monitor and act upon through existing information systems. An emphasis on quality rather than activity or savings have boosted health professional involvement.
- A region-wide community health initiative (ComSalut) and an intersectoral public health plan (PINSAP), which actively involve primary care teams jointly with ENAPISC, have renewed the **focus on community orientation and public health integration.**

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PRIMARY CARE ELECTRONIC PANELS IN CROATIA: An information solution for more proactive primary health care services

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Summary

In 2014, the Croatian Health Insurance Fund introduced “primary care panels for NCDs”, an innovative instrument that allows systematic recording and management of data on patients with noncommunicable diseases (NCDs). The aim of the panels was to improve model of care for NCDs in primary care by strengthening the role of general practitioners as the primary information holders and care coordinators. Systematic, easy access to important information facilitated both clinical and managerial decision-making. Three years since country-wide introduction of primary care panels, their coverage is now 3.8 million adults. They have resulted in better patient stratification, better management of NCDs in primary care, fewer secondary complications from NCDs and fewer patients who require a consultation with a specialist.

Strengthening the role of primary care in the management of NCDs

The Croatian National Health Strategy 2012–2020 includes strengthening the role of primary care in the prevention and management of NCDs (1). Poor patient outcomes, which resulted in high rates of premature mortality from major NCDs in 2012 (401 deaths per 100 000 population) and high share of specialist consultations (23% of all ambulatory visits) indicated that patients with and at risk of NCDs should be better managed in primary care (2, 3). As many countries in the eastern part of the WHO European Region face the same problem and are adopting information solutions to better manage patients with and at risk for NCDs, the experience of Croatia might be useful.

Introducing primary care panels

To address the growing burden of NCDs and associated costs, the Croatian Health Insurance Fund (CHIF) decided to improve the management of NCDs in primary care with an information technology solution known as “primary care panels”. The prototype of primary care panels is a tool used in family group practice in Breznica, where general practitioners decided to record and store patients’ anthropometric and risk factor data in Microsoft Excel tables and update it during patient visits (3). The innovation was recognized by the CHIF as good practice, and several national information technology companies have developed special e-panel software based on this model. Development of the panels was

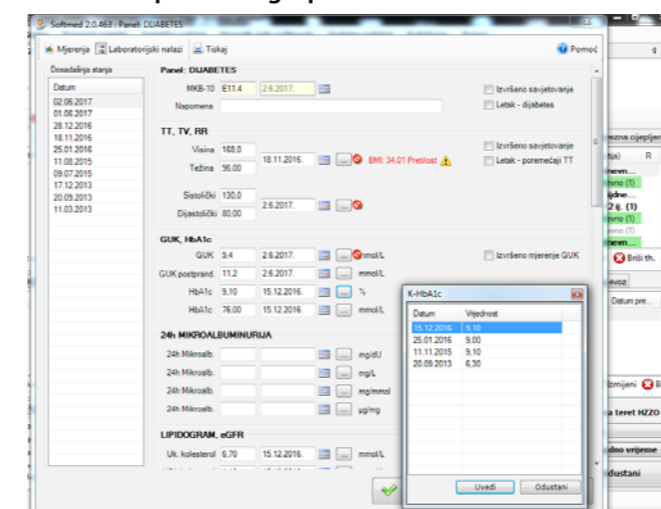
Key Messages

- Local innovations can effectively improve early detection and care of NCDs.
- A demand-driven approach to transformation of service delivery is an important factor for success.
- Introduction of innovations as part of wider national health reform facilitates acceptance by a broad range of stakeholders.
- Innovative information technology in primary care does not require a large investment.
- Alignment of wider health system functions, such as incentives and accountability arrangements, ensures the success of an innovation.
- The functionality and utility of the primary care panels was expanded at marginal cost.

encouraged by financial incentives, with an aligned contract model. Primary care panels were pilot-tested for 8 months during 2012–2013 in selected facilities across Croatia and were shown to improve risk stratification and management of NCDs. After release of the results of the pilot study, country-wide use of primary care panels spread rapidly, with uptake in almost all family practices by the end of 2014.

“Primary care panel” is a common name for a group of software tools used in primary care. There are two types of panel, for prevention and for chronic disease. “Preventive panels” are filled in routinely for the entire population during primary care encounters. They are specific modules that enable general practitioners to record and stratify risk factors for NCDs in the population aged 14 years and older. The basic preventive panel includes personal information, weight and height and in-built formulas that allow calculation of the body-mass index and its position on percentile curves. The age-dependent modules include questions on smoking, alcohol use, blood pressure, waist–hip ratio and plasma glucose values (if indicated by an increased body-mass index). One of the features of the preventive panel is a function for generating leaflets on risk factors and behaviour change, which can be printed during a visit and handed to the patient. The panels are filled in opportunistically at a recommended frequency of 6–12 months, with an automatic pop-up reminder function.

Fig. 1. Sample chronic disease panel: intuitive interface enabled rapid scaling-up of use



Source: Screen shot by Zoran Maravich

“Chronic disease panels” are designed for proactive management of patients with major NCDs, such as diabetes mellitus, arterial hypertension and chronic obstructive pulmonary disease. In addition to the data recorded in preventive panels, these panels allow recording of disease-specific parameters, such as glycated haemoglobin, blood lipids, the results of spirometry and fundoscopy and dates of vaccination (which are important for patients with chronic obstructive pulmonary disease). Built-in formulas allow calculation of indicators such as body-mass index, waist–hip ratio and 10-year risk for occurrence of acute cardiovascular disease. A built-in questionnaire can help providers to check patients’ adherence to treatment. Information is filled in in chronological order, which allows navigation through the data by both date and

specific parameters, so that general practitioners can see the dynamics of disease and the effectiveness of treatment at individual level (Fig. 1). Chronic disease panels also have an automatic reminder function to do or repeat certain diagnostics and follow up patients, pop-up functions for missing information and basic decision support tools based on current clinical guidelines and recommendations.

The panels can be completed by primary care nurses or general practitioners without additional training, mainly because of its well-designed intuitive interface

Integrated features of the panel allow all relevant information to be transferred between preventive and chronic panels and from electronic medical records received from hospitals and linked laboratories. Information technology companies provide strong support to software users during workdays. The information collected from primary care panels is synchronized in real time and stored locally; some data are stored centrally at the CHIF server. All the information in the panels can be printed out in numerical and graphic formats.

Use of primary care panels is monitored and reimbursed by the CHIF as part of a blended payment scheme for primary care. The coverage and completeness of preventive panels filled

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in by primary care providers is monitored and reimbursed as part of an “additional activity indicators package”, while the integrity and quality of chronic disease panels are included in the “quality indicators package”, and their reimbursement contributes about 3% of the income of providers. The CHIF also has a non-financial reward system for primary care practices that comply with certain standards in chronic disease management, one of which is chronic disease panels.

Impact of primary care panels

The introduction of primary care panels has improved the delivery of primary care-based services for individuals with NCDs in Croatia. Since their introduction in 2013, the number of preventive and chronic disease panels and the number of patients registered and maintained has increased rapidly by more than 9% in a year.

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new patients with diabetes mellitus registered and followed 2012-2016

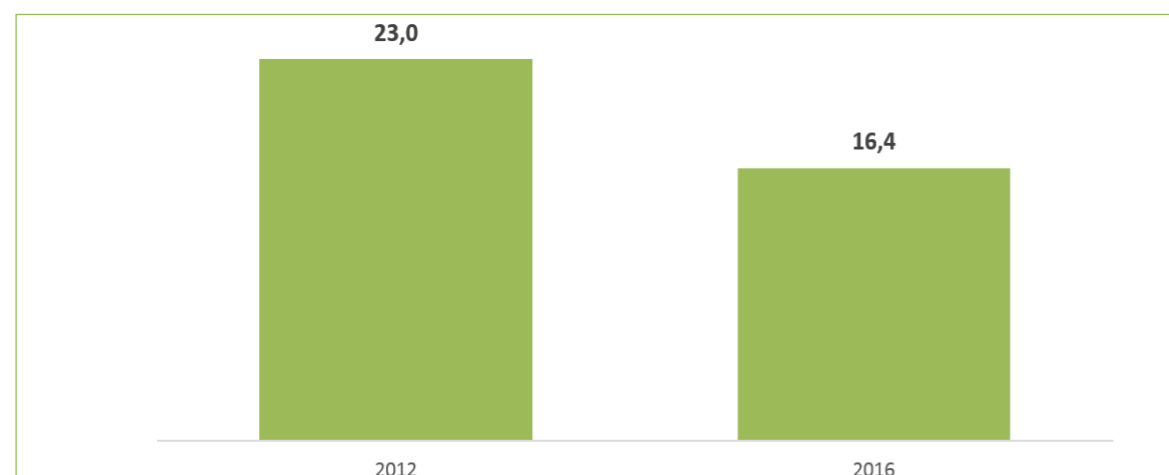
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new patients with hypertension registered and followed 2012-2016

Croatia, like many other countries, had inadequate registration of people with chronic conditions, which is a problem for continuous disease management. Introduction of the panels has improved the situation. The Public Health Institute of Croatia has estimated that the population prevalence of diabetes mellitus is 9.2%, and that of hypertension is 40%. Before the panels, in 2012, 2% of people with diabetes and 10% of those with hypertension were not registered and thus not followed regularly. By 2016, the registered numbers reached the estimated population prevalence.

Basic support for decision-making and automated output in chronic disease panels has resulted in better compliance with current clinical guidelines and improved the overall efficiency of general practitioner consultations, allowing more time to provide advice on lifestyle and ensure compliance with treatment. This, in turn, has resulted in fewer referrals to specialists. (Figure 1) The accessibility of chronological patient information in primary care has resulted in improvements in the continuity of care and less duplication of diagnostic tests both in primary care and at successive levels of care.

Figure 1. Reduction in the proportion of diabetics with specialist referral signals increased confidence of family doctors to manage conditions



Source: Authors' calculation based on data of the Year Book Croatian Public Health Institute and CHIF. Note 2016 figures include extrapolation of 2015 specialist visits.

Next steps

As an extension of primary care panels, the CHIF introduced two additional panels in 2014: an anticoagulant therapy panel and a rational therapy panel. The first allows rapid referral, transfer of laboratory results and adjustment of anticoagulant therapy for patients. The second is used to manage polypharmacy among patients aged > 65 years. The data collected in the panels are planned to be used in registers in order to make the most up-to-date data available for use in policy and service planning.

Lessons learned

- **Local innovations can effectively improve early detection and care of NCDs.** A prototype of the primary care panels was a small-scale innovation used in family group practices in Breznica, which was later recognized by the CHIF and scaled up for use nationally, after a few modifications. As local innovations better account for the specifics of a health system of a country, they tend to be more successful and acceptable when scaled up.
- **A demand-driven approach to transformation of service delivery is an important factor for success.** The low resistance to and the strong uptake of panels by providers may be due the fact that their practical needs were taken into account at the outset of the design of the panels. Intuitive software and testing in pilot facilities across the country demonstrated their clear advantages in improving clinical processes and contributed to their rapid uptake nationally.
- **Introduction of innovations as part of wider national health reform facilitates acceptance by a broad range of stakeholders.** Primary care panels were introduced as part of the Croatian National Health Strategy 2012–2020 and its specific call to strengthen the role of primary care in the prevention and management of NCDs. This provided better leverage for investment and acceptance by all stakeholders.
- **Innovative information technology in primary care does not require a large investment.** According to the CHIF, the development and introduction of the primary care panels did not require a large investment. The intuitive software design allows physicians and nurses to use the panels without additional training. It is important to note, however, that the primary care panels were introduced in a country in which practices were already equipped with personal computers.
- **Alignment of wider health system functions, such as incentives and accountability arrangements, ensures the success of an innovation.** At the same time as it introduced primary care panels, CHIF redesigned its primary care payment scheme to include indicators of use of the panels, including the completeness and integrity of entries, which are reimbursed monthly. To encourage use of the chronic disease panels, the CHIF also introduced a non-financial award system for primary care practices that comply with certain standards in chronic disease management, by awarding them the label “five-star practice”.
- **The functionality and utility of the primary care panels was expanded at marginal cost.** Since the introduction of primary care panels in 2013, several additional modules have been added, to assist in titration of anticoagulant therapy and to manage polypharmacy in elderly patients. These were added at marginal cost, by building them into the existing software. The latest plans are to extend use of the information collected in the panels, by aggregating the data with those of specific disease and risk factor registries, and to add a tool for real-time monitoring of NCD risk factors.

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EMPLOYING PEOPLE WITH DISABILITIES IN CROATIA: Intersectoral public health action for an inclusive labour market

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Summary

In Croatia, like in many countries in the WHO European Region, people with disabilities are an underemployed group in the workforce, which significantly impacts their welfare and contributes to social inequalities. To address this, Croatia implemented the Law on Vocational Rehabilitation and Employment of Persons with Disabilities in 2013 with the aim to increase employment in this group. Key regulatory mechanisms included quotas related to the number of people with disabilities and incentives for employers. Another mechanism was the development of integrative workshops and working centres where the skills of people with disabilities are tested for participation in the labour market or in sheltered and integrative workshops. The Law also regulates reasonable accommodation of the workplace including physical barriers, working equipment and personal assistance. The Law resulted in more people with disabilities employed in the labour market in Croatia.

Towards an inclusive labour market

People with disabilities account for about 12% of the total population in Croatia or about half a million people, of which 60% are men and 48% are of working age (19–64 years). Strengthening employment opportunities for people with disabilities has received growing attention as it is seen as a civil rights issue, essential to citizens and a practical benefit for businesses and government budgets. For people with disabilities, employment means greater economic self-sufficiency, an opportunity to use their skills and more active participation in community life. Employment in this group is particularly important, because having a disability often leads to social isolation and harms health outcomes over time (1). Due to the expected decline of the working-age population, people with disabilities are now increasingly recognized as a valuable resource in the workforce in both the private and public sectors.

The law on vocational rehabilitation and employment of people with disabilities

The policy towards people with disabilities has been marked by prominent regulatory activity in Croatia between 2001 and 2015 (Table 1). The legal system for people with disabilities has been

Key Messages

- The creation of an inclusive labour market is a priority public health concern.
- The National Institute of Public Health has a crucial role in promoting intersectoral action and in producing an evidence briefing to shed light on the impact of employment policies on the health of people with disabilities and the economy.
- Political stakeholders can contribute to an inclusive labour market.
- Employers have an important role when it comes to the work integration of people with disabilities.
- For the person with a disability, a quota system primarily provides an opportunity for employment.
- Integrating relevant information from different sources is the basis for work ability judgments.

implemented through more than 250 laws, sub-legal acts and decisions, as well as applicable international documents.

The role of the National Institute of Public Health has been essential in developing the Law and related intersectoral action. As part of the different working groups established to prepare the Law, it produced an evidence briefing to shed light on the impact of employment policies on the health of people with disabilities. It also coordinated preparatory action between the various stakeholders to highlight the importance of civil rights and health issues to people with disabilities.

Table 1. Key regulatory instruments for people with disabilities in Croatia, 2001–2015

Year	Regulatory instrument
2001	Law on Croatian Register of Persons with Disabilities
2007	Ratification of the United Nations Convention on the Rights of Persons with Disabilities
2007	National Strategy for the Equalization of Opportunities for Persons with Disabilities (2007–2015)
2009	Anti-Discrimination Act
2009	Monitoring and Evaluation Framework of the 2007 National Strategy
2010	Deinstitutionalization Plan
2013	Law on Vocational Rehabilitation and Employment of Persons with Disabilities
2014	Operational Plan for Deinstitutionalization and Transformation of Social Welfare Homes
2014	Decision on the Network of Social Services
2014	Strategy for Combatting Poverty and Social Exclusion (2014–2020)
2015	National Strategy for the Equalization of Opportunities for Persons with Disabilities (2017–2020)

The Law on Vocational Rehabilitation and Employment of Persons with Disabilities came into force in 2013 with the key objective to encourage private employers to hire, recruit and retain this population (2). This Law provides a strong incentive to professional rehabilitation and employment. It stipulates that employers who employ at least 20 workers are obliged to employ, in a reasonable job position of their own choice and with appropriate working conditions, a certain number of people with disabilities. The most common professions among employed people with disabilities in Croatia are shop assistant, unskilled worker, economic technician, car mechanic, farm worker, waiter, driver and chef.

The quota ranges between 2% and 6% (but not less than 2%), depending on the number of employees and the activities carried out by the employers. Employers who fulfil the quota are eligible for a financial compensation of 30% of the minimum wage per month for each person with a disability. The Law enables people with disabilities to work without the loss of family pensions, and gives them the right to choose either their work-based or family pension. In

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addition, the Law allows for the development of integrative workshops and working centres where the skills of people with disabilities are tested for participation in the open labour market or in sheltered and integrative workshops. The Law also regulates reasonable accommodation of the workplace including physical barriers, working equipment and personal assistance.

An administrative process is carried out for each disabled person applying for a job. First, an assessment is conducted to verify whether the criteria for disability are fulfilled. Eligibility disability criteria for employment of people with disabilities are:

- 60% physical disability due to loss of function in lower extremities;
- 70% physical disability due to loss of function in upper extremities;
- 70% physical disability due to hearing loss;
- 80% physical disability due to injury of any other kind; and
- 90% total physical disability, in case of multiple injuries, provided there is 60% physical disability of lower extremities, 70% physical disability of upper extremities or 70% physical disability due to other types of injury.

If eligibility criteria are met, an employment certificate is provided through the National Disabilities Registry, run by the National Institute of Public Health. Regulation on the Registry was established in 2001 with the aim to improve the quality of the registered data, and to allow people with disabilities to exercise their rights in the system. The Registry allows detailed insight into the level of physical, intellectual, sensory and mental impairment, the level of support and the working capacity of a disabled person. A unique identification number allows data on the same person to be extracted from other databases to quickly provide the needed certificates.

Following this validation, the Institute of Expertise, Professional Rehabilitation and Employment of Persons with Disabilities determines whether the employer has met the required quota.

Execution of the Law is monitored by the Institute of Expertise, Professional Rehabilitation and Employment of Persons with Disabilities and by the Ministry of Labour and Pension System.

As part of the quality assurance of the Law, an ombudsman for people with disabilities has the right to access the premises of the employer. In case of irregularities, a report is submitted within 30 working days, and the employer needs to take corrective actions. Furthermore, if the ombudsman judges that a person with disabilities has been subjected to discrimination, violence, abuse or exploitation, a complaint is submitted to the State Attorney and the State Administration Body, suggesting measures to protect the rights and interests of people with disabilities.

Impact

The Law on Vocational Rehabilitation and Employment of Persons with Disabilities serves as an important incentive for employers to hire, recruit and retain people with disabilities. Around 11 000 people with disabilities have been employed in Croatia since implementation of the Law.

Lessons learned

- **The creation of an inclusive labour market is a priority public health concern.** An inclusive labour market allows all to participate to the best of their abilities regardless of any form of disability or vulnerability.
- **The National Institute of Public Health has a crucial role in promoting intersectoral action and in producing an evidence briefing to shed light on the impact of employment policies on the health of people with disabilities and the economy.** Shared positive experiences and examples of best practices may help reduce fear and stigma among employers and co-workers and may lead to an increase in employment of people with disabilities.

- **Political stakeholders can contribute to an inclusive labour market** by underpinning the urgency of workplace integration in times of an ageing workforce and skill shortages so that prospective employers recognize the benefits they can gain.
- **Employers have an important role when it comes to the work integration of people with disabilities.** A quota system has proved essential as it requires companies to employ a minimum percentage of people with disabilities, combined with a penalty for each place not filled.
- **For the person with a disability, a quota system primarily provides an opportunity for employment**, but at the same time it may contribute to the experience of self-stigma.
- **Integrating relevant information from different sources is the basis for work ability judgments.** Clear communication channels between involved players and systems (i.e., personal, workplace, health care and compensation systems) are needed.

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HORIZON SCANNING FUTURE HEALTH AND CARE DEMAND FOR WORKFORCE SKILLS IN ENGLAND, UK: Noncommunicable disease and future skills implications

Matt Edwards¹

Summary

England has developed a comprehensive approach to project future demand for skills and competencies of the health and care workforce based on a robust workforce planning framework where stakeholders were involved at every stage. Broad categories of the roles and responsibilities for different workforces were defined, and future changes in the demand were explored for six challenging scenarios. The exercise revealed a fast growth rate in demand for health workforce largely driven by long-term conditions and noncommunicable diseases. Addressing this demand will require a different skill profile in 2035 with a growing relevance of lower-skilled workers. Motivated by this study, England has expanded the mental health workforce, created new roles such as nursing and physician associates, expanded training places for nurses, midwives and allied health professionals, and expanded medical education to train 1500 extra doctors.

A health workforce fit for purpose

In England, over 15 million people (out of a total population of 55 million) were recognized as suffering from one or more long-term conditions in 2015; they are therefore one of the major sources of demand for health and care services (1). During the next decade, this number is set to increase further, with an increase in the proportion of people who have three or more conditions at the same time. Such increases in population demand have significant implications for the future requirements for human resources for health in terms of numbers and skills.

Projecting future demand for health and care skills

The overall purpose and aim of the Department of Health in England is to help people live better for longer. This includes overall responsibility for planning for existing and future challenges to meet the health and care needs of our population. Planning the workforce is a key aspect of this.

In 2015, the Department published the results of research from the Horizon 2035 programme (2) concerning future demand for skills and competencies of the health and care workforce. Broad categories of the roles and responsibilities for different workforces were defined, and future changes in the demand were explored in six challenging scenarios.

Approach

The research was based on the robust workforce planning framework (Fig. 1), which includes extensive stakeholder engagement and a mix of qualitative and quantitative approaches to investigate multiple plausible futures and simulate interventions to inform policy decisions (3).

Key Messages

- Investigation of skills mix and future demand for the whole system can reveal new ways of thinking and planning.
- Small annual changes in demand can add up to larger changes over time requiring major shifts in the skills and competencies of the health workforce.
- It is important to understand the context of the system to be investigated, ensuring that the appropriate scope, level of enquiry and methods are selected.
- It pays off to experiment with a range of techniques and approaches to accommodate variation in systems.
- Ensure that stakeholders are involved at every stage of the workforce review, including modelling and validation of variables.

Figure 1. Robust workforce planning framework

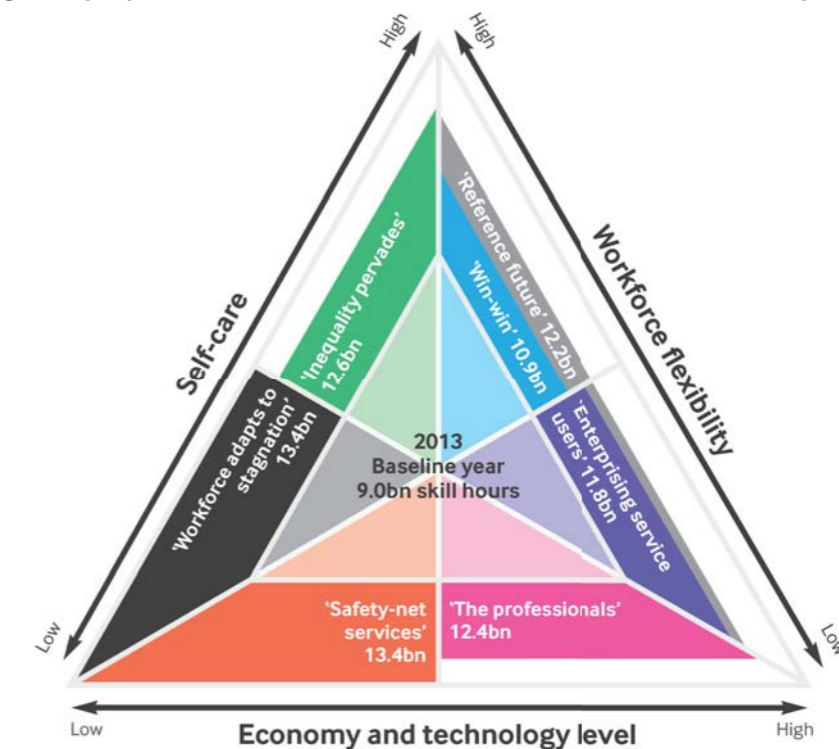


Source: Horizon 2035, Centre for Workforce Intelligence, UK

The features of this approach included:

- use of “systems thinking” methods to analyse the complex factors and forces that impact the system and a system dynamics model to simulate future changes;
- creation of a “well-being skills cube” to classify workforce skills and competence by eight types of skill, six skill levels and seven sources of population demand;
- delivering facilitated workshops to create six challenging but plausible visions of the future health and care system (Fig. 2); and
- use of best practice elicitation methods to quantify parameters for modelling and capture their uncertainty. Understanding uncertainty is important for making effective workforce planning decisions.

Figure 2. Using multiple plausible scenarios to consider different futures and the implications for skills



Source: Horizon 2035, Centre for Workforce Intelligence, UK

Modelling population demand for workforce skills

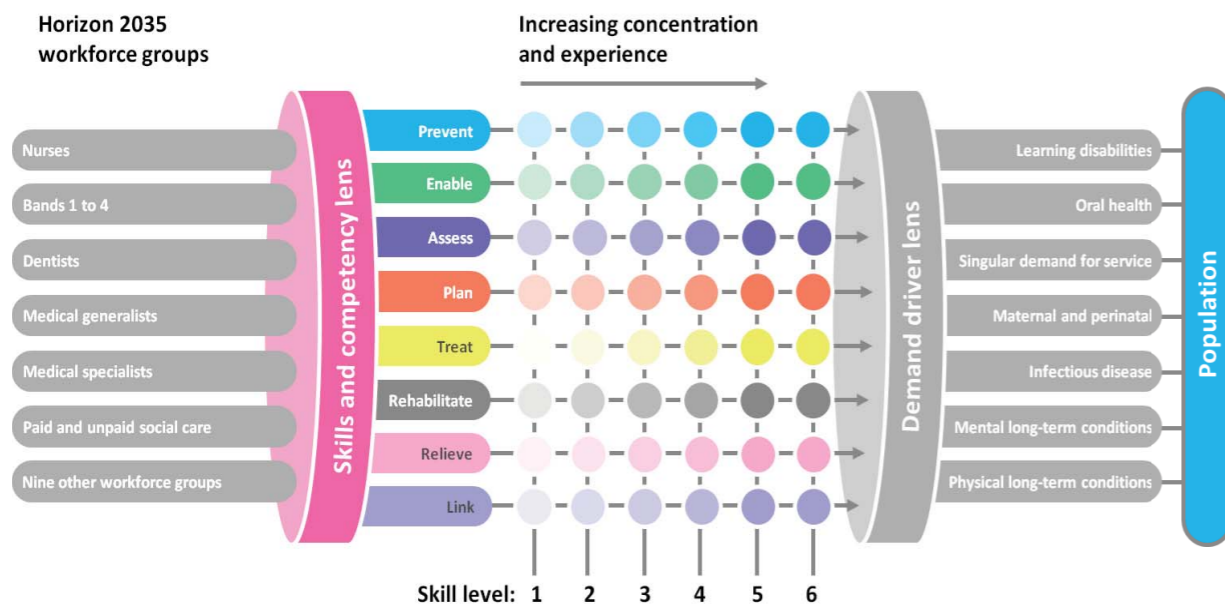
After extensive mapping of workforce skills (Fig. 3) and quantification of population health demand, the model included the following parameters:

- **population growth:** changes in population size due to projected births, deaths and net migration;
- **population ageing:** change in population size and level of activity associated with each age group for different sources of demand;

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- **level of well-being:** change in the prevalence of each demand source, for example physical or mental long-term health conditions, by age in comparison with the 2014 baseline;
- **shift to prevention:** aggregate change towards more prevention activities in the overall system; and
- **productivity:** for different levels of well-being skills, whether more or less skill outputs for service users will be achieved in the same workforce time in 2035, relative to today.

Figure 3. Map of Horizon 2035 workforce skills and population demand



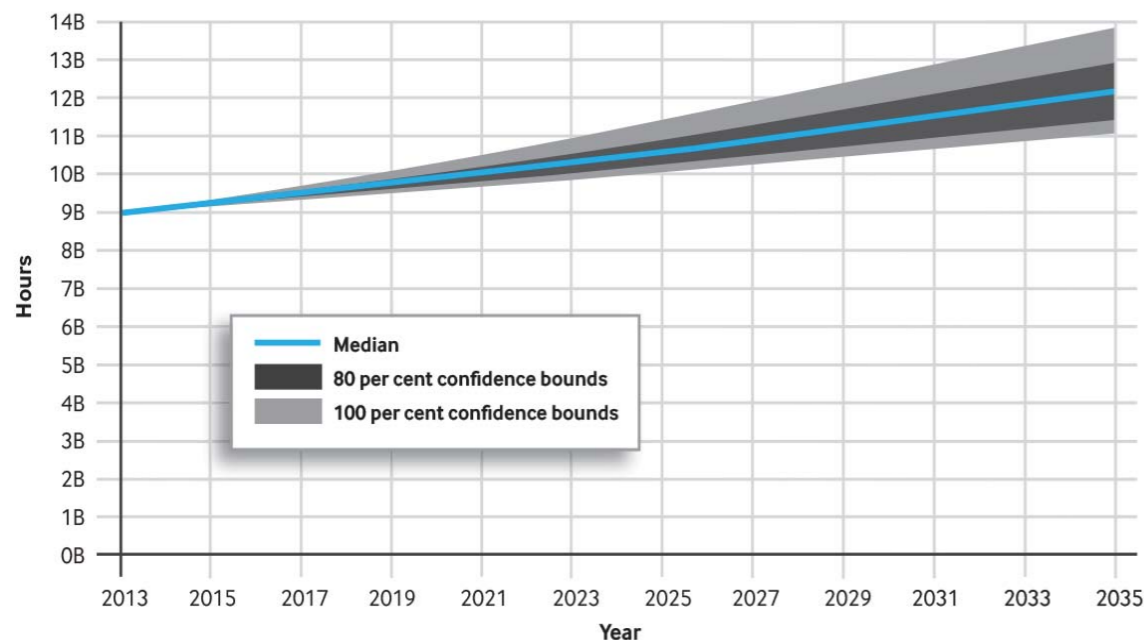
Source: Horizon 2035, Centre for Workforce Intelligence, UK

Findings

Demand for workforce time is growing faster than the population. Projections show that the demand for health and care workforce time could grow more than twice as fast (average annual growth rate, +1.3%) as overall population growth (average annual growth rate, +0.6%) by 2035.

The total workforce hours required by the system in 2035 are projected to increase by a median of 3.2 billion hours (36%), from 9.0 billion to 12.2 billion (Fig.4).

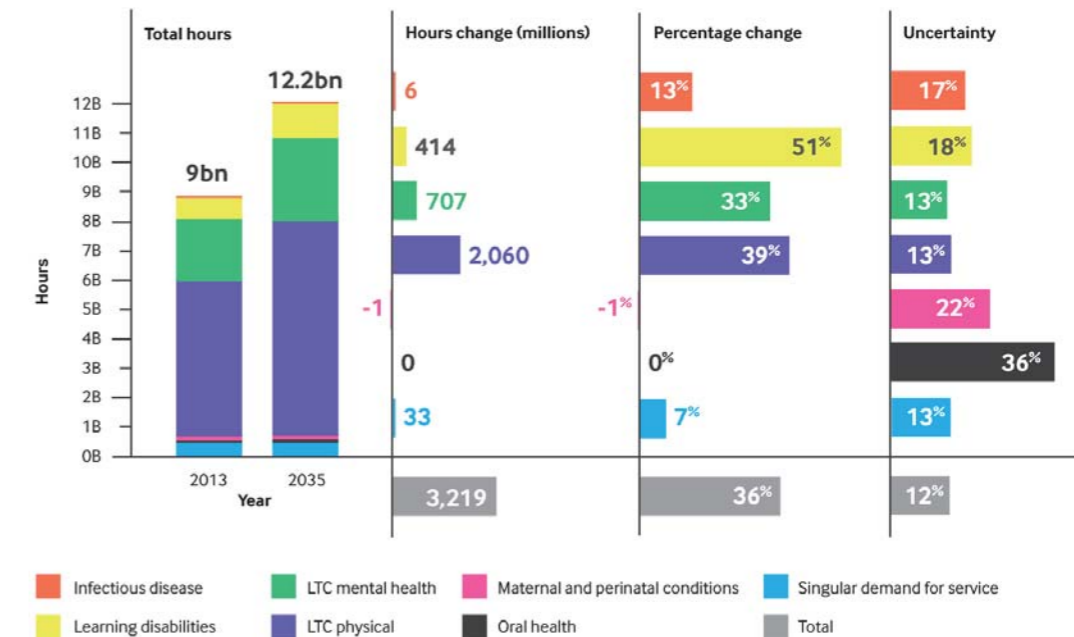
Figure 4. Total hours in reference scenario constraints, median and uncertainty, 2014–2035



Source: Horizon 2035, Centre for Workforce Intelligence, UK

Significance of long-term conditions and noncommunicable disease (NCDs). This analysis revealed that over 80% of additional demand is driven by increasing needs for health care and support associated with long-term conditions and NCDs (Fig. 5). This is due to both an ageing population and a projected increase in disease prevalence for all age groups.

Figure 5. Total hours by demand source, reference future conditions, change in hours, percentage change and total uncertainty 2013–2035 (median projection)

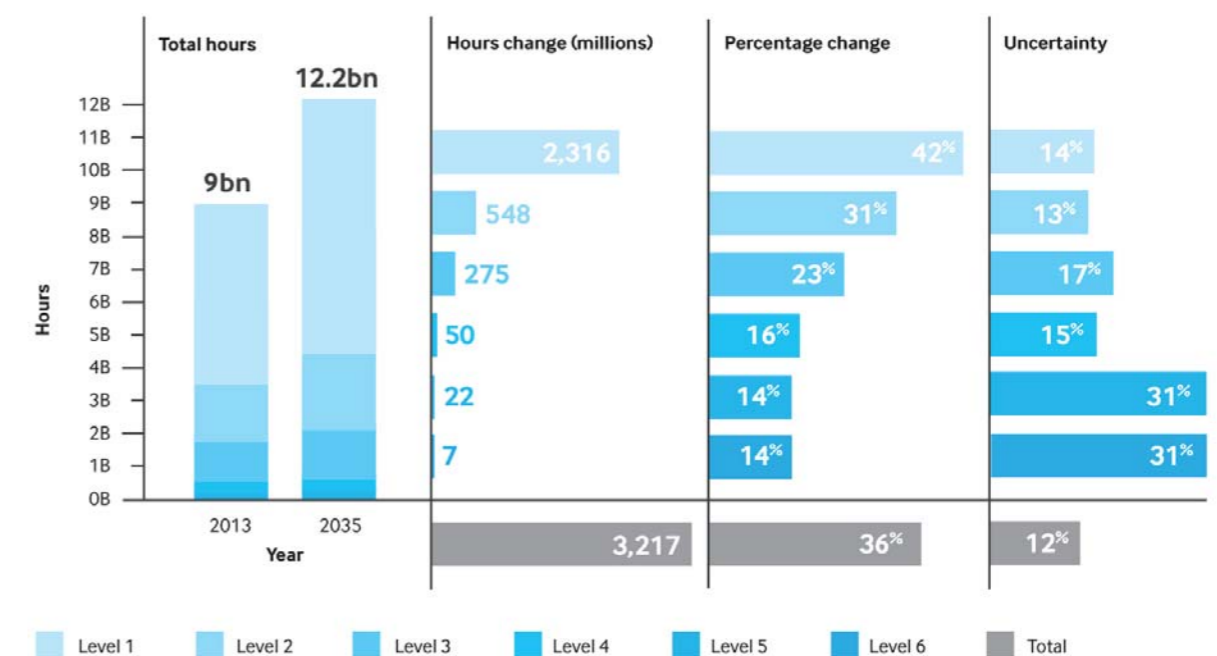


bn, billion; LTC, long-term condition

Source: Horizon 2035, Centre for Workforce Intelligence, UK

A different skill profile in 2035. The future profile of demand may be very different from that of today. For example, growth in demand for lower levels of skill, such as those for unpaid care, support carers and National Health Service (NHS) staff working in lower skilled occupational grades (“bands 1–4”), are projected to substantially outstrip growth in demand for the higher skill levels of medical and dental professionals (Fig. 6).

Figure 6. Total hours by skill level, reference future conditions, change in hours, percentage change and total uncertainty 2013–2035 (median projection)



bn, billion

Source: Horizon 2035, Centre for Workforce Intelligence, UK

Impact

This study has highlighted the future skills implications for England's health and care system. It has helped shift and orient thinking about how long-term conditions and NCDs may affect future demand for workforce time. Within England, there is ongoing work to identify long-range and nearer risks for workforce supply and demand. Recent examples of significant developments in human resources for health and announcements within England and further afield include the following.

England: £1.3 billion to transform mental health services and to expand the mental health workforce with 21 000 new posts by 2020–2021. The announcement included a pledge to treat an additional 1 million patients by 2020–2021, provide services 7 days a week, 24 hours a day, and to integrate mental and physical health services for the first time. The NHS will dramatically increase the numbers of trained nurses, therapists, psychiatrists, peer support workers and other mental health professionals to deliver on this commitment (4).

England: Creation of new roles, such as nursing associates and physician associates. These new roles are intended to ensure high-quality care and outcomes for patients by providing improved capacity and capability (5). There were 2000 nursing associates and 650 new physician associates in training and 500 clinical pharmacists as of early 2017.

England: Expansion of nurse, midwife and allied health professional training places. In 2016, the Government announced reforms of student financing to support higher education institutions in creating up to 10 000 more degree places by 2020 (6). Previously, because of limits on the number of commissioned places, two of three applicants were unable to secure a training place. The reforms will allow higher education institutions to provide more places on courses for nursing, midwifery and allied health professions to meet the demand from potential students. This should improve the supply of qualified health care graduates in the future.

England: Expanding medical education to train up to 1500 extra doctors each year. This 25% increase in the number of undergraduate training places will increase the "home-grown" medical workforce to meet growing demand for care (7). This is the largest single increase in physician training places in the history of the NHS. It will ensure that the NHS is able to meet future challenges by increasing domestic supply significantly to tackle pressures in key specialities such as general practice and reduce reliance on agency workers, locums and foreign-trained professionals.

Europe: Future skills of the health workforce in Europe. As part of the European Union Joint Action on Health Workforce Planning and Forecasting, part of the approach used in the Horizon 2035 programme was adapted to perform skills research in Europe (8). The findings included identification of high-level drivers of change for the future (including NCDs and multi-morbidity).

Americas: Developing multiple workforce futures with the Pan American Health Organization and WHO on the human resources for health agenda. Elements of robust workforce planning have been used to consider long-term workforce futures for the Americas and as part of the global human resources for health agenda (9).

Lessons learned

- **Investigation of skills mix and future demand for the whole system have revealed new ways of thinking and planning.** Conceptualizing demand for human resources for health, including unpaid workers, is an essential aspect of determining how the health and care system might provide support or respond to changes. Consideration only of certain health professional groups is a partial approach, which may miss current and emerging supply and demand risks.

- **Understand the context of the system to be investigated, ensuring that the appropriate scope, level of enquiry and methods are selected.** For example, in determining whether a whole system, a specific grouping or a particular disease or condition is to be examined, how the workforce supply and demand as well as possible interventions will be considered and quantified.
- **Experiment with a range of techniques and approaches.** Each health system is different, and data and evidence can be variable. Therefore, learning from other fields and contexts can bring new insights. For example, much was learnt from the European Union Joint Action and other fora on planning human resources for health and workforces.
- **Ensure that stakeholders are involved at every stage of the workforce review, including modelling and validation of variables.** This will enhance the quality, depth and recognition of the work and results. For example, scenarios generated by stakeholders, model assumption reviews and elicitation of highly uncertain variables for the future should be based on expert judgement and the best available evidence.

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PAY-FOR-PERFORMANCE IN ESTONIA: A transformative policy instrument to scale up prevention and management of noncommunicable diseases

Jonathan Marcotte¹, Melitta Jakob²

Summary

In 2006, Estonia introduced the Quality Bonus System (QBS)—a pay-for-performance instrument that provides financial rewards to primary health care physicians when they reach service provision targets in disease prevention and management. Less than a decade since the programme's launch and for a cost of less than 2% of Estonia's primary health care budget, the incentive programme has resulted in significant year-on-year scaling up of disease prevention and management in Estonia.

Estonia—a pioneer in health system reform

To address the growing burden of noncommunicable diseases (NCDs), Estonia focused on earlier detection and more proactive management of chronic conditions. A comprehensive approach to strengthening primary health care and right-sizing the hospital network were at the heart of the reforms. Continuously refined purchasing arrangements by the Estonian Health Insurance Fund created an enabling environment for restructuring service delivery and improving the mix of services with more prevention and proactive management of chronic conditions. The QBS was introduced to facilitate this transformation.

The quality bonus system

The QBS was designed in collaboration with the Society for Family Doctors and was launched in 2006 by the Health Insurance Fund. The objectives were to strengthen primary health care and enhance the role of family physicians in the prevention and management of disease, including a major focus on chronic illness.

The QBS provides additional payment on top of an existing mixed payment mechanism that is dominated by capitation payment, fees-for-service and a basic allowance. Physicians receive lump-sum cash bonuses for achieving coverage targets for specific services.

The QBS is organized into three performance domains, one of which addresses chronic diseases. This domain consists of five indicator sets with a total of 27 indicators. Most indicators are process-oriented and were selected because of their impact on outcomes based on clinical guidelines.

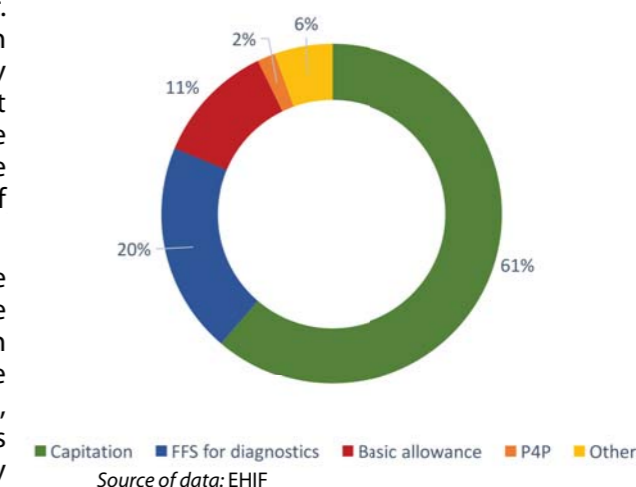
Estonia QBS Key Messages

- The QBS in Estonia was not a stand-alone solution but part of a comprehensive strategy to strengthen primary care.
- The QBS was designed as an integral part of a mixed model of provider payment for primary health care, with well-aligned and purposefully chosen incentives.
- A centralized data system enabled uncomplicated implementation of the QBS as an integrated part of purchasing health services rather than as a stand-alone mechanism.
- Small resources led to a significant impact leveraging comparative performance information.
- QBS was designed and implemented step by step.
- Stakeholder involvement facilitated wide acceptance by physicians.
- Pay-for-performance has been a powerful means for informing policy-makers and service providers about priorities.

Physicians are awarded points for reaching coverage targets, which are weighted differently for each domain and indicator. Coverage targets were set in a step-wise fashion to guarantee gradual scaling up of services by all participating physicians: each year's target is equal to the average performance in the previous year plus 10%. Bonus payments are awarded when a predetermined number of points is acquired.

An electronic billing system was in place before the QBS was introduced, which allows the Health Insurance Fund to follow all physician activities and monitor their progress. The system contains detailed patient information, including a list of chronic disease sufferers and a record of all services delivered by family doctors in Estonia. Family physicians receive personal electronic feedback on their performance twice a year, giving them an opportunity to analyse their performance and compare it with that of other doctors. The results of the QBS and a list of participating physicians are published on the Health Insurance Fund website each year for participating physicians and the public.

Figure 1. Share of payment mechanisms in PHC budget (2014)



Design of the QBS

- The chronic disease domain is one of 3 disease domains included in the QBS and contains five sets of indicators: (i) prevention of cardiovascular disease, (ii) management of type II diabetes, (iii) management of hypertension, (iv) secondary prevention after myocardial infarction and (v) hypothyreosis.
- Bonuses are paid directly to physicians who then decide how to distribute them among nurses, administrators and other staff members.
- Physicians were initially invited in 2006 to enrol voluntarily in the QBS. By 2011, 90% of physicians had enrolled. The mechanism became mandatory in 2015.
- Special patients and anomalous patient-physician encounters are excluded from reporting to avoid unfair penalties for outcomes beyond physicians' control.
- Bonus payments are paid annually rather than monthly to lower transaction costs.
- The proportion of physicians who qualified for a bonus increased from 4% in 2006 to more than 50% by the end of 2013.

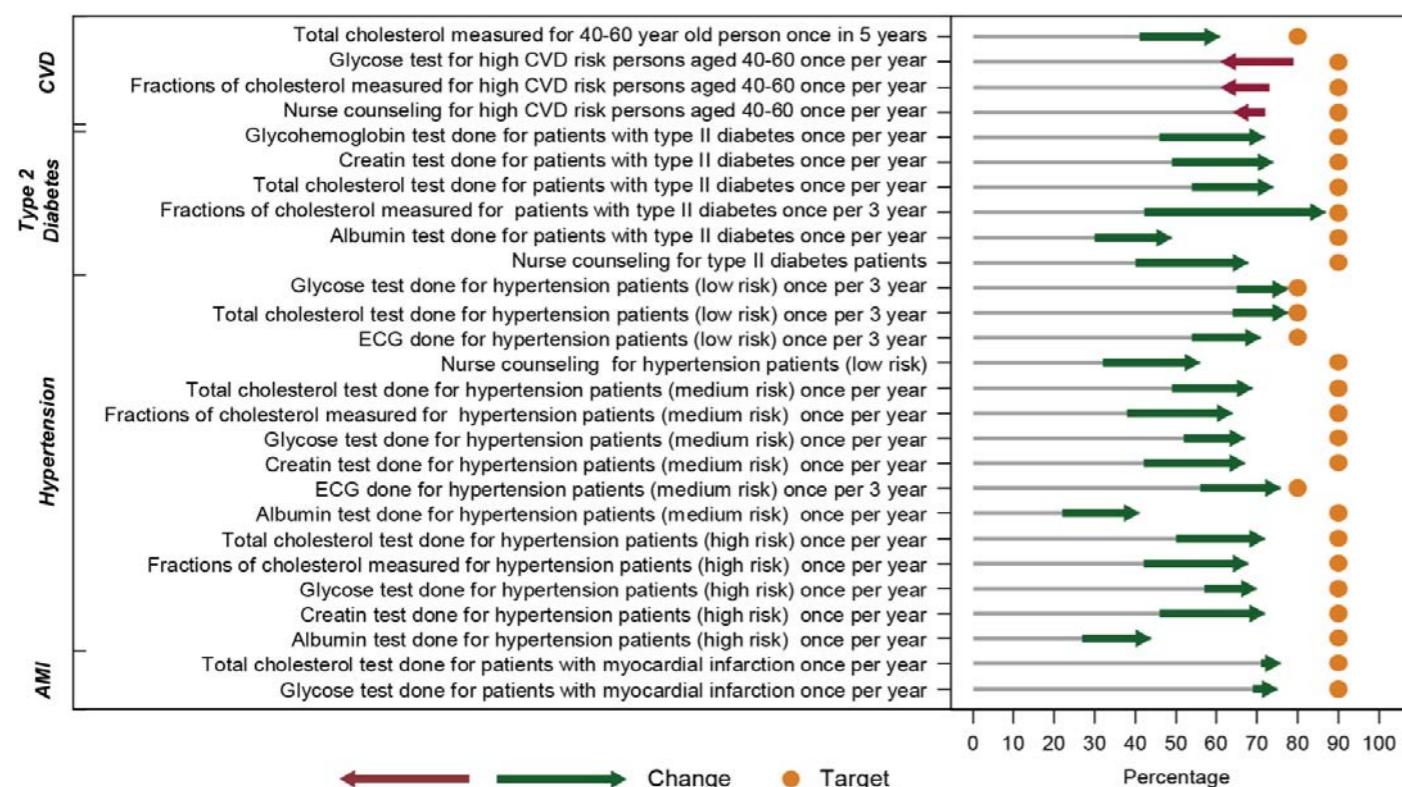
Impact on service coverage

In the 9 years since the QBS was first established it has strengthened chronic disease prevention and management in Estonia and has played an important role in the continued development of a strong primary health care system. Between 2007 and 2013, 24 of the 27 QBS indicators for chronic disease prevention and management improved (1). The increases range from 5% to 45% (2), with an average improvement across all indicators of 18.5 percentage points. Service coverage for most indicators jumped from about 50% of target population covered to about 70% (1). Additionally, there is some evidence that patients of physicians participating in the QBS require hospitalization for chronic conditions less frequently than those of physicians not participating in QBS (2).

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Figure 2. Progress towards chronic disease prevention and management targets



Source of data: EHIF

organizational reforms, new payment mechanisms, integrating evidence into practice, strengthening the health workforce and improving information systems.

- **QBS was designed for integration into a mixed model of provider payment for primary health care with well-aligned and purposefully chosen incentives.** The QBS contributed to weakening the incentive inerrant in capitation payments to under-provide preventative and disease management services and over-refer patients to specialists and hospitals.
- **A centralized data system enabled uncomplicated implementation of the QBS as an integrated part of purchasing health services rather than a stand-alone mechanism.** The existing billing system contained sufficient information about chronic conditions so that physician and nurse activity could be measured against targets without additional data collection.
- **Small resources led to a significant impact leveraging comparative performance information.** Semi-annual performance feedback and publication of overall performance results helped harness intrinsic motivation of family doctors towards professional improvement; normative pressure pushed doctors to meet the standard of their peers.
- **QBS was designed and implemented step by step.** The incremental, multi-year implementation of QBS involved carefully designed steps intended to (i) foster the achievement of realistic targets, (ii) give primary care physicians time to adapt to reforms and (iii) allow changes to the system to be made when areas for improvement were identified.
- **Stakeholder involvement facilitated wider acceptance by physicians.** The involvement of the Society for Family Doctors in designing the QBS ensured wide acceptance of the system by family physicians and helped to present it as a programme to enhance primary care in Estonia and not purely as a financial initiative by the health purchaser.
- **Pay-for-performance has been a powerful means for informing policy-makers and service providers about priorities.** The Estonian Health Insurance Fund used a financial reward to clearly communicate to physicians what is valued by the health system and to drive changes in standard practice accordingly.

Policy implications for Estonia

These achievements are impressive. They are likely to be the result of a comprehensive approach to strengthening primary health care in Estonia, which included organizational reforms, new payment mechanisms, integrating evidence into practice, strengthening the health workforce and improving information systems.

Further improvement in chronic disease prevention and management and a consequent reduction in avoidable hospitalizations for cardiovascular disease and diabetes are nevertheless possible (3). Improvement may require further fine-tuning of both service delivery and payment mechanisms. In the single-practitioner model of primary care, it might be costly to further scale up health promotion, prevention, patient activation and proactive disease management for chronic conditions. Ways to share resources (staff, information, activities) among practitioners may be a sensible and necessary next step.

In terms of payment mechanisms, the interface between primary care on the one hand and specialist and hospital care on the other must be considered. The predominant incentive in the Estonian system is upward movement of patients, as primary care is paid mainly by capitation, while specialist and hospital care are paid by capped fees-for-service and case-based payments, respectively. Experimenting with capitation and/or bundled payments across higher levels of care might be a promising way forward.

Lessons learned

- **QBS in Estonia was not a stand-alone solution but part of a comprehensive strategy to strengthen primary care.** QBS was but one component of a set of systematic, well-sequenced instruments for strengthening various aspects of primary health care, including

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PUBLIC HEALTH NURSES IN FINLAND: A life-course approach to the prevention of noncommunicable diseases

Kirsi Grym¹, Liesbeth Borgermans²

Summary

In Finland, registered public health nurses manage and deliver high-quality preventive health services throughout a person's life-course. The Finnish system is exemplary, as an integrated, effective life-course approach to health through its emphasis on prevention and health promotion, interprofessional collaboration and task-shifting from doctors to nurses, while safeguarding the quality of care and achievement of good health outcomes in the Finnish population, including the satisfaction of its citizens. An integrated chain of public health services is delivered through maternal and child health, school health and student health clinics, occupational health and adult and elderly health care facilities. The services offered reflect national life-course-related health goals that are defined for different age groups.

Investing in a life-course approach to NCD prevention

The Finnish system is an integrated, effective life-course approach to health facilitated by a large number of public health nurses. A life-course approach to health is used, as social and cognitive skills, habits, coping strategies, attitudes and values acquired in early childhood and adolescence strongly influence the remainder of the life-course, with implications for the risks for noncommunicable diseases (NCDs) and general health. Investment in a life-course approach to health has been shown to have important returns for public health and the economy by addressing the causes, not the consequences, of ill health.

An integrated chain of public health services

A total of 5200 public health nurses (1) manage and deliver high-quality public health services in municipalities. They are employed in various sectors, including maternal and child health care clinics (*neuvola*) and school health care services, which are essential parts of the preventive and health promotion services in municipal primary health care. *Neuvola* services are located mainly in primary health care centres, while school health care is organized in schools.

Municipalities are in charge of the practical arrangements of these free, mainly tax-funded services. The Ministry of Social Affairs and Health is responsible for guiding maternal and child and school health services, while the National Institution for Health and Welfare publishes

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Key Messages

- Registered public health nurses manage and deliver services throughout the life-course and are front-line workers in health promotion and prevention.
- They effectively address the prevention of NCDs by offering comprehensive services, inter-professional collaboration and continuity of care.
- Their services reflect the national life-course-related health goals for different age groups.
- Health inequality is addressed by early, targeted support, especially for socioeconomically vulnerable groups.
- Government agencies are responsible for the design and evaluation of maternal and child health, and school health services, although municipalities are in charge of the practical arrangements for these services.

guidelines, arranges training and compiles data from monitoring. The National Public Health and Safety Authority (*Valvira*) and regional agencies oversee the services in a nationwide programme.

Finnish parents have frequent individual health check-ups with public health nurses during pregnancy and with their child until the child starts school at the age of 7 years. After this, periodic individual health check-ups are continued by school public health nurses until the child graduates at the age of 16 years. The same public health nurse follows up the family from the beginning of the pregnancy until the child starts school. The interventions include assessments of children's physical, mental and social health, vaccinations and supporting parents in providing secure, child-focused upbringing. These services promote healthy growing environments for children and healthy family lifestyles. Support is also provided through home visits and by parents' groups. Health inequalities are addressed by early, targeted support, especially for socioeconomically vulnerable groups. The services offered reflect the national life-course-related health goals defined for different age groups.

Table 1. Examples of services provided by public health nurses over the life-course

	Services specific to age or condition	General services
Maternal care	Monitoring normal pregnancies and screening for high-risk pregnancies Supporting parenthood, early interaction and breastfeeding Monitoring women with pregnancy-related diabetes	Promoting a healthy lifestyle through tailored health counselling (e.g. nutrition, physical activity)
Child health	Assessing, monitoring and promoting the growth and development of children (including neurocognitive development and psychosocial health and development) Supporting parenthood and early interaction Preventing accidents	Supporting and empowering people to maintain and promote their own health and well-being with a proactive, holistic work approach
School health	Assessing, monitoring and promoting the growth and development of children (including psychosocial health and development) Assessing the environment of children (including relationships with family and friends) Supporting parenthood	Screening for risky behaviour (e.g. use of alcohol, tobacco and drugs) Screening for mental health problems (e.g. depression, eating disorders)
Student health	Assessing, monitoring and promoting students' health and ability to study Planning monitoring and care of chronic illnesses during studies Assessing students' health from the point of view of possible health and safety risks in their future occupation	Vaccinations Promoting sexual health
Occupational health	Assessing, monitoring and supporting people's health and ability to work Assessing and promoting the safety of work environments and workplaces Preventing work-related illness and accidents	Planning, organizing and guiding health and peer groups (e.g. parenting classes, weight management groups)
Adult health	Preventing and managing chronic illnesses (e.g. type 2 diabetes, asthma, hypertension) Providing preventive primary care health check-ups to people outside occupational health services (including for unemployed people) Supporting people with multimorbidity in living a full life	Working on health equity and reducing social inequalities Recognizing the need for special support and arranging help and support when needed
Elderly health	Supporting and promoting people's functional ability and ability to take care of themselves Supporting safe living at home Providing preventive primary care health check-ups (including memory screening)	Working in multiprofessional intersectoral collaboration to support the health and well-being of individuals Nursing services, e.g. sickness assessments, chronic wound care, minor accidents, medication

The following examples show how public health nurses contribute to scaling-up core interventions and services:

- Childhood obesity:** The public health nurse is in the front line for detecting obesity in children, as individual weight and height are monitored closely during health check-ups and communicated to the family. Family-centred care includes behavioural change through coaching and positive feedback. If the body-mass index is alarming, a doctor's appointment is made, and other health care professionals are involved, including nutritionists and psychologists.

- **Adolescent smoking:** Every adolescent is evaluated for smoking habits during health check-ups, starting at the age of 10 years. Smoking is also assessed in cases of respiratory infection and among girls seeking birth control. Smoking cessation programmes are offered, and nicotine replacement therapy can be initiated.

Other examples of services for different target groups over the life-course are listed in Table 1.

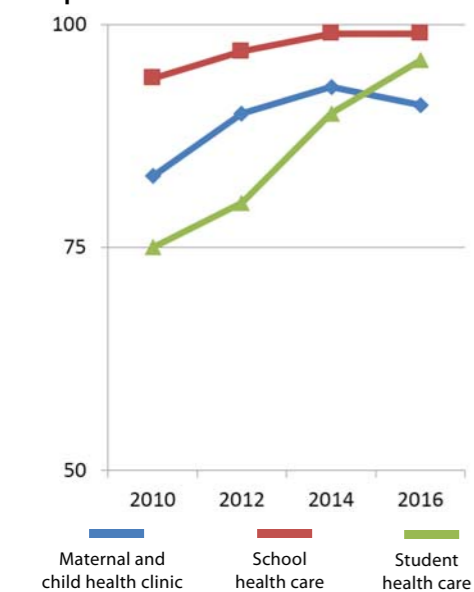
Both maternal and child health care clinics and school health care services are part of an integrated life-course chain of services for age-dependent factors. Within this chain, public health nurses work with health professionals in primary, secondary and tertiary care. The main collaborating partners are medical specialists, social workers, nutritionists, psychologists, physiotherapists, speech therapists, occupational therapists and dentists.

Identification of patient data and integration of services are facilitated by a unique social security number attributed to every Finnish citizen and used in all encounters. An integrated view of a patient's life-course is ensured, which allows the detection and follow-up of risk factors for NCDs and other health conditions (2).

Impact

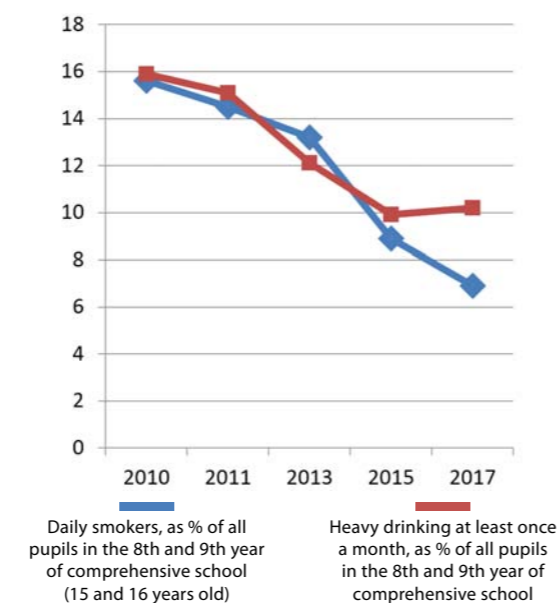
Neuvola and school health services cover the beginning of the life-course for virtually the entire Finnish population. Overall, the number of public health nurses working in these sectors nearly reaches the national recommendation target, and an increase has been seen in the past few years (Fig. 1). Because of the high-quality health care services, the rates of infant mortality and low birth weight are generally lower in Finland than in other countries (3,4). In 2016, the newborn mortality rate was 1.1 per 1000 live births, and the rate of preterm births was 5.2% (5). The relational continuity of care provided by Finnish public health nurses also influences maternal subjective well-being (6), and a large decrease has been seen in adolescent risk behaviour (Fig. 2). In a public survey in 2012, *neuvola* services were chosen as the best Finnish innovation of all time (7).

Fig. 1. Public health nurse resources as compared with national recommendations (%)



Source: TEAviisari (2018)

Fig. 2. Adolescent risk behaviour (%)



Source: Sotkanet.fi (2018)

Lessons learned

- **Registered public health nurses manage and deliver services throughout the life-course and are front-line workers in health promotion and prevention.** They work in an integrated life-course chain of services that reflect the national life-course-related health goals for different age groups.

- **They effectively address the prevention of NCDs by offering comprehensive services, inter-professional collaboration and continuity of care.** Close inter-professional collaboration with other professionals in health and social care enables public health nurses to empower individuals and the population more efficiently.
- **The availability of comprehensive services and the increasing health literacy** of people and communities are important in the work of public health nurses.
- **Holistic approaches to people-centred care require continuous training**, which is a statutory obligation in Finland for health care professionals so that they can maintain and develop their skills.
- **Health inequality is addressed by early, targeted support, especially for socioeconomically vulnerable groups.** Support and help should be offered without delay. The special needs of families that do not use the *neuvola* or school health services must be identified and tailored support offered to those in need, these families are known to be in increased risk of social exclusion than the families that attend the services.
- **The free *neuvola* services complement a wide range of allowances, benefits and grants that are designed to strengthen the resources of individuals and families so that they can take responsibility for their own health and well-being.** Parental support and health counselling are offered at frequent periodic health check-ups and parenting classes. Continuous, confidential relationships and interaction between public health nurses and families enhance the effectiveness of health counselling.
- **Government agencies are responsible for the design and evaluation of *neuvola* and school health services, although municipalities are in charge of the practical arrangements for these services.** Government involvement in monitoring these preventive primary care services guarantees, for example, access to the well-resourced services.

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PUBLIC HEALTH PRODUCT TAX IN HUNGARY: An example of successful intersectoral action using a fiscal tool to promote healthier food choices and raise revenues for public health

Éva Martos¹, Tamás Joó², Zsófia Pusztai³

Summary

In 2011, the Hungarian Parliament passed legislation creating the public health product tax—a tax levied on food products containing unhealthy levels of sugar, salt and other ingredients in an effort to reduce their consumption, promote healthy eating and create an additional mechanism for financing public health services. Four years since the tax was introduced, consumption of taxable unhealthy foods in Hungary has decreased. Many food manufacturers have reduced or eliminated unhealthy ingredients in their products, population awareness of healthy eating has increased, and approximately US\$ 219 million in revenue has been raised and earmarked for health spending.

Responding to a public health crisis

Noncommunicable diseases are the leading causes of morbidity and mortality in Hungary. The rates of death from ischaemic heart disease, stroke and cancer are among the highest in the industrialized world. Hungary is noted for having the highest average per-capita salt consumption in the European Region and approximately two thirds of the adult population is either overweight or obese. In recent years, the Hungarian Government has taken major steps to improve population nutrition. Initiatives include passing legislation to ensure nutritional standards in public catering, eliminating the use of trans-fats in food products, improving the nutritional quality of cafeteria food in schools, and introducing the public health product tax.

The public health product tax

In 2011, Hungary introduced the public health product tax—a levy raised on food products containing unhealthy ingredients exceeding a threshold level. Prepared collaboratively by the Ministry of Health and the Ministry of Finance and with the support of WHO, the tax is designed to promote healthy food choices and simultaneously mobilize funding for public health services. Additionally, the tax aims to redistribute responsibility for unhealthy food choices so that individuals bear a proportional share of the social and economic burden of unhealthy eating. The specific health objectives of the tax are to encourage healthier eating habits among Hungarians and to encourage manufacturers to reformulate recipes to make unhealthy

Key Messages

- A fiscal instrument can play an effective role in improving the nutrition behaviour of the population.
- The public health product tax is not a silver bullet for addressing poor nutrition or a budget shortfall.
- Healthier products due to product reformulation are a positive consequence of tax avoidance.
- Improved nutrition literacy has been one of the outcomes of the tax improving nutrition behaviour beyond the direct impact of price increase.
- Intersectoral action enabled accurate problem definition, development of an appropriate policy solution, and effective implementation.
- Continuous refinement of legislation after initial enactment was essential for exposing and shutting loopholes, ensuring tax's effectiveness.
- The unhealthy product tax is compatible with European Community law.

products healthier. The economic objective of the tax is to create a steady stream of revenue earmarked for public health, helping to offset the health care costs of diet-related illness.

Before introducing the public health product tax, laboratory analyses of food product content were collected to identify unhealthy foods and to quantify the levels of salt, sugar and other unhealthy ingredients that they contained. This information was combined with data on consumption of high-salt and high-sugar food products to serve as a reference in preparing the tax legislation. The information also served as baseline data to be used later in monitoring and evaluating changes in consumption patterns and product formulations. The administrative burden of the tax on manufacturers and sellers was assessed and determined to be minimal. Subsequent to its introduction, the tax was amended five times to close loopholes in the legislation and ensure its effectiveness.

The public health product tax is collected at points of sale from consumers who purchase a taxable food product and also from sellers when selling a taxable food product in Hungary for the first time. The tax is per unit of product sold, measured in kilograms or litres.

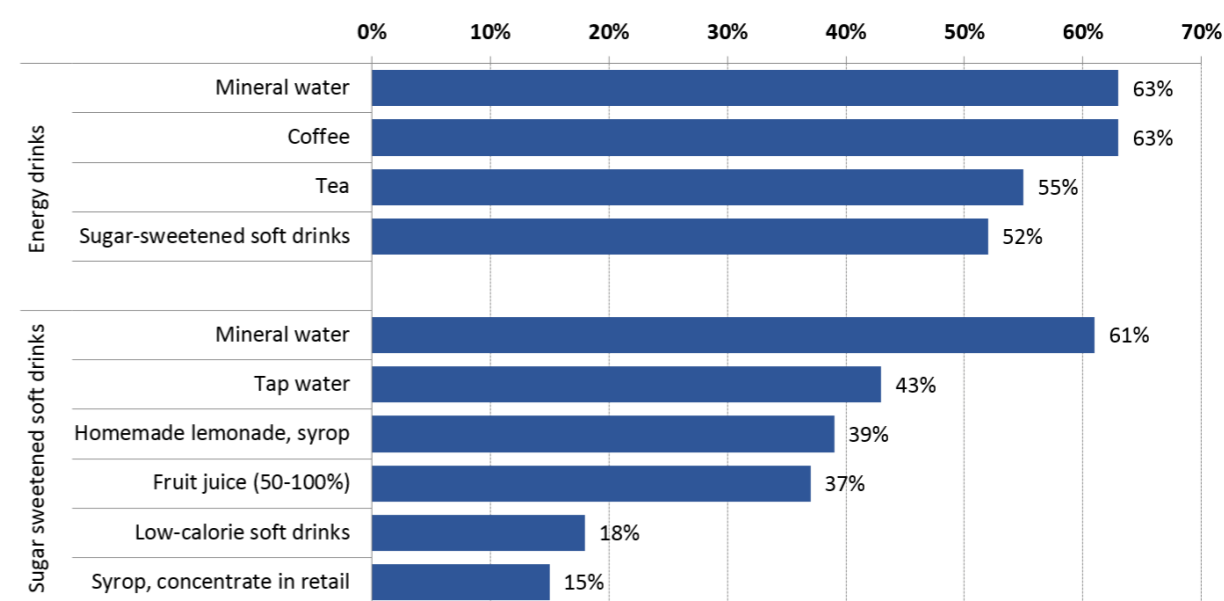
Although exceptions exist and the tax in some cases depends on the quantity of the unhealthy ingredient rather than on its presence alone, the tax applies to:

- pre-packaged sweetened products such as sweets, biscuits, confectionery products, bakery products and cocoa-containing products;
- soft drinks with added sugar;
- fruit jams and similar sweetened preserves;
- flavoured beer with added sugar;
- “alcopops” (alcoholic soda beverage);
- alcoholic beverages;
- energy drinks; and
- excessively salty snacks.

Impact

The public health product tax in Hungary has had a significant impact. Since its introduction in 2011, consumption of unhealthy food products has decreased concomitantly with the decrease in the supply and sale of those products. The first impact assessment, conducted by the National Institute for Health Development in 2012, showed that after instating the tax, approximately 40% of unhealthy food product manufacturers changed their product formulas to either reduce or eliminate unhealthy ingredients (28% and 12%, respectively) (1). Manufacturer sales of taxable products fell by an average of 27% and prices for taxable products rose by an average of 29% (1). A second impact assessment, conducted by the National Institute for Food and Nutrition Science in 2014, showed that consumers of unhealthy

Figure 1. Examples of substitution effect from taxable unhealthy food to healthier options



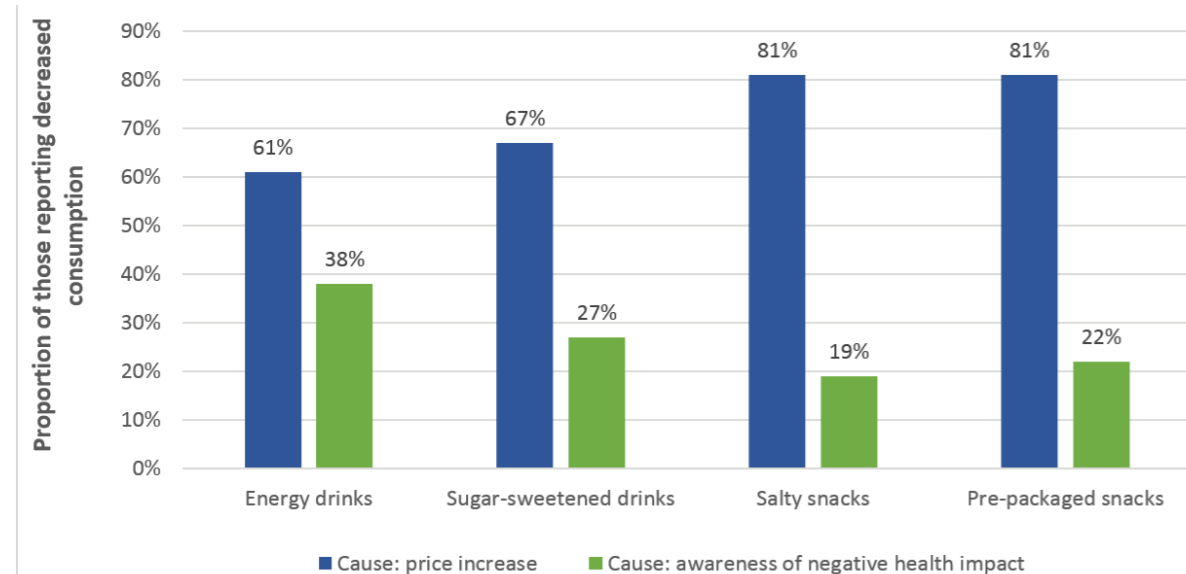
Source of data: National Institute for Food and Nutrition Science (2015)

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Figure 2. Reasons for decreased consumption of unhealthy food items



Source of data: National Institute for Health Development (2013)

food products responded to the tax by choosing a cheaper, often healthier product (7–16% of those surveyed), consumed less of the unhealthy product (5–16%), changed to another brand of the product (5–11%) or substituted some other food (often a healthier alternative) (2). Most people (59–73%) who reduced their consumption after introduction of the tax consumed less in 2014 than in previous years, suggesting that the reduction in unhealthy food consumption has been sustained (2). In its first 4 years of operation, the tax has generated HUF 61.3 billion (about US\$ 219 million) for public health spending (2). In 2013, this amounted to roughly 1.2% of government health expenditures in Hungary.

Lessons learned

- **A fiscal instrument can effectively improve the nutrition behaviour of the population.** In contrast to discouraging examples of similar efforts elsewhere in Europe, the Hungarian experience demonstrates that introducing a tax on a well-defined set of food items can contribute to healthier food choices. In part, the success of the Hungarian formulation of the tax is due to its relatively narrow set of included food items which were targeted for their unequivocally negative impact on public health. This provided a strong justification for the intervention and contributed to its acceptability.
- **The public health product tax is not a silver bullet for addressing poor nutrition or a budget shortfall.** The tax was introduced in Hungary at a time when the emerging public health crisis and nutritional issues were subject to intensive public discourse. The tax was part of a comprehensive set of measures targeting nutritional behaviour. Similarly, from a public finance perspective, the tax neither resulted in a revenue windfall nor a public health financing revolution. It was one component of a larger diversified financing strategy to raise revenues for health.
- **Healthier products due to product reformulation are a positive consequence of tax avoidance.** Some producers of unhealthy products opt to reduce or eliminate the levels of unhealthy ingredients in order to lower their tax burden. Although this behaviour does not generate revenue for the budget, it reduces the availability of unhealthy food items and may result in lower health system costs for diet-related chronic diseases.
- **Improved nutrition literacy has been one of the outcomes of the tax improving nutrition behaviour beyond the direct impact of price increase.** The public health product tax decreased unhealthy food consumption by increasing the price of unhealthy food products and creating a cost barrier. Indirectly, the tax and the public discourse around its introduction began to change population attitudes to unhealthy foods and influenced consumer decisions to consciously avoid unhealthy products.

- **Intersectoral action enabled accurate problem definition, development of an appropriate policy solution, and effective implementation.** The motivation for the tax originated from the need for greater funding for public health action. Public health experts from the Ministry of Health, National Institute for Health Development, National Institute for Food and Nutrition Science, the Ministry of Finance, and WHO worked closely together to formulate the final version of the tax and to see the legislation through a number of revisions.
- **Continuous refinement of legislation after initial enactment was essential for exposing and shutting loopholes, ensuring tax's effectiveness.** After it came into effect, the public health product tax was refined several times in reaction to manufacturers who made superficial modifications to unhealthy recipes with the aim of tax evasion. The refinements allowed policy-makers to combat the manoeuvring of producers and to tax those producers who did not genuinely reformulate their products to make them healthier.
- **The unhealthy product tax is compatible with European Community law.** The rules of the public health product tax are compatible with European Community law as the tax liability of a product depends solely on its composition and is independent of its place of production.

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THE PUBLIC CATERING DECREE IN HUNGARY: Intersectoral public health action to improve nutrition and address social inequalities with a binding legal instrument

Krisztina Biró¹, Andrea Zentai²

Summary

The Public Catering Decree was published in 2014 after a long preparatory phase and intense intersectoral cooperation with relevant stakeholders. This legal tool is one component of a complex set of public health measures to address the root causes of obesity. The Decree pertains to dietary risk factors primarily in educational settings (including free summer meals for disadvantaged children) and in hospitals and addresses not only health-related but also social and equity issues. Three years after its introduction, favourable changes in the school nutrition environment were seen, and a positive change in the attitude of the food industry. Robust communication activities to supplement the legislation improved understanding of its public health goals, thus strengthening the public perception and acceptance.

Comprehensive approach required to improve nutrition outcomes

Chronic noncommunicable diseases, in particular cardiovascular diseases and cancers, are major causes of premature mortality in Hungary. Obesity contributes to these outcomes and is thus a major public health concern, particularly among children. In Hungary, 28% of children are overweight and more than 11% are obese (1). National surveys show that children's diets already contain nutritional risk factors.

Healthy nutrition is important for the mental and social development of children and their well-being and improves school performance and attendance (2). As children spend most of their day in preschools and schools, they consume 35–65% of their daily energy there. Thus, schools and preschools have a pivotal role in ensuring access to healthy nutrition and shaping children's health behaviour. Making the preschool and school food and nutrition environment healthy is a long-term investment in health, with positive effects lasting well into adulthood.

Recognizing that voluntary action alone had not been successful in changing unfavourable nutritional outcomes, the Hungarian Government launched a complex set of mandatory legal actions to address lifestyle-related risk factors, including nutrition and physical activity. The renewal of nutritional standards in public catering was driven in particular by high demand from both professionals and the public.

Key Messages

- Voluntary actions alone are not enough to catalyse changes in the food environment or in dietary behaviour; binding legislation is also required.
- A complex policy tool that affects health, social and equity issues requires strong and aligned intersectoral cooperation.
- Strong political commitment from the Government both in its mission and in financial terms is required to deliver such complex results.
- Diet-related noncommunicable diseases cannot be reduced effectively only by a "silver bullet" such as the Public Catering Decree. This complex problem requires a systematic approach and a comprehensive, aligned, system-wide response.
- The structural change in the public administration that has merged health, social affairs, education, youth and sport into a single ministry facilitated the process by ensuring more efficient intersectoral cooperation.
- Robust communication activities to supplement the legislation led to better understanding of its public health goals, thus strengthening the public perception and acceptance.

The Public Catering Decree

The Chief Medical Officer renewed the nutrition guidelines for public caterers in 2011, introducing the new approach of food-based recommendations. The new guidelines essentially encourage greater intake of vegetables and fruit and reductions in fat, salt and sugar consumption.

The new ministerial decree on public catering was based on these guidelines. Preparatory intersectoral work was led by the Ministry of Human Capacities, a "supra-ministry" covering health, social affairs, education, youth and sport.

The decree was widely and thoroughly negotiated for three years by all relevant stakeholders, including Government bodies, professional and public organizations such as caterers' associations, parent associations, patient associations and local governments and the food industry. Reasons for opposition included fear in local governments and among caterers of increases in the price of raw materials and pressure from the food industry for swift, costly technological changes. During the negotiations, a number of compromises were made to take into account the facilities and opportunities of local governments and the food industry. Preliminary modelling and pricing of menus that respected the new decree were developed to avoid unnecessary financial constraints for providers. Good practices of careful, reasonable menu planning with locally produced food and seasonal menus were collected during the preparatory phase to enable caterers to comply with the new decree.

The decree was published in 2014, entered into force on 1 January 2015 and has been applicable since 1 September 2015. It covers preschools, primary and secondary schools and other educational settings, in-patient care facilities and certain services that provide social and child protection care.

The decree legislates application of food-based standards and an additional set of standards for some nutrients (e.g. salt, sugar, total fat, calcium). For salt, a stepwise approach was used. Providers gradually comply with reference values for the daily maximum salt intake for different age groups, reaching the final value over six years. The decree stipulates the specific food groups to be provided daily (milk and dairy products, whole grains and cereals, fruit and vegetables). The decree also regulates the number of meals to be provided, the age-appropriate portion sizes, the frequency of certain food groups over a 10-day catering period, energy requirements per age and the variety of meals. The decree restricts the use of some food categories and prohibits a list of foodstuffs (e.g. energy drinks, sweetened soft drinks, non-fruit-based syrups, caffeine-containing beverages for children under the age of 18 years) and a list of food colorants for children.

The decree obliges caterers to provide adequate information to consumers by displaying the amounts of nutrients and the presence of allergens. One section is dedicated to mandatory training of caterers. It legislates the provision of nutritious, healthy meals appropriate for age and physiological status and also for people with special dietary needs, such as those with intolerance to lactose, sensitivity to gluten and other intolerances justified by a specialist, as listed in European Union legislation. This element of the legislation is forward-looking, as this aspect of public catering has not previously been addressed.

The decree emphasizes equity and enforcement of the basic right to health. It has a strong social element, providing for healthy meals free of charge for children in socially disadvantaged families. A tendering system is in place to cover the cost of summer catering for schoolchildren in an increasing number of disadvantaged settlements.

Intensive communication activities, including setting up a webpage to disseminate authentic messages for health education and awareness-raising, country-wide public roadshows, collecting good practices and sharing recipes to promote healthy catering, have been implemented by the Ministry of Human Capacities and the National Institute of Pharmacy and Nutrition. Explanations of the rationale for the legislation and dissemination of its public health goals helped to improve public (and parental) perception and acceptance.

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Impact

The public catering and nutrition environment in primary schools was assessed in 2017 by the National Institute of Pharmacy and Nutrition within the framework of the Biannual Collaborative Agreement between the WHO Regional Office for Europe and the Ministry of Human Capacities, Hungary. (3) The preliminary results show a number of favourable changes in meals in primary schools between 2013 and 2017 (Fig. 1).

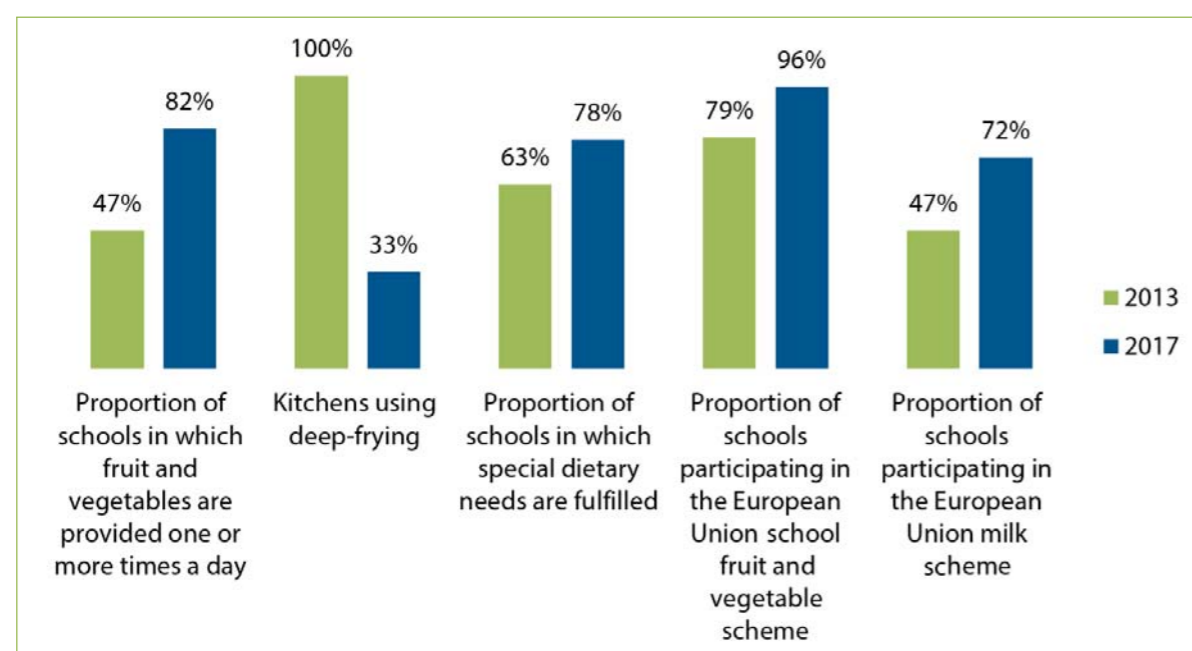
- In 90% of schools, caterers comply with the regulations on sugar, energy and fat content.
- Healthy meals and ingredients are available or being introduced, and only a minority of children dislike them.
- The proportion of schools in which fruit and vegetables are provided one or more times a day has increased significantly.
- The traditional cooking technique of deep-frying is used in significantly fewer kitchens.
- The proportion of schools in which special dietary needs are fulfilled has increased substantially.

The school nutrition environment also became healthier during 2013–2017.

- One fourth of schools reported that they had kitchen and/or school gardens.
- The proportion of schools participating in the European Union school fruit and vegetable schemes and in the milk scheme increased.
- The number of school snack shops selling sugar-sweetened beverages or colas, pre-packaged candies, chocolate, biscuits or wafers has decreased.

With these changes, the meals provided in the public catering sector have become healthier, with more milk and/or dairy products, greater consumption of fruit, vegetables, whole-grain products and cereals, and lower intakes of salt and saturated fatty acids. The food industry has shown increased willingness to reformulate foods to obtain low-fat meat products and less salt.

Fig. 1. Changes in selected indicators 2013-2017



Lessons learned

- **Voluntary actions alone are not enough to catalyse changes in the food environment or in dietary behaviour; binding legislation is also required** to design a framework and to urge all relevant stakeholders, including the food industry, to act.

- **A complex policy tool that affects health, social and equity issues requires strong, aligned, intersectoral cooperation** among government bodies, professional organizations, civil society, the food industry, local governments, schools and families.
- **Strong political commitment from the Government** both in its mission and in financial terms is required to deliver such complex results through design, negotiation and implementation.
- **Diet-related noncommunicable diseases cannot be tackled effectively only by a “silver bullet”** such as the Public Catering Decree. This **complex problem requires a systematic approach and a comprehensive, aligned, system-wide response**. The legislation is one of an extensive set of measures, including legal tools, model school programmes, operative programmes, intersectoral initiatives and communication campaigns targeting dietary risk factors, nutritional behaviour and health literacy. All are important elements of the complex response.
- **The structural change in the public administration** that has merged health, social affairs, education, youth and sport into a single ministry **facilitated the process by ensuring more efficient intersectoral cooperation**.
- **Robust communication activities** to supplement the legislation **led to better understanding of its public health goals**, thus strengthening the public perception and acceptance.

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ADVANCING THE ROLE OF NURSES AND MIDWIVES IN IRELAND: Pioneering transformation of the health workforce for noncommunicable diseases in Europe

Elizabeth Adams¹, Claudia B. Maier², James Buchan³, Lucinda Cash-Gibson⁴

Summary

A survey that included 32 countries in Europe in 2015 found that more than two thirds had extended the official scopes of practice of nurses in primary care. Ireland is one of those countries. It first introduced advanced practice roles in 2001, as a cost-effective reconfiguration of primary care services, designed to meet the increasing needs of patients and other service requirements. This was followed by authorization for nurses and midwives to prescribe in 2006–2007. Several barriers to progress, including legal and regulatory, were addressed systematically and comprehensively. By mid-2007, regulations specifying the conditions for nurses and midwives to prescribe medicinal products had been signed into law, and a new professional education programme was introduced to support these advanced roles. The first Nurse Prescriber was registered in 2008. Independent evaluation found increased patient satisfaction with the care and information they received, greater professional satisfaction of nurses and midwives and consensus among clinical stakeholders that the new roles resulted in the delivery of effective, high-quality care to patients while reducing some of the workload of primary care physicians.

Responding to increased patient needs and workforce demands

In many European countries, primary care practices are under pressure to provide high-quality, comprehensive, patient-centred care. Primary care professionals often have high workloads. The challenges are intensified by the increasing prevalence of noncommunicable diseases (NCDs), which reflects changes in sociodemographic and epidemiological profiles. In some countries, this has triggered changes in service delivery and workforce composition in order to better meet increasing patient needs and ensure the provision of effective care.

A snapshot survey conducted in 2015 of nurses in advanced roles, including advanced practice nurses and nurse practitioners, in 36 countries, of which 32 were in Europe, showed that more than two thirds of the countries had extended the official scopes of practice of nurses in primary care services. Most of the nurses worked in advanced roles within teams, with varying levels of physician supervision. In eight countries, four of which were in Europe (i.e. Ireland, the United Kingdom, Finland and the Netherlands),

Key Messages

- Advanced practice nurses and midwives are a rapidly growing workforce in some countries, who have high potential to improve the care of patients with NCDs and have experience in a primary care context.
- Governance and regulation are critical policy levers in extending the scope of practice.
- Enabling nurses in advanced roles to prescribe could enhance their contribution; any legislative changes will require careful consideration.
- A systematic approach, with continuing national support and multi-stakeholder engagement, are critical to ensure the legitimacy of re-allocation of roles and responsibilities within primary care teams in order to fill specific gaps in service delivery for patients with NCDs.
- Standardized professional education and training are required to support nurses and midwives working in advanced practice.

there had been extensive task-shifting, whereby advanced practice nurses and nurse practitioners were authorized to work at high levels of practice (1). The next section describes the experience in Ireland.

Table 1. Timeline for developing advanced roles to include prescribing

2001	Service Reform Reconfiguration	<ul style="list-style-type: none"> • Cost-effective reconfiguration of primary care services, including expansion of nurse and midwife roles
2006	Authorization Legislation	<ul style="list-style-type: none"> • Authorization for nurses and midwives to prescribe • Amendments to 2006 Irish Medicines Board (Miscellaneous Provisions) Act, allowing independent prescribing by nurses and midwives.
2007	Regulations Education Training Legitimacy	<ul style="list-style-type: none"> • New professional regulations specifying conditions for nurses and midwives to prescribe medicinal products signed into law • New six-month professional education programme for a Certificate in Nursing (<i>Nurse and Midwife Prescribing</i>) introduced to support advanced roles
2008	National Guiding Framework	<ul style="list-style-type: none"> • First Nurse Prescriber registered • National Guiding Framework for Nurse and Midwife Prescribing issued
2017	Standards and Requirements	<ul style="list-style-type: none"> • Department of Health, Office of the Chief Nurse issued consultation paper "Developing a Policy for Graduate, Specialist and Advanced Nursing and Midwifery Practice" • Nursing and Midwifery Board of Ireland issued "Advanced Practice (nursing) Standards and Requirements"

Nurses and midwives in advanced roles: prescribing

In Ireland, the main driving factors for developing advanced practice were social and demographic change (e.g. an ageing population), a requirement for reconfiguration of services to provide more specialized services for patients (for, e.g. diabetes, asthma, cancer), value for money and a greater focus on community services.

Advanced practice by nurses and midwives in Ireland was enabled by allowing them to prescribe. This was achieved in a two-track approach: amendments to the 2006 *Irish Medicines Board (Miscellaneous Provisions) Act*, allowing for introduction of prescribing by independent nurses and midwives, and the introduction of new professional regulations. It is not necessary to be an advanced practitioner to prescribe: 894 nurses and midwives were registered to prescribe medicinal products in April 2016 (2).

In 2007, a six-month programme for a Certificate in Nursing (*Nurse and Midwife Prescribing*), funded by the Health Service Executive, was established to support nurse and midwife practitioners in their new advanced roles and responsibilities. The Department of Health established a national steering group to advise on the regulations and to oversee national implementation of the new prescribing roles. A national '*Guiding Framework for Nurse and Midwife Prescribing*' in Ireland was issued in December 2008 to ensure systematic, consistent guidance.

Nurses and midwives registered with the Nursing and Midwifery Board of Ireland, who have completed an approved six-month post-registration education programme become a '*Registered Nurse Prescriber*', and, with authority from their health service provider, can prescribe a range of medicinal products within their scope of practice.

In March 2017, the Department of Health Office of the Chief Nurse issued a consultation paper, '*Developing a policy for Graduate, Specialist and Advanced Nursing and Midwifery Practice*', in order to ensure a critical mass of staff in these advanced roles, to utilize them more effectively

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and to change their education to meet the changing demographics, increasing demands and economic constraints. The Nursing and Midwifery Board of Ireland also recently issued 'Advanced Practice (Nursing) Standards and Requirements' (3), which sets out the criteria for registration and the competence required at that level.

Advanced practice nursing is defined as a career pathway for registered nurses committed to continuing professional development and clinical supervision in order to practice at a higher level of capability as independent, autonomous, expert practitioners. To date, 193 advanced nurse practitioners in 53 specialties and eight advanced midwife practitioners in six specialties are registered with the Nursing and Midwifery Board of Ireland.

Impact

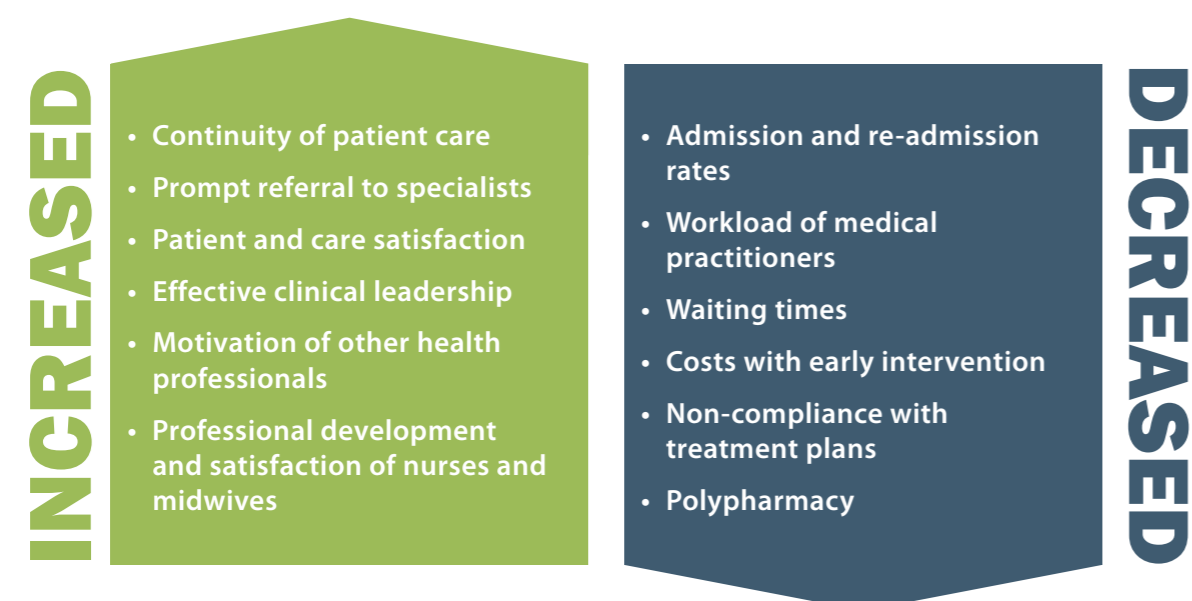
While the overall number of nurses and midwives in advanced practice remains low, it has increased rapidly. For example, between 2010 and 2014, the compound annual growth rate of nurse practitioners was 13.3%, five times that of physicians (4).

The first registered Nurse Prescriber started work in Ireland in 2008. Now, many nurses and midwives are registered in this new role in a wide range of clinical areas, including acute and community services. Further extension of these roles is under way.

Independent evaluation showed that extending the roles of nurses has resulted in more effective clinical leadership, better continuity of patient or client care and prompt referral of patients to relevant specialists. The evaluation also showed lower hospital admission rates, a reduction in the workload of doctors, greater use of evidence-based assessments and interventions by multidisciplinary teams, shorter waiting times, greater satisfaction of families and carers with the information they receive, and motivation of other health professionals to advance their professional knowledge and skills (5).

The practice has also been evaluated, with the finding that, overall, the extension of prescribing to nurses and midwives in advanced roles has been a positive development, particularly in terms of patient satisfaction with care and the professional development, and satisfaction of nurses and midwives. There was consensus among clinical stakeholders that nurses and midwives in these new advanced roles could deliver high-quality care to patients while reducing some of the workload of primary care physicians. After nurse prescribing had been introduced, medical doctors did not consider the new advanced role as encroaching on their "territory" but rather appeared to value and respect the contribution of the new roles to patient care (6).

Table 2. Impact of nurses and midwives in advanced practice



Lessons learned

- **Changes in legislation, regulations, provision of education and governance arrangements, registration requirements, clinical practice outcomes and public perception** are some aspects that must be taken into account and addressed to expand the roles of nurses and midwives to include prescribing.
- **To ensure the legitimacy of advanced roles for nurses and midwives, a standardized, systematic approach to health service providers, continuing national support and multi-stakeholder engagement are necessary.** In Ireland, national support was provided by the Office of the Nursing and Midwifery Service Director in the Irish Health Service Executive, who led a multi-stakeholder approach.
- **Nurses and midwives in advanced roles, often with the authority to prescribe, can improve the effectiveness of care for patients with NCDs and co-morbidities by providing timely access to services and patient-centred care and can also alleviate the workload of physicians without compromising patient safety.** Many countries have implemented or are considering to introduce advanced roles for nurses in primary care settings.

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IMPROVING MEN'S HEALTH IN IRELAND: Building capacity among front-line health workers to engage men

Noel Richardson¹, Isabel Yordi Aguirre²

Summary

Noncommunicable diseases are the leading cause of death and disability among men in Ireland and are underpinned by men's poorer lifestyle behaviours and underutilization of health services. Ireland's National Men's Health Policy (2008–2013) identified building capacity among front-line service providers as an essential but neglected component of developing effective strategies for engaging men in self-care. In order to tackle this deficit in gender sensitive service provision for men, ENGAGE, Ireland's National Men's Health Training programme, was developed. The comprehensive one-day training is based on an experiential learning and reflective practice approach, combined with mechanisms for feedback and peer support during and beyond training. ENGAGE has improved service providers' knowledge, skills and capacity to engage and work with men and to deliver more gender-competent health services and programmes; boosted community outreach programmes to priority groups of men; and influenced the development of gender sensitive service provision.

Addressing the deficit in gender sensitive service provision for men

In Ireland, as in most European countries, men's lower life expectancy is underpinned by higher death rates from noncommunicable diseases, the leading cause of death and disability among men. Substantive differences in health outcomes are also evident between different categories of men. For example, men from lower socioeconomic groups experience significantly higher mortality rates than men from higher socioeconomic groups, and this gap between rich and poorer men has been increasing. Other subpopulations, such as male travellers, gay, bisexual and transgender men, and farmers experience health outcomes that are significantly worse than the general population of Irish men. It has also been well documented that men who experience social disadvantage, marginalization and social exclusion experience a disproportionate burden of ill health.

In addition to broader social determinants of health, engaging with the health system and self-management can lead to better noncommunicable disease outcomes. Evidence suggests that underpinning men's higher mortality rates from chronic diseases are poorer lifestyle behaviours, including higher levels of alcohol consumption and binge drinking, higher rates of smoking and unhealthier diets. The rate of increase in male obesity is a particular cause of concern in Ireland. Men's underutilization or delayed use of health services in the course of an illness has been

Key Messages

- Noncommunicable diseases remain the leading cause of death and disability among men in Ireland and are underpinned by men's poorer lifestyle behaviours and underutilization of health services.
- A comprehensive National Men's Health Policy was launched to integrate gender-specific approaches into health policies, programmes and services, and meaningfully translate them into practice.
- Building capacity among front-line service providers was a key policy direction to address the deficit in gender sensitive service provision for men.
- Promoting positive gender roles and supportive environments work better in engaging men in self-care than reinforcing negative gender stereotypes.
- Investment in individual learning has led to organizational and culture change through evidence-informed tools to engage with men, a network of supportive peers, continual support and a platform to spread this learning within organizations.
- Success factors have included (i) a clear mandate matched with funding and resources; (ii) comprehensive evaluation ensuring evidence of impact; (iii) adaptation and refinement in response to emerging needs; and (iv) an explicit focus on peer support and mentoring.

identified as a principal challenge and priority for improving men's health. With the exception of the 70+ age category, men in Ireland were found to have had fewer general practitioner consultations than women in the previous 12 months and were twice as likely to have had no general practitioner consultation in the previous 12 months. When men do consult a doctor, they are less likely to adhere to prescribed treatment. Service providers often see men as "hard work" or "hard to reach" and are unclear about the type of services to which men might best respond. This has led to calls for service provision to be informed by a better understanding of men's beliefs, values and attitudes to ill health and their approach to using health services.

Building capacity among front-line health workers to engage men

In response to these issues, Ireland launched its National Men's Health Policy in 2009 (1), which is underpinned by an explicit focus on gender-specific strategies and strengths-based approaches to community engagement and capacity-building measures to reach men. Much of the work has revolved around excellent partnerships between the statutory, community/voluntary and academic sectors, resulting in the creation of a strong evidence base. This has greatly strengthened the capacity of health policy to reach so-called hard-to-reach groups of men through community outreach approaches.

This strategy has been unique in the WHO European Region and has influenced the development of the WHO regional strategy on the health and well-being of men, which is due for publication in autumn 2018. Historically, most gender-focused health policy initiatives and gender-mainstreaming approaches to health have been synonymous with women's health. Despite a substantial body of evidence supporting the need for gender-specific approaches to reaching men with health programmes and services, often, these are not integrated in policies or fail to find any meaningful translation in practice.

Capacity building at individual, partnership and community levels is a critical component of both the process and outcome of positive engagement with men. Specifically, the need to build capacity among front-line service providers has been identified as an essential but neglected component of developing effective strategies for reaching men. ENGAGE, Ireland's National Men's Health Training programme, was developed to address this deficit in gender sensitive service provision for men. This comprehensive one-day training aims to increase participants' understanding of best practice in engaging men with health programmes and services and was developed against a backdrop of: (i) poorer health outcomes and health behaviours among men; (ii) men's underutilization of certain health programmes and services; (iii) challenges from service providers' perspectives in engaging men; and (iv) increasing evidence in support of more gender-sensitive or so-called men-friendly approaches. In the review of the National Men's Health Policy, ENGAGE emerged as a key pillar of policy implementation and was described as a "major and unique training resource with the capacity to reach significant numbers of front-line service providers" (2).

A training of trainers [ToT] cascade model of delivery was adopted as the most effective and cost-efficient way of maximizing the diffusion of ENGAGE training to front-line service providers both in terms of number and geographical spread. To date, four ToT programmes have been delivered, and the programme has been the focus of both outcome (3) and process (4) evaluations. Candidates selected for



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the ToT programme (trainers) were required to have prior facilitation experience, represented a national geographical spread and included a mix of professions (primary care, health promotion, and community and voluntary sectors). Each trainer was required to commit to deliver three, one-day ENGAGE training days to front-line service providers. Trainers were provided with a comprehensive ENGAGE training resource pack and promotional material, and all service providers who attended ENGAGE training received certification. Post training, technical assistance was offered to trainers in the form of co-facilitation with either an experienced ENGAGE facilitator or later a mentor who was an experienced trainer. There were ongoing communication and support from the ENGAGE coordinator, including annual trainer refresher meetings and sharing of reflective practice. Trainers received periodic updates of the online resource repository.

Impact

Table 1. Impact of ENGAGE

ENGAGE	400 participants trained in 2017
	Impacted the work practice of 93.4% of service providers
	Improved service providers' knowledge, skills and capacity to identify priorities for men's health and to engage men in their services
	Boosted an exponential rise in community outreach programmes to priority groups of men in Ireland

ENGAGE is now firmly established as a core and evidence-based component of the Health Service Executive's suite of training courses in Ireland, and is recognized as having a key role in improving gender equality by transforming structures and policies that engage men in self-care. ENGAGE trainers remain active and delivered training to approximately 400 participants in 2017.

Outcome evaluation findings suggest that ENGAGE succeeded in improving service providers' capacity to engage and work with men and to deliver more gender-competent health services and programmes. Significant improvements were reported in terms of service providers' (n=295) knowledge, skill and capacity to identify priorities for men's health that could meet the needs of their organization, and to engage men in their services, and these were sustained up to five months post training. The vast majority of service providers (93.4%) reported that ENGAGE had impacted their work practice up to five months post training, with 39.3% having formally committed to men's health in their workplans and/or conducting men's health initiatives within their services (3).

More broadly, the success of ENGAGE can be measured by the exponential rise in community outreach programmes to priority groups of men. For example, ENGAGE was delivered to key stakeholders involved in (i) "Men on the Move" (a community-based physical activity programme targeting overweight men), which has resulted in significant and sustained weight reduction, improved fitness and reduced cardiovascular disease risk among men (5); (ii) "Farmers Have Hearts" (an outreach cardiovascular disease prevention programme), which found a high prevalence of multiple risk factors for cardiovascular disease among farmers (6) and has prompted a comprehensive follow-up intervention; and (iii) "Sheds for Life" (a health promotion programme delivered in Men's Sheds), which builds on the inherent health-promoting nature of Sheds (7). These examples demonstrate that ENGAGE has been effective in influencing the development of gender sensitive service provision and has significant implications for practice elsewhere.

Lessons learned

- **Noncommunicable diseases remain the leading cause of death and disability among men in Ireland** and are underpinned by men's poorer lifestyle behaviours and underutilization of health services. Much of this is avoidable through more effective policies.
- **A comprehensive approach has been essential.** The National Men's Health Policy was launched to integrate gender-specific approaches to health programmes and services and meaningfully translate them into practice.
- **Building capacity among front-line service providers through ENGAGE, Ireland's National Men's Health Training programme, was a key activity** within this comprehensive health strategy to address the deficit in gender sensitive service provision for men.
- **Positive gender roles and supportive environments work better than reinforcing negative gender stereotypes.** ENGAGE has evolved from simply informing gender sensitive service provision for men to a more gender transformative role in contributing to gender equality, by challenging harmful gender roles and norms and developing supportive environments to engage men in self-care.
- **Investment in individual learning has led to organizational and culture change.** Giving front-line service providers evidence-informed tools to engage with men, a network of supportive peers, continual support and a platform to spread this learning within organizations can have a transformative impact on the norms of organizational practice related to men's health.
- **Success factors** instrumental in sustaining and maintaining momentum were: (i) continuing to have a men's health policy mandate, which has been significant in securing the requisite funding and resources; (ii) conducting a comprehensive evaluation, thus ensuring that the programme is evidence based; (iii) adapting and refining the programme in response to emerging needs; and (iv) having an explicit focus on peer support and mentoring.

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TELEMEDICINE IN KAZAKHSTAN: Bridging the urban–rural divide in delivering prevention, diagnosis, and treatment of noncommunicable diseases

Clayton Hamilton¹

Summary

Since the inception of a telemedicine network in 2004, Kazakhstan has progressively built a world-class service platform as a key component of the national approach to strengthening health care delivery in rural settings and achieving the country's goal of universal health coverage. The telemedicine network, which was established to ensure the accessibility of specialized medical care for rural populations, provides a range of tele-consultation services, including some designed specifically to support the diagnosis and treatment of noncommunicable diseases (NCDs).

Through the national telemedicine network, the Government of Kazakhstan is successfully realizing its vision of “an effective and accessible health system that meets the needs of the population”, as embodied in the strategic plan of the Ministry of Health for 2017–2021. It considers that expansion of the telemedicine network will be pivotal to further improving the quality of medical care in rural areas by 2050.

Addressing the burden of NCDs in rural communities

Kazakhstan has a high burden of premature mortality due to four major NCDs: cardiovascular disease, diabetes mellitus, chronic respiratory disease and cancer, which accounted for 84% of all deaths nationally in 2014. Many of these chronic conditions can be avoided by access to a well-functioning network of primary health care facilities and to the national telemedicine network for appropriate, timely prevention, diagnosis, management and treatment. Sparse rural populations and the geography of the country are some of the main challenges to delivering effective health care in Kazakhstan. The country also faces other challenges, including the numbers, specialties and distribution of human resources for health across the country. Rural and remote areas continue to experience shortages of health care personnel. Several countries in the WHO European Region face similar challenges and will find inspiration from the Kazakh approach.

Key Messages

- Telemedicine can be a key component of strengthening health services delivery and achieving universal health coverage.
- A well-governed, national telemedicine network can be effective for timely prevention, diagnosis, management and treatment of NCDs.
- Scaling-up telemedicine requires a multifaceted approach, including identifying appropriate use, applying standards, ensuring training for health care professionals, developing supportive policies and integrating health information.
- Public–private partnerships may be helpful for scaling up telemedicine and introducing frameworks for integrated people-centred care, although public interest must be adequately protected.
- Information and communications technology can address previously intractable policy problems, such as access of rural populations in large, sparsely populated countries to care and specialist care.

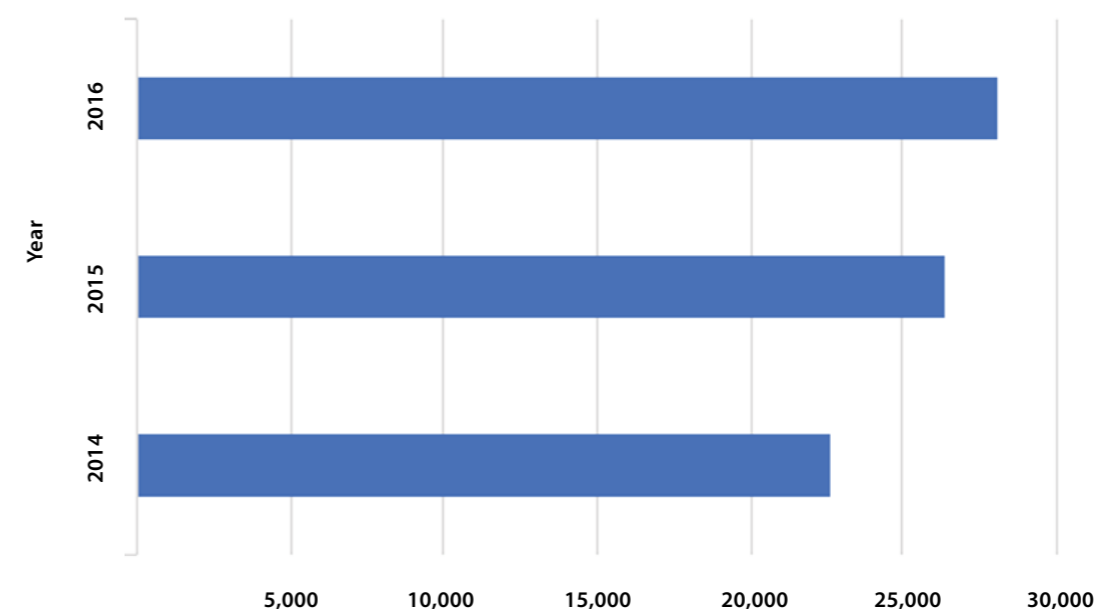
The Kazakh national telemedicine network

The national telemedicine network is a strategic, long-term investment by Kazakhstan. It is a key part of extending health services and improving population health for all citizens, irrespective of their location. Within the national “Strategy 2050”, the Government intends to develop the network further and to introduce “smart medical services”, online prevention and treatment and further scaling-up of digital health.

The telemedicine network was established by the Ministry of Health in 2004 as part of long-term health sector reform and to ensure universal health coverage of its population. It recognized that telemedicine is a maturing technology that could be part of a broader strategy for health care provision in rural communities, which would overcome geographical challenges and the shortage of health care personnel. The network has been gradually extended with advances in communications infrastructure and now comprises 209 health care facilities at district, regional and national levels. With the Republican Coordination Centre for Sanitary Aviation, medical assistance transport, disaster care initiatives and a network of mobile pharmacies, the telemedicine network provides rural citizens with comprehensive access to health care. The number of telemedicine consultations has increased each year (Fig. 1). The network not only provides clinical support but is used by specialists in medical universities, scientific research institutes and national centres to provide lectures and seminars on diseases for training of health workers in regional and district hospitals.

“Telehealth” comprises health services delivered at a distance, including remote clinical diagnosis and monitoring, to facilitate prevention, promotion and curative elements of health. It may also include electronic approaches for public health, administration, research and health education.

Fig. 1. Numbers of telemedicine consultations conducted annually in Kazakhstan, 2014–2016



Source: Ministry of Health of Kazakhstan

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Impact

Timely, correct diagnosis and treatment through telemedicine allow health care professionals in Kazakhstan to administer emergency medical care to patients promptly, reduce the costs associated with travel for care and reduce the complexity of accompanying multi-morbid patients to regional or state clinics.

In 2016, experts in 15 regional hospitals, the children's regional hospital of Shymkent and 14 state clinics conducted 28 060 telemedicine and video consultations, of which 26 252 were conducted by regional hospitals and 1808 by state clinics. In the same period, the telemedicine network was used to facilitate 7477 radiographic, 4698 electrocardiographic and 1563 ultrasound examinations.

Reflecting the growing burden of NCDs in Kazakhstan, the most frequent tele-consultations in 2015 were for cardiology (16.7% of all consultations), pulmonology (13%) and neurology (9.7%). Telemedicine is most often used in Karaganda, South Kazakhstan and Akmola oblasts. The state clinics that conduct teleconsultations most often are the Institute of Cardiology and Internal Medicine, the National Scientific Medical Centre and the Scientific Centre of Paediatrics and Children's Surgery.

The Ministry of Health is now exploring whether public-private partnerships could offer additional means for scaling-up the national telemedicine network.

Lessons learned

- An appropriate governance structure for standardization and progressive scaling-up ensures the long-term sustainability of telemedicine.
- Adoption of telemedicine also requires non-technical support, including appropriate policy, regulation and reorientation of care pathways.
- Investment in continuous training and support of health care personnel in the use of telemedicine is a catalyst for further extension of the network.
- The uses of telemedicine may extend beyond clinical care to include communication, training and research.
- In rural environments, an intersectoral approach to linking telemedicine with other modes of care delivery (e.g. aviation, medical transport, emergency care, mobile pharmacies) increases the quality and effectiveness of the health system response.
- Integration of telemedicine into the national health information system enables access to information for the delivery of remote care and avoids the creation of information silos.



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COMMUNITY ACTION FOR HEALTH IN KYRGYZSTAN: an integrated approach of health promotion and primary health care provision in rural areas to scale up hypertension detection

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Summary

Community Action for Health (CAH) in Kyrgyzstan is a health promotion programme built on direct citizen participation. Village health committees (VHCs), made up of volunteers, work with primary health care services to identify health-related priorities and implement health actions. One of the most ambitious health actions has focused on hypertension, contributing to improvements in early detection and subsequent monitoring of people with high blood pressure.

Undetected hypertension – a silent public health crisis

Kyrgyzstan's rate of avoidable mortality from cardiovascular disease is one of the highest in the WHO European Region. Hypertension is one of the risk factors, but late detection and poor compliance with medication are persistent problems. According to WHO calculations based on the 2007 Kyrgyz Integrated Household Survey, only 27% of people with high blood pressure were aware of their condition, and only 14% of those who were aware had taken their medication in the past 24 hours. Awareness and compliance with treatment among men were even lower, at around 20% and 8%, respectively. Although primary health care workers have been measuring blood pressure routinely for years (72% of people over 30 years of age who reported visiting a primary health care centre in 2007 had their blood pressure checked), many people still do not seek care at this level. Men aged 40–60 years are a particular concern because of their low rate of use of primary health care.

Bringing health closer to the people: community action for health

A cornerstone of Kyrgyzstan's pioneering health system reforms in the past 20 years has been a new model of health promotion based on community empowerment in conjunction with strengthening of primary health care.

The CAH programme started as a pilot project in one *rayon* (district) in 2002, with the support of the Swiss Agency for Development and Cooperation and the Swiss Red Cross and in partnership with the Kyrgyz Ministry of Health and the Mandatory Health Insurance Fund. Once the programme had proved its potential, the Ministry included it as a component of the Manas Taalimi National Health Sector Reform Programme 2006–2010 and provided funding to hire the necessary personnel. This commitment attracted other international donors for countrywide expansion

Key Messages

- Engaging individuals and empowering communities can contribute to improved outcomes for complex health problems, such as hypertension.
- An attitude of partnership is essential for the success of a community health programme.
- In countries with severely under-diagnosed hypertension, community outreach and mobilization are essential to persuade people to go to health facilities for diagnosis and follow-up.
- Community action for health works well if it is not a stand-alone effort but an integral part of the health system.
- Countrywide expansion of community action for health is a result of step-by-step scaling up of a well-designed, evaluated pilot project.
- The significance of the community action for health programme goes beyond the health actions of VHCs.

of the CAH programme. Currently, it covers about 90% of the villages in Kyrgyzstan – over 3 million people; and, since 2014, an adapted version covers all urban areas as well.

The CAH programme is best described as a partnership between VHCs and the health system. The main partners of the VHCs in the health system are the “health promotion units”, which provide VHCs with regular training on health actions and assist in their organization. As they are located in family medicine centres, the health promotion units link population-based health promotion and individual health services. Primary care providers also interact closely with the VHCs and thus increase their engagement within their communities, beyond receiving patients. VHC delegates form *rayon* health committees to coordinate activities among themselves and with *rayon* health services. At national level policy discussions, an association of VHCs represents them and coordinates with the Republican Health Promotion Centre in the planning, design and implementation of health actions for conditions including hypertension, anaemia, goitre, brucellosis and alcohol abuse, among others.

The decision-making power of VHCs has gradually been enhanced. They have gained the right to establish their own agendas to address broader determinants of health in their communities and have also begun to be involved in policy development and participatory budgeting with their local governments.

Health action on hypertension

From the early days, high blood pressure topped the list of health problems identified by the communities during participatory assessments in all *oblasts* (regions). It was the third most frequent and burdensome disease for women, the second for men and the most burdensome for poor people.



Health action on hypertension was developed in close collaboration with VHCs. The initial aim was to address awareness, detection, regular check-ups and compliance with medication. This approach proved to be too demanding for the VHCs and ineffective for a high-prevalence disease like hypertension. The health action was therefore simplified, resulting in its current form. Its focus is now on screening to improve people's awareness of hypertension. Since 2011, an annual “hypertension week” has been held, during which VHCs screen as many adults as they can with semi-automatic blood pressure cuffs. The organization of screening is left to the VHCs. Most use a combination of house visits and fixed locations for blood pressure measurement. People with elevated blood pressure are given special attention, whether or not they have a previous diagnosis of hypertension. VHC members explain the danger of cardiovascular diseases and the importance of daily, lifelong medication. A booklet explaining cardiovascular

disease and its risk factors in detail is given to each person, and they are sent to their primary care provider for verification, further diagnosis and management. VHCs record people's name, address and blood pressure and give the lists to primary care providers so that they can follow up people who do not consult them. In urban areas, screening was initially done by primary care providers who positioned themselves at highly frequented places. Since 2015, public health committees – the new counterparts to VHCs in urban areas – have joined this health action in urban communities. In the lead-up to hypertension week, countrywide TV spots inform people about screening and encourage them to seek out the volunteers.



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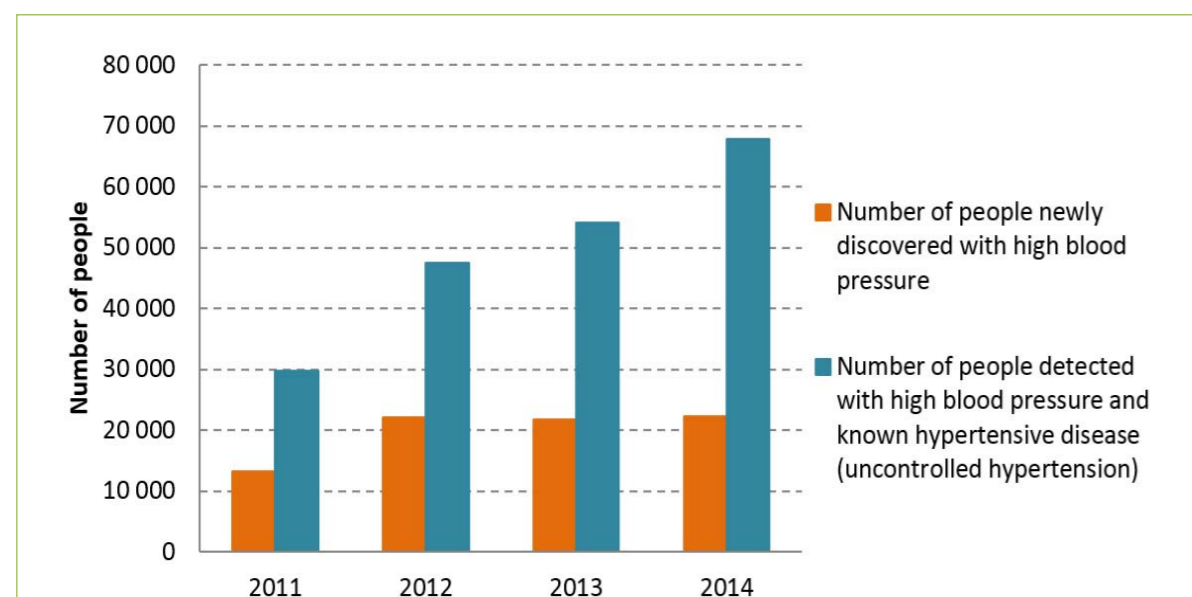
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Impact

The CAH programme has contributed to a significant improvement in early detection and management of hypertension, and the number of people screened during the annual hypertension weeks has increased each year. Since 2011, a total of 1.75 million people have been screened for elevated blood pressure, comprising about half the adult population of Kyrgyzstan. Screening identifies both people with elevated blood pressure who were not aware of their condition and also people who are aware of their hypertension but do not know that it is uncontrolled, i.e. their blood pressure reading was elevated at the time of screening (Figure 1).

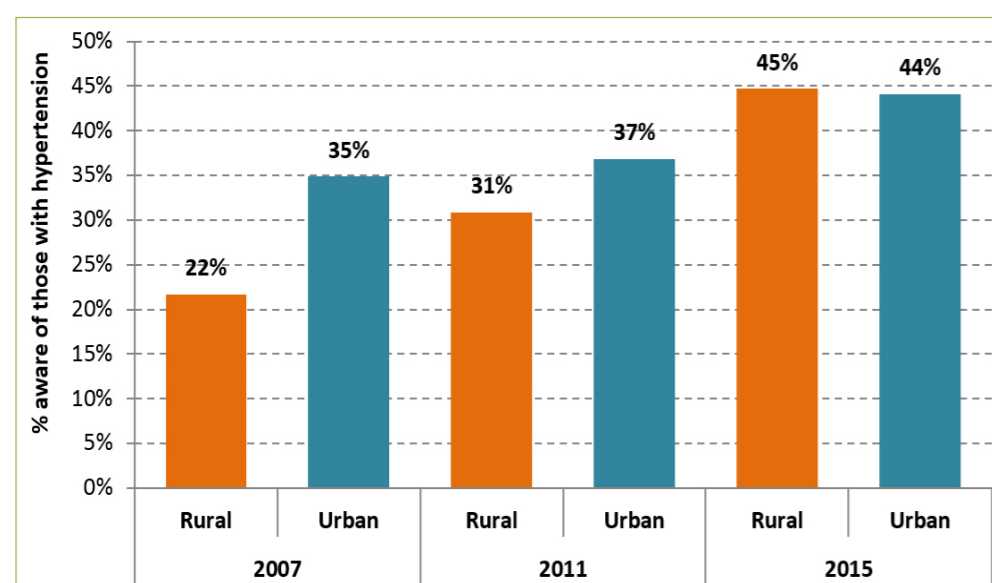
Figure 1. Hypertension screening week results



Source: CAH overview and results

The approach of the CAH programme has had a significant impact on hypertension awareness and control nationwide. According to WHO calculations from the nationally representative Integrated Household Survey, awareness of having hypertension increased from 27% in 2007 to 45% in 2015. The increase was greater in rural areas, where VHCs work. As a result, a large urban–rural gap in awareness of hypertension status noted in 2007 had disappeared by 2015 (Figure 2). Compliance with anti-hypertensive medicines also improved during this period. The proportion of people with elevated blood pressure who reported having taken their medication in the past 24 hours was 33% in 2015, in contrast to 14% in 2007.

Figure 2. Hypertension awareness in rural and urban areas



Source: Kyrgyz Integrated Household Survey, 2007, 2011, 2015

Lessons learned

- **Engaging individuals and empowering communities can contribute to improved outcomes for complex health problems, such as hypertension.** When communities become partners in the health care system, creative approaches to a number of health issues such as hypertension become possible. Countrywide implementation of the CAH programme resulted in coverage of virtually all villages and towns, which increased awareness of hypertension to a remarkable degree in a relatively short time.
- **An attitude of partnership is essential for the success of a CAH programme.** The commitment of volunteers depends on continuous experience that *their* issues and interests are being taken seriously. This begins with the use of participatory tools to identify the priorities in communities and then to act on them. Further, health care personnel are trained to interact with VHCs in an appreciative way in order to foster independent, critical thinking. Above all, success requires sustained support for VHCs in their organizational development. The resulting empowerment and the concomitant sense of growth and potential are the main rewards and motivation for voluntary work. VHCs thus perform health actions such as that for hypertension with a sense of ownership and commitment.
- **In countries with severely under-diagnosed hypertension, community outreach and mobilization are essential to persuade people to go to health facilities for diagnosis and follow-up.** Primary health care workers are often overstretched and cannot incorporate outreach into their regular workload, even if in principle it is their task. Meaningful outreach covering a sufficient number of people can be achieved with the help of community volunteers. In order for this to be sustainable, however, they must be supported by community capacity-building.
- **Community action for health works well if it is not a stand-alone effort but an integral part of the health system.** This guarantees its sustainability and attracts potential donor organizations to cooperate and invest in the programme. It also ensures coordination of health actions. In parallel to the hypertension health action, primary health care staff were trained in improved diagnosis, documentation and management of hypertensive patients. Therefore, people found to have elevated blood pressure received optimal care from primary health care providers. This further increased the number of patients who took their medication.
- **Countrywide expansion of CAH is a result of step-by-step scaling up of a well-designed, evaluated pilot project.** This strategy allowed the programme to sow the seeds of trust while developing a new paradigm in the field of health and ensuring learning by doing. The results prompted the Kyrgyz Ministry of Health to adopt community action as a cornerstone of health promotion and primary health care.
- **The significance of the CAH programme goes beyond the health actions of VHCs.** As described above, empowerment is an essential part of the programme, and there have been numerous VHC initiatives to address local determinants of health. The programme fosters the sense that civic participation is possible and useful and hence strengthens civil society. New leaders are created, who stand out through their commitment to social well-being, some of them being elected to local self-government bodies. And, as most VHC members are women, the CAH programme is helping to change traditional gender roles, as seen in several studies.

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SENIOR FRIENDLY COMMUNITIES IN THE MEUSE-RHINE EUROREGION: Improving the lives of people with dementia and old-age depression

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Summary

The Meuse-Rhine Euroregion⁷ has embarked on strengthening the role of local municipal authorities to support active and healthy ageing in senior friendly communities paying special attention to dementia and old-age depression. The Senior Friendly Communities Project has included training of local policy-makers in strategy development, local public health interventions, intersectoral action and cross-border collaboration, new roles for community personnel, people-centred approaches to care and well-being, and implementing information technology solutions. The Project can be tailored to the needs of communities and has inspired local authorities to provide more interventions for dementia and old-age depression.

Addressing the rising burden of dementia and old-age depression

As elsewhere in the WHO European Region, the Meuse-Rhine Euroregion grapples with an aging population and increasing prevalence of dementia and old-age depression. The prevalence of dementia and depression is nearly 2% and 25% respectively in a population of about four million people in the Meuse-Rhine Euroregion (1). While these conditions are typically first identified through the health system, improving the lives of older people with dementia and depression requires integrated approaches combining health, social and other municipal services contextualized to the specific needs of communities (2). A wide range of interventions and services are available to maintain function in people with dementia and/or depression for as long as possible, regaining lost function when there is the potential to do so, and adapting to lost function that cannot be regained (3). This brief provides a good example of how the uptake of such interventions can be implemented in an adaptable manner.

Senior Friendly Communities Project

The Senior Friendly Communities Project started in 2016 and builds on the WHO Active Ageing Framework (2002) (4). The three pillars of this Framework (participation, health and

Key Messages

- Local-level multidisciplinary intersectoral action is needed to support healthy ageing, particularly for those with dementia and old-age depression.
- Local authorities and communities have a key role to play in developing and implementing evidence-based interventions to improve the well-being of people with dementia and old-age depression, and their informal caregivers.
- Strategic planning is an important instrument of successful intersectoral action at local level.
- Contextualized action is essential, taking into account the needs, existing knowledge and strengths of municipalities and communities.
- Planning for sustainability is necessary to safeguard the long-term commitments of municipalities.

security) provide the conceptual basis for this Project. The euPrevent | EMR Foundation, the implementing agency, supports cross-border cooperation between professionals and organizations engaged in maintaining, promoting and improving public health for residents in the Euregion Meuse-Rhine. The support package for municipalities comprises four consecutive steps.

Step 1. Assess capacity. An online (baseline) capacity assessment (available in Dutch, English, French and German) is carried out in each participating municipality, complemented by in-depth interviews conducted by regional coordinators. From the results of the assessment, municipalities gain insight into their performance in supporting people with dementia and/or old-age depression, and family caregivers which serves as a starting point for further action. The assessment enables contextualizing support.

Step 2. Choose activities. Municipalities receive a fixed budget they can use to select a number of activities, reflecting local preferences and needs. Every municipality appoints a local coordinator who oversees the planning and manages activities. This local coordinator is in turn supported by regional Project coordinators. Key activities municipalities can choose from include the following, with examples presented in Table 1:

- multiple **strategy workshops** for local policy-makers on how to develop a strategic plan focusing on local public health campaigns, intersectoral action and cross-border collaboration that contribute to the well-being of people with dementia and old-age depression;
- **training of well-being coaches** who closely work together with primary care physicians;
- **outreach** activities offered by trained volunteers to socially isolated older people;
- **educational sessions** on ageing, positive health, communicating with people with dementia and on empowering family caregivers;
- creation of **local social networks** of older people;
- **education in primary schools** on dementia and depression;
- **cultural activities** that include the themes of dementia and depression; and
- **online support tools** for informal caregivers.

Table 1. Example activities developed by municipalities in Belgium, Germany and the Netherlands

<p>As, Belgium (8 000 inhabitants)</p> <p>Municipalities are supported to develop neighbourhood groups and networks of older people to improve their social inclusion. Local residents can identify and present topics – such as civil society action, lifelong learning and sports – to their community to initiate these groups and networks.</p> <p>Municipalities are supported to implement an online platform to support caregivers of people with dementia. Developed with the aim to improve collaboration between professional and informal caregivers, this password-secured website allows for the exchange of information and personal messages, and serves as an important care planning tool.</p>
<p>Kerkrade, the Netherlands (46 000 inhabitants)</p> <p>Family physicians identify patients who are in need of social support, and prescribe services provided by so-called well-being coaches. These coaches are volunteers who are trained to support people at risk of old-age depression. Interventions include developing a well-being plan, providing social support and helping the patient find supporting networks. The well-being coach reports back to the family physician on progress made by the patient.</p> <p>A social worker coordinates a team of volunteers who are trained to provide telephone support to socially isolated people. A social worker identifies people at risk of isolation who are contacted every three days or every week to follow-up on their needs, and to prevent social isolation.</p>
<p>Euskirchen, Germany (56 000 inhabitants)</p> <p>Different target groups (community personnel, police officers, public transport personnel, fire fighters, shop owners, etc.) are trained on how to communicate with people who have early dementia. Three-hour theoretical courses are complemented by role-playing and audio-visual aids.</p> <p>Children age 12 receive two educational sessions in schools on dementia and depression. They visit a nursing home, and participate in activities with residents with the aim to better understand these illnesses and to help develop intergenerational relationships and to promote an inclusive society.</p>

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⁷ The Meuse-Rhine Euroregion is a cross-border area of Belgium, Germany and the Netherlands.

Step 3. Implement activities. The Project provides support and guidance to municipalities to implement the activities chosen.

Step 4. Ensure sustainability. After the initial implementation process, a second assessment is performed in all municipalities who are advised on how to make the activities sustainable and to develop a five-year sustainability plan.

Impact

The Project assisted local coordinators of 32 municipalities in implementing interventions for people with dementia (80 activities) and depression (90 activities). Participating municipalities reported that they expanded their service offerings for people with dementia (Fig. 1) and old-age depression (Fig. 2) since the start of the Project.

Fig. 1. Number of municipalities involved in activities related to dementia before and after the Senior Friendly Communities Project, according to the three pillars of the WHO Active Aging Framework

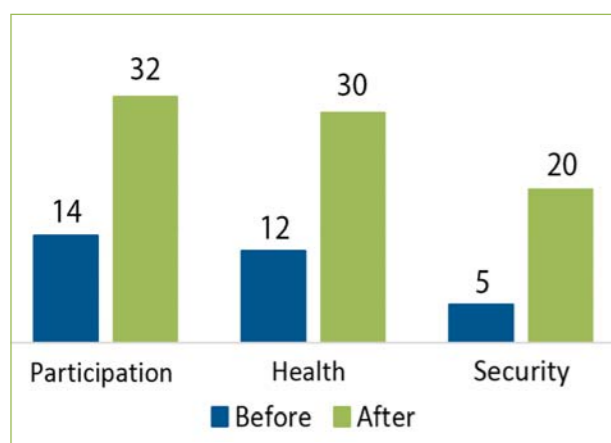
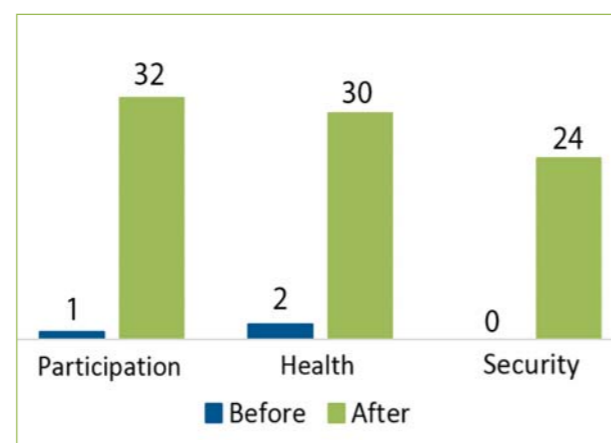


Fig. 2. Number of municipalities involved in activities related to old-age depression before and after the Senior Friendly Communities Project, according to the three pillars of the WHO Active Aging Framework



Lessons learned

- **Local-level multidisciplinary intersectoral action is needed to support healthy ageing**, particularly for those with dementia and old-age depression. While most of these conditions are identified in primary care, maintaining, restoring and replacing declining cognitive functions requires a partnership between various health, social and other municipal services.
- **Local authorities and communities have a key role to play** in developing and implementing evidence-based interventions to improve the well-being of people with dementia and old-age depression, and their informal caregivers.
- **Strategic planning is an important instrument of successful intersectoral action at local level.** Senior friendly communities can only be developed if each municipality has a clear and individualized strategy, taking into account local history, context and partners.
- **Contextualized action is essential**, taking into account the needs, existing knowledge and strengths of municipalities and communities.
- **Planning for sustainability is necessary** to safeguard the long-term commitments of municipalities in addressing the challenges related to dementia and old-age depression.

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CENTRE FOR HEALTHY LIVING IN THE NETHERLANDS: Building sustainable capacity and alliances for effective health promotion

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Summary

The National Institute for Public Health and the Environment (RIVM) Centre for Healthy Living serves as the national hub for integrated expertise on health promotion in The Netherlands. Key activities are a systematic procedure to assess the quality of interventions, a web portal complemented by specific websites and tailored face-to-face support, training and coaching.

It is an example of how a national government has taken up its stewardship role for health promotion, shaped by both local government responsibilities and a variety of theme-specific health promotion institutes operating nationally. Based in the RIVM, the Centre works with a wide range of partners within and outside the health sector. It gathers, enriches and disseminates knowledge, which is then “translated” into practical tools that can be applied at grassroots level.

An evaluation has demonstrated the Centre’s success in fostering coherent health promotion in The Netherlands. Its systematic approach to assessing the quality of interventions is instrumental in advancing intersectoral health promotion policy and practice across the country.

Each month, an average of 14 000 individuals access it on the Gezondleven.nl web portal, and 5000 individuals access the intervention database.

Ensuring coherence, quality and efficiency of health promotion

Health promotion in The Netherlands involves many players. Expertise and interventions are provided by a variety of health-related organizations, each focusing on one or more themes and operating mainly nationally. Local governments are responsible for the health of their populations, and health promotion is done primarily by local professionals. In 2005, the Health Care Inspectorate observed that local professionals felt overwhelmed by the volume of health promotion activities but lacked insight into their quality. Uptake of effective interventions was insufficient, and it was considered that the coherence of local health policy could be improved.

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Key Messages

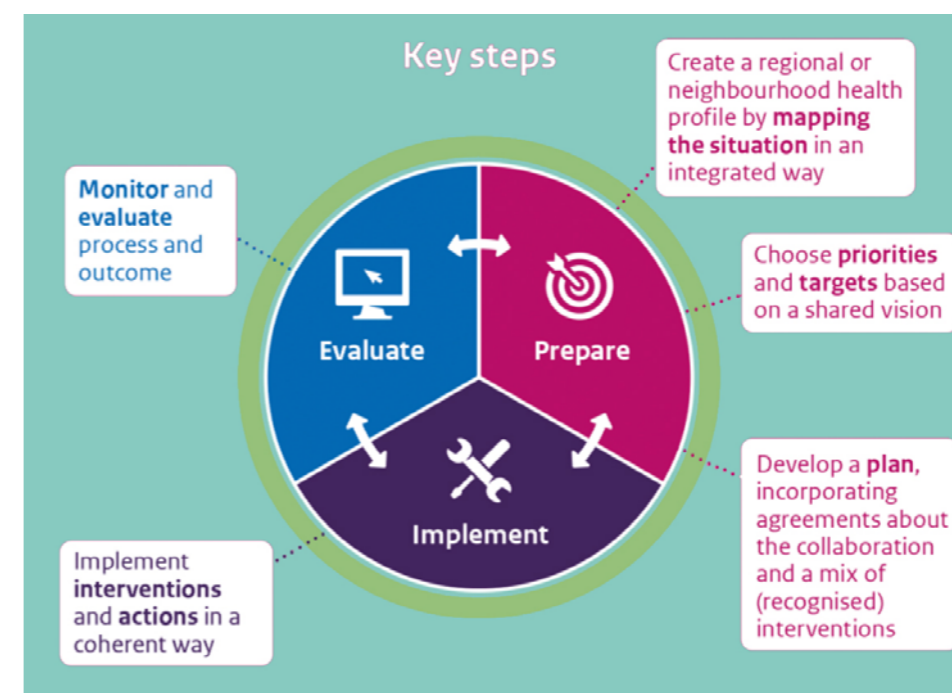
- The aim of the Centre is to contribute to the health of all Dutch citizens by enhancing the quality and efficiency of health promotion in the country and ensuring coherence among health-promotion actors and organizations.
- “Co-creation” is a fundamental principle of the Centre, to maximize translation of knowledge into practice.
- The systematic assessment and the intervention database are the main products of the co-creation process and a major factor in the Centre’s success, as they demonstrate the quality, effectiveness and feasibility of health promotion interventions.
- Support and validation from the Government and especially the Ministry of Health, Welfare and Sport are essential.
- Health promotion professionals and local policy-makers appreciate the accessible, highly structured format in which the best available evidence is presented to them via the Internet.

The RIVM Centre was therefore established in 2008, commissioned by the Dutch Ministry for Health, Welfare and Sport and based within RIVM, a Government agency. The aim of the Centre is to contribute to the health of all Dutch citizens by ensuring coherence among health-promoting organizations and by improving the quality and efficiency of health promotion in The Netherlands. It encourages systematic, informed approaches, supports local professionals and policy-makers and coordinates health promotion across the country.

The Centre for Healthy Living

The Centre is the national hub for health promotion expertise, gathering, enriching and disseminating information. It supports health promotion professionals and local authorities through the “Loketgezondleven.nl” web portal, complemented by websites for healthy schools and healthy child care, and by providing tailored face-to-face support, training and coaching in programmes in schools, nurseries, workplaces, (primary) care centres, municipalities and neighbourhoods (1). As an example, Fig. 1 presents the steps in the Centre’s neighbourhood approach.

Fig 1. Steps in the healthy neighbourhood approach



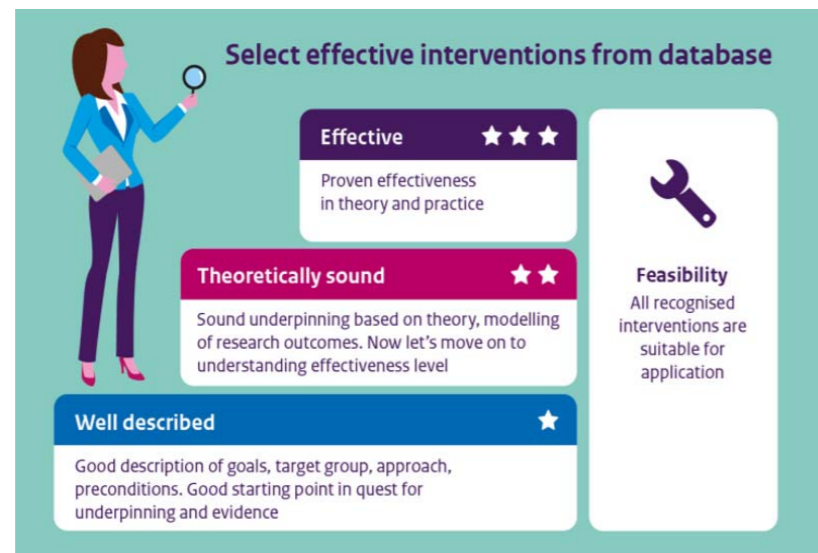
The “intervention database for healthy and active living” provides access to information on the quality, effectiveness and feasibility of a wide range of interventions. The information is collected and assessed systematically as “well described”, “theoretically sound” or “effective” (2,3). This recognition system for interventions was developed in collaboration with national centres of expertise outside the health promotion sector: social and welfare, children and youth services, long-term care, mental health services and sports. All the partners agreed to use the same assessment process and to encourage uptake of interventions in their own field. This national assessment approach aims to advance intersectoral policy and practice across The Netherlands.

The database can be accessed via various search functions in the Loketgezondleven.nl web portal. The portal presents health promotion interventions in a prestructured format, categorized by health theme, target groups and settings (schools, nurseries, workplaces, (primary) care, municipalities and neighbourhoods). It includes manuals, stepped approaches and examples of good practice, allowing professionals to choose the interventions that correspond to their needs and encouraging overall uptake of the informed approaches. The interventions are also outlined in online manuals. Fig. 2 presents some figures on the three-step assessment process and the intervention database.

Another main objective of the Centre is to foster coherent health promotion throughout the country. The Ministry for Health, Welfare and Sport plays a stewardship role for the Centre and other national health promotion institutes by ensuring complementarity and collaboration. In addition, the Centre encourages synergy among thematic programmes and facilitates networking events and collaborating structures.

The Centre aspires to base its work on the best available knowledge and evidence. Hence, it participates in international networks such as the Schools for Health Network and EuroHealthNet. The Centre is the mandated Dutch partner in several European Union Joint Actions and in the prevention of chronic diseases, enabling it to share expertise, gain new perspectives and contribute to innovations in health promotion.

Fig 2. Intervention database and recognition system assessment levels



Impact

In 2018, the Centre will have been operational for 10 years. After 5 years (2013), it was evaluated by an external assessor through an online questionnaire, with which 1200 professionals assessed the Centre's products and services, 20 interviews with key stakeholders and partners including the Ministry of Health, Welfare and Sport, and data on website visitors (4). The conclusion was that the Centre had succeeded in fostering coherence and coordination of health promotion in The Netherlands. The intervention database and online healthy municipalities and healthy schools manuals were commended in particular by the user groups. The actual uptake of interventions in practice and application of the knowledge shared could, however, be improved. Consequently, the Centre has developed more ready-to-use products and practical tools.

Each of the Centre's programmes is evaluated regularly to find options for further improvement and to align them with professionals' needs. The healthy municipalities and healthy schools programmes include dedicated user panels, which are consulted two or three times a year; they demonstrate the importance of supportive national and local policy and funding. These can and do provide positive incentives to encourage or require local uptake of practices from the database and use of systematic, informed approaches.

The recognition system for interventions was evaluated in 2011 (5,6) and 2017 (not published yet). Professionals, stakeholders and partners were either interviewed or filled in a questionnaire (N=700 with a 51% response rate in 2017). The results indicated that the system is well appreciated, especially with regard to information on the quality and effectiveness of interventions. Respondents suggested the inclusion of more information on the practical applicability of interventions, with options for adjustments, and that local policy-makers be made more familiar with the system and its benefits.

Each month, an average of 14 000 individuals access the Centre's Gezondleven.nl portal, and 5000 access the intervention database. The Centre is active on social media: in early 2018, its Twitter account had close to 8000 followers, and 700 people follow its Facebook pages.

The Centre has attracted clear interest from abroad due to its international work. Partners in the European Union Joint Action on Reducing Alcohol-related Harm, for instance, adopted the recognition system for interventions to evaluate all good practices within the project. At the request of partners in the European Union Joint Action on Chronic Diseases, the Centre hosted a dedicated cross-learning visit on the systematic assessment approach for interventions and the role of the web portal in encouraging uptake of interventions in practice.

Lessons learned

- National governments can play a stewardship role in fostering robust, comprehensive health promotion, even within a health system with devolved, diversified responsibilities.
- The independent mandate of RIVM was a key factor in developing and sustaining healthy alliances throughout the country and in building a joint knowledge base.
- Maintaining such alliances at the interface of local policy and national expertise centres requires long-term, sustained efforts by all partners.
- Accumulating and disseminating knowledge must be accompanied by support for national and local policies and funding incentives that encourage or even demand informed approaches.
- National capacity-building for local professionals requires a comprehensive package of services, which should combine training in standard skills and expertise with tailor-made support, outreach and consultation through both online and offline tools. Peer-based learning can also be helpful.
- Work with partners in other sectors can build on more general (process) approaches but must also take into account differences among sectors. Opportunities for collaboration and mutual benefits vary, as does the time frame within which progress can be made.
- Insights into and scientific evidence on health promotion are not obtained overnight. Societies and local conditions often change faster, and local professionals and policy-makers prefer to tackle actual challenges. This may clash with the aspiration to maximize the uptake of the best available interventions.

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PRIMARY CARE PERFORMANCE MONITORING IN PORTUGAL: Benefits of an integrated information system

Alexandre Lourenço¹

Summary

Portugal is on a journey to a high-performing health system. The 2005 primary health care reform lies at the core of this successful endeavour. The reform consists of a comprehensive transformation of the traditional hierarchical model of care towards larger multiprofile teams managing population health with an emphasis on technology and networking. As part of the reform, an integrated primary care performance monitoring system has been developed to connect, manage, validate and optimize health care processes and outcomes.

Improving satisfaction, access, efficiency and quality of primary care

In 2005, a major primary health care reform was launched in Portugal in response to low levels of satisfaction with care among citizens, professionals and policy-makers; poor access and inefficiencies; bureaucratic barriers; and lack of incentives to improve performance (1). Multidisciplinary primary care centres were established and connected in a network to manage the health of 50 000–200 000 people. These networks of primary care centres coordinate and integrate different units: family health, shared services (e.g. dental care, mental health, nutrition, physiotherapy), public health and community services (e.g. home care, palliative care, school health). Voluntarily established and self-organized, family health units are multidisciplinary teams (including family doctors, nurses and clinical secretaries), whose size depends on the registered population. They work in an integrated manner with other primary health care units, community outreach programmes, other health care providers and hospitals. The integrated primary care performance monitoring system has been an integral part of this reform and aims to put into practice more community-oriented care, teamwork, autonomy and accountability, continuous quality improvement, efficient contracting and evaluation.

Primary care performance monitoring

The integrated primary care performance monitoring system is part of the strategy defined by the Ministry of Health for the digital transformation of the National Health Service. It provides for the standardization of information such as clinical records and procedures. Fig. 1 shows the functionalities of the system.

The basic information system used in primary care in Portugal (SINUS) dates back to 1996. Initially, SINUS was used for administrative purposes. Over time, a number of additional modules were added to support better clinical management. The Physician Support System was added allowing physicians to manage their patient lists and specific health programmes. It uses the International

Key Messages

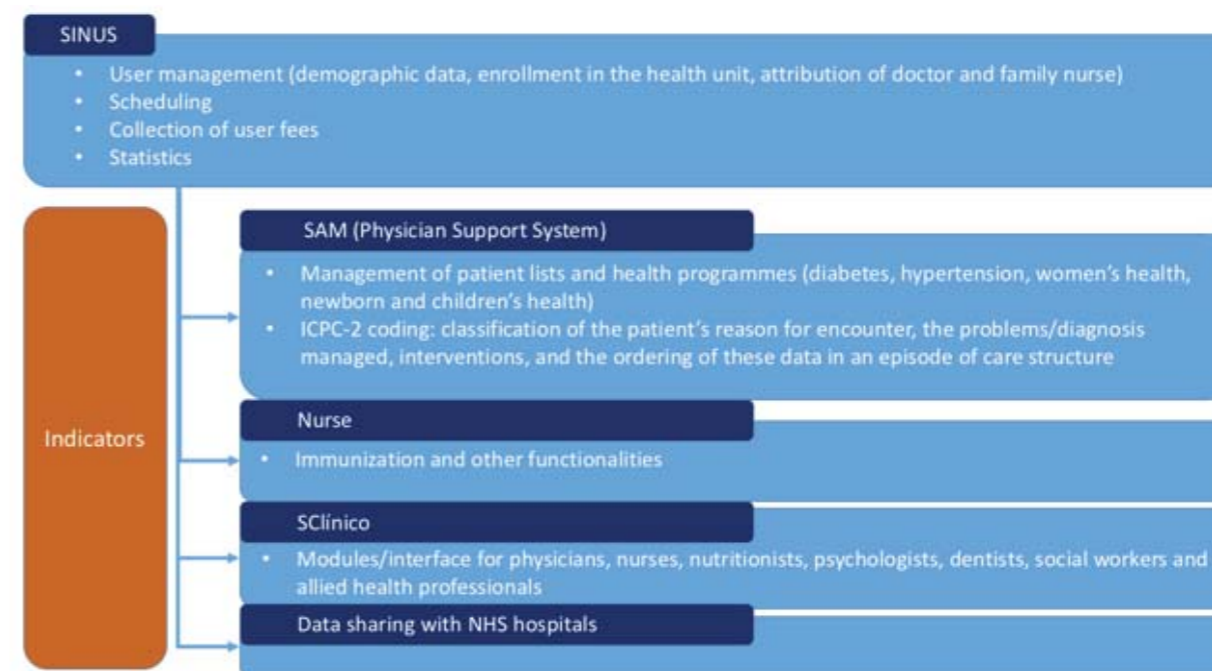
- Performance monitoring and strengthening of information platforms are integral parts of a clear and strategic vision for the future of primary health care in Portugal.
- The design of the performance monitoring system is fully aligned with the model of service delivery thereby improving both clinical processes and management functions.
- The performance monitoring system has also been brought in line with the contracting process but in a supportive secondary role.
- Health professionals are engaged in using information platforms as their work benefits from it.
- The performance monitoring system has changed the culture and ethos in primary care.
- Developing an effective performance monitoring system requires the engagement of all stakeholders, which takes time.

Classification of Primary Care, Second edition (ICPC-2) coding, which is part of the family medicine residency programme. A nurse module was developed, beginning with immunization tracking and gradually incorporating more functionality.

As the primary care practice moved towards a multiprofile team-based approach, a single interface (SCLínico) was developed with different profiles for each type of health care worker in the team. This software, developed and maintained by the Ministry of Health, covers 90% of primary care providers, and proves to be very cost-effective to run given the lack of licensing fees or external contracting requirements. Primary care physicians also have access to a web platform to see all information recorded by hospitals, such as electronic patient records. Patients can use this platform to access their electronic health records and to request medical appointments and medication renewals.

More than 300 primary health care centres have adopted this integrated information platform and more than 13 000 health care workers use it.

Fig. 1. Functionalities of the integrated primary care performance monitoring system



This extensive and integrated information system enables effective performance monitoring in primary care. Since 2009, concepts, registration rules and the definition of performance indicators are published annually, assuring consensus among health professionals, health care administrations, professional and scientific associations and trade unions. The indicators are in line with strategic directions as defined in the National Health Plan, clinical guidelines and health system administrative directives. Indicators are collected (forming a matrix) across several domains, for example, hypertension, diabetes, cancer screening, mental health, woman's health, family planning, maternal health, youth and child health. Additionally, the incidence and prevalence of patients with specific disease diagnoses are recorded (diabetes, hypertension, asthma, dementia, obesity, tobacco use).

A subset of the performance indicators is used for contracting purposes (2). Since 2017, the primary health care contracting process is based on improvement action plans with a commitment to results, activities and resources, and it follows a two-step approach.

1. External contracting involves negotiation between the regional health authority and each group of primary health care centres. The indicators' matrix and goals are common for all the country, assuring the coverage of all predefined domains (i.e. clinical performance, health care integration, organizational quality, continuous professional education, information and communication). The associated action plan is developed according to regional and local health improvement priorities.
2. Internal contracting involves negotiation between each group of primary health care centres and health units (e.g. family health, community health, public health, shared services). The indicators' matrix and goals are also nationally defined for a period of three years, assuring the coverage of all predefined domains for each type of unit.

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For both steps, a subset of indicators is selected from a common national set. They are a mix of process (e.g. proportion of patients who were assessed for risk of diabetes), outcome (e.g. proportion of diabetics controlled) and population-based indicators (e.g. hospitalization rate of diabetics). Priority is given to comprehensive indicators (i.e. indicators that capture the outcomes of several interconnected activities) and population-based indicators (e.g. avoidable admissions).

One of the most powerful capabilities of the system is to provide strong and easy-to-interpret input into performance management. Fig. 2 shows the analytical and benchmarking capabilities based on the indicator diabetes-related amputations. The top panels show regional comparisons of this indicator from best to worst; the bottom panels show trends over time.

Fig. 2. Benchmarking screenshot of a selected indicator: incidence of major amputations among residents with diabetes mellitus



Performance evaluation takes place annually at the regional and primary health care centres' group levels and is used predominantly as an improvement tool. Shortcomings are identified based on an analysis of indicators and by benchmarking. Regional health authorities and providers discuss ways to overcome suboptimal performance. These discussions lead to improvement action plans, which form the basis of the contracting process. Performance evaluation is also used to allocate financial incentives.

Impact

The development of the performance monitoring system has supported the primary health care reform process. It ensures continuous quality improvement by creating a culture whereby all employees continually examine and improve the organization of their work to satisfy user requirements. Specifically, performance monitoring has (i) allowed working towards common goals and promoted teamwork; (ii) set clear expectations; (iii) allowed the introduction of regular feedback on performance and the implementation of corrective measures; (iv) permitted benchmarking and dissemination of best practices; and (v) supported the implementation of the pay-for-performance mechanism.

The performance monitoring system is an essential tool for the health care professional's day-to-day role. Almost all contacts between a physician and a patient are registered including ICPC-2 coding. Supporting health professionals, the system allows primary health care units to focus on prevention activities by identifying patients that need personalized care.

Performance monitoring has introduced a new layer of transparency. Following the transparency policy led by the Ministry of Health, since December 2017, more than 300 indicators for all

primary health care units are publicly available online (<https://bicsp.min-saude.pt/pt/Paginas/default.aspx>). The site allows benchmarking and analysis of the health-related indicators by provider, district level, regional level and country level, increasing the possibility of participation on health care delivery.

Evidence shows that noncommunicable disease-related early detection and disease management indicators are significantly better in current multidisciplinary practices (family health units) than in traditional primary care centres (3). Waiting times for an appointment with a family physician in a multidisciplinary practice are 54% lower, and the total number of consultations is 6% higher. Waiting times for acute consultations and nursing appointments are also lower in multidisciplinary practices (4). Other data show lower total societal cost in multidisciplinary practices, with less spending on diagnostic tests and pharmaceuticals. Multidisciplinary practices proved to be more efficient and accessible and received higher patient satisfaction scores (5).

Lessons learned

- **Performance monitoring and strengthening of information platforms are integral parts of a clear and strategic vision for the future of primary health care** in Portugal and not stand-alone efforts at digitalization. This vision has been continuously refined and implemented in a step-by-step fashion. This has allowed learning-by-doing and experimentation with evidence-informed solutions appropriate for the Portuguese context.
- **The design of the performance monitoring system is fully aligned with the model of service delivery thereby improving both clinical processes and management functions.** The performance monitoring system was designed based on the desired model of care including the package of services and key quality standards such as clinical guidelines. This integration provides incentives for all to use and improve it.
- **The performance monitoring system has also been brought in line with the contracting process but in a supportive secondary role.** Individual improvement plans supported by a set of indicators are prioritized over the contracting process, which adapts to these and supports them.
- **Health professionals are engaged in using information platforms as their work benefits from it.** Utilizing ICPC-2 made the information clinically relevant and helpful. The ability to receive feedback made data input worthwhile and assured engagement on data quality. Investment in training was prioritized, for example, including ICPC-2 as part of the family medicine residency programme.
- **The performance monitoring system has changed the culture and ethos in primary care.** It has been an essential tool used to reorient health administrators and health care professionals in recognizing the impact of their work on the population that they serve.
- **Developing an effective performance monitoring system requires the engagement of all stakeholders, which takes time.** Critical success factors were strong leadership, good coordination between the political and operational spheres, strategies to avoid unnecessary conflicts with status quo, careful management of change so that the reform was not politicized, and strong investment in training to establish a critical mass of professionals who can quickly operationalize and implement policies.

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IMPROVING OUTCOMES FOR ACUTE CORONARY SYNDROME IN THE RUSSIAN FEDERATION:

An example of regionalization of services for improved quality and systems of care for acute coronary syndrome in Saint Petersburg

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Summary

Within the framework of the Federal Cardiovascular Programme, services for acute coronary syndrome (ACS) were transformed over a decade in St Petersburg. It was motivated by a relatively high cardiovascular mortality, high in-hospital mortality from ACS, low availability of modern technologies, low adherence to guidelines, insufficient quality of care and insufficient funding. A comprehensive regionalization of services led to high availability of care, efficacy in ambulance routing, a high degree of implementation of the model of care, increased access to reperfusion technologies, improved adherence to guidelines and improved quality of care. It was associated with a decrease of in-hospital mortality from ACS and a decrease in cardiovascular mortality.

Improving the quality and timeliness of care for acute coronary syndrome

The cardiovascular mortality rate in St Petersburg is higher (by 12.8% in 2017) than in the Russian Federation in general (1). ACS with ST-segment elevation myocardial infarction (STEMI) is characterized by having the highest mortality in the early stages of the disease. Quality and timeliness of care in the first stages is critical; thus, decreasing system delay from first medical contact to reperfusion therapy is important. This can be particularly challenging in a city the size of St Petersburg which has 5 million inhabitants. In 2006, access to reperfusion therapy, via thrombolysis or percutaneous coronary interventions (PCI), for patients with ACS was limited. Thrombolytics were expensive for the majority of hospitals, and late admission and lack of special training of medical staff meant that few STEMI patients benefitted. Availability of PCI was very low, and it was unaffordable for the majority of patients in emergency situations. Mortality from myocardial infarction within cardiac centres was more than 20% (Table 1).

Reorganization of care for ACS

In 2006, all hospitals provided a similar and insufficient level of ACS care with limited availability of reperfusion, PCI and some types of medical therapy (Table 1). The patients were treated mostly with medical therapy, and diagnostic capabilities were limited. In some hospitals the PCI

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Key Messages

- Reducing cardiovascular mortality in the Russian Federation is a national priority and this has greatly facilitated the service delivery transformation process at regional level.
- A comprehensive and sustained approach is needed to achieve better outcomes with action at policy, purchaser, and provider levels.
- A systematic approach to quality improvement based on timely quality data is needed.
- The ability of a health system to respond to acute events is dynamic, affected by changing factors such as road quality, traffic patterns and provider network, and needs constant review and adjustment.

procedure and optimal diagnostic facilities were only available during working hours, usually from 9.00-16.00h. Improving the service delivery and quality of care for ACS in St Petersburg happened gradually over more than a decade. The aims were to achieve: easy access to high-quality guidelines-based care, a decrease of in-hospital mortality from ACS and improved outcomes, and a decrease in cardiovascular mortality.

Structure: the first stage was the development of a regional network and the introduction of a two-tier system of regional cardiovascular centres (RCCs) – hospitals that can perform PCI 24 hours a day, 7 days a week (24/7) – and primary cardiovascular departments (PCDs) – hospitals without catheterization laboratories. The Federal Cardiovascular Programme (2008–2013) specified the design of the network. There are now 16 RCCs, of which 13 offer 24/7 care and have the appropriate diagnostic facilities. PCDs have been excluded from the network since 2013, when the number of RCCs was sufficient and prehospital care including transportation time was acceptable.

Emergency transportation: the city comprises 18 districts (with populations ranging from 45 000 to 550 000) which have substantial differences in transport networks and traffic level. For emergency medical care, the city has been historically divided into three main areas (north, south and central), with emergency hospitals and ambulance stations located accordingly. Selection of an optimal route and target hospital for an ambulance is a complex problem, and dynamic traffic conditions need to be considered. Statistical data, public geographic information services (OpenStreetMap) and real-time data on traffic flow (Yandex Maps) were used in order to design a more efficient decision support system for ambulance personnel and dispatchers (2) (Fig. 1).

Pre-hospital care: previously, there was a lack of interaction between ambulance and hospitals and poor in-hospital logistics. Prehospital triage of ACS patients was fragmented with two different systems of *prehospital care* (emergency and urgent). Reorganization led to centralized dispatching, the option of phone consultation with an on-duty senior physician from the central ambulance station, routing with distance and time control, and the availability of resuscitation and intensive care teams. For some remote areas of St Petersburg, prehospital thrombolysis was needed. Responsible ambulance stations were identified, and ambulance staff was trained to perform thrombolysis. These stations were supplied with tenecteplase (from the municipal budget of city districts), and the territorial fund of obligatory medical insurance established a special insurance tariff for prehospital thrombolysis.

Monitoring quality: assessing the quality of care was key in developing the regional ACS network. A group of independent experts from the territorial fund performed two quality of care audits. The 2013 audit was by order of the city deputy governor, and after analysing the defects of care, a checklist of the 10 most common mistakes in quality control was developed for experts of insurance companies. A special computer scoring system developed to measure quality of care was implemented in all city hospitals, insurance companies and the quality control department of territorial fund. The next independent audit was performed in 2016 and showed significant improvement of quality of care. Total citywide electronic ACS registry based on the territorial fund of obligatory medical insurance started in the February of 2016. To promote access to myocardial necrosis biomarkers testing, troponin test at admission was established as quality indicator by insurance companies and for the ACS registry.

Access to resources: the Federal Cardiovascular Programme helped to increase access to medicines and technologies, as well as programmes for cardiac rehabilitation after ACS. A centralized supply of thrombolytics started in some regions in 2008 and in St Petersburg in 2010. The number of angiographs increased, with additional angiography equipment installed in large emergency hospitals. The staff deficit was eliminated for key roles such as cardiovascular interventionists and intensive care unit physicians.

Impact

There have been substantial improvements in the process and outcomes since 2016 (Table 1). The availability of reperfusion therapy (thrombolysis and PCI) has increased dramatically (Fig. 2). Other achievements include high availability of care (proportion centres/population, proportion of patients undergoing PCI), efficacy in ambulance routing, a high degree of implementation of the model of care (high proportion of hospitalizations in specialized

centres), increased access to reperfusion technologies, improved adherence to guidelines and improved quality of care. A decrease of in-hospital mortality due to ACS and a decrease in cardiovascular mortality were also reported.

Fig. 1: Heatmap of transfer time to nearest PCI hospital at 40 km/h (computer modelling)

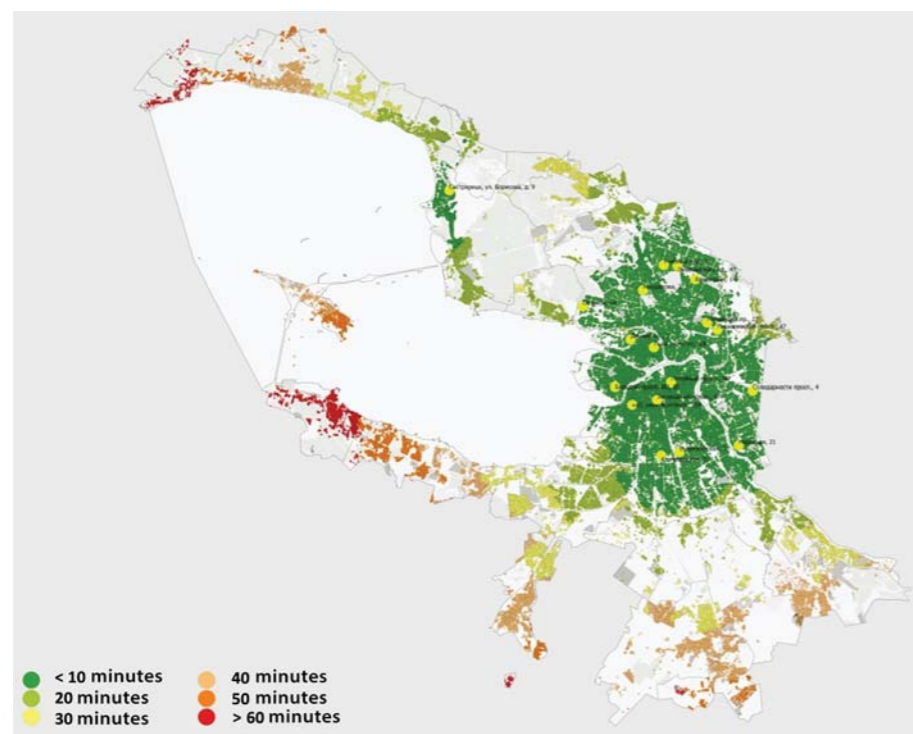


Fig. 2: Number of PCI in ACS patients (per 100 000) in St Petersburg, 2010–2017, by year

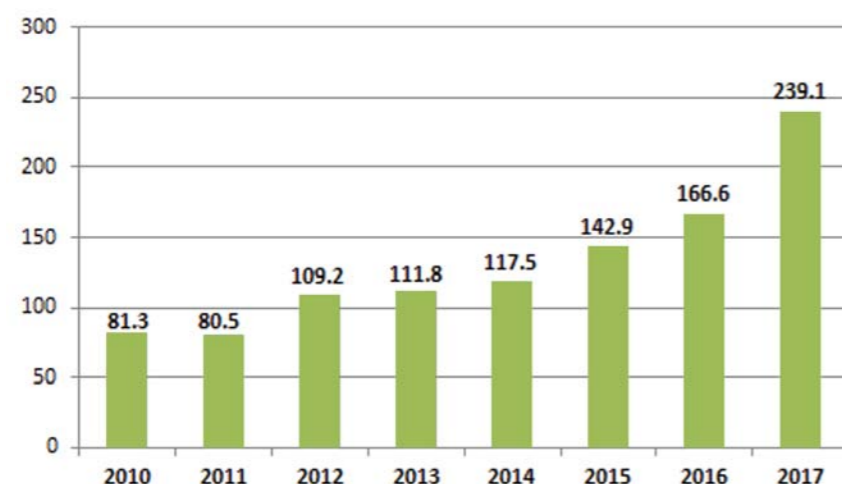


Table 1. Improvement in processes and outcomes of care for ACS in St Petersburg, Russian Federation

Indicator	2006	2016
Reperfusion therapy: thrombolysis	Streptokinase administered in hospital (alteplase)	Tenecteplase administered in ambulance
Number of PCI centres	2, open 08:00–17:00	16, 13 of them open 24 hours a day, 7 days a week
Primary PCI in STEMI	~0%	>60%
ACS network	No	Dispatched, GPS/traffic monitoring
Registry	No	All cases, citywide registry
Mortality (MI) in CV centres	>20%	5–7%

GPS: global positioning system; MI: myocardial infarction.

Improvements have not just been in acute care. Currently, early in-hospital rehabilitation for all patients with ACS is available. Insurance covers rehabilitation programmes in a countryside sanatorium for ACS patients of working age. For all patients antiplatelet drugs are available for 6 months free of charge. Providing all ACS patients with all the necessary medications for 1 year and developing outpatient rehabilitation programmes are key next steps.

Lessons learned

- **Reducing cardiovascular mortality in the Russian Federation is a national priority and this has greatly facilitated the service delivery transformation process at regional level.** Regional governments implemented initiatives within the Federal Cardiovascular Programme which led to the organization of cardiac centres and monitoring of cardiovascular disease/mortality statistics and indicators.
- **A comprehensive and sustained approach was needed to achieve better outcomes.** This required action with multiple pathways including at regional, local, policy, provider and purchaser levels. Examples include: raising awareness among the public and symptoms recognition, medical education, additional hospitals, working groups, routing model for ambulances, quality control, citywide registry, monthly meetings, analytics, information technologies, network coordination and insurance funding.
- **A systematic approach to quality improvement based on timely quality data is needed.** Initiatives included: monitoring of the volume and quality of care in hospitals, independent quality audits, the citywide ACS registry (from 2016) with automated analytics and quality control, monthly meetings of a registry working group and monthly data assessment, and monthly meetings of managers of cardiovascular centres of hospitals in the Healthcare Committee of the Government of St Petersburg.
- **The ability of a health system to respond to acute events is dynamic, affected by changing factors such as road quality, traffic patterns and provider network, and needs constant review and adjustment.** Since the beginning of the development of a regional ACS network, traffic has increased substantially and new highways were introduced. Dynamic changes in traffic patterns require regular reassessment of the shortest routes to hospitals. The growth of high-technology care in hospitals has outpaced the development of outpatient and rehabilitation care. Further work is needed to prevent recurrent cardiac events. The complexity of the regional system of ACS care and the difficulty in performing effective assessments to identify areas of improvement demonstrate the need for continual improvements in information technologies and analytics.

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HEALTH PROMOTION CENTRES IN SLOVENIA: Integrating population and individual services to reduce health inequalities at community level

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Summary

Health promotion centres (HPCs) were created in 2002 in all 61 primary health care (PHC) centres across Slovenia. Their main role was to provide lifestyle interventions against key risk factors for noncommunicable diseases (NCDs) by combining population and individual approaches. HPCs integrated previously dispersed activities in PHC centres, including community nursing. Between 2013 and 2016, a new paradigm was piloted to assure integration of different services targeting vulnerable groups. The new role of HPCs was to create partnerships with key stakeholders, including social services and nongovernmental organizations (NGOs), to improve health at community level. Health promotion teams were established to prepare local strategies and actions plans, which would address the needs of different population groups and identify and reduce health inequalities.

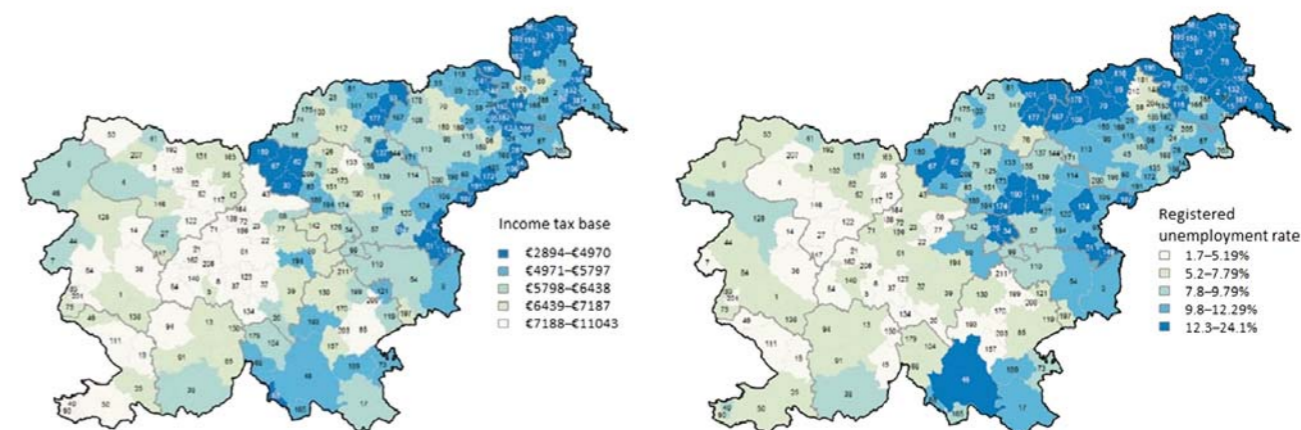
Reducing health inequalities by strengthening primary care capacities

Despite universal and comprehensive health care access for all Slovenian citizens and the health improvements achieved in the last few decades, Slovenia faces persistent inequalities in NCD outcomes across regions. Western and central regions are much better off than the eastern and north-eastern regions, reflecting different levels of development and poverty (1). Moreover, differences in health system response to the needs of vulnerable population groups hamper their access to health services, including preventive services, due to health illiteracy, poverty and unemployment. Inequalities exist between genders with regard to health status and access and use of medical services. Health inequalities begin early in the life course and have increased among schoolchildren, in particular, among those from lower socioeconomic classes. As in other European countries, the economic and financial crisis has deepened health inequalities in Slovenia (Fig. 1 and Fig. 2).

Key Messages

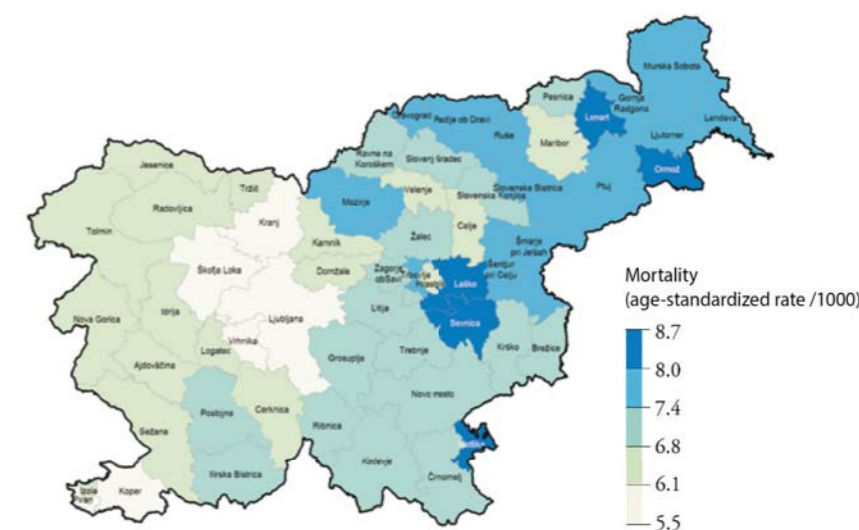
- The health system has played a leading role in reducing health inequalities, particularly for NCDs, in Slovenia.
- A contextualized community-based approach enables a prompt and structured response to the needs of vulnerable populations.
- An integrated multidisciplinary approach requires transforming service delivery so governance, funding and competencies are aligned.
- Multidisciplinary teams in HPCs have a broad spectrum of competencies and skills to provide health promotion and disease prevention programmes within PHC.
- Cross-sectoral cooperation based on a community-based approach is of crucial importance for health equity.
- Assuring sustainable financing for health promotion and disease prevention is essential.

Fig. 1. Distribution of Slovenian municipalities into quintiles relative to income tax base per capita and registered unemployment rate, 2004–2008



Source: Tax Administration of the Republic of Slovenia (TARS), 2004–2008 (recalculations by the Institute of Macroeconomic Analysis and Development of the Republic of Slovenia); Surveying and Mapping Authority of the Republic of Slovenia (SMARS), 2010.

Fig. 2. Mortality by Slovenian administrative units, 2005–2009



Source: National Institute of Public Health (NIPH) Database of deaths 2005–2009; SMARS.

Triggered by the report on health inequalities in Slovenia from 2011 (2) and a thorough analysis of the health system performed in 2015 (3), Parliament adopted the decision to better address the needs of vulnerable populations and to reduce inequalities by strengthening PHC capacities. To assure a community-based approach that focuses on health determinants, health promotion and prevention of NCDs, steps were undertaken to strengthen HPCs as an integral part of PHC, which integrate primary care and public health services and engage with other sectors and stakeholders.

Strengthening PHC to reduce inequalities in health at community level: HPCs

PHC has a long tradition in Slovenia and presents the first point of contact for patients, with good access to curative and preventive services. With a wide range of practitioners providing health care at primary level (general practitioners (GPs), paediatricians, gynaecologists, community nurses, midwives, dentists for adults and children, pharmacists, physical therapists, psychologists and other health professionals), it has a gate-keeping role in the health system.

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Phase 1. Strengthen systems for health promotion and disease prevention for the entire population.

In 2002, a few months after Slovenia adopted its national programme for the prevention of cardiovascular diseases (CVD Preventive Programme), HPCs were introduced into the existing strong PHC network (61 PHC centres). GP practices were tasked to provide preventive check-ups and refer patients at risk to HPCs for fee-free lifestyle intervention classes.

The National Health Insurance Fund (NHIF) provided funding, and financial incentives were introduced for GP practices who reach target values for preventive check-ups. At the same time, the introduction of HPCs represented an opportunity to employ more nurses and other health promotion professionals, and an incentive for the management of PHC centres to expand their task profile and service baskets.

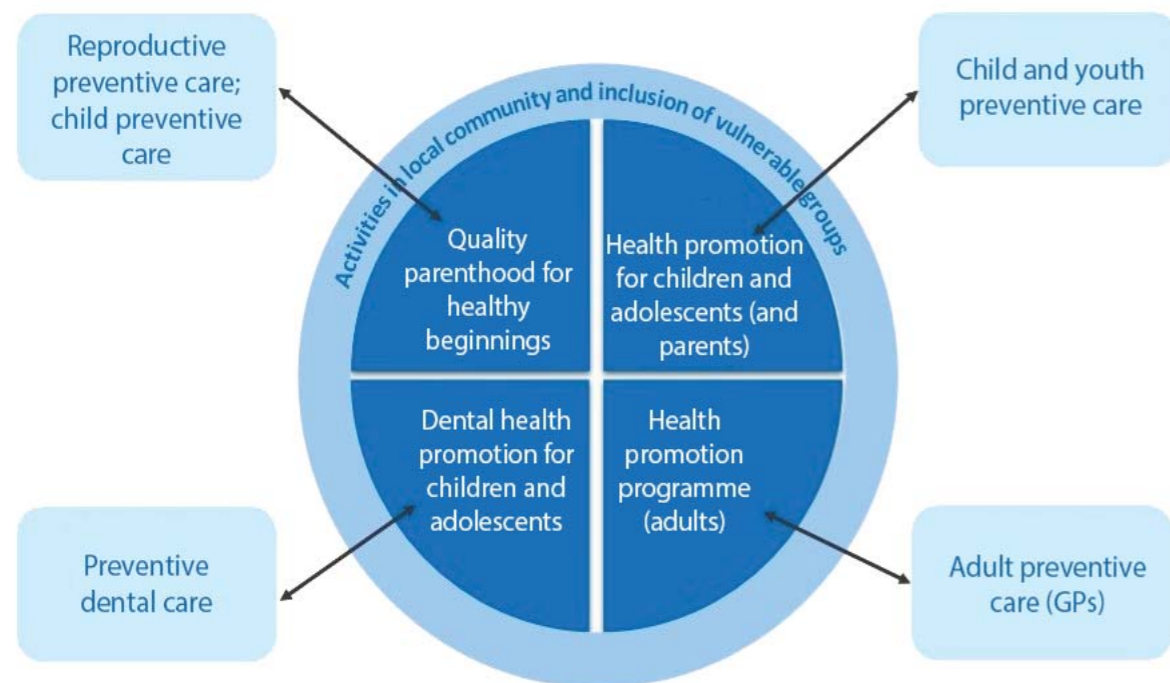
Implementation of the CVD Preventive Programme was first managed by CINDI Slovenia (a WHO Countrywide NCD Intervention programme led by one of the biggest PHC centres in Ljubljana), and later by the NIPH. Programme management included the development of interventions, training and follow-up of professional development, implementation and process evaluation.

Phase 2. Strengthen the focus on inequalities and vulnerable groups.

A new initiative to upgrade the existing HPCs started in 2013 (4). Using the Norwegian Funding Mechanism, a project "Towards better health and reducing inequalities in health" was piloted in three PHC centres in different parts of Slovenia. Within this project, 2.2 million euros were invested to address the widening gap of inequalities, including in health, by reducing lifestyle-related chronic NCDs. Based on an assessment, the CVD Preventive Programme was adapted to meet the needs of vulnerable populations (children, adolescents and adults).

Upgraded HPCs (Fig. 3) include multidisciplinary teams of nurses, physiotherapists, psychologists, dieticians and kinesiologists. Patients attend individual and group classes on lifestyle changes regarding healthy nutrition, physical activity and mental health; smoking, alcohol use, obesity and diabetes are addressed as well.

Fig. 3. Integrated HPC



Within the project, several tools were developed to support the work of professionals in HPCs, including guidelines, protocols and models for comprehensive prevention of NCDs related to lifestyle factors and for the integration of preventive services. Training materials to address cultural differences and develop competences in intercultural mediation were also prepared.

More than 60 experts from the NIPH contributed to the project, and more than 100 other professionals were involved, including family doctors, nurses and midwives, anthropologists, sociologists, clinical psychologists and dieticians. Social work centres, schools, employment services, NGOs and other stakeholders at community level contributed to the development of this new approach.

The three HPCs in pilot PHC centres became the cornerstone and the driver to establish contact with the most vulnerable and hard-to-reach populations and to integrate different structures, professionals and programmes within PHC centres and the community.

Apart from the health promotion teams in HPCs at community level, health promotion action groups were established to help identify and include hard-to-reach populations (unemployed, Roma population, people with mental health problems or disabilities, illicit drug users and others) in the new preventive programme.

The pilot project concluded in 2016 with plans to introduce the new model into at least 25 additional HPCs by 2020. The Government of Slovenia assigned an additional 15 million euros from the European Union cohesion funds for this purpose (5).

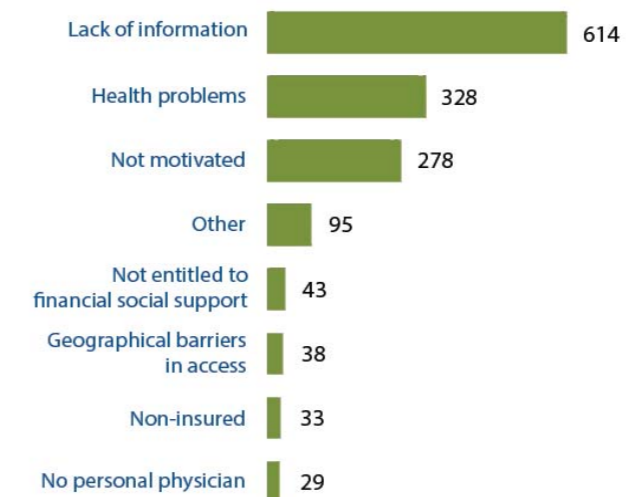
Impact

In the 15 years of operating HPCs and implementing the CVD Preventive Programme, more than half of the adult population was screened for lifestyle risk factors. Almost 50 000 patients annually attend intervention classes in HPCs. Trends in (premature) mortality, particularly for cardiovascular disease, declined by 19% between 2007 and 2015 (from 327 to 266 per 100 000). However, disparities still exist between regions, as well as between income categories.

The initial scepticism of GPs and other health professionals about the contents, target values and financing of the programme gradually changed to enthusiasm due to improved patient health outcomes.

As part of the project "Towards better health and reducing inequalities in health", NIPH performed a field survey in three piloted communities to identify key vulnerable groups and their barriers in access to care. A total of 850 people participated in the survey including people with socioeconomic vulnerabilities, mental health disorders and disabilities; the unemployed; the homeless; and other vulnerable groups. They identified perceived barriers to preventive interventions (Fig. 4). To address these access barriers, a wide range of stakeholders in partnership performed interventions targeting people from different vulnerable groups (Fig. 5).

Fig. 4. Number of people and perceived barriers to preventive services



Note: survey responders could choose multiple barriers.
Source: NIPH.

Fig. 5. Number of stakeholders engaging in action to address access barriers



Source: NIPH.

Implications for policy

The National Health Care Plan 2016–2025, which prioritizes equal rights and access to health services as core values for the development of Slovenia’s health system, guarantees the sustainability of the achievements. The HPCs and the new model for health promotion and disease prevention will be systematically scaled up to all PHC centres:

- through fully integrating financing within compulsory health insurance by increasing capitation payments and incentivizing performance of preventive services; and
- by systematically incorporating capacity-building activities developed under these programmes into the educational programmes of health and other professionals.

The next phase will emphasize working in the community by providing support to local initiatives and approaches. Thus, NIPH, PHC centres and municipality administration will steer the process of establishing a local action group for health promotion by using a community approach to identify local health needs and build solutions.

Lessons learned

- **The health system has played a leading role in reducing health inequalities, particularly for NCDs, in Slovenia.** In particular, PHC services together with public health services reaching out to communities has proved to be a powerful vehicle to reach vulnerable groups.
- **A contextualized community-based approach enables a prompt and structured response to the needs of vulnerable populations.** It increases social cohesion using formal and non-formal types of care and by combining population and individual approaches. It allows a combination of top-down and bottom-up approaches in developing and delivering programmes for those in need and goes beyond institutional boundaries in health and social care.
- **An integrated multidisciplinary approach requires transforming service delivery so governance, funding and competencies are aligned.** PHC, through HPCs, have an important role to play in delivering preventive services and public health programmes that focus on vulnerable groups within the community. However, coordination structures, sustainable financing and a competent workforce are crucial to perform these functions and assure integration of different services.

- **Multidisciplinary teams in HPCs have a broad spectrum of competencies and skills to provide health promotion and disease prevention programmes within PHC.** To successfully work with other sectors in the community and to address the needs of vulnerable populations, development of specific training materials and guidelines is needed. Over time, these multidisciplinary training approaches need to be integrated into mainstream public health, health promotion, primary care training and beyond the health sector into public policy and training for public administration.
- **Cross-sectoral cooperation based on a community-based approach is of crucial importance for health equity.** Local communities with a variety of stakeholders have enormous potential in mobilizing individuals and organizations to identify and include those left behind and contribute to a healthy environment and healthy choices for all.
- **Assuring sustainable financing for health promotion and disease prevention is crucial.** Involving key stakeholders from the start, in particular the payer and local authorities, is essential. Developing a local strategy and action plan, applying criteria to measure outcomes and reporting to the public and decision-makers on the progress and the impact of adopted measures can contribute significantly to the sustainability of equity-based preventive programmes.

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POPULATION STRATIFICATION: A fundamental instrument used for population health management in Spain

José Cerezo Cerezo¹, Carmen Arias López²

Motivation and summary

Changing health services from a disease-centred to a patient-centred approach was one of objectives of the Spanish Strategy for Approaching Chronicity in the National Health System (2012). A strategic priority for facilitating this transformation was considered to be identification of the health needs of every patient, so that interventions could be tailored. In the framework of the project "Stratification of the population of the National Health System", a locally developed and tested "population grouper", Adjusted Morbidity Groups (AMG), was used in the majority of the Spanish regions to stratify patients' risks according to morbidity and complexity (1). Risk stratification is widely used in population health management, health service planning and clinical management.

Stratification of the health risks of people with chronic diseases has been adopted in many European countries to strengthen population health management and provide better-tailored services. Some countries have purchased or adapted existing software, and others, like Spain, have developed novel, country-specific population tools for grouping and health risk assessment (2,3). These practices are aligned with the European framework for action on integrated health services delivery as one of the key strategies for moving towards people-centred health services (4).

Adjusted morbidity groups

Process

AMG were set up in the Catalan Health Service by the Catalan Health Institute and the TicSalut Foundation as part of the Catalan Prevention and Chronic Care Programme. Later, two consecutive collaboration agreements between the Spanish Ministry of Health, Social Services and Equality and the TicSalut Foundation (Catalan Health Service), allowed extension of AMG from Catalonia to the vast majority of the Spanish regions. By 2015, 38 million people had been grouped (5,1).

Nature of AMG

AMG is a tool for population grouping and risk stratification that takes into account two factors: multimorbidity and complexity. The process requires the codified diagnostic codes of users' morbidity, the date of diagnosis and, as the principal source of information, data collected

Key Messages

- Risk stratification tools such as the Adjusted Morbidity groups (AMG) can assist health systems in progressing from disease-centred to patient-centred care.
- The AMG can be used to estimate current and future risks for mortality, morbidity and various indicators of health service utilization, enhancing health care management.
- The AMG are particularly relevant for addressing patients with chronic comorbid conditions from both a system-wide and a clinical approach and allow benchmarking at various levels.
- The AMG have proved to be flexible and transferable among regions.
- To develop and put into practice a tool of this nature, reliable, up-to-date, systematized, homogeneous, computerized primary health care records are indispensable.

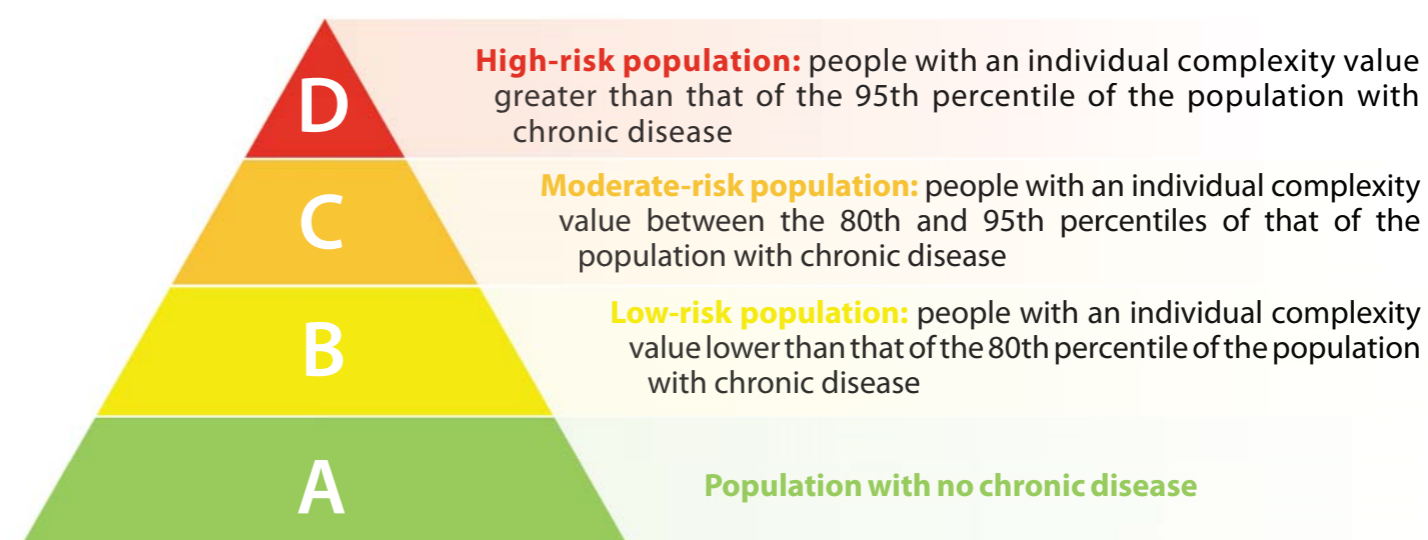
in electronic primary health care records. Acute diagnoses are taken into consideration only if they were made during the study period (usually one year), while chronic diagnoses are considered regardless of the date.

Grouping by morbidity: individuals are classified into one of seven morbidity groups by their assigned international diagnostic codes, as follows: healthy population, pregnancy and/or labour, acute disease, chronic disease in one system, chronic disease in two or three systems, chronic disease in four or more systems and cancer.

Grouping by complexity: each morbidity group (except the healthy population) is divided into five subgroups of complexity, the level of which is determined by analysis of a set of resource use variables, such as primary care visits, pharmaceutical prescriptions, mortality and risk for hospital admission. The complexity calculation was based on information on the population of Catalonia in 2011 (7.5 million). Combining morbidity and complexity resulted in 31 AMG.

Individual clinical labels and complexity index: the AMG includes two additional kinds of information on each patient. First, an individual clinical label for the most relevant and/or prevalent disease is selected from a list of 80 agreed, prioritized health problems. Secondly, a numerical complexity index is calculated that allows pyramidal risk stratification, in which each patient is allocated to a risk level or stratum (Fig. 1).

Fig. 1. Stratification pyramid based on complexity index



Towards population health management

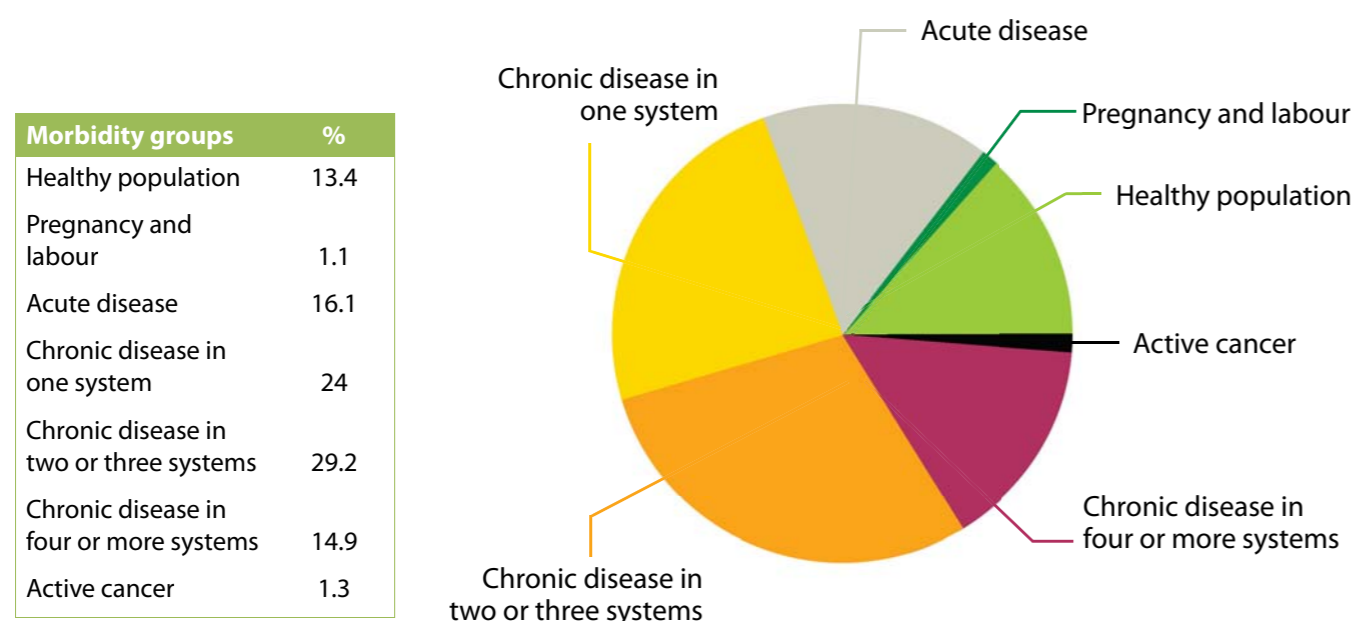
The AMG is helpful for better understanding the distribution of health risks in the population. The Spanish health system is coordinated nationally but is decentralized to the 17 Spanish regions, many of which have used the AMG for different analytical purposes. Some examples are given below.

Temporal and geographical distribution of morbidity: Fig. 2 shows the proportions of the population in the seven morbidity groups in one region: 68% had at least one chronic disease and 44% experienced multimorbidity. About 15% of the patients with multimorbidity had chronic diseases that affected four or more organ systems. Such simple figures can be used for analysis over time and by geographical area for better planning decisions, for example.

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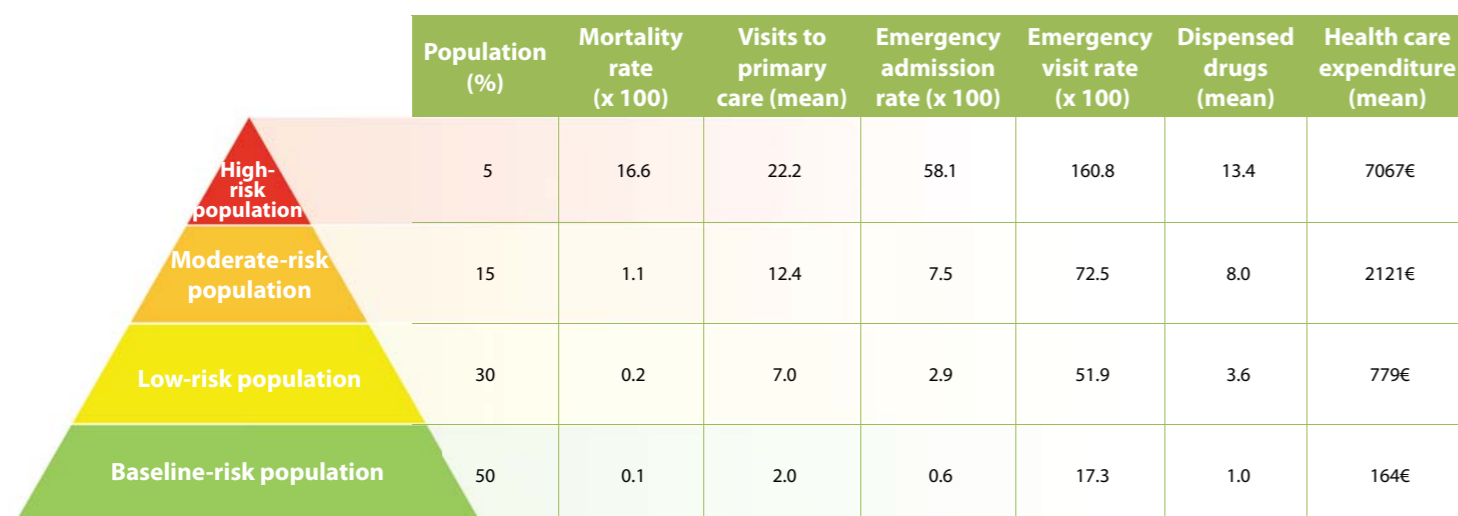
Fig. 2. Population distribution by morbidity group



Source: Ministerio de Sanidad, Servicios Sociales e Igualdad, 2018

Resource needs by health risk. Fig. 3 shows the results in another region, where pyramidal risk stratification was used to calculate the values for a set of variables of resource use and cost analysis for every risk stratum. The highest risk stratum, which includes only 5% of the population, consumed the highest share of health resources, with a clear gradient across the risk spectrum. Changes over time and by geographical area can be useful for ensuring that resource allocation patterns meet needs.

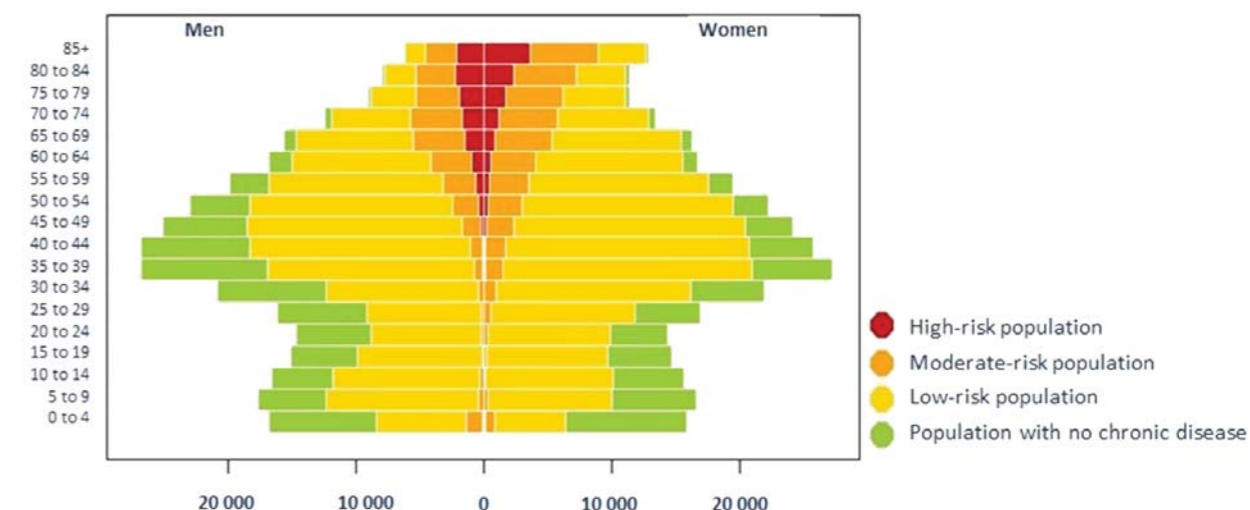
Fig. 3. Mortality and resource use by risk stratum



Source: Ministerio de Sanidad, Servicios Sociales e Igualdad, 2018

Life-course and gender distribution of health risk. In a third region, patients stratified according to their complexity index were distributed on the population pyramid as depicted in Fig. 4. This revealed the numbers of high-risk individuals by sex and age group. As observed in this example, the higher the age group, the more patients are in the high-risk stratum. This becomes especially relevant for those over 65 years, who are most likely to have multimorbidity. High-risk patients are also seen in the age group 50-60 years, with a direct impact on the labour and economic sectors. This information can be particularly helpful for designing interventions.

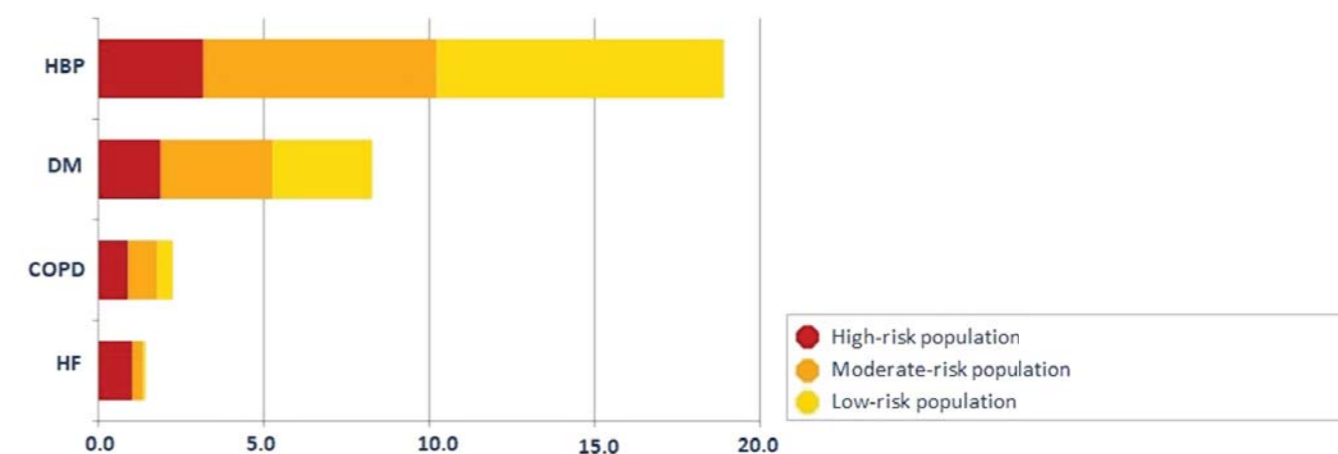
Fig. 4. Population distribution by age, sex and risk stratum



Source: Ministerio de Sanidad, Servicios Sociales e Igualdad, 2018

Chronic conditions and health risk: The proportion of high-risk patients in each of the most relevant noncommunicable diseases can be also determined by the AMG. Fig. 5 shows the results for a fourth region of Spain, with the proportions of the population at high risk shown in red. The proportion of patients in the highest complexity category depends on the disease. Whereas the vast majority of people with high blood pressure were in the moderate or low risk strata, a high proportion of patients with heart failure were classified as high-risk patients. This information is valuable for forecasting use of health resources according to the noncommunicable disease profile of the population.

Fig. 5. Frequency (%) of the main chronic diseases by risk stratum



Source: Ministerio de Sanidad, Servicios Sociales e Igualdad, 2018

Impact and uses of the AMG

In a survey carried out in 2017 by the Ministry of Health, Social Services, and Equality, Spanish regions reported a wide range of applications for the AMG for better health management and resource planning.

Population health management and case finding: The most widespread use is in finding cases in primary and secondary health care in order to include them in the regional programmes for complex or advanced chronic patients. For example, in Madrid, the risk calculated in the AMG is used, with

other variables and with a clinician's validation, to refer patients to such programmes. The strength of the concordance between the AMG risk levels (high, medium, low) and the intervention levels assigned by physicians (high, medium, low) was assessed as moderate to good (6).

Proactive case management of high-risk patients in primary care: The AMG are also used as routine health indicators in individual primary health care records for proactive clinical decision-making. In some regions, such as Catalonia, the AMG risk score is listed in the patient's electronic health records and is thus accessible to health care professionals (physicians, family nurses, case managers etc.). They can then draw up a list of their most complex patients by combining the information provided by the stratification tool with other clinical variables and therefore compare a patient with the rest of their assigned population.

Resource planning: In other regions, the AMG are used in macro-management to estimate current or future health care costs and resource utilization in order to allocate health resources accordingly. For example, in the Balearic Islands, the AMG are used to calculate the annual pharmaceutical budget of primary health care family physicians. The pharmaceutical expenditure and the complexity indexes of the patients assigned to the family practitioner in the previous year are used to estimate the next year's budget, and the estimates are adjusted by the practitioner's actual pharmaceutical expenditure to determine the final annual budget.

Strategic purchasing: The AMG are used in Catalonia with other variables to adjust the annual per capita payment to primary health care teams. In the Madrid region, the AMG are used to calculate the capitative prescription budget of primary health care centres.

Health workforce planning: The AMG can contribute to optimizing health workforce planning and allocation. In Catalonia, the Nursing Council has proposed a new model for establishing the minimum number of nurses required on primary health care teams to ensure the quality of health care. In this model, morbidity measured by the AMG was part of the allocation formula.

Research and decision-making in public health: Research uses may include identification of vulnerable groups, analysis of population morbidity or selection of controls for epidemiological studies. One region used the AMG complexity index to prioritize individuals for eligibility for influenza vaccination and for alerting them by SMS.

Performance assessment: The AMG are also used to adjust many indicators of efficiency and quality in primary and emergency health care.

Lessons learned

- The information provided by risk stratification tools such as the AMG can assist health systems in progressing from disease-centred to patient-centred care. Through better patient health profiling, health services can respond more accurately and comprehensively to the actual health needs of both groups and individuals.
- The AMG can be used to estimate current and future risks for mortality, morbidity and various indicators of health service utilization, enhancing health care management by the introduction of transparent, evidence-based criteria in decision-making about health programmes, policies and resource allocation.
- The AMG are particularly relevant for addressing patients with chronic comorbid conditions from both a system-wide and a clinical approach. Such patients are readily identified through the AMG and can be included in case management programmes for patients with complex chronic disease (with physician validation). In addition, inclusion in the AMG of information from electronic health records allows health professionals (physicians, nurses) to forecast a patient's prognosis and tailor clinical interventions accordingly.
- The AMG allow benchmarking at various levels. Health managers can identify and compare areas with larger health demands and resource consumption with better-performing areas. In addition, physicians and nurses can compare patients according to their complexity index and with average rates in their health area.

- The AMG have proved to be flexible and transferable among regions, as shown by their use in 13 of the 17 Spanish autonomous health systems.
- In order to develop and put into practice a tool of this nature, reliable, up-to-date, systematized, homogeneous, computerized primary health care records are indispensable.
- In decentralized health systems such as that in Spain, successful regional initiatives can be identified and scaled up if there are adequate mechanisms for selecting good practices and effective collaboration agreements.

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REFORM OF THE MEDICAL CURRICULUM IN SWEDEN: Towards a more active and multidisciplinary learning of people-centred care

Stefan Lindgren¹

Summary

Medical schools in Sweden are revising their medical curricula to involve students in more active and multidisciplinary learning and to better integrate basic science and clinical experiences. This is in response to changing needs in patients, rising incidence and prevalence of chronic diseases and multimorbidity, the proliferation of new knowledge and technologies, changing practice environments and new understandings of pedagogy. These reforms are a joint effort by the government and universities, health care providers, patient organizations and professional organizations.

It has been recognized that new and main competencies are required. The reform identified the need for pro-active chronic disease management, increased emphasis on disease prevention and health promotion, critical thinking, continuous quality improvement, generalist competencies, communication skills and multidisciplinary teamwork. This means that practice-based learning is gradually moving from hospital settings to primary care.

Towards new skills and competencies through transformation of medical curriculum

Like most countries in the WHO European Region, the Swedish health care system is still primarily organized to deal with acute rather than chronic disease conditions, with limited focus on disease prevention and health promotion in clinical practice. Overall, medical training does not reflect sufficiently the enormous changes in the health care environment including changing needs in patients, the rising incidence and prevalence of chronic diseases and multimorbidity, the proliferation of new knowledge and technologies, changing practice environments and new understandings of pedagogy.

Some of the most significant changes over the last century in virtually every medical field have been the proliferation of training

Key Messages

- Transforming the medical curriculum is possible and requires collaborative efforts between all stakeholders for sustained impact.
- Better alignment of residency curricula in every discipline with current and anticipated requirements of practicing physicians is needed.
- Learning outcomes addressing the desired competencies must be clearly formulated and assessed.
- Priority should be given to competency-based training and the development of generalists.
- Competencies should target both clinical-technical skills and soft-skills.
- Practice-based learning is gradually moving from hospital settings to primary care.
- Improved interdisciplinary curricular arrangement (medical, nursing and allied health professionals working together) is essential.
- New accreditation standards are needed across the continuum of medical education.

programmes in new subspecialties and the lengthening of training time. Moreover, the clinical environment within academic health centres, including their teaching hospitals, is currently widely perceived as being unreceptive to educational innovations. Training remains largely tied to local and subspecialty traditions and to the requirements of inpatient service units. The culture of training and practice that students and residents are taught outside of the classroom inculcates values and approaches to clinical practice that often do not align well with those promoted within the formal medical school curriculum (1).

A medical curriculum in line with today's health care challenges

The transformation started in 2013 with an agreement between relevant stakeholders including the government, health care professionals, professional organizations, educational organizations and patient organizations on the main health problems that must be managed and the related competencies needed. Chronic diseases, multimorbidity and the need to strengthen primary care and teamwork were critical drivers of a needed paradigm shift that emphasized the best possible health and quality of life in individuals and populations in contrast to curing diseases only. Basic and clinical knowledge, skills and professionalism that remain central components of the new curriculum are addressed with this focus in mind (2).

The Swedish reform of the medical curriculum is in line with the vision as outlined by the World Federation for Medical Education (3) that highlights the need for new accreditation standards across the continuum of medical education.

The reform consisted of two main dimensions.

The first dimension is a re-definition of competencies. The stakeholders of the reform process have investigated and identified what competencies are needed in medical graduates to address society's priority health concerns. Priority is given to the development of generalist competencies of relevance to strengthening primary care. In this context, emphasis is placed on pro-active chronic disease management, comprehensive needs assessment, goal-oriented care, patient education and empowerment, health promotion, interdisciplinary care, integrated care, evidence-based practice, quality improvement approaches, effective use of information and communication solutions, and long-term support of patients and their relatives. Examples of competency clusters in the field of communication, teamwork and people-centred care are provided in Table 1.

Competencies also target particular attitudes and skills, such as critical thinking, scientific approaches to new information and knowledge development, life-long professional development and ethics.

The second dimension is the definition of learning strategies. In addition to the existing traditional master-apprenticeship system of learning, new learning strategies were introduced including: interprofessional learning (medical and nursing students working together aiming for case-based learning) and videotaped recording of patient-provider dialogues to improve patient-centred communication and clinical reasoning. In the new undergraduate curriculum (which is extended over 5.5 years before students graduate as doctors), the clinical practice periods have been extended and to a larger extent are taking place in outpatient settings and primary care (4). The students are part of existing multidisciplinary teams and are assigned individual tasks and responsibilities. Attention is also given to the use of information and communication technology, and its role in promoting integrated care.

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Table 1. Examples of competency clusters for medical graduates relating to communication, teamwork and people-centred care in Sweden

Effective communication	<ul style="list-style-type: none"> • Demonstrate active, emphatic listening. • Convey information in a jargon-free and non-judgmental manner. • Communicate care plan options to patients in a clear manner. • Adapt the style of communication that most appropriately takes into account the impact of health conditions on a patient's ability to process and understand information. • Ensure the flow and exchange of information between the patient, family members and relevant providers is complete. • Provide health education (materials) that are appropriate to the communication style, cultural norms and literacy of the patients and reinforce information provided verbally during health care visits.
Teamwork	<ul style="list-style-type: none"> • Clearly identify and support roles and responsibilities of all team members, including patients. • Represent one's professional opinions and encourage other team members, including patients, to express their opinions and contribute to decision-making. • Resolve differences of opinion or conflicts quickly and without acrimony. • Demonstrate practicality, flexibility and adaptability in the process of working with others, emphasizing the achievement of treatment goals as opposed to rigid adherence to treatment models. • Link patients and family members with needed resources, including but not limited to specialty health care, rehabilitation and social services, peer support, financial assistance and transportation, following up to ensure that effective connections have been made. This includes arranging access to patient navigation services.
People-centred care	<ul style="list-style-type: none"> • Comprehend that effective care planning requires several discussions with the patient and other parties, over time. • Screen for multimorbidity and assess cognitive impairment and mental health problems including risky, harmful or dependent use of substances and harm to self or others, abuse, neglect and domestic violence. • Assess the nature of the patient's family, social supports and other socioeconomic resources that impact patient health. • Match and adjust the type and intensity of services to the needs of the patient, ensuring the timely and unduplicated provision of care. • Incorporate the patient's wishes, beliefs and history as part of the care plan, while minimizing the extent to which provider preconceptions of illness and treatment obscure those expressed needs. • Understand the effect of disparities on health care access and quality.

Source: Author.

Impact

All medical faculties in Sweden have embarked on the road to reform the medical curriculum. Major changes involve an emphasis on generalist competencies, the increased number of training hours students spend in primary care practices and facilities, and the introduction of new topics to the curriculum including quality of care, integrated care, people-centred care and the use of information technology. The introduction of new learning strategies is another major change to the development and implementation of the new curriculum.

Faculties now focus on documenting learning outcomes related to the defined competencies, as well as on developing quality indicators to assess the performance of the reform.

Lessons learned

- Transforming the medical curriculum is possible and requires collaborative efforts between all stakeholders for sustained impact.
- Better alignment of residency curricula in every discipline with current and anticipated expectations of practicing physicians is needed.
- Learning outcomes addressing the desired competencies must be clearly formulated and assessed.
- Priority should be given to competency-based training and the development of generalists.
- Competencies should target both clinical-technical skills and soft-skills.
- Practice-based learning is gradually moving from hospital settings to primary care.
- Improved interdisciplinary curricular arrangement (medical, nursing and allied health professionals working together) is essential.
- New accreditation standards are needed across the continuum of medical education.

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IMPROVING CARDIOVASCULAR RISK IN UZBEKISTAN: Implementing a package of essential interventions to prevent and control noncommunicable diseases successfully involved nurses and found missing men

Muborak Sadirova¹, Dilfuza Aniyozova², Jill Farrington³, Elena Tsoyi⁴

Summary

The Kashkadarya and Ferghana regions in Uzbekistan implemented an integrated model for prevention of noncommunicable diseases (NCDs). The model combined community-level support for behaviour change in NCD risk factors with changes to primary health service delivery to stratify and manage patients with cardiovascular risk (CVR) factors. Implementing clinical protocols led to greater coverage of the target population and improved CVR stratification, detection and control of risk factors, and detection of arterial hypertension and type 2 diabetes mellitus. It also led to better organization of care, increased task-sharing between doctors and nurses, enhanced the role of nurses in primary health care (PHC), and increased the engagement of men in NCD prevention.

Реагируя на растущее бремя неинфекционных заболеваний

In Uzbekistan, the risk of premature death (in people aged 30–69 years) from the four main NCDs is estimated to be around 31%, primarily from cardiovascular diseases. A quarter of adults aged 18–64 years and almost a third of adults aged 40–64 years are at high risk of a heart attack or stroke in the next 10 years. Men are particularly at risk given their tobacco use and harmful use of alcohol. In general, men tend to underutilize health care services, and blood pressure is not well controlled in this population. Although Uzbekistan has been implementing health promotion and disease prevention programmes for many years, challenges remain particularly in reorienting PHC delivery from treatment to prevention and in organizing care delivery to identify and manage patients at high CVR, particularly men. There was insufficient coverage, poor implementation of the WHO “best buys” – evidence-based and cost-effective NCD recommendations –and frequent underutilization of nurses.

NCD prevention in PHC

In September 2015, eight PHC facilities in two regions in Uzbekistan were identified to pilot a new approach using the WHO package of essential NCD (PEN) interventions for PHC

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Key Messages

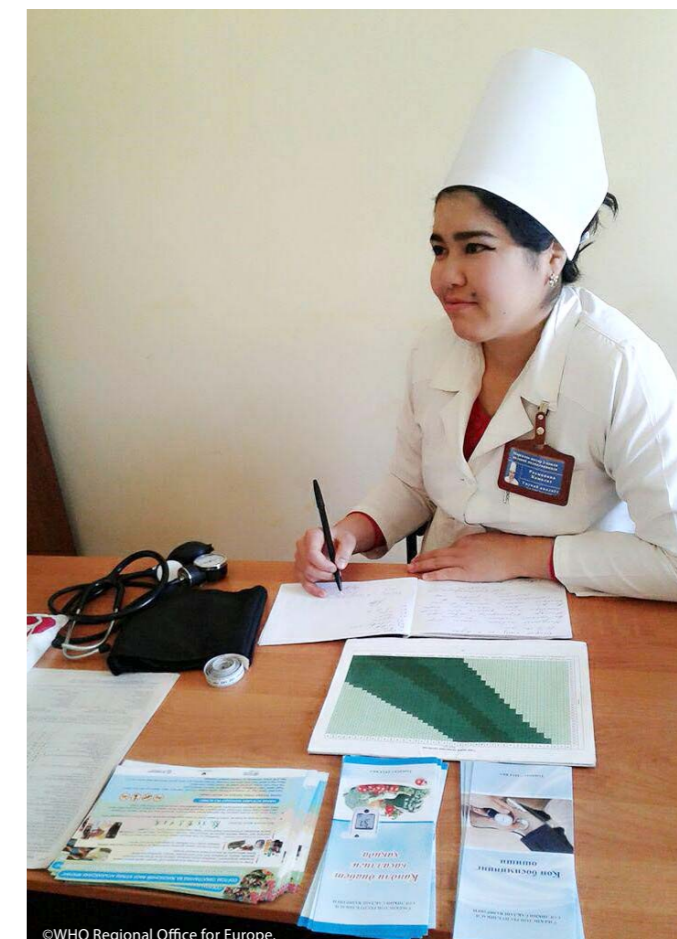
- Expanding the independent role of nurses required a systematic approach including changes to a regulatory framework.
- A system of internal and external supportive supervision is an important element of continuous improvement in quality of care.
- Motivation and the ability to compare team performance outcomes are important aspects in strengthening the commitment of health workers to improve the quality of their work.
- Actively involving patients, together with health workers, in treatment plans can help change patient behaviour to reduce risk factors for cardiovascular disease.
- Intersectoral collaboration to improve health is a key factor in raising public awareness and promoting community-based health programmes.

together with a system of continuous improvement of quality of health services. The WHO PEN protocols for identifying and managing individuals with high cardiovascular disease risk and, more recently, Protocol 3 on chronic respiratory disease were adapted for use in Uzbekistan.

When introducing the PEN protocols into routine practice, the focus was on building capacity of PHC facilities through team-based training of specialists and updated clinical protocols, and by implementing supervisory support mechanisms to monitor and evaluate team performance and other quality improvements. This required considerable changes to the organizational structure of health care delivery.

- Given the high workload of general practitioners (GPs), teamwork of GPs and nurses was streamlined through clear delineation and delegation of responsibilities, and by expanding the role of nurses.
- The catchment areas for doctors and nurses are local communities (mahallas). Patient registers were used to identify the target group of adults aged 40 years or over and to invite them for CVR assessment; health care workers followed up with patients who did not attend the assessment.
- In waiting rooms in PHC facilities, nurses performed pre-doctor check-ups and asked patients about risk factors; measured height, weight and blood pressure; and calculated body mass index before the patient saw the GP.
- Nurses also used questionnaires to detect risk factors during home visits.
- To facilitate the planning and monitoring of patients' first and follow-up visits, nurses started logbooks to track planned and actual visits in line with each patient's CVR.
- To help track health status, individual patient management plans were created which could be attached to outpatient health records and, if possible, given to patients so they could be more involved in their own care.
- Facilities were transformed into polyclinics where blood and cholesterol tests could be performed free-of-charge to patients with results available within a few hours.
- A software application was developed to assess and manage CVR, facilitate risk stratification, track quality indicators and evaluate results; the application is being integrated into the information system for outpatient care services.
- National and local coordination teams regularly visited health clinics in the pilot regions to provide supportive supervision, and to monitor and evaluate using an approach which included audit of patient records, observations of clinical practice, interviews with staff and patients, and feedback to clinicians/staff and suggestions for improvement.
- Indicators for monitoring and evaluating CVR were included in national guidelines.

A nurse assesses CVR in patients using PEN tools, Margilan Family Polyclinic #1



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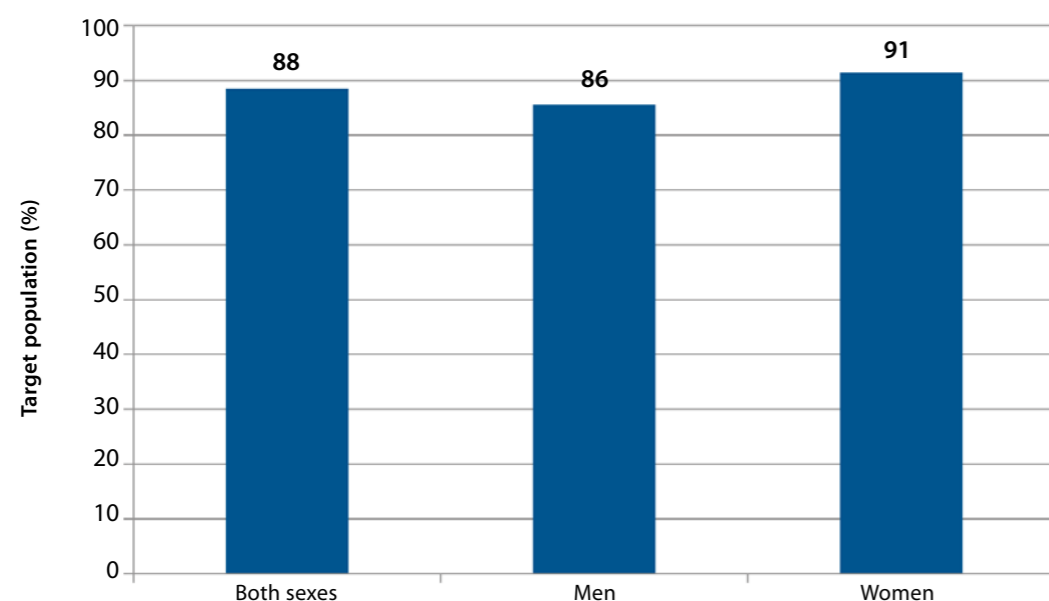
The changes in PHC are supported by a community health promotion project (“Healthy Life”) at the local community level, which is under the leadership of the local government. This project successfully engages other government agencies, women’s committees, youth leaders, religious leaders, journalists and other key stakeholders to mobilize health promotion initiatives. Examples of work include large-scale information communication campaigns for the general population, health promotion events for young people, screenings for NCD risk factors and initiatives to help people choose a healthy lifestyle.

Impact

With the introduction of new clinical protocols, preventive care has gained prominence. Health workers have begun to pay more attention to assessing risk using a total CVR approach, and coverage of patients aged 40 years and older has improved.

After one year, the eight pilot facilities performed risk assessments on 32 052 people, with nearly an 80% uptake of cardio-metabolic risk screening among people over the age of 40. Analysis of coverage data by gender in three pilot facilities shows high coverage among men (86%) at nearly the same rate as women (Fig. 1).

Fig. 1. Coverage of CVR assessment in adults aged 40 years and over (target population) in three pilot districts



Source: database of three pilot PHC facilities in Fergana region.

Other results from the pilot project include:

- an approximate 50% increase in the number of patients with newly detected arterial hypertension (from 1416 to 2039 registered cases) and type 2 diabetes (from 175 to 272 registered cases);
- a 65% increase (from 54.2% to 89.6%) in the proportion of patients with arterial hypertension or type 2 diabetes who are prescribed treatment in line with the WHO PEN protocols;
- a 63% increase (from 28.9% to 47.2%) in the proportion of patients aged 40 years or older with type 2 diabetes or arterial hypertension and high blood cholesterol (higher than 8 mmol/l) and/or high CVD risk who are treated with statins;
- improvement in the quality and effectiveness of patient counselling on NCD risk factors and healthy lifestyle behaviours by health professionals;
- an increase in the completeness of clinical examinations by doctors according to protocol;
- increased utilization of health services by the male population at PHC facilities for CVR assessment, which had been a major concern;

- an increase in patient satisfaction since clinicians show more interest in their patients’ health;
- an increase in confidence and empowerment among nurses regarding their expanded role; and
- an increase in task sharing between doctors and nurses, and the promotion of team decision-making.

Lessons learned

- **Expanding the independent role of nurses required a systematic approach including changes to a regulatory framework.** Introducing the new clinical protocols was not easy, and nurses faced barriers when performing their new duties. A regulatory framework regarding PHC workers needed to be revised. The involvement of the chief nurse in the national steering group appears to have been critical. Now nurses are empowered to develop their clinical role; for example, they can establish a working nurse diagnosis such as high blood pressure and provide recommendations to patients based on nursing information. Health care workers were trained on a standard treatment approach, which was supported by peer-to-peer education.
- **A system of internal and external supportive supervision is an important element of continuous improvement in quality of care.** Regular monitoring visits by supervisors from the national, regional and district levels and by internal supervisors who provided constructive feedback resulted in the identification and timely resolution of problems. This practice needs to continue with an emphasis on strengthening self-supervision to resolve problems with using the new protocols in routine practice. This approach will be valuable for scaling up the pilot project to the entire country.
- **Motivation and the ability to compare team performance outcomes are important aspects in strengthening the commitment of health workers to improve the quality of their work.** Several factors contributed to increasing the satisfaction of health workers and improving quality of care. These factors were the dissemination of experience from the pilot facilities, presentation of team outcomes on regional and national levels, community involvement in evaluating the performance of each team and joint work with community leaders to achieve common goals. The motivation of midlevel health personnel is worth noting because they were aware of their contribution and the importance of their role in improving the performance of PHC facilities.
- **Actively involving patients, together with health workers, in treatment plans can help change patient behaviour to reduce risk factors for cardiovascular disease.** Patients who helped to decide how and when they will reduce CVR are most likely to successfully change their behaviour. It is important for health workers to monitor how well the patient is achieving targets and to involve the patient’s family members.
- **Intersectoral collaboration to improve health is a key factor in raising public awareness and promoting community-based health programmes.** The outcomes of implementing the “Healthy Life” initiative showed that when the health care sector engages with stakeholders –local authorities, the government sector, local communities, women’s committees, youth leaders and the religious community – the likelihood of success increases. This engagement supports the efforts of the health care sector, especially in increasing the number of men attending NCD screening programmes.

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