

**Now more than ever:**

The contribution of nurses and  
midwives to primary health care

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## A compendium of primary care case studies

38 case studies submitted by  
29 countries across the 6 WHO regions



Nursing & Midwifery  
Human Resources for Health

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Geneva 2009



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## 1. Introduction

The year 2008 is the 60th anniversary of the founding of the World Health Organization (WHO) and the 30th anniversary of the Declaration of Alma-Ata – a landmark in the global development of primary health care (PHC) (WHO and UNICEF 1978). As the 2015 deadline for achieving the Millennium Development Goals (MDGs) draws nearer, the WHO Director-General has called for “a renewed emphasis on primary health care as an approach to strengthening health systems”, building on the legacy of Alma-Ata and the challenge for health for all to help achieve the goals (Chan 2007).

Nurses and midwives took the Declaration of Alma-Ata to heart from the start and continue to put its principles into practice. Their contribution forms the backbone of primary health-care services worldwide. This is, therefore, an opportune moment to reflect on the role played by nurses and midwives in primary health care and on their contribution to its revitalization.

The current renewal of Primary Health Care includes four broad policy directions for reducing inequalities and improving health for all. These policy directions reflect a convergence between the values of primary health care, the expectations of citizens and the common health performance challenges that cut across all context. They include:

- Universal coverage that ensures that health systems contribute to health equity, social justice and the end of exclusion, primarily by moving towards universal access and social health protection
- Public policy that secures healthier communities, by integrating public health actions with primary care, by pursuing health public policies across sectors and by strengthening national and transnational public health interventions
- Leadership that replaces disproportionate reliance on command and control on one hand, and laissez-faire disengagement of the state on the other, by the inclusive, participatory, negotiation-based leadership indicated by the complexity of contemporary health systems, and
- Service delivery that re-organizes health services around people's needs and expectations, so as to make them more socially relevant and more responsive to the changing world, while producing better outcomes.

This service delivery transforms conventional health care delivery to primary care. Primary care has a number of distinctive features that differentiate it from conventional care. These features are person - centeredness, comprehensiveness and integration, effectiveness and safety, and continuity of care. Additionally, the following organizational conditions are essential to ensure that primary care presents these features , namely, the switch from specialized to generalist ambulatory care, with responsibility for a defined population; use of primary care team as a hub for coordinated care ; and the ability to coordinate support from hospitals, specialized services and civil society.

This Compendium of primary health-care studies is part of a year-long project led by the WHO Office of Nursing and Midwifery. Entitled Now more than ever: the contribution of nurses and midwives to primary health care, the project aims to maintain, improve and scale up the contribution of nurses and midwives to primary health care worldwide, within the context of the interprofessional team. The plan is to achieve this through a series of project activities:

- 1) to review the contribution – past and present – of nurses and midwives to primary health care worldwide;
- 2) to identify and disseminate care models, examples of best practice, and the common elements of successful primary care service delivery;
- 3) to recognize the contribution of nurses and midwives to primary health care worldwide, and provide incentives that facilitate the recruitment, motivation and resilience of front-line staff; and
- 4) to offer guidance on scaling up the nursing and midwifery contribution to leadership and policy-making in primary health care.

The overall project goal cannot be achieved, however, without the active support of fellow health workers, policy-makers, service managers, educators, researchers and, above all, the communities in which the services are located.

The target audiences for the project's deliverables will vary according to each product and activity, but will basically include nurses and midwives who deliver primary health-care services, other practitioners and support workers, service planners and managers, organizations of health professionals, training institutions, policy-makers and opinion-leaders, and civil society organizations that represent users of primary health-care services.



## 2. Purpose of the compendium

A compendium may be defined as “a book containing a collection of useful hints”, “a selection of objects in one container”, or “a comprehensive summary of a larger work”. This compendium has elements of each of these definitions. It summarizes and analyses primary care case studies collected from around the world, with particular emphasis on the contribution of nurses and midwives to the strengthening of health systems.

The compendium is designed to influence future progress by helping to fulfill the second project activity – to identify and disseminate case studies that provide examples of best practice in primary care worldwide and review them in order to discern the common elements of, and barriers to, successful primary care service delivery.

The compendium is the first step in an ongoing collection of primary care case studies and provides a selection of 38 exemplars that are both interesting and illuminating. This selection is by no means exhaustive, definitive or exclusive and WHO would like to receive many more such studies in the future.

### 3. Method

A call for case studies went out in late 2007 from the WHO headquarters Office of Nursing and Midwifery to the six WHO regional offices, the Global Advisory Group for Nursing and Midwifery and other partners. They in turn sought submissions from organizations and individuals that they knew to be involved in primary care. They used a standard template (attached as Annex 1) that requested information on the aims of the service, programme or project described in the case study, the type of work involved, the five major needs of the population served, funding and staffing arrangements, and the extent to which the service met the criteria for primary care advocated by the Declaration of Alma-Ata and subsequent WHO materials.


A total of 38 teams from 29 countries submitted responses. Table 1 lists the responses from each region and country. It shows the global spread of the studies and the wide range of settings, contexts, cultures and levels of development covered.

To facilitate a rapid overview of the diversity and complexity of the work undertaken by nurses and midwives, WHO made a summary of each case study and sent it to a designated contact person for validation. The summaries cover the aim of the project, staffing, funding and outcomes (where available) and are included in Annex 2.

**Table 1:** Case studies collected by August 2008

	Country	WHO region	Case study title
1.	Australia	Western Pacific	First Aboriginal nurse practitioner leads community dialysis service
2.	Bahrain (1)	Eastern Mediterranean	A vital role for nurses in the provision of primary care nationwide
3.	Bahrain (2)	Eastern Mediterranean	Long-term investment in nursing pays off
4.	Bhutan	South-East Asia	Primary care flourishes after a late start
5.	Botswana (1)	Africa	Promoting good health among university students
6.	Botswana (2)	Africa	Community-based services for prevention and care
7.	Brazil	Americas	Empowerment through community therapy
8.	Canada	Americas	Nurse practitioners serve medically deprived communities
9.	Chile	Americas	Telephone support for the self-care of chronic diseases
10.	China	Western Pacific	Nurse-led innovation in telehealth
11.	Colombia	Americas	An integrated, interdisciplinary and intersectoral primary care service
12.	Cook Islands	Western Pacific	Nurse practitioners facilitate equity and access
13.	Denmark	Europe	Improving the health of older people reduces hospital costs
14.	Eritrea	Africa	Partnership to improve the health of mothers and babies
15.	Germany	Europe	Family health nurses empower vulnerable populations
16.	Haiti	Americas	Shifting the focus from hospital to community
17.	Iran	Eastern Mediterranean	Primary care for all in rural areas
18.	Lebanon (1)	Eastern Mediterranean	Scaling up community nursing to improve children's health
19.	Lebanon (2)	Eastern Mediterranean	Educating nursing students through community participation
20.	Malawi	Africa	A primary care model for HIV prevention

	Country	WHO region	Case study title
21.	Mexico	Americas	Promoting health in a poor urban community
22.	Oman	Eastern Mediterranean	Strong government commitment brings long-term improvements
23.	Republic of Korea	Western Pacific	Community nurses more cost-effective than physicians
24.	Rwanda	Africa	Training for the future
25.	Samoa	Western Pacific	A community nursing model for population-centred care
26.	Saudi Arabia	Eastern Mediterranean	Nationwide focus on health promotion through primary care
27.	Slovenia	Europe	A multidisciplinary role model for primary care
28.	Tajikistan	Europe	Introducing family health nursing within national reforms
29.	Thailand	South-East Asia	Training nurses to work in their own communities
30.	United Kingdom (1)	Europe	Providing support to homeless people
31.	United Kingdom (2)	Europe	Developing a generic model for community health nursing
32.	United States (1)	Americas	Integrated care for people with mental illness
33.	United States (2)	Americas	Volunteer nurses fight cancer in a rural community
34.	United States (3)	Americas	Group antenatal care promotes breastfeeding
35.	United States (4)	Americas	Drop-in primary care clinics boost child immunization
36.	United States (5)	Americas	Encouraging active living and healthy eating
37.	United States (6)	Americas	Nurse-led primary care reduces risk of noncommunicable disease
38.	UN Administered Province of Kosovo	Europe	Professional training oriented towards the provision of primary wcare in a post-conflict setting



Following the preparation of the summaries, each case study was analysed to identify its key themes. Data on the main needs of the populations served and the extent to which the projects met primary care criteria were collected and compared. For reporting purposes, the primary care elements included in the template stipulated that each service, programme or project should:

- provide essential health care based on practical, scientifically sound and socially acceptable methods and technology;
- be universally accessible to individuals and families;
- involve full participation of the community;
- have a cost that the community and country could afford to maintain;
- foster self-reliance and self-determination;
- be an integral part of the country's health system and overall development; and
- have an entry level for patients located close to the heart of the community.

This report is structured on the basis of the above criteria – the focal activities of the case studies, the main needs of populations with nurse and/or midwife-led primary care services, and key themes arising from the data organized according to the priority areas identified in the WHO eleventh general programme of work 2006–2015, Engaging for health (WHO 2006). The concluding section outlines pointers for success and barriers to be overcome.

Case-study contributors were requested to send their reports to WHO, together with any published articles, photographs and other materials relating to their projects and services. This rich and interesting source of information is too detailed for inclusion in the compendium. It has, however, been drawn on in compiling the summaries. It has also been indexed within a primary care nursing and midwifery bibliography that is being published separately as part of the Now more than ever project.

The focal activities  
of the case studies based  
on population needs





## 4. The focal activities of the case studies

Section 4 provides a brief overview of the range of issues covered by the case studies. It uses selected case studies as examples rather than listing each study that focuses on a particular issue. The summaries in Annex 2 provide a comprehensive overview of the focus of each study. The issues tackled in the case-study projects vary considerably in scope and scale, ranging from national primary care programmes (Islamic Republic of Iran, Saudi Arabia) to a school-based project run by a nursing faculty and a local community (United States [5]).

### 4.1 Prevention and control of locally endemic diseases

The services range from prevention and control of locally endemic diseases such as HIV/AIDS (Botswana [1, 2], Malawi), tuberculosis (Haiti, Samoa) and vector-borne diseases (Malawi, Republic of Korea) at one end of the spectrum, to prevention and management of noncommunicable diseases at the other (Chile, China, Cook Islands, United States [1]).

#### Box 1

**Prevention and control of locally endemic diseases:  
Promoting good health among university students (Botswana [1]).**

A 20-year-old student, who was raped and knifed during a short holiday in her home village in 2003, was counselled, treated and given support. Another third-year student was sexually abused by her stepfather; he infected her with HIV that she passed on to her child. She is now on antiretroviral therapy and the service continues to counsel and support her; her child is on a prevention of mother-to-child transmission programme.

## 4.2 Health promotion

Health promotion is a major focus of all the case studies, either in the services being delivered or as a competency factor in educational programmes.

### Box 2

#### Health promotion:

##### **Encouraging active living and healthy eating (United States [5])**

A middle-school student took part in a 12-week course on bicycle safety, maintenance and repair that was organized by the health promotion programme. He was subsequently offered paid employment by a Chicago park district programme to teach the skills he had learnt to younger children during the summer.

He continues to teach younger children about bicycle safety and maintenance and has helped build bicycles for several friends and family members. He has converted part of his family's garage into a bicycle repair shop and has helped many of his neighbours get their bicycles back in working order – thereby also promoting their physical activity. He has also built himself a bicycle from discarded parts and he uses it for all his local transport needs.

In another family the mother volunteered to be a “walking school-bus captain”, supervising 10 children to walk to and from school five days a week. She also became an AmeriCorps member and took responsibility for many healthy-eating activities at the school – these ranged from daily delivery of a healthy snack to 125 first-grade students, to developing a backyard garden and teaching gardening to her neighbours. Following her experience in this role she went on to be employed by a large local consortium addressing childhood obesity. She is planning to continue her education to develop a career in public health.

## 4.3 Promotion of food supply and proper nutrition, adequate supply of safe water and sanitation

Nutritional problems are regularly targeted for intervention. On the one hand, the problems relate to a lack of food (Eritrea, Haiti, Malawi) and, on the other, to poor nutrition and obesity caused by eating the wrong types of food (United States [5]). Some projects are involved in ensuring safe water supplies and basic sanitation (Colombia), particularly in areas of conflict (Eritrea, Kosovo, Lebanon [2]).

#### 4.4 Maternal and child health, immunization and school health

Maternal and child health is a major focus of many of the projects (Colombia, Eritrea, Oman, Thailand, United States [3]). Reproductive health care – such as the avoidance of teenage pregnancies (Samoa), learning breastfeeding and parenting skills (United States [3]), family planning (Islamic Republic of Iran, Republic of Korea), treatment of sexually transmitted diseases (United States [4]) and screening for breast and cervical cancer (Mexico, United States [2]) is frequent. Immunization is a standard intervention in all the programmes targeting maternal and infant health. In some situations (Lebanon [1]) immunization services are funded and supported by large national health promotion programmes; in others (United States [4]) they are linked to local initiatives such as immunization drop-in centres.

School health is a significant focus, with active involvement in school education, diet and exercise programmes (Bahrain [1], Botswana [2], Cook Islands, Samoa, United States [5]).

##### Box 3

**Maternal and child health:**

##### **Immunization and school health (United States [4 and 6])**

Marco, aged 15 and needing immunization, visited the clinic with his mother. He was born in San Francisco but had lived in Brazil for 12 years before returning to California. He had no immunization records or health-care coverage. He was given hepatitis A and B, mumps, measles and rubella (MMR) vaccine, varicella and tetanus immunizations and also a tuberculin skin test. He returned too late, however, for an accurate reading of the first skin test so he was given a second tuberculin test. The nurse was able to educate his mother on the importance of a valid test and, for the second reading, they returned in time. The second test was positive so Marco was evaluated for latent tuberculosis infection. The nurse documented his care, including the test results, and arranged a referral to the TB clinic at the county hospital. Through that referral, Marco and his mother received radiological evaluation and medication, and Marco was connected to a primary care clinic in their neighbourhood for ongoing care. The continuity of care and connection with the family ensured that this adolescent boy received prompt screening and vaccination appropriate for a new immigrant (United States [4]).

(continued on next page)

Juana, a pregnant woman, had recently emigrated from Ecuador to Michigan with her American husband. She became very depressed after the move, especially when one of her siblings died. The service provided Juana with counselling and support and, with its help, she safely delivered her first child. She later gave birth to two more healthy children and became an active volunteer with a local Hispanic group for new arrivals. Juana and her entire family remain patients of the service and she has had no further treatment for depression since that first year (United States [6]).

#### 4.5 Appropriate treatment of common diseases and illnesses

A regular feature of many of the services is the administration of appropriate treatment for common diseases and illness such as diabetes mellitus, diarrhoea, HIV, hypertension, skin conditions and upper respiratory diseases.

##### Box 4

##### **Appropriate treatment for common diseases and illnesses: first Aboriginal nurse practitioner leads community dialysis service (Australia)**

Following a haematemesis, gastric ulcer and complications, Mary, an elderly woman, was discharged from hospital to resume dialysis at a nurse-run dialysis unit in her rural community. The discharge summary described blockages in both her legs that required surgery because of painful leg ulcers that would not heal.

Mary was described as being non-compliant with her medication and diet. The nurse practitioner identified several components of Mary's care that could improve her wound healing if appropriately addressed. Mary had lost a lot of weight and her dry weight needed to be reduced to facilitate removal of the gross-pitting oedema that was decreasing the supply of nutrients and oxygen to the area and thus precluding wound healing. The nurse practitioner changed Mary's dialysis prescription to accommodate this.

Mary was also anaemic so the nurse practitioner corrected her iron deficiency by prescribing intravenous iron (uraemic patients do not absorb oral iron) and adjusting her erythropoietin to elevate her haemoglobin to normal – a strategy that also increases oxygen to help wound healing.



The nurse practitioner reviewed the barriers to Mary's adherence to prescription regimens and found that her medication to prevent soft tissue calcification was too expensive for her. After discussing this with Mary's family doctor, the nurse practitioner presented a number of possible alternatives that were less expensive and not calcium-based – calcium had also been a factor contributing to Mary's poor wound healing.

Mary's excessive drowsiness was leading to poor oxygenation. A review of her medication regime found that she was receiving endone, a substance that accumulates in dialysis patients. An alternative analgesic was therefore prescribed.

As a result of these interventions Mary lost 10 kilograms of fluid, her wounds healed, the vascular surgery on her legs was no longer necessary, and she took her (affordable) phosphate binders as prescribed. The success of this case was a result of the nurse practitioner's advanced knowledge of renal functions, skills in assessment, analysis, diagnosis and prescribing, and the fact that she had the legal right to perform these activities. The nurse was the lead manager of the patient; input from the general practitioner (GP) was required only for specific prescriptions.

#### 4.6 Provision of essential medication

The provision of essential medication varies significantly. In some programmes, for example, nurse practitioners are able to prescribe medication subject to its availability; in others the medication is supplied through national schemes (Cook Islands). Some services are able to supply specific medication such as antiretroviral therapy (Botswana [2]), while others have to go to great lengths to obtain medication for their disadvantaged communities. One organization established an "indigent pharmacy fund" for those unable to buy medication (United States [6]), while elsewhere nurses lobbied local drug company representatives to obtain medication through "compassionate use" programmes or samples (Canada).

Nurses who are able to provide medication opportunistically when they treat disadvantaged or hard-to-reach patients are a valuable front-line resource. To make the best use of nurses' access time with homeless patients one service (United Kingdom [1]) has enabled its nurses to attend an approved prescribing course (Department of Health (England) 2006). Another country (Bahrain [1]) is working towards legislation to enable nursing staff to prescribe medication.

## Box 5

### Provision of essential medication:

#### **Providing primary care to homeless people (United Kingdom [1])**

Bill, an otherwise healthy 33-year-old homeless man, presented to the service with diffuse swelling of his feet and ankles. He had pain and redness over the dorsum of his right foot and felt slightly feverish. Tender oedema and redness extended up the pretibial area. His skin was macerated between the toes and fissures were present. He reported that he had no allergies, that he did not use illicit drugs, and did not take any prescribed, over-the-counter or complementary medication. He said that he drank about 12 units of alcohol a week and smoked 10 cigarettes a day.

Cutaneous disease is a frequent cause of morbidity in homeless people. It may present as a minor problem but with neglect, compounded by difficulties in gaining access to acceptable health care, it may result in a disabling and life-threatening condition. Frequently-occurring skin conditions include trauma, gas gangrene, leg ulcers, frostbite and scurvy. The Homeless Health Service allows suitably qualified nurses to spend the time necessary to build relationships with the homeless men and women, undertake medical and social history surveys and to perform the required clinical examinations to arrive at a working diagnosis, achieve agreement and prescribe medicinal products and make referrals for ongoing medical and social care.

An empirical working diagnosis of uncomplicated cellulitis was made for Bill. The prescribing nurse was then able to issue a prescription for an antibiotic with a good safety and side-effect profile to which he was not known to be allergic. Guidelines on dosage, frequency and duration of treatment were followed. Clotrimazole 1% was included on the prescription for treatment of an accompanying tinea pedis. Bill also saw the team podiatrist.

The experience of this service shows that using traditional nursing communication skills to optimize compliance with treatment, together with advanced assessment and prescribing skills, assures quicker access to treatment and also leaves medical practitioners free to devote their time to more complex cases. Early treatment means less discomfort for the patient and prevents costly secondary care interventions.

#### 4.7 Provision of mental health services

Another common aspect of primary care is the provision of mental health services by nurses. This features in work with homeless people (United Kingdom [1]), victims of domestic violence and rape (Botswana [1, 2], Colombia, United States [6]), and people suffering in the aftermath of war (Kosovo). Nurses provide group therapy and counselling for local communities as a result of needs assessments based on family visits and community consultations. In one community (Lebanon [2]), for example, a survey of 447 households representing 2234 people led to the establishment of health services in six schools, psychological consultations for 50 people, and 30 health education lectures for children, adolescents and parents. Primary mental health care was offered to people with serious mental illnesses (United States [1]) and to communities struggling with poverty and isolation (Brazil).

##### Box 6

##### **Provision of mental health services:**

##### **Empowerment through community therapy (Brazil)**

The Paraíba community therapy programme helped Juanita, married to a violent alcoholic, to strengthen her resolution to no longer submit to the domestic violence that she had been victim to. The counselling increased her resources and gave her the ability to live peacefully with her husband.

#### 4.8 Telehealth

Telehealth care is an innovative mechanism described by two projects as a strategy for delivering primary health care. In a telehealth programme for people living with type 2 diabetes (Chile), four nurses provide telecare support through programmed outbound calls. They use motivational interviewing and provide decision-making support, 12 hours a day, 6 days a week. The effect of this nurse-managed telephone support was studied in terms of the patients' self-efficacy, perception of health, healthy eating, physical activity, foot care and use of the health services. Eight months after the programme started, a significant improvement was observed; the patients in the experimental group improved significantly with respect to their perception of self-efficacy, the number of days of healthy eating, and the quantity and quality of foot care.



In another service extending from Hong Kong to rural areas in mainland China, telehealth nurses take care of healthy communities and people with subclinical symptoms and chronic conditions such as diabetes mellitus, stroke, incontinence and pain. The service includes health assessment, maintenance of a lifelong health record, motivational interviewing, symptom and disease management, rehabilitation, health enhancement and health education (China).

#### **Box 7**

##### **Telehealth:**

##### **Telephone support for the self-care of chronic diseases (Chile)**

A nurse in a Santiago service made a follow-up telephone call to Maria, a patient who had recently changed from oral hypoglycaemic drugs to insulin. Maria said that she had attended a training programme in the primary health-care clinic to learn how to use insulin and was quite sure that she was doing everything correctly. She mentioned, however, that she had to buy an additional two or three bottles of insulin every month because the dose she received from the outpatient clinic was not enough. The nurse worked with Maria over the phone to clarify the number of insulin doses required and Maria then realized that the amount of insulin she received at the clinic was, in fact, sufficient to last until she was eligible to receive more medication.

Owing to her long working hours, Maria had difficulties attending the clinic. She could not go in person to make an appointment and appointments could not be made by telephone. The telecare nurse, therefore, sent an e-mail on her behalf to the nurse in the cardiovascular health programme. This nurse then rearranged her timetable so that she could check Maria's insulin technique and correct her errors. Without the telecare intervention, Maria would have had to wait two months for her normal check-up before she had an opportunity to inform the nurse of her problem. She could have also received inappropriate and possibly risky insulin doses during that period.

#### **4.9 Health promotion for the elderly and the prevention of noncommunicable disease**

Keeping people as well as possible despite chronic disease is another significant objective of primary care. Active health promotion in the elderly is a feature of the Skævinge project – a project that started in a single municipality



but subsequently became a national primarycare activity (Denmark). The Skævinge approach also been adopted in Japan. Other programmes have been designed specifically to support people living with diabetes (Bahrain [1, 2]), cardiovascular disease (United States [1]) and renal disease (Australia), and to work with groups where high disease rates of cervical cancer (United States [2]) and substance abuse (United Kingdom [1]) are prevalent.

#### Box 8

**Health promotion for the elderly and the prevention of noncommunicable disease:**

**Family health nurses reach and empower vulnerable populations (Germany)**

Eda is a widow of 60. She has five children, 21 to 37 years of age, and cares for her 94-year-old father who lives with her and suffers from dementia. Eda has cardiac problems and finds it stressful to be constantly available, taking care of her father 24 hours a day with little support from her children. The intervention of the family health nurse relieved the situation by improving communication within the family, reinforcing the social network, and involving an external home-care service. As a result, hospitalization of the father has been avoided. Eda receives more support from family members and now has time to leave the house to go shopping, work, and participate in the meetings of a self-help group for carers.

#### 4.10 Preparation and support of an appropriately qualified primary care workforce

The development of a suitably qualified and skilled workforce is a critical issue in the establishment of primary care. Several case studies describe programmes engaged in training nurses for primary care roles (Bahrain [1, 2], Cook Islands, Germany, Kosovo, Tajikistan, Thailand, United Kingdom [2]) (see also section 6.6 below).

Another practical professional development solution is the education and introduction of nurse practitioners who are able to case-manage groups of patients from admission through to treatment and referral or discharge (Australia, Canada, China, Cook Islands, Republic of Korea, United States [1], [2], [4], [6]).

Others reported on the development and support of a range of paid and unpaid workers who undertake primarycare work. Providing educational

support for traditional birth attendants and integrating them more fully into health-care teams, for example, is a key feature in the strategies to improve maternal, infant and reproductive health (Eritrea, Haiti, Samoa).

Other programmes support and train volunteers – faculty staff and students, parents and other community members who donate their time and are willing to translate, teach, work and deliver basic care to work in community projects (Eritrea, Haiti, Lebanon [2], Malawi, Thailand, United States [1], [2], [5], [6]).

The case studies partly capture aspects of task shifting – described as a process of delegation whereby tasks are moved, where appropriate, to less specialized health worker. The crux of the issue in the case studies, however, is task legitimization and support, rather than task shifting. Task shifting is a current subject of international debate (see, for example, WHO 2008).

#### Box 9

**Preparation and support of an appropriately qualified primary care workforce:**

**Nurse practitioners facilitate equity and access (Cook Islands)**

With the aim of decreasing the current rate (9%) of infant and maternal mortality rate, women in labour are well cared for – every woman admitted to the maternity ward is always attended by a midwife.

Another well-cared-for group of patients live on the outer islands where they are served by nurse practitioners. Three islands in the Northern Group have been served by nurse practitioners for 18 years. The services of the nurse practitioners have been recognized as superb and their success has contributed to the establishment of a second nurse practitioner programme (now in progress).

## 5. Main needs of the populations served

The case-study contributors were asked to list the five main health needs of the populations served. They were not asked to rank the needs so, for reporting purposes, each need is taken to be equal. The replies indicate that many services have undertaken detailed needs assessments before implementing their projects. Some of the assessments were based on individual needs (United Kingdom [1], United States [3]), some were group-based (Denmark, Mexico, United States [5]) and some were community-based (Bahrain [2]). As the focus of the needs must perforce reflect the focus of the project, there is some overlap with the discussion in Section 4 above. However, the groupings set out in Table 2 are both significant and reasonably consistent in type.

Only three of the needs identified do not fit neatly into the above categories. They are, however, worthy of mention. Even though they are not among the top five needs identified for most communities, they are important needs and emerge in subsequent discussions in this report.


The first of the additional needs is the need for adequate staffing. Several projects identified improved retention of staff as a successful outcome, perhaps suggesting that the primary care model contributes to job satisfaction (United Kingdom [1], United States [1]).

The second is the need for good research and data to inform the projects – it is important to know whether interventions are effective and efficient; this requires rigorous research and measurement.

The third is the need for clear and unambiguous policy commitment. This underpins almost all aspects of the basic social and infrastructure category of needs and is discussed in more detail below.

**Table 2:** Top five needs of the populations served in the case studies

Overarching category	Actual needs identified by respondents (n)
Needs of the chronically ill and the elderly	Health education and disease management support for people living with noncommunicable diseases (NCD) such as diabetes, hypertension and cancer (33). Home care for the elderly (4). Continuity of care for the elderly and those with NCD (3). End-of-life care (including HIV/AIDS) (2). Rehabilitation (2). and those with NCD (3). End-of-life care (including HIV/AIDS) (2). Rehabilitation (2).
Basic social and infrastructure needs	Disease prevention (unspecified) (9). Adequate food (8). Prevention of communicable diseases (6). Financial support to access health care (6). Adequate water (5). Essential medication (4). Prevention of HIV/AIDS (4). Advocacy for resources (3). Dental care (3). Literacy (3). Adequate hygiene habits (2). Adequate shelter (2). Malaria prevention and control (2). Children’s eye care (1). Podiatry (1).
Psychological and mental health needs	Belief in and ability to effect self-care (11). Counselling and psychological support (10). Reduction of social and familial isolation (7). Reduction of substance use and abuse (6). Leisure and sports activities (3). Support to obtain and keep employment (2). Domestic and gender violence (2). Increase of self-esteem (2). Cultural respect and safety (2).



Overarching category	Actual needs identified by respondents (n)
Maternal and child health needs	<p>Family planning, screening, sexual and reproductive health (10).</p> <p>Reduction in maternal and infant mortality (9).</p> <p>Immunization (7).</p> <p>Antenatal and postnatal care (6).</p> <p>Child health, parenting skills, breastfeeding (6).</p> <p>Childhood obesity (4).</p> <p>School health (2).</p>
Acute care needs	<p>Accidents, trauma, war injuries (7).</p> <p>Asthma management in children (2).</p> <p>Acute front-line care (8).</p>

## Key themes arising from the case studies



## 6. Key themes arising from the case studies

Analysis of the case studies has revealed a number of themes that relate not only to the nature of the work being undertaken, but also to how it is undertaken and what helps or hinders it. These key themes match some aspects of the priority areas identified in Engaging for health, WHO's general programme of work for 2006–2015. The global health agenda ranges from the political to the clinical. All the priority areas are therefore not addressed in the predominantly clinically-based case studies. However, many key themes do align coherently. They are set out in Table 3 and will be discussed in turn.

**Table 3:** Alignment of key case study themes with WHO's global agenda (WHO 2006)

WHO priority area	Key themes from case studies
1. Investing in health to reduce poverty	Variability in investment. Funding strategies and sustainability. Role of the charitable and voluntary sectors.
2. Building individual and global health security	The educational role of nurses and midwives. Ways of working with communities – co-production of health.
3. Promoting universal coverage, gender equality, and health-related human rights	Use of technology to promote coverage. Working with women. Ensuring access in rural areas, free at point-of-service delivery.
4. Tackling the determinants of health	Education in schools and communities.
5. Strengthening health systems and equitable access	The role of universities. Cross-country support.
6. Harnessing knowledge, science and technology	Use of technology. Use of new and emerging nursing roles.
7. Strengthening governance, leadership and accountability	Preparing future leaders through education.


## 6.1 Investing in health to reduce poverty

Engagement for health highlights the commitment of governments to poverty reduction as a factor central to primary health care. This commitment is evident in some of the case studies where public health services are offered free at the points of access (Bahrain, Canada, Islamic Republic of Iran, Oman, Saudi Arabia, Slovenia, United Kingdom). Other projects, however, even in developed countries, have complex processes to raise funds to provide the services. This is a marked feature of projects in the United States – in one project, for instance, up to 20 funding and in-kind donation sources were used to implement a project that aimed to bring essential screening to women in a community where the mortality rate for cervical cancer was 51% higher than the national average, and a third of the population in the region lived below the poverty line (United States [2]).

Securing reliable and sustainable funding to cover the screening and provider costs is an ongoing challenge. Some projects are completely or predominantly funded through the charitable sector (for example Chile, Haiti and the United States). A nursing college project working with a poor community in Chicago (United States [5]) sought its primary funding from the Robert Wood Johnson Foundation and supplemented it by a total of US\$ 68 000 with grants from no less than 16 funding sources and a further 13 in-kind donation sources. This enabled the leaders to leverage and increase the original funding from the Robert Wood Johnson Foundation by well over 500% – a commendable effort. Yet the time required to raise the funds and undertake the administration and reporting required for so many donations took the nurses away from much-needed care delivery.

A number of projects are funded partly by the government and partly by aid agencies or charitable bodies (in Botswana, Chile, the Cook Islands, Eritrea, Lebanon and the United States, for example). Still others have been established as research projects, funded by grant-making bodies or other nongovernmental organizations (in China, Denmark, Kosovo, Malawi and Tajikistan, for example). Some have been successful, with the project being taken over and funded by the government once the efficacy of the intervention has been demonstrated (Denmark, Kosovo). Universities have funded some projects as part of their social and community commitments – at the University of Botswana, for example, a programme of health education for students was established by the university and later supported by the government (Botswana [1]).





Volunteering is also a feature of many of the projects. In Lebanon the university president called on professors, administrative staff and students to work for a project on their days off (Lebanon [2]). The project was thus funded on a pro bono basis and all staff gave of their time and expertise voluntarily. It provided an opportunity for faculties to link theory to practice and allowed students of all disciplines – particularly nursing and midwifery – to consolidate the acquired competencies and knowledge while providing a direct service to the population.

## **6.2 Building individual and global health security**

Many case studies focused on building individual health security, with nurses and midwives taking leading roles in health education and promotion, and disease prevention. The nurses and midwives often took the education programmes directly to the communities where they focused on those who were unable to afford services or unable to attend clinics because of family commitments, distance or illness. They also accessed groups who were known to be reluctant to access health care or were simply unaware of what was available. Once the nurses and midwives had built up rapport and trust, they were able to encourage these communities to seek other health care where available and appropriate.

In a programme in central London that specifically targets homeless people, aiming to address inequities and provide assistance to maintain health, nurses take opportunistic drop-in services to this hard-to-reach group (United Kingdom [1]). The population served has complex needs and includes refugees and asylum-seekers. During the period described in the study, 80% were men, and nearly half of them had previously been in prison. Over a period of two years the programme served 1695 clients and provided 5812 consultations that led to ongoing counselling and podiatry consultations for a number of clients. The programme – partly a response to the heavy use of hospital emergency departments by homeless people – resulted in a drop in emergency attendance among this sector of the population.

Taking services to people who would otherwise be disadvantaged by distance and/or illness is the goal of a programme in Botswana that has established community clinics within 5 kilometres of most villages. The clinics are staffed by volunteers, many of whom are retired nurses (Botswana [2]). The clinics provide front-line information (including advice on HIV/AIDS, diarrhoea, malaria and noncommunicable diseases), education, services (such


as antenatal and postnatal care and children's immunization services) and community home-based care. They also dispense food baskets for HIV/AIDS patients and the destitute.

An intervention programme in Antioquia (Colombia), based on a needs assessment of each family in the community, was run by 14 community health nurses, including nine professors who also worked as community coordinators. The results of the needs assessment indicated the following:

- subsistence: high unemployment, poor housing and, especially in rural areas, consumption of non-potable water and inadequate hygiene habits;
- protection: weak self-care and home-care notions and concepts among family members related to limited access to services and educational, social and cultural programmes and projects;
- affection: the communities spoke of mental-health burdens arising from domestic violence, depression, alcohol consumption and other addictive behaviours;
- participation: few networks for social support and very little participation in decision-making processes in the formal community groups;
- leisure: little participation in leisure activities, and a lack of sports and leisure facilities.

As a result of the family visits and the needs assessments, the State PHC Model was used to develop various strategies, including education programmes and referral to the Environmental Protection State Office. Exercise programmes were introduced, increased leisure spaces were provided, and a food and nutritional improvement programme was established for the most vulnerable sectors of the population. The project also addressed maternal and child health, immunization, sexual and reproductive health and screening, and was funded as a high priority by the government. In 2006, 55 799 families in Antioquia were assisted; by 2007, 77 436 families had been visited at least once and care plans had been developed for 26 678 families. In addition, 34 793 family referrals to different social development services were made in 2006, and 59 457 in 2007. These are all indicators of the expansion of the programme's coverage.

In the Cook Islands, a group of 15 islands scattered over 240 square kilometres of ocean, nurses provide care on all but one of the populated islands. The care is based on six key principles: to improve the health of children by



reducing the mortality and morbidity rate; to improve the health of young people through reducing the incidence and impact of risk-taking activities; to improve the health of women through reducing maternal mortality and morbidity; to improve the health of men through reducing the incidence and impact of noncommunicable diseases; to strengthen health support services for older people; and to strengthen health services which support independence for people. These services are provided by nurse practitioners on the more remote islands and by registered nurses throughout the other islands. Postnatal visits are made and home visiting is also provided for the elderly.

Community health nurse practitioners in the Republic of Korea deliver primary health care to rural communities and serve as practitioners in regional centres that they staff and manage. They are registered nurses who have received six months' additional training to allow them to provide the following services: diagnosis and treatment of common illness; patient transfer and referral; management of trauma and emergency; management of chronic illness; normal labour and delivery; insertion of intrauterine devices; administration of immunizations and medication. Many of the nurses function as community development agents and are thus able to improve not only the health status of the community but also the quality of the environment and living standards. There is no difference between the care provided by nurse practitioners and physicians in terms of content and process. Two independent research studies have reported that the primary care services provided by the nurses is of the same quality as that provided by the physicians and is more cost-effective.

Primary care programmes in Bhutan are run by nurse-midwives in basic health units and outreach clinics. They have achieved 90% immunization coverage, and manage to provide basic health-care services to 90% of the population, despite the extremely difficult terrain and the scattered population, segments of which are inaccessible. Among other achievements, data for 1984 and 2006 show that the average life expectancy has increased from 46 years in 1984, to 67 in 2006; the infant mortality rate has decreased from 103 per 1000 live births to 40 per 1000, and the under-five mortality rate has decreased from 162 per 1000 live births to 62 per 1000.

The Skævinge project (Denmark) had two aims: to offer health and social services to an entire municipality, and to give priority to supporting the individuals' potential to maintain and strengthen his/her health and quality of life. Self-managed groups organize teamwork and a better-structured care process; this in turn gives each staff member more responsibility.


Ten years after the project became permanent, a follow-up evaluation compared data from 1985 and 1997, focusing on the health status, use of services and activities of daily living for people 75 years and older. In 1997 the individuals' assessment of their own health was significantly more positive (41%) than that of their peers in 1985 (29%). A key factor contributing to this change is the long and in-depth process of attitude-changing to ensure that each person feels ownership and accountability for his/her health.

As a measurement of hospital use, the average bed-day rate per person was used. The findings show that the use of somatic bed-days among the target group was lower in this area than for the rest of the country in 1990 and 1994. The municipality's health department was able to reduce its running costs in a period when the number of people aged 75 years and over grew by 30% (Wagner 2001).

### **6.3 Promoting universal coverage, gender equality, and health-related human rights**

The ability to make a serious impact on universal coverage, human rights and gender equality requires macro-level input: political will, government commitment and substantial, sustainable funding. At the micro-level, nurses and midwives work to address these issues with communities across the globe. Examples include, but are not limited to, the following: working with women in the Appalachian mountains to address health-care disparities related to cancer incidence and mortality (United States [2]); working with women attending university to reduce the incidence of gender violence and concomitant transmission of HIV (Botswana [1]); working with and through traditional birth attendants in rural Africa to reduce female genital mutilation and improve birthing practices (Eritrea); and providing comprehensive services to people in remote and rural areas (Islamic Republic of Iran).

One case study provides a good example of how a health programme can also introduce strategies to promote gender equality and teach negotiation and advocacy skills (United States [3]). CenteringPregnancy® aims to increase the psychosocial well-being and healthy behaviour of disadvantaged women in Chicago as a strategy for reducing adverse maternal and infant outcomes and disparities among racial/ethnic groups. It is based on woman-centred care and the empowerment of women throughout their reproductive lives; it draws on concepts of midwifery care, feminism, social support theory, and self-efficacy theory. All antenatal care providers (group facilitators) are nurse-midwives, and co-facilitators are nurses and other clinic support staff.



For obstetrically low-medical-risk women, the project has adopted a group-visit model that provides: more health promotion; group peer support; a collaborative patient-provider relationship; and self-management training and activities. Women are taught to perform self-care activities and try out new skills in the supportive environment of the group. They also have access to information that is typically not shared, such as their medical charts. Group concerns set the priorities for the educational sessions. The women are encouraged to participate in decision-making and learn to advocate for themselves and their families. All these strategies emphasize self-determination and partnership between provider and patient.

In the pilot study 110 women received group antenatal care. Women reported that they enjoyed sharing their pregnancy experience with other women. One said, “I loved the program because every time you come you can share your story.” They appreciated the fact that group members were people like themselves and felt that they learned about pregnancy by sharing experiences and concerns. Another woman said, “I learned a lot about the pluses of breastfeeding ... I changed my mind ... I’m still breastfeeding my baby.” Compared to women in individual care, women in the study attended significantly more antenatal visits (9.7 versus 8.3) and gained significantly more weight during pregnancy (32.2 pounds versus 28.5 pounds). They were also significantly more likely to have initiated breastfeeding during hospitalization (59% versus 44%). At hospital discharge, 44% of the women were exclusively breastfeeding, compared to 31% of the women in individual care.

The notion of health as a human right was the foundation philosophy of the Declaration of Alma-Ata. Key features of many of the case studies are the methods and processes for engaging with individuals and communities to develop awareness of human rights issues. Many reflect an approach in which the individuals and community groups are treated as the experts, particularly in relation to their understanding of their own environment or their disease and its impact on their lives and needs.

This active relationship between health professionals and communities was recently described as the “co-production” of health. The broad definition formulated by Bouvard (2007) builds on a number of earlier definitions, particularly that of Joshi and Moore (2003):


“... the provision of services through regular, long-term relationships between professionalised service providers (in any sectors) and service users or other members of the community, where all parties make substantial resource contributions”.

The co-production of health forms part of a continuum of community engagement, with the activities differentiated by the purpose for which engagement takes place (Popay 2006). Information provision and exchange lie at one end of the continuum, next comes consultation, then co-production and, at the far end, community control. Moving along this continuum, the approaches to engage with the community reflect an increasingly strong ethos of development and empowerment. The greater the participation, empowerment and control, the greater the impact on service outcomes, health status and the reduction of health inequalities.

The key philosophy underpinning co-production of health is that both parties – the health professional and the community member – bring the knowledge and expertise essential for influencing the determinants of health. This emerges in a personal reflection from the Slovenia case study: “Children’s personalities are, above all, formed at home (the family), in the kindergarten and by their neighbourhood. The most important role is played by their parents, who can provide them with a positive home environment at the psychological, physical and social levels. Thus knowledge obtained by parents during a baby’s antenatal and postnatal periods is of great importance. It enables organization of health-care services with health education and preventive activities.”

Another example of valuing local knowledge is the education and support of traditional birth attendants in Eritrea. They are selected on the basis of age, physical fitness and social acceptability before being trained and deployed by the community, members of the health facility and the women’s associations. Their value as people who bring knowledge and skills to the health endeavour is expressed by the case study author who writes that “... They are drawn from the community to serve that community. The TBAs [traditional birth attendants] bring on board community issues and concerns that they share with hospital management. This mechanism fosters full community participation in the planning and implementation of health services to the community.”

In Thailand, local organizations select and fund local people to study to become “nurses of and for the community”. The programme content is directly influenced by the health needs of the community to which they will return on completing their education. The first group of graduates returned to work in their respective communities in 2006. They are providing home-based care to chronic disease patients, elderly people, children, people with disabilities and other disadvantaged groups. They also provide care for people presenting with minor illnesses. Local surveillance is now conducted for



both communicable and noncommunicable diseases and health promotion activities are being implemented. This is already having an impact on the number of patients admitted to hospital.

A “community therapy” project in Brazil exemplifies a scenario where the community identifies its needs and the health professionals respond to the community’s agenda for health. Nurses work with community members who choose to attend a local therapy group to provide support and facilitated discussion. The work is based on Freire’s philosophy of resilience and liberty (Freire 1970). Community therapy is offered to anyone who is suffering; children, young people, adults and old people of both sexes take part in the meetings. Residents usually attend within their own community and the participants are mostly elderly adults, generally Catholic housewives who work at home or are retired, have low incomes and a low level of education. Meetings are held weekly and last two hours – about 25 people take part in each meeting. The service is provided by three professors of nursing from the Department of Nursing of the Federal University of Paraíba. Students in the graduate programme in mental health nursing, as well as postgraduate research students, are also involved. Participants generally show an improvement in their general health status, their capacity to maintain relationships and their social interaction skills. They also report feeling more empowered, self-determined and independent, with a greater sense of self respect and understanding of their limitations. The model is now being adopted in other communities in Brazil.

#### **6.4 Tackling the determinants of health**

Tackling the determinants of health, as stated in Engaging for Health, “... goes beyond the influence of ministries of health, and involves a large number of government and commercial responsibilities”. Determinants such as nutrition, water and sanitation, and reproductive health sit squarely within the work of the nurses and midwives in these case studies, as can be seen from the aggregation of activities in the identification of the top five needs (Table 2).


## 6.5 Strengthening health systems and equitable access

The most significant contribution to strengthening health systems that emerges in the case studies is, perhaps surprisingly, the major role of universities – both in initiating primary care projects and in providing skilled health professionals. This reflects the continuing worldwide process of bringing nursing and midwifery practice and education closer together, and the ever-expanding engagement of nursing and midwifery faculty as practitioners and researchers in new symbiotic relationships. Many of the projects have been initiated through university or college faculty nurses and midwives. The alliance between academic faculty and clinical practice is critical in developing innovation and providing rigorous evaluation and analysis. These projects have undergone quantitative and qualitative analyses of processes and outcomes. Some innovations of nursing and midwifery faculty are concerned with developing primary care services and projects in partnership with local communities, while others involve working with faculty in other countries to develop educational and clinical programmes.

A number of local primary care interventions involve the use of faculty to run clinical programmes that enable undergraduate and postgraduate students to practise under the supervision of clinical faculty staff. For example, the University of Illinois Integrated Health Care (IHC) Program, a not-for-profit nurse-managed centre in Chicago, is a vehicle through which faculty, family nurse practitioners and mental health clinical nurse specialists provide integrated physical and mental health care for people with serious mental illnesses who also have – or are at risk of – co-morbid chronic physical disease (United States [1]) (McDevitt et al. 2005).

Since 1998, the university's College of Nursing has worked with Thresholds Psychiatric Rehabilitation Centres to provide integrated primary care to mentally ill clients. As a faculty practice site, IHC supports undergraduate and graduate education of nurses and other health-care professionals. All its nurse practitioners hold faculty appointments in the university, serve as student preceptors, and participate in classroom teaching. The work of the IHC Program includes both physical and mental health care of the client group. An integral part of the work is the collection and analysis of data to ensure best practice. The faculty family nurse practitioners provide primary care with additional psychotherapeutic knowledge and skills. They bring an evidence-based community health-care approach to the IHC team. The faculty advanced-practice nurses are expert in group processes and in dealing with family conflicts; some prescribe psychotropic medication and conduct medication monitoring. Care delivery in the clinics is evidence-based:





the IHC Program has developed a robust database to support outcome monitoring, analysis and evaluation. This has led to modifications to care-delivery methods, education of members, and quality monitoring. Outcome data demonstrate strong uptake of the service and improvements within a range of physiological parameters.

As an example of international collaboration for strengthening health systems, a multisite project entitled “Mzake ndi Mzake (Friend to Friend) Peer Group Intervention for HIV Prevention: a PHC model” enables the primary care system and volunteer health workers to work on HIV prevention with adults and adolescents in rural areas (Malawi). The project was developed and implemented by nursing faculty at the University of Malawi Kamuzu College of Nursing and the University of Illinois at the Chicago College of Nursing in the United States. Nurses and community health workers play a crucial role as peer leaders in their communities and as trainers of peer leaders. To date the service has been funded through research grants from donors, including the Fulbright Scholarship Program (1999–2000), the United States National Institute of Nursing Research (2001–2008) and the World AIDS Foundation (2003–2005). Local funding is being sought to continue and extend the intervention to other sites.

The intervention delivery system is built on the primary care model of health worker– community collaboration. It integrates social-cognitive learning for behavioural change with cultural tailoring and gender sensitivity. It is organized and evaluated by the two faculties, and delivered by trained health workers and community adults who work in pairs as peer leaders. Six interactive group sessions are convened to discuss topics such as the need for HIV prevention, human sexuality, how HIV and other infections are sexually transmitted, prevention strategies, partner negotiation, correct condom use, and how to spread the message in the community. The team has trained 333 district health workers, 60 community leaders, 2242 adults and over 1500 young people in the rural communities, and 855 health workers in the urban referral hospital.

The programme coordinators in the two universities used a quasi-experimental evaluation design, comparing outcomes for health workers and community adults in the intervention district and a control district at three time points. To assess the impact at community level, independent random samples were drawn from the target communities, including adults and adolescents who had participated in the intervention and some who had not. Urban hospital outcomes were evaluated at baseline and, on average, 6.5 months

after the intervention. In terms of outcomes, improvements were observed in all the groups in terms of their HIV-related knowledge, attitudes to condoms and testing, self-efficacy for practising safer sex and talking with partners about HIV prevention, and community HIV-prevention activities (Norr et al. 2006). All adults showed more favourable attitudes to condoms. Risky sexual behaviours decreased among district health workers and adults, and condom use increased among sexually active adults and adolescents. Only urban health workers showed no change in safer sex practices. Urban and district health workers, however, showed improvements in universal precautions and client teaching.

In both these case studies support for primary care development came from the same source – the University of Illinois at the Chicago College of Nursing in the United States. As a WHO Collaborating Centre, the College of Nursing has a distinguished record of support for primary care in resource-poor settings. It has demonstrated sustainable commitment to local and international partnerships; this has in turn enriched the experience of its own faculty and students.

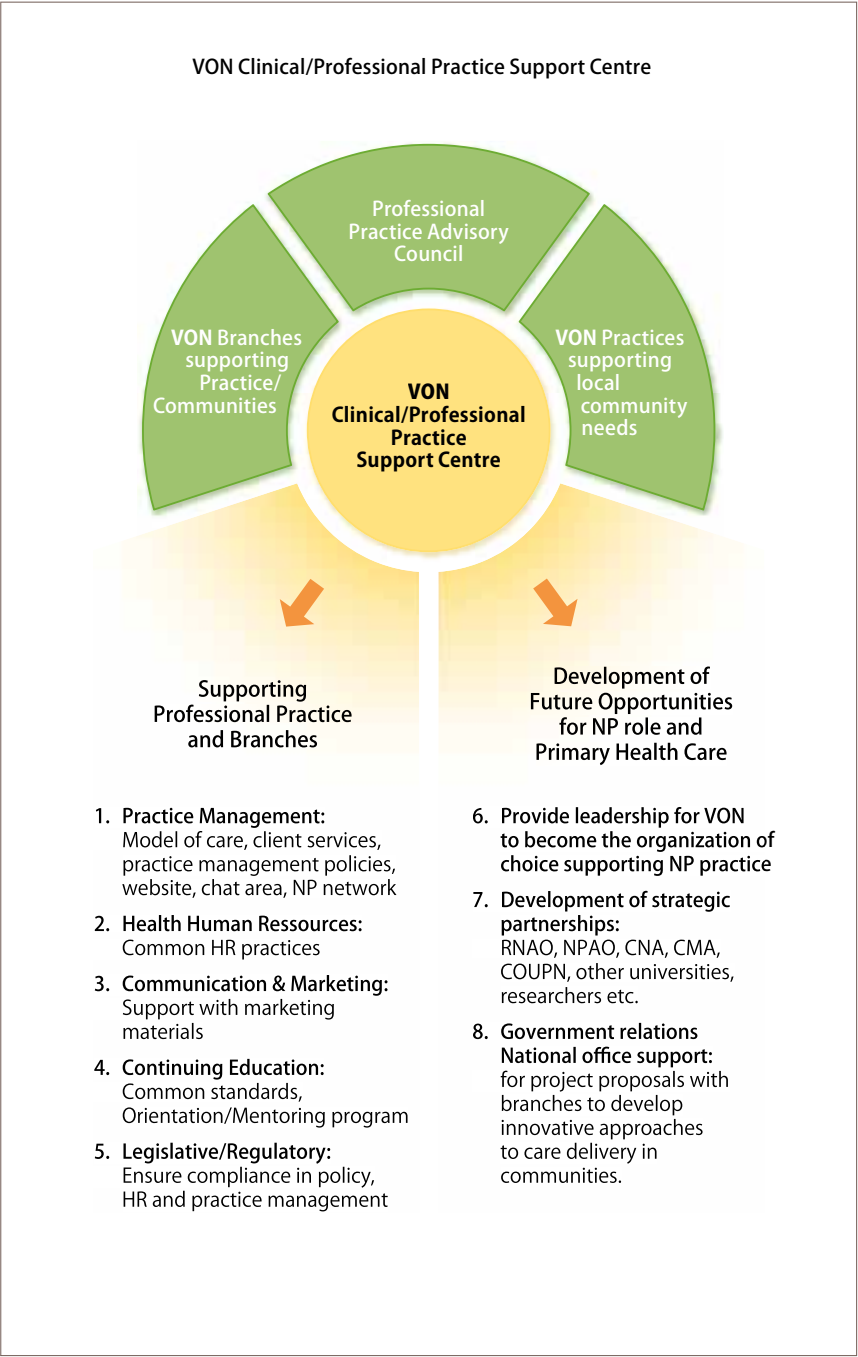
## **6.6 Harnessing knowledge, science and technology**

A number of the case studies exemplify the harnessing of knowledge, science and technology. The two telehealth programmes (Chile, China) are wonderful examples of how modern technology can take supportive health care to rural and hard-to-reach areas and patients.

Following a survey of students in Botswana that revealed that they were bored with the earlier HIV/AIDS education campaigns and that only 37% of them felt the previous methods of delivering safe-sex information were reaching them, the University of Botswana installed plasma screens to provide up-to-date information, education and communication (Botswana [1]).

In Canada many of the underserved areas where nurse practitioners are required to work are located far away from the urban areas where most nurse practitioners live and are educated. To address this challenge, the Victorian Order of Nurses (VON) has developed the Nurse Practitioner Clinical Professional Practice Support Centre, a virtual web-based environment which links all the nurse practitioners (Figure 1). It is led by a nurse practitioner and functions to provide comprehensive support to the role.

**Figure 1:** The Victorian Order of Nurses:  
Clinical/professional practice support centre, Canada




The Westminster Homeless Health Team works in partnership with three other organizations to provide a service that, with the help of an innovative shared information technology (IT) system, functions seamlessly. This system facilitates the maintenance of electronic records for all the homeless patients who are seen across the three arms of the service (including two specialist general practices for homeless people). It also ensures safe, quality care for a mobile population.

A team in Hong Kong that delivers telehealth services to mainland China is combining eastern and western medicine while developing a range of innovative technologies (see Table 4 for a list of its recent patent applications).

**Table 4:** Patent applications, Hong Kong

Filing date	Title	Patent Office / Application number
11 January 2007	System and method for administering medication	USPTO: 11/622,311
28 October 2006	Smart device for anti-sleep apnoea	USPTO: 1/553,998
29 May 2006	Method for predicting blood glucose level using a near-infrared spectral scan	PCT/IB2006/001142
4 November 2005	Smart wristband for sleep disorders	USPTO: 11/267,427
5 October 2005	Foot massage apparatus	USPTO: 11/244,254
24 May 2005	Opto-mechatronic acupressure pen	USPTO: 11/135,960
5 May 2005	Method for predicting blood glucose level using a near-infrared spectral scan	USPTO: 11/122,325

Another aspect of knowledge development relates directly to the new grades of staff and the skills required for work in primary care, as discussed briefly in Section 4.10 above. From the programmes being developed around the world, it is evident that specific skills are required to equip nurses and midwives to work in primary care. Although there is obviously some overlap, these skills do not necessarily mirror the skills required for working in acute care. It is necessary to move away from specialization to a more generic role.



This trend can be seen in the development of nurses – known as primary, family, community or integrated health nurses – in Bahrain, Bhutan, Colombia, Germany, Kosovo, Mexico, Rwanda, Samoa, Saudi Arabia, Scotland, Slovenia, Tajikistan and Thailand. All the case studies give details of curriculum content and processes, and are generous in their willingness to disseminate and share information. The roles involve all the aspects of primary care identified in Section 4. In Bahrain, Kosovo, Scotland and Thailand these programmes are being implemented nationally, in recognition of the fact that major investment purely in tertiary health care will not provide solutions to future demographic and workforce challenges.

Scotland's review of nursing in the community identified a new generic model as a way forward (United Kingdom [2]). It recommended that the disciplines of district nursing, health visiting, school nursing and family health nursing be absorbed into a new, single role – the community health nurse (Scottish Executive Health Department 2006). This new programme will be complementary to a universal child-health surveillance programme: following each child's assessment, care plans will be developed, where required, to meet the health needs of the child and family. Any member of the community may contact the nurse directly for health advice. As the authors of the Scottish family health nurse programme state, Scotland is changing and health services are changing with it. The demographic picture is of an ageing population with reducing numbers of people of working age. The project supports key policy objectives: a fundamental shift in the way the health service works, from an acute, hospital-driven service to one that has a community focus; a focus on meeting the twin challenges of an ageing population and the rising incidence of long-term ailments; a concentration on preventing ill health by equipping the health service to encourage and secure health improvement and “wellness”, rather than just illness; a drive to treat people faster and closer to home; and a determination to develop services that are proactive, modern, safe and embedded in communities.

This new discipline will build on the strengths of nursing in the community to:

- adopt a strong partnership approach with individuals, carers, families and communities;
- work as part of nursing and multidisciplinary, multi-agency teams;
- practise according to the seven elements of nursing in the community;
- focus on providing services that meet local needs, and complement and reflect national priorities, as set out in government policy.

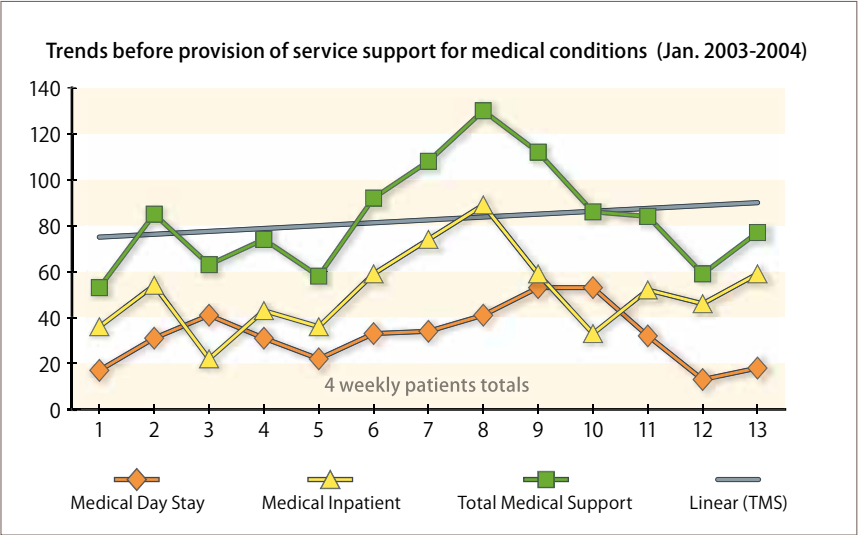
The health needs met by the “nurses of the community” in Thailand are diverse. It is recognized that they are area-specific and population-focused, with nurses conducting activities to:

- develop community social capital, including community culture, and identify the key actors in the community health-care system;
- assess the community’s health, including an assessment of the risks and problems;
- perform comprehensive community health interventions, care, services, and programme design and implementation; and
- introduce health policies and development agreements at local community level, and drive them at state and national level, for collaborative endeavours and actions.

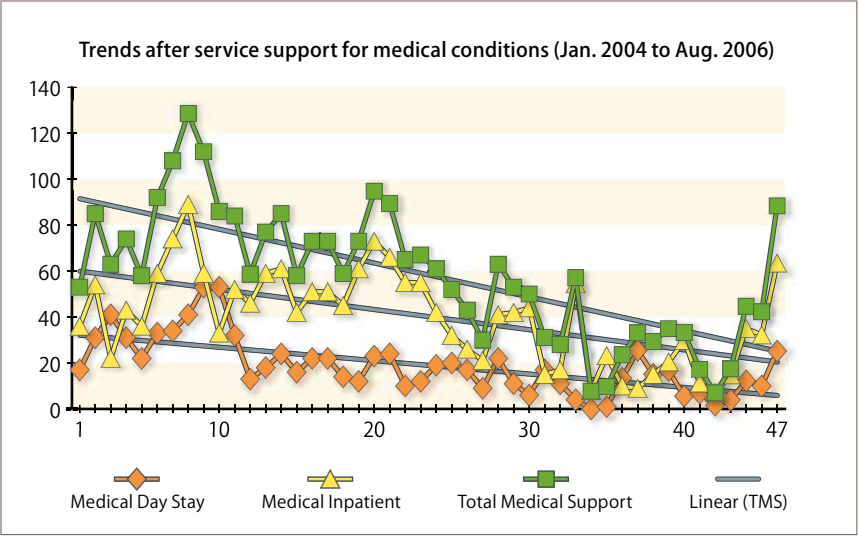
As well as highlighting the need to provide nurses with new skills to undertake these roles, many of the case studies identify the success of equipping and enabling appropriately educated nurses to work in advanced-practice roles, such as the nurse practitioner. The introduction of these roles may bring marked improvements in individual and community health outcomes. For example, Box 10 shows how a nurse practitioner in Ontario, Canada transformed the lives of an elderly couple.

Another fine example is an Aboriginal renal nurse practitioner in Australia whose work with indigenous and non-indigenous groups suffering from end-stage renal disease brought about significant health gains. The need for this role was identified as a result of the rising number of people needing acute dialysis 24 hours a day. A retrospective study of the causes of this rise suggested that 80% of the patients had risk factors that, if addressed early enough, would have prevented admission to the tertiary referral hospital for acute intervention. These risk factors were further examined and, when the diagnostic, clinical and referral skills required to address them were evaluated, it was found that the scope of practice of a nurse practitioner met the requirements. The review was a valuable tool in determining the needs of this group, in supporting a proposal for a new model of care in the community, and in developing the scope of practice that would address the need. The community nephrology nurse practitioner was able to develop and implement nursing models that integrated evidence-based clinical management with nursing advocacy for quality of life. The evaluation of this role has incorporated measurements that reflect new models of care, including models of care for cardiovascular stability and vascular access. The impact of the interventions is shown in Figures 2 and 3.

**Figure 2:** Impact of nursing interventions – trends in the year before provision of service support for medical conditions (dialysis) by nephrology nurse practitioners, Journal of Human Hypertension, Canada, January 2003 to January 2004



**Figure 3:** Canada: Impact of nursing interventions – trends after service support for medical conditions (dialysis) provided by nephrology nurse practitioners, Journal of Human Hypertension, Canada, January 2004 to August 2006





## Box 10

### Transforming health and lives:

#### **The nurse practitioner (Canada)**

Newly arrived in a small Ontario community, John, aged 70, attended the nurse practitioner clinic for the first time. He wanted his shoulder looked at as it had been causing him discomfort for the past week, especially when sleeping. He reported that he spent six hours a day in the local nursing home where he had recently had to place his 67-year-old wife, due to the challenges of Alzheimer's disease. He went on to say that he was still providing almost all her care because of his desire to do so, "from breakfast through to tucking her in at night". He said that he would like to begin to connect with the new community to which he had moved to be closer to his wife but he was limited by time and his shoulder discomfort.

While doing the physical assessment after completing his history, the nurse noticed that John occasionally had difficulty hearing her. Upon gentle questioning, he said that he had had this problem for several years and had been recommended hearing aids and possibly surgery. He had done nothing about it, however, as his wife's needs were the priority. Examination revealed some scarring and fluid behind his eardrum.


The nurse assessed him from all perspectives: he missed his wife and was not yet connected with the community; his hearing loss further complicated social interaction. She gave him a self-care information sheet and a demonstration of shoulder-stretching exercises; she also referred him to a physiotherapist, a physician specializing in hearing problems, and a dining club for older people.

As John continued to see the nurse for follow-up and further coordination of care, he began to express concern about the medication his wife was taking in the nursing home. He was upset at not being informed or involved before changes were being made. He wanted to take his wife back home but knew that the responsibility could be overwhelming. The nurse listened actively as he spoke of his hopes and fears, supports and challenges. He was screened for depression and tried role-playing a potential approach to the caregivers at the nursing home. He agreed to link with community resources to determine if it would be feasible to care safely for his wife at home. His shoulder discomfort was lessening

A month after his first visit, John returned to the clinic. He had seen the specialist and agreed to an attempt at surgical improvement of his hearing. He was

(continued on next page)





still saddened by his wife's placement but recognized that he needed to get all the support in place before making any significant changes. There had been a moderate improvement in his shoulder condition but his increased use of an over-the-counter anti-inflammatory medication was causing his blood pressure to rise. The nurse reviewed various factors that might also contribute to this change, and they agreed together on how to address it.

The following visit revealed progress. John was experiencing only occasional shoulder discomfort. He was enjoying the social aspect of seeing the physio-therapist and the interaction at the diners' club. Ear surgery was scheduled for a week away and he was expected to recover within a few weeks. Just in case, a hearing aid had been fitted. His blood pressure was now stable, although still in the "high normal" range.

The laboratory tests ordered by the nurse were normal so his blood pressure would continue to be monitored, but less frequently. After connecting with the community resources suggested earlier, John had decided that his wife could return home in a month. He and the nurse worked out what providers and services would be needed to support him and his wife. He was grateful that the nurse, with a geriatric specialist, would also be the regular health provider for his wife.

## **6.7 Strengthening governance, leadership and accountability**

One of the most significant features of the case studies is the way in which nurses and midwives at all levels in varied organizations have assumed leadership roles and taken up the challenge of leadership, sometimes with strong government and/or governance support, sometimes with little or none.

The role of key organizations in providing leadership in primary care is essential – not only to ensure adequate funding and infrastructure such as medication, travel, facilities and staffing, but also to ensure that the work of the nurses focuses on providing clinical and educational support rather than on fund-raising or lobbying. There are major policy implications in how primary care is integrated into economic and resource planning for health systems. This aspect requires careful consideration but is beyond the scope of this compendium.

Local nursing and/or midwifery leadership is a key feature of all the case studies and resembles what the Leadership for Change programme of the International Council of Nurses (ICN) calls “dispersed leadership” – namely the emergence of leaders and leadership at any level of an organization (Shaw 2007). The ICN programme identifies three key and equal elements of leadership that are also present in each case study: the person (or in most cases here, the people) who are the leaders; the setting of leadership; and the followers. The ICN programme is built on the premise that consideration of all three is required for effective leadership.

The investment required to implement primary care programmes effectively demands the evaluation, measurement and reporting of processes and outcomes so as to identify their efficacy and acceptability. This emphasis on process as well as outcome is a key feature of many of the case studies, as discussed in Section 6.3. For example, in the Skaevinge project, an action research approach was initially taken to engage the community (Denmark). Action research “... builds upon a democratic process and has flexible structures that are open to change and allows simultaneous evaluation of the process and results. In short it permits system-oriented research. This way it is possible to anchor changes in practice.” The basic characteristics of action research are described as collaboration between researcher and practitioner – resolving practical problems and changing actual practice, leading to the development of a local theory (Wagner 2001).

In this and many other projects in this compendium, rigorous evaluation was often made possible through alliances between clinical nurses, community members and academic researchers. The university colleagues were able to structure the projects to ensure formative and summative, quantitative and qualitative data collection. The need to be accountable is a highlight of many of the case studies, and relates both to those placing their trust in the clinicians by engaging in the primary care projects, and to those investing funds and infrastructure.



## 7. Conclusion: pointers for success

The contributors to the compendium were asked to offer pointers for success and to highlight challenges. Recurrent themes running through these pointers resonate with the elements of primary health care identified in the Declaration of Alma-Ata. There is much consistency across the studies in the identification of pointers for success so they have not been attributed to individual contributors.

The democratic engagement and empowerment of both staff and community was identified by most projects as a key requirement for success. This engagement and empowerment is essential for effective teamwork and accurate needs assessment. The degree of engagement required is highlighted in the discussion on co-production of health in section 6.3. Commitment and motivation are essential and can be built up through culturally appropriate and sensitive engagement with communities. Accurate needs assessments are also required by key stakeholders across the service sectors because the achievement of health is not considered to be the domain solely of health-care professionals, planners and policy-makers.

The need to build on existing local resources is seen as critical to success. This is part of the process of recognizing that services ought not to be imposed on communities, but developed in response to their identified and owned needs. Ownership of programmes by local communities is seen to be fundamental to sustainability and, furthermore, to build self-esteem and self-belief – factors that are also considered essential indicators of good health. Education and the provision of information are seen as primary care cornerstones because they enable all stakeholders to step up to the mark and meet expectations. This in turn fosters self-esteem and self-belief.

Projects need to have clear goals and to set out unambiguously the expectations of health professionals and community members. This should assure that outcomes can be predicted and measured, and expectations met and managed. Where projects cannot be delivered directly at local level, technological innovation provides access to hard-to-reach groups but the principles of engagement, empowerment and local needs assessment still apply.


Information and data are also identified as vital. Successful primary care projects need to: use evidence-based standards, guidelines and interventions; have access to shared electronic records and the Internet for obtaining

information; and collect good data on outcomes and demographics. Marketing of programmes and encouragement through feedback to participants are central to the programmes for the purposes of recruitment and publicity.

Education and information-sharing have already been highlighted as central to staff development, and Section 6.6 describes a number of new educational programmes around the world that are equipping nurses to take on primary care roles. Several contributors emphasized the need to have faculty engaged in the programmes so that students could be rotated through them, thus preparing the recruitment of future cohorts of nurses and midwives into primary health care and building a sustainable workforce. The programme in Thailand that trains nurses from particular localities in need, then supports their return to work back where they came from, is a particularly stimulating model that has tended to fall into disuse but is in need of revival.

Two key areas, considered central to the success of the case studies, presented challenges for a number of contributors. One was the issue of reliable and adequate funding and resources, including access to other resources such as medication, equipment, textbooks and staff. The other was the challenge of narrow thinking about the capacity of staff to take on new roles. This issue has been much studied and discussed (see, for example, Chiarella 2002). There are a number of reports of medical and some nursing staff having difficulty in letting go of conventional and stereotypical thinking about who ought to perform which tasks. This has been described in relation to affirmative action as the “myth of the meritocracy” – the possibility of work being taken on by another group, unless similarly qualified, is unthinkable because they are seen to be incapable of meeting the challenge (Hall 1997). Yet there is ample evidence and experience to show that different personnel and community members are capable of equal, high quality participation in health-care decision-making and delivery. Strong claims to maintain the status quo are often made on the grounds of safety and quality so it is important to gather evidence about outcomes to ascertain whether or not the resistance to change is based only on protecting professional power and privilege.

This compendium has presented and analysed 36 case studies from 29 countries from all corners of the globe. All the studies highlight the commitment to, and activity of, nurses and midwives in relation to primary care, an area where they are so often the front-line workers. These studies are by no means exhaustive. They do, however, present a valuable snapshot of current work and its preoccupations.



In this collection we salute not only the contributors, but also all those nurses, midwives and other health workers who strive daily to attain the vision of Alma-Ata.

The Compendium was done before the renewal of Primary Health Care got on the way and the production of the World Health Report 2008 on Primary Health Care: Now More than Ever. This work needs to be viewed in this specific global context. Follow-up activity is planned to ensure that this work contributes to the renewal of Primary Health Care with particular focus on putting people in the center of care.

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## Annexes





## Annex 1: WHO template for reporting case studies

Activity 2 of the project Now more than ever: the contribution of nurses and midwives to primary care is to publish a compendium of case studies that highlight best practice in primary care (PC) world-wide, with a focus on country-led delivery of front-line services and programmes by nurses and midwives.

Two or three studies will be collected from each of the six WHO regions and described within a common framework based on WHO indicators of good practice. This will facilitate comparison and identification of the shared elements of successful primary care service delivery, and will be used to encourage future progress. It is intended to collect studies from the full range of countries and settings – rich and poor, urban and rural.

### Tool: Template for data collection, based on WHO indicators of good practice

Please complete these questions to tell us about your primary care service, project or programme. You may include priority programmes on specific health problems (such as HIV/AIDS, malaria, or tuberculosis), projects on a particular health issue or for a specific target population, or general primary care services. All are relevant as long as you can show that nurses and/or midwives are playing a key role in delivering these services directly to patients and populations. You may use additional pages to add any extra information that you think is relevant. If possible, please also write a narrative of not more than 1000 words describing your service and its achievements. This information may be edited for use in a WHO publication, in which case you will be contacted. Thank you for your help in highlighting the contribution of nurses and midwives to primary care worldwide.

1. Basic data	To be completed by contact person
Name of institution/service/project	
Country	
WHO region	

1. Basic data		To be completed by contact person
Contact person	Insert your name, e-mail address, phone, fax, full postal address.	
Job title of contact person		
Name and title of the head of your service		
Date of this submission		
2. About your primary care service		To be completed by contact person
<b>a) A brief description of the service, including:</b> <ul style="list-style-type: none"> <li>• its aims and objectives,</li> <li>• what care model you use,</li> <li>• the staff working in the service,</li> <li>• the service provided.</li> </ul>		
<b>b) Type of service provided:</b> <ul style="list-style-type: none"> <li>• Health promotion</li> <li>• Promotion of food supply and proper nutrition</li> <li>• Adequate supply of safe water and basic sanitation</li> <li>• Maternal and child health care, including reproductive health care</li> <li>• Immunization</li> <li>• Prevention and control of locally endemic diseases</li> <li>• Appropriate treatment of common diseases and illnesses</li> <li>• Provision of essential drugs</li> <li>• Other</li> </ul>		
<b>c) Population served</b>	Describe your target population (number, characteristics).	
<b>d) Main health needs of the population served</b>	List the five main needs.	
<b>e) Staff</b>	List the staff groups delivering the service, with numbers of staff in each group, and qualifications if known.	
<b>f) Funding and budget</b>	Describe who funds the service, and its annual budget.	

2. About your primary care service		To be completed by contact person
g) External partners	Describe any external partners who support your service.	
h) Key activities/interventions: <ul style="list-style-type: none"> <li>• Service delivery</li> <li>• Monitoring and evaluation, including impact assessment</li> <li>• Education</li> <li>• Research</li> <li>• Other</li> </ul>	Indicate below which activities/interventions take place.	
i) Human resources for health (HRH) issues	Briefly describe any important HRH issues, such as shortages and migration, and any measures taken to recruit and retain staff.	
3. Dissemination		To be completed by contact person
		List any publications, videos etc. that describe your service, with references if available.
4. Primary care criteria		Describe briefly if and how your service meets each of these criteria
Essential health care based on practical, scientifically sound and socially acceptable methods and technology		
Universally accessible to individuals and families		
Involves full participation of the community		
Has a cost that your community and country can afford to maintain		
Fosters self-reliance and self-determination		
Integral part of your country's health system and overall development		
Entry level of patients is located close to the heart of the community		

5. Narrative		Write a narrative of not more than 1000 words describing your service.
<p><b>Include the following points if you can:</b></p> <ul style="list-style-type: none"><li>• why the service is important;</li><li>• whether it is innovative in your area;</li><li>• what makes the service successful;</li><li>• what role nurses and midwives play in its success;</li><li>• a specific example of a real patient and family who have been well cared for;</li><li>• evidence of what the service achieves: before-and-after; assessment/measurement of the specific outcomes it was designed to achieve within a specified time period;</li><li>• any lessons learned or recommendations for the future, and advice for others wishing to deliver a similar service;</li><li>• any other information you wish to supply (graphs and photos for inclusion in the final report are always welcome; if the photos contain people, please obtain their consent to publish before submission);</li><li>• anything else you think is important.</li></ul>		

## Annex 2: Case study summaries

### 1. AUSTRALIA:

#### **First Aboriginal nurse practitioner leads community dialysis service**

This regional community dialysis service is run by an indigenous nurse practitioner and supports approximately 300 indigenous and non-indigenous people. It provides renal replacement therapy for end-stage kidney failure in the form of haemodialysis or peritoneal dialysis. The service operates through five community satellite dialysis units, located within the 31 000 square kilometres covered by Lower Sector Hunter New England Health. The clients are cared for in settings where medical officers are not present – either at home or in one of the dialysis units. The nurse practitioner who runs the service works nationally with Aboriginal and Torres Strait Islander people who have chronic and end-stage kidney disease.

The programme aims to provide renal replacement therapy and prevent outcome complications – co-morbidities and the causal ailments of kidney disease and renal replacement therapy – while maintaining a quality of life that suits the client. The nurse practitioner covers all the units with phone contact 16 hours a day and renal nurses staff the satellite dialysis units and run a home-visiting service. Every five weeks each centre is visited – once by a nephrologist and a dietitian, and three times by a social worker.

The programme is funded through the Department of Nephrology. Funds raised through charity groups, pharmaceutical companies, nongovernmental organizations, friends and families have also been used to support related projects. These include a “bush tucker” farm project with a local high school and the reproduction of a book, written by the nurse practitioner, to help indigenous community members who have kidney disease and diabetes adapt healthy-eating advice to their traditional “bush tucker”.

The nurse practitioner service is important in many ways. It provides clinical support that was not previously available for nurses; it supports patients; it provides an interface between the various primary care providers (general medical practitioners, practice nurses, community nurses and Aboriginal health workers); it gives an opportunity for continuing professional development to other nurses; it validates effective nurse-led medical models; and it offers a vision of preventive primary care strategies.

The appointment of Lesley Salem, who holds the post of nurse practitioner, was groundbreaking – not only was Ms Salem the first nephrology nurse practitioner in Australia, she was also the first Aboriginal nurse practitioner in the country. She has raised professional and public awareness of health issues and the role of the nurse practitioner, facilitated the achievement of initiatives beyond those included in her job description, and helped establish projects that reflect the social conscience of the nursing profession.

## **2. BAHRAIN (1):**


### **A vital role for nurses in the provision of primary care nationwide**

This national programme is based on the principles that primary care be made accessible to all citizens and that the services provided are scientifically and socially acceptable. The programme's mission is to provide people of all ages with comprehensive, high quality family health care that is accessible, acceptable and continuous throughout their respective life spans. Free health services are provided to all, with minimum charges for non-Bahraini residents. Communities participate in the planning and delivery of health services through liaison with committees at the Ministry of Health of Bahrain and the health centres.

Primary care has developed rapidly over the last 30 years. There are 22 health centres throughout the kingdom. Most of the centres are open from 07h00 to 21h00; a smaller number are open from 07h00 to midnight; and one provides a 24-hour service. The budget is unspecified but is allocated by the government every two years.

The primary care is provided by nurses at the health centres, in home-care settings and in school health services. It is an integral part of the programme and plays a major role in the community. The goals of the nursing services are aligned with broader strategic directions: to provide optimal and holistic nursing care through enhancing and strengthening education, evidence-based practice, research, and continuous quality improvement in accordance with local, regional and international indicators.

Nursing services cover prevention, education, health promotion and leadership. The staff includes general nurses, triage nurses, specialist diabetic nurses, community health nurses, midwives and school health nurses. They work closely with other health professionals and each category has a clear role and scope of practice.



The outcomes are assessed through activity measures. The population appears to be well served by the programme. To highlight a few statistics: in 2006 there were 2.8 million recorded visits to the health centres; 64 700 antenatal visits; 4137 home visits; 18 486 visits to the diabetic clinic; nearly 492 000 vaccinations were given, and 114 600 children were screened.

### **3. BAHRAIN (2):**

#### **Long-term investment in nursing pays off**

The Post-Basic Community Health Nursing Program is a well-established professional training programme that has been in place since 1982. Its overall goal is to train competent community health nurses who are familiar with local situations and can respond to community health needs and problems.

The graduates' major roles include the provision of preventive services, assessment and analysis of the health needs of families and communities, health education, health promotion, the development and evaluation of appropriate community-based health-care plans, the management of common health problems, and research into relevant primary care problems.

The programme has been successful in meeting public health needs through the services of its well-trained nurses. They play a key role, not only in shaping the future of primary care, but also in running many of the specialized clinics such as chronic-illness clinics (18 health centres have diabetic clinics), well-woman clinics, child screening, preschool screening, adolescent health clinics, postnatal services and premarital check-ups. The graduates are responsible for many achievements, including the maintenance of the national vaccination coverage at 98%.

### **4. BHUTAN:**

#### **Primary health care flourishes after a late start**

Bhutan was a late starter in health development but now claims to have one of the best-organized primary care systems in the South-East Asia Region. It manages to offer basic health services to 90% of the population despite extremely difficult terrain and scattered and inaccessible communities.

Its national primary care programme is part of a four-tiered network that comprises a national referral hospital, a regional referral hospital, district hospitals, and basic health units that include community outreach clinics. Nurse-midwives work at all four levels of the system. Assistant nurse-mid-

wives are posted mostly in the basic health units where they focus on maternal and child health. The primary care system has secured commitment from the highest level decision-makers and policy-makers in the country, including members of the Bhutanese royal family. The programme is fully funded by the government and receives external support from the World Health Organization (WHO), the Global Fund to Fight Aids, Tuberculosis and Malaria (GFATM) and the World Bank.

Among other achievements, statistics for 1984 and 2006 show that the average life expectancy has increased from 46 years to 67 years, the infant mortality rate has decreased from 103 deaths per 1000 live births to 40 per 1000, and the under-five mortality rate has decreased from 162 deaths per 1000 live births to 62 per 1000.

## **5. BOTSWANA (1):**

### **Promoting good health among university students**

This local project aims to promote good health among the student community at the University of Botswana, treating them when they are ill and educating them in matters of health.

The staff of the university clinic includes a medical director, three doctors, a senior nurse who is studying for a master's degree in counselling, six sisters and five staff nurses with midwifery and nursing diplomas. There are 15 710 students at the university, over 14 000 of whom are undergraduates. The service is funded by the university and supported by the Government of Botswana.


The service sets out to address the young people's physical, spiritual, emotional, psychological and social needs. It provides health education and promotion, particularly on HIV/AIDS. Students can access the service around the clock as nurses are on call after hours and transport is provided for referrals and emergencies. The service caters to students from diverse backgrounds with a variety of health problems. The staff find the work very challenging and believe the service they provide is important.

## **6. BOTSWANA (2):**

### **Community-based services for prevention and care**

This national community-based primary care programme aims to enhance health promotion, provide home-based care, support people with chronic





illnesses, and ensure risk-reduction through programmes that focus on aspects such as school health and use of the media. A clinic within five kilometres of every village is generally assured and some home-based community care is provided.

The staff are mostly registered nurses who work with doctors, health educators, nutritionists, health inspectors, counsellors, teachers and community-based organizations. Retired nurses participate in the community home-based care programmes. The programme is funded through the Ministry of Health of Botswana, with external support from the United Nations (UN) and WHO.

The programme provides a broad range of services that include: information, education and communication about HIV/AIDS, diarrhoea, malaria, and non-communicable diseases like hypertension and diabetes mellitus; the provision of food baskets for HIV/AIDS patients and people who are destitute; reproductive health care; immunization for under-fives and schoolchildren; prevention of malarial diseases through the supply of treated nets; and medication to treat noncommunicable and infectious diseases, including antiretrovirals for people who are HIV-positive. The prevalence and wide distribution of the services are viewed as a marker of success, although more specific outcome measures are lacking.

## **7. BRAZIL:**

### **Empowerment through community therapy**

Community Therapy is a local project that aims to prevent mental illness and promote mental health through building and strengthening the social and affective bonds that are essential for forming networks of psychosocial support. The underlying philosophy of the process has its origins in cultural anthropology and Paolo Freire's teachings on resilience and liberty (Freire 1970). The interventions, run by the Federal University of Paraíba, provide opportunities for people seeking help to have access to skilled counsellors in a collective environment.

Community therapy is offered to anyone who is suffering. Children, young people, adults and old people of both sexes take part in the therapeutic meetings. Most participants are elderly adults, generally housewives, who either work at home or are retired, Catholic, with low incomes and low educational levels. The meetings are held weekly and last two hours; about 25 people take part in each meeting. Residents usually attend within their respective

communities. The service is provided by three professors of nursing from the Department of Nursing of the Federal University of Paraíba, assisted by postgraduate research students and students of the graduate programme in mental health nursing.

The initiative is based on voluntary human resources; it therefore receives no financial support and does not have an annual budget. The municipal health secretary provides a venue for the meetings in the Health Family Unit in the Mangabeira IV district of the city of João Pessoa – Paraíba.

In terms of outcomes, the participants in Community Therapy generally show improvement in the state of their general health, their capacity to maintain relationships and in their social interaction skills. They also report feeling empowered, self-determined and independent, with a greater respect for themselves and their limitations.


## **8. CANADA:**

### **Nurse practitioners serve medically deprived communities**

The aim of developing nurse practitioner service sites in Ontario is to increase access to health care and provide ongoing primary care for all age groups, ranging from pre-conception to end-of-life counselling. The PHC Nurse Practitioner Services are run by the Victorian Order of Nurses, Canada's largest national not-for-profit, charitable home and community-care organization. This province-wide, multisite programme focuses on the provision of holistic care, with an emphasis on wellness and disease prevention. Client education, health promotion and community development are key priorities.

There are 16 clinic sites located in medically under-serviced communities, with 24 nurses providing ongoing primary care to more than 18 500 people. Each full-time nurse practitioner carries a case-load of about 800 clients who are registered in his/her practice and sees, on average, 8–25 clients a day.

The Canadian Ministry of Health and Long-Term Care of Ontario provide funding for various initiatives to introduce the role of the nurse practitioner and address health-care needs. The funding covers the salary of each nurse, a stipend for the collaborative physicians and a small amount for operating costs. Each community is expected to raise additional funds to supplement the ongoing needs. The fundraising aspect is coordinated by the local Victorian Order of Nurses (VON) branch and involves the municipality, the community and frequently the VON Canada Foundation.



Each site is unique, based on its community context and ability to provide additional funds. Community partners – town councils and business organizations – provide in-kind resources such as rent and electricity. Monthly records are maintained on the number of clients seen, preventive activities such as immunizations and Pap tests, episodic care and adjustment of therapeutic approaches, referrals, and the frequency of physician collaboration. Client-satisfaction surveys indicate a high level of trust and satisfaction with the nurse practitioner services.

## 9. CHILE:

### **Telephone support for the self-care of chronic diseases**

This project aims to develop, implement and evaluate the effectiveness of a practice-linked, nurse-managed, telephone support model to improve the management of chronic conditions and self-care. The target group is made up of clients with type 2 diabetes who attend cardiovascular disease programmes in seven primary care clinics in the low-income commune of Puente Alto, Santiago.

The objectives are to provide self-management and self-care support to patients, and determine the effect of the telephone-support model on self-efficacy, perceptions of health, healthy eating, physical activity, foot care and the use of health services. Nurses provide telecare support through programmed outbound calls. They use motivational interviewing techniques and provide computer-aided decision-making support, 12 hours a day, six days a week.

The nurses share medical records electronically with the cardiovascular programme team to ensure coordination and continuity of care, provide relevant information between visits, and facilitate comprehensive and high quality chronic-disease management. The number of participating staff varies according to the size of the clinic (the smallest has 150 patients with type 2 diabetes, the largest has 1250).

The National Fund for the Promotion of Scientific and Technological Development is funding the research – US\$ 750 000 for three years until 2008 – and in-kind support is being provided by the Pontificia Universidad Católica de Chile, Entel Call Centre, Municipality of Puente Alto, the Chilean Ministry of Health and the South Eastern Health Service of Santiago. Colleagues from the University of Michigan (United States of America), and the University of Ottawa (Canada), provide important in-kind and technical support. The pilot project, incorporated as a component of the cardiovascular health

programme, is funded by the Chilean Ministry of Health and has an annual budget of US\$ 180 000 for three years (until 2009).

A study conducted on the experimental group measured indicators such as self-efficacy, healthy eating, physical activity and foot care. It showed a significant improvement after eight months of intervention. The group members had a more positive perception of their self-efficacy, the number of days of healthy eating increased, and the quantity and quality of foot care improved. Interestingly, their perception of “good health” decreased significantly. Perhaps, as the telecare intervention raised their awareness of what it means to have a chronic condition, they realised how poorly they were managing their diabetes.


## **10. CHINA:**

### **Nurse-led innovation in telehealth**

The Centre for Telehealth and Telecare, Hong Kong Polytechnic University, supported this regional, integrative health-service programme from 2002–2006 and developed the system that served as its platform. The service extended from the local community in Hong Kong to rural areas in mainland China. It served the healthy community and provided care for people with subclinical symptoms and/or chronic conditions such as diabetes mellitus, stroke, incontinence and pain. The scope of services comprised health assessment, maintenance of a lifelong health record, motivational interviewing, symptom and disease management, rehabilitation, health enhancement and health education.

In 2002 the university provided a grant of US\$ 1.3 million (10 million Chinese dollars) to support the establishment and operating costs of the centre, as a four-year project in the school of nursing. The centre’s mission was to take a lead in promoting health in the community by providing community-based, rehabilitative, palliative and primary care services through its clinics and evidence-based practice, and to develop health-care professionals to deliver community-focused integrated health care.

The centre made remarkable progress through its interdisciplinary efforts and attracted local, regional and global attention. It was run by a management team with a director, research fellow and relevant staff members from the school of nursing and the university. The service team was multidisciplinary and nurse-led; staff included nurse practitioners, physiotherapists, nutritionists, Chinese medical practitioners, Western medical practitioners, an aromatherapist, a clinical optometrist, clinical psychologists and a music therapist.



In 2006, the original centre was replaced by a new centre, the Centre for Integrative Digital Health. The new centre continues to provide leadership in the research and development of an inter-operable infrastructure between health care and digital technologies that aim to improve the quality and efficiency of health care and people's ability to manage their own well-being. Outcomes include the attainment of patents for a smart device to prevent sleep apnoea, a method for predicting blood glucose level using a near-infrared spectral scan, foot massage apparatus, and an opto-mechatronic acupuncture pen. The centre receives significant research grants and has won several awards for its innovations.

## **11. COLOMBIA:**

### **An integrated, interdisciplinary and intersectoral primary care service**

This project is based on family needs. It seeks to strengthen the human development of each family member and encourage processes that dignify life, incorporating values such as solidarity, justice and equity, as well as the right to health and life. The programme was implemented as a result of an agreement between the Antioquia Government, Antioquia's Health Section Directorate, the county administrations, the School of Nursing at the University of Antioch, and the Cooperative Company of Educational Services in Health.

The project serves as an extensive primary health assistance model. It promotes a public health strategy for providing care to communities – an integral, interdisciplinary, intersectoral strategy that is based on identified cultural, social, economic, political and environmental needs.

The practices and interventions of the community nurses and “life promoters” are based on the identification and understanding of family needs. This assures that the activities – reorganization of health services and the consolidation of education, participation and communication – are achieved in a manner that is appropriate and acceptable to the families.

At the core of the model, the family visits enable the recognition of family dynamics, relationships, needs and potential issues. The family narrative is an instrument that enriches the family interview and, complemented by observation, analysis and interpretation, it facilitates care planning, monitoring and follow-up.

Primary care is a reality in Antioquia because of the commitment and combined effort of the 95 municipalities and the state government. The latter has

invested around 7000 million pesos (US\$ 3.5 million) in the project which hires 80 professional nurses, 293 assistant nurses and 526 life promoters. Advice and technical support are provided by regional coordinators, most of whom are university nursing professors.

The project's major achievements include control of environmental risk factors, decreased maternal and perinatal morbidity and mortality, decreased morbidity and mortality from chronic ailments and childhood illnesses such as acute respiratory infections and diarrhoea, increased access to health services, and increased immunization coverage. As an indication of the growth of the project's coverage,

55 799 families were helped and 34 793 referrals were made to different social development services in 2006, while 77 436 families were helped and 59 457 referrals were made in 2007.


## **12. COOK ISLANDS:**

### **Nurse practitioners facilitate equity and access**

The Cook Islands Nursing Services aim to provide equitable, high quality nursing to the population of the Cook Islands, a group of 15 islands scattered over approximately 240 square kilometres of ocean. The service comprises a school of nursing and clinical services. Hospital-based services are provided in Rarotonga and, in addition, the community health services run a midwife-led clinic that provides antenatal, postnatal and family-planning services. District well-child clinics are run by community health nurses, most of whom are midwives. The community health nurses also provide health checks and immunizations for schoolchildren.

Each of the five islands in the southern group of outer islands is staffed by at least one registered nurse or midwife; in some instances, extra support is provided by enrolled nurses. In the northern group, six of the seven islands have nurse staffing. The Cook Islands' nursing staff comprises 52 registered nurses, 11 midwives, 3 nurse practitioners, 15 enrolled nurses, 7 community health nurses, 2 health promoters, 3 lecturers, 9 nurse practitioner students, 12 undergraduates and 6 compassionate nurses. The overall programme is funded by the government.

The introduction of nurse practitioners was a pioneering development. It was initiated in 1990 when a nurse practitioner programme was established to cater for the health needs of the outer islands and to provide training based



on the diagnosis and treatment of prevalent local health problems. Three of the islands in the northern group have been served for the past 18 years by the first cohort of nurse practitioners. Their services have been recognized as superb – a factor that has contributed to the funding of a second nurse practitioner programme that is now in progress and is expected to contribute to the provision of equitable services throughout the country.

### 13. DENMARK:

#### **Improving the health of older people reduces hospital costs**

The Skævinge project had two aims: to offer health and social services to an entire municipality, and to give priority to supporting the individual's potential to maintain and strengthen his/her health and quality of life.

The project originated as a three-year action-research study that was conducted in a municipality of 5000 people and focused on the elderly people who were 67 and over (10%). It involved 120 staff, including two doctors, 20 nurses, 40 nursing assistants, 18 home helps, 5 therapists, 14 kitchen staff, 8 cleaning staff, administrative staff and politicians. Self-managed groups organized teamwork and a better-structured care process. This, in turn, gave each staff member more responsibility. The project leader's salary was paid by the municipality and the Danish Ministry of Social Affairs provided additional funds.

Ten years after the project became permanent, a follow-up evaluation was conducted on the initiative of the Skævinge municipality in 1997. The Danish Institute for Health Services Research Data conducted the study. They compared 1997 data on the health status, use of services and daily activities of people aged 75 and over with similar data collected during a survey undertaken in 1985, before the original project was implemented.

In 1997, the peoples' assessment of their own health was significantly more positive (41%) than that of their peers in 1985 (29%). This is a subjective assessment, not an objective measure of the presence or absence of illness or health-related shortcomings. Experience has shown, however, that there is a strong correlation with objective health findings. The interviews confirmed the staff assessments that the services of the Skævinge project were experienced as positive.

A key factor for the project's success was considered to be the long and in-depth process of attitude-changing that was implemented to ensure that eve-

ryone felt ownership and accountability for his/her health. The average bed-day rate per citizen was used as a measurement of hospital use: the use of somatic bed-days among the target group was lower in 1990 and 1994 than for the rest of the country. The municipality's health department was able to reduce running costs in a period when the number of people aged 75 years and over grew by 30%.

Skævinge was the first municipality to start a 24-hour primary health-care service; now all municipalities have them. The success of the original project led to implementation of the model across Denmark and in Japan.

#### **14. ERITREA:**

##### **Partnership to improve the health of mothers and babies**

This local project focuses on enhancing the collaborative relationship between nurses, midwives and traditional birth attendants. Run from Edaga Hamus Hospital in Asmara, Eritrea, the goal of the project is to contribute to the reduction of maternal and child mortality and morbidity. It aims to do this by improving interdisciplinary collaboration and promoting community participation, thereby increasing health-seeking behaviours.


The hospital is located in the heart of the community, with a catchment population of around 100 000. It has only 13 nurse midwives, 11 registered nurses and 25 associate nurses, so there is a significant need to engage the community, particularly the traditional birth attendants.

The programme is fully funded by the Government of Eritrea through its Ministry of Health, with WHO and the United Nations Population Fund (UNFPA) as external partners.

The traditional birth attendants, who are seen as community opinion leaders, are encouraged to promote health-seeking behaviour in the community and refer pregnant women to health facilities for delivery. The ministry of health has established programmes to recruit and train people from local communities on a range of issues, including the need to end harmful traditional practices such as female genital mutilation; it has also undertaken sanitation campaigns.

The relationship between health workers and community opinion leaders such as traditional birth attendants needs to be improved. This depends on a recognition of the traditional birth attendants' value within the health





system, and on the need to overcome the communication and transport barriers that face nurses and midwives who provide outreach services.

The government's introduction of the concept of self-reliance – and the community's recognition of it – has energized the community. Volunteers, including traditional birth attendants, are motivated through regular refresher courses, involvement in outreach services as part of the hospital team, award of certificates, and provision of supplies (including gowns). This has promoted health-seeking behaviour, established better working relationships and strengthened continuity of care from household to health facility.

Since the programme began there has been a gradual increase in the number of pregnant women referred, greater immunization coverage, and an increase in the number of mothers and children treated at the hospital.

## 15. GERMANY:

### **Family health nurses empower vulnerable populations**

The German Family Health Nurse Pilot Project (2004–2008) aims to assist families throughout the life span, providing support in crisis situations including pregnancy, domestic violence, poverty, the effects of migration and the general need for care. In the past, until a crisis arose, these clients were inaccessible to the health services and social professions due to a lack of information, poor education, poverty, long-term unemployment, a lack of health insurance and the failure of services to create easy access.

Within multidisciplinary teams of health-care professionals, the family health nurse makes a key contribution to the attainment of the 21st century targets, as set out by WHO in Health 21. The service focuses on three key issues: family and community, health promotion, and preventive home-care services. The initial staff of 11 family health nurses and 2 family health midwives have completed a 2-year training programme, based on the WHO European curriculum and coordinated by the German Nurses' Association.

Funding of the new services is somewhat haphazard and the nurses are paid partly by the community and/or other project funds. It will be necessary to identify and create options for funding on the basis of health promotion and prevention outcomes.

Although the initial project has not yet been completed, the signs are positive. The nurses support the families in their daily life and help them to cope with

difficult situations. The early results show that families accept their interventions, trust them, and are becoming more responsible and empowered.

## **16. HAITI:**

### **Shifting the focus from hospital to community**


The Hôpital Albert Schweizer offers primary health care through six remote health centres and a network of over 100 community health and development workers. It serves a population of 300 000 in central Haiti and aims to improve the health of the community and reduce endemic health conditions. It is a referral hospital and offers advanced diagnostic and surgical services.

The hospital has a full complement of nine permanent Haitian physicians and a group of international physician specialists who come as required to support complex surgery. It employs around 60 registered nurses and has an operating theatre, laboratory, radiology equipment, blood bank, and a pharmacy.

The community-based services, including both health and economic development, are built around the rural health centres. They involve over 60 community health workers, traditional birth attendants and 150 volunteer animatrices, each of whom regularly visits 15–20 households for case-finding and referral. Economic development activities include reforestation, wells and water-line development, micro-credit and veterinary services. Community services are designed around a risk-factor analysis that highlights the needs of specific households or individuals in the various ecological zones, through the annual cycle of seasons. Malnutrition, for example, is highest among newly weaned infants in the mountains during the rainy season.

Nurses are the core of the inpatient service and, together with support workers, play an important role in ambulatory settings. Community-based traditional birth attendants attend more than 90% of all deliveries. The service is privately funded, receiving nearly US\$ 5 million per annum. External support is provided by World Vision and the Global Fund for tuberculosis, AIDS and malaria.

The incidence of tetanus and childhood communicable diseases has been reduced to negligible levels. Gains have been made in controlling malnutrition, malaria and tuberculosis, but these diseases remain endemic. Maternal mortality has been reduced through an inpatient high-risk maternity service, and by providing continuing education for the traditional birth attendants.



The hospital-centric approach has shifted over the past 50 years to a community-centric approach. This has resulted in greater gains in disease prevention and early case finding.

## **17. THE ISLAMIC REPUBLIC OF IRAN:**

### **Primary care for all in rural areas**

This national project is a priority in the country's health strategy. It reflects concern for human dignity, security, ethics, equity and social justice, and recognizes the need to maximize health opportunities by tackling social and economic barriers to health and health care. The principle aims are:

- good health and well-being for everyone throughout their lifespan;
- an improvement in the health of disadvantaged people;
- collaborative health promotion and prevention of disease and injury, through intersectoral cooperation;
- timely and equitable access for all to a comprehensive range of primary health-care services, regardless of ability to pay.

The main policy streams for constructing the health network and programmes are based on the following priorities: preventive services, outpatient services for vulnerable groups, especially mothers and children, and for those in remote and underprivileged rural areas. Decentralization is also a key factor and the project aims to create self-sufficient regional and local facilities.

The project is publicly funded and free at the point of access in rural areas. It focuses on health centres and health posts that serve 90% of the rural population and are staffed by over 30 100 behvarz (community health workers). Health centres are the frontline service in rural areas. They serve an average of 1500 people and each centre is staffed by two behvarz. One of the behvarz is always female and her main duty is to provide primary health-care services. Each centre covers one or more villages. Health posts have three family health technicians, an environmental health technician and a midwife whose main responsibility is family planning.

The services offered by the centres and posts include: maternal and child health care; family planning; case-finding and follow-up for tuberculosis, malaria, mental disorders, diabetes and hypertension; limited treatment; environmental health; occupational health; school health; oral health and, in some areas, community-based rehabilitation.

## **18. LEBANON (1):**

### **Scaling up community nursing to improve children's health**

Health for all children in Lebanon – decreasing the mortality and morbidity rate is a new national programme that serves 800 000 children, 0–18 years of age. It provides both preventive and curative services, including immunization, food and water supplies, health education, curative care and essential medication. The staff comprise midwives, nurses and doctors. The Lebanese Ministry of Public Health provides the funding (4% of the ministry's budget); external support is provided through Italian Cooperation for Development.

The project is in its early stages. There is a need to recruit and retain more clinical staff; education programmes are therefore required to prepare more community health nurses. Community engagement has not yet been implemented but the service has been seen to be acceptable to individuals and families, and is considered to be important because it addresses the needs of the population.


## **19. LEBANON (2):**

### **Educating nursing students through community participation**

This project to educate nurses was planned as a comprehensive health and human development intervention to be implemented in different regions. In 2006, the Saint-Joseph University of Beirut made a strategic commitment to increase its connection and involvement with the community. It called for volunteer action, inviting academics, administrative staff and students to participate in a "seventh day programme" (Opération 7ème jour) – each person to donate a day of his/her free time.

The first project, conducted in the area of Cana, in the caza (province) of Tyre, south Lebanon, aims to support and promote services leading to greater social well-being by investing human and material resources, expertise and vision to influence individual and community life. The goals, developed in collaboration with local and national community bodies, are soundly based on the principles of equity, local resource-building and sustainable development.

Nurses and midwives are major actors in the project. Their technical, managerial and leadership skills are essential for its success. They coordinate all field activities, provide services and have a great impact on the improvement of health and the promotion of well-being. Undergraduate nursing students



participate in community health modules on prevention, promotion and rehabilitation. This introduces them to nursing interventions where they experience aspects of empowerment, outreach activities and education. By linking theory to practice Opération 7ème jour allows the students to consolidate their competencies and knowledge, while providing direct services to the population. It also facilitates their becoming active citizens and members of their respective communities.

Several factors make the service successful: the volunteer aspect of the activities; solidarity with the population in need; the high motivation of the students, professors and administrators; the interdisciplinary aspect of the activities; effective leadership and the availability of financial resources. The services provided, such as vaccination, hygiene and medical consultations, and the outcomes achieved are defined according to the urgency of the population's needs.

## **20. MALAWI:**

### **A primary health-care model for HIV prevention**

“Mzake ndi Mzake (Friend to Friend) Peer Group Intervention for HIV Prevention: a PHC model” is a multisite project that enables the primary care system and volunteer health workers to work on HIV prevention with adults and adolescents in rural areas.

The project was developed and implemented by nursing faculty at the University of Malawi Kamuzu College of Nursing and the University of Illinois at Chicago College of Nursing (United States). Nurses and community health workers play a crucial role as peer leaders in their communities, and as trainers of peer leaders.

To date the service has been funded through research grants from donors, including the Fulbright Scholarship Program (1999–2000), the United States National Institute of Nursing Research (2001–2008) and the World AIDS Foundation (2003–2005). Local funding is being sought to continue and extend the intervention to other sites.

The intervention delivery system is built on the primary care model of health worker–community collaboration. It integrates social-cognitive learning for behavioural change with cultural tailoring and gender sensitivity. It is organized and evaluated by the two faculties and delivered by trained health workers and community adults who work in pairs as peer leaders. Six interactive

group sessions are convened to discuss the need for HIV prevention, human sexuality, how HIV and other infections are sexually transmitted, prevention strategies, partner negotiation, correct condom use, and how to spread the message in the community.


The team has trained 855 health workers in the urban referral hospital, 333 district health workers, 60 community leaders, 2242 adults and over 1500 young people in the rural communities. In terms of outcomes, improvement is evident in all groups with respect to: HIV-related knowledge; attitudes to condoms and testing; self-efficacy for practising safer sex and talking with partners about HIV prevention; and community HIV-prevention activities. All adults show more favourable attitudes to the use of condoms. Risky sexual behaviour has decreased among district health workers and adults, and condom use has increased among sexually active adults and adolescents. Urban and district health workers show improvements in universal precautions and client teaching, but urban health workers show no change in safer sex practices.

## **21. MEXICO:**

### **Promoting health in a poor urban community**

This university-led primary care project offers nursing interventions that focus on the promotion of health, prevention, early detection, and damage limitation to the individual, the family and the community. The Communitarian Nursing University Center is coordinated by the National School of Nursing and Midwifery at the Universidad Nacional Autónoma de México. The five key areas are family health, work health, sports health, recreation health, and environmental health. The centre's vision is to consolidate the development of nursing skills through practice in real scenarios, with a special focus on self-care, and to develop the community engagement of the nurses. To accomplish this, the centre's objectives are grouped into three broad areas: academic, service and research. The centre is coordinated by three members of the nursing professoriate and staffed by 17 nurses. Under-graduate and post-graduate nursing students rotate through the centre as part of their academic programmes.

Funding for the project comes from different sources, including the university, the Government of Mexico and some direct fees. The town served by the centre, San Luis Tlaxiataltemalco, Xochimilco, has a total of 13 633 inhabitants, including 3408 families. This is a community with urban and semi-urban characteristics and a low economic status; the residents come from the states of



Mexico, Oaxaca, Guerrero, Puebla and Veracruz. Most of the families are nuclear, with numerous family members. The principal community groups are students, housewives, flower-growers, general workers and employees. Nearly half the population does not belong to any social security system. The most common disease groups are respiratory, metabolic, gastrointestinal, cardiovascular and trauma. The main causes of death are cardiovascular, cancer-related, gastrointestinal and metabolic diseases. In 2007, 327 home visits and 2527 consultations were conducted in the family-care programme, 459 health education assessments were made of children in primary and secondary schools, and 1605 health certificates were issued.

## **22. OMAN:**

### **Strong government commitment brings long-term improvements**

This national primary health-care programme aims to ensure that the public has access to basic health care, including promotion of health, prevention of disease, and curative and rehabilitation services. Primary care is the entry point for the provision of services at the health facility.

Community participation is encouraged through engagement in the district health committee that comprises members from government departments (including education, the ministry of the interior, etc.) and the community. Primary care is an important aspect of the government's commitment to provide universal health care for all citizens; primary care services have been expanded since 1970.

The focus in 1970–1990 was mainly on communicable diseases preventable by immunization, especially in childhood. As lifestyles have changed the focus is now on noncommunicable diseases and the provision of services for an ageing population, while sustaining the prevention of childhood communicable diseases.

The overall staffing of the programme is around 1400 nurses, including those who provide antenatal and postnatal care. The overall health budget is 210 million Rials (approximately US\$ 547 million) and there is significant collaboration with external consultants from WHO.

High immunization coverage, provided by nurses and midwives, has been maintained and infant mortality has fallen from 170 deaths per 1000 live births in 1970, to 16 deaths per 1000 in 2006. Strong political commitment has helped ensure that basic health indicators have improved significantly.

A number of factors, such as better housing, cleaner water and sanitation, education, communication and roads, may be attributed to the improvements in public health.

## **23. REPUBLIC OF KOREA:**

### **Community nurses more cost-effective than physicians**

This national programme aims to deliver primary care in rural areas through community health centres that are staffed and managed by community health nurse practitioners. These are registered nurses who have received a further six-months of specialist training. The responsibilities of these nurses include: diagnosis and treatment of common illnesses; transfer and referral patients; management of trauma and emergency; management of chronic illness; normal labour and delivery of babies; insertion of intrauterine contraceptive devices; immunization; and administration of medication.

Legislation for community health nurse practitioners has been in place since 1980; there are now 1892 of them practising. The programme is funded by the government and by local residents as part of a universal health insurance. Other funding sources and external partners include the Ministry of Health and Welfare of the Republic of Korea, community health centres and tertiary hospitals in neighbouring cities.


A study conducted by the Korean Population and Public Health Research Institute showed that 93% of the residents reported that the nurses' services were helpful and satisfactory; they considered that the nurses were providing comprehensive health-care services, education and contributing to environmental improvement. Two studies by the Korean Institute of Population and Health and the Korean Development Institute reported that the primary-care services provided by nurses were not only of the same quality as those provided by physicians, but also more cost-effective. Furthermore, many of the nurses function as community development agents, working not only to improve the health status of the community but also to improve the quality of the environment and the standard of living.

## **24. RWANDA:**

### **Training for the future**

The aim of this national project, initially implemented in 2002 at the Kigali Health Institute in Rwanda, was to develop a core of human resources for the continuing production of skilled and competent nurses and midwives. The





institute collaborated with the University of KwaZulu-Natal (South Africa), to educate a group of diploma graduates to the level of bachelor's degree in nursing with honours. The plan was to conduct a five-year programme at the institute, training a group of at least 40 students who would then graduate with degrees at varying levels. These students would, in turn, become responsible for the teaching, training and development of human resources for health at the institute and elsewhere in Rwanda.

Teachers and supervisors from the School of Nursing in South Africa provided the training; the WHO Regional Office for Africa and the Rwandan Ministry of Health provided the funding. Despite staff shortages at the School of Nursing, the South African staff were motivated to travel and teach in a distant country, taking with them library materials donated by colleagues and collaborating partners from other institutions.

The project has now been running since 2002; the first group of bachelor-level nurses graduated in 2004. The second phase focused on the sustainability of the project to assure a continuing supply of qualified, well trained nurses and midwives. With a view to making Rwanda self-sufficient in this respect, the institute was helped to design a curriculum to train its own nursing and midwifery educators.

Five new post-secondary schools of nursing have recently been opened across the country and each of them will require a regular supply of qualified nursing and midwifery educators. During the second phase of the project, the first group of 30 candidates graduated in 2007. It is anticipated that, between 2005 and 2009, at least 10 graduates will complete the master's degree for specialized skills in nursing and midwifery, and by 2011 at least three graduates will have earned their doctorates.

## **25. SAMOA:**

### **A community nursing model for population-centred care**

The national primary care programme in the Samoan Public Health System is delivered mainly through the Nursing and Integrated Community Health Service, using the primary care-focused Integrated Community Health Nursing Service model.

Samoa has a population of 182 700, with 70% living in rural areas and 39% young people. As life expectancy improves, the increasingly elderly population is creating a challenge: management of the noncommunicable diseases

of an ageing population. Another challenge, posed by the young people who include a large cohort of adolescents, is the provision of services to deal with sexual and reproductive health issues, including the rising rates of sexually transmitted diseases.

The Integrated Community Health Nursing Services are staffed mainly by nurses, complemented by regular visiting medical officers and ad hoc assistance provided by environmental health officers. The staffing profile of each health district is a cohort of registered nurses, including a clinical nurse consultant who provides clinical or technical leadership and is responsible for professional standards; a nurse manager who is in charge of the facilities and coordinates staff and resources; and registered staff nurses and enrolled nurses, the usual ratio being one registered nurse to three enrolled nurses.


Women's committee members are active in different community health activities such as vegetable gardens, home inspections of cooking facilities/utensils, and mass drug distribution for filariasis. Traditional birth attendants work closely with nurses and midwives and are legally recognized as allied health workers. They are required to register as providers and also receive training from midwives. This training aims to ensure the safety of mothers and babies. It focuses on cleanliness of the home and living environment, hygienic and sterile delivery processes, and detection and early referral of problems.

The Integrated Community Health Nursing Services model is nurse-led and delivers population-focused holistic care in community settings, including rural clinical facilities. It encompasses health promotion and disease prevention activities, wellness screening, and first point-of-contact health care. The service also undertakes triage, stabilization and referral for appropriate treatment and chronic disease follow-up, and care across the life span. Settings include rural district hospitals, community health centres, women's committee centres, schools, homes and any other community settings. The model facilitates full participation of families and relevant community groups throughout the process of providing care and/or health protective programmes. It also provides opportunities for clients, families and communities to attain and maintain a level of self-responsibility.

## **26. SAUDI ARABIA:**

### **Nationwide focus on health promotion through primary care**

This national project aims to provide people with a broad spectrum of care, both preventive and curative, over a period of time and to coordinate all the



care received. The objectives of the project are to: provide organizational, economic and social conditions to promote healthy lifestyles; raise community awareness of healthy lifestyles, and support healthy lifestyles and health promotion activities; promote healthy lifestyles through health-promotion activities and advertising via mass media; and develop an effective method for teaching healthy lifestyles and disease-prevention issues.

A wide range of staff is employed in the project, including family physicians, dentists, health surveillance specialists, community and family nurses, midwives, pharmacists, X-ray technicians, laboratory technicians and administrative staff. The service is funded mainly by the Saudi Arabian Ministry of Health – approximately US\$ 1 billion annually. WHO, the main external partner, sends experts to give advice and help in planning primary care services, especially in nursing.

An example of the success of the service is that the immunization rate rose to over 95% in 2007; this was associated with a fall in communicable disease. Furthermore, no single case of polio has been recorded in the country during the last seven years.

## **27. SLOVENIA:**

### **A multidisciplinary role model for primary care**

The Dr Adolfa Drolca Health Centre in the country's second city, Maribor, is part of a network of regional centres that provide all the primary care services in their respective geographic areas. The centres are responsible for health promotion, including illness prevention, curative and rehabilitative activities. They are staffed by graduate nurses and staff nurses. The services are based on a model of integrated care, with the nursing staff working in multidisciplinary and multisectoral teams in the local communities. Using a primary care framework means that the services are provided to people where they live and work, so the whole population is systematically included.

The Maribor Health Centre serves as a role model for primary care because of the well-synchronized work of all its health professionals. The nurses provide services in all the health teams and deal with issues such as women's health, children's health, students and school health, adults and the elderly. The overall service has 119 doctors, 179 graduate nurses, 214 staff nurses, 56 dentists, 36 dental technicians, 4 social workers, 10 radiologists, 19 physiotherapists and an occupational therapist. It is funded as a public sector

service from the government public health budget. Certain aspects of payment are contingent on the service meeting key performance indicators for preventive primary care.

The service is a rich source of data on the community's health and well-being. It provides significant screening activities and home visits, strong antenatal and postnatal support for women and children, and a comprehensive child health monitoring scheme. As the home of a long-established WHO collaborating centre for primary health-care nursing, the centre has played a vital role in supporting nursing and primary care development throughout the former Yugoslavia and beyond.

## **28. TAJIKISTAN:**


### **Introducing family health nursing within national reforms**

The main focus of this project is the development of family health nursing as part of a national health-reform programme. The project was built on international collaboration, with partners contributing a combination of expertise and funds. The aim was to develop a new approach to nursing education that would provide graduates with the necessary skills and expertise in primary care, within a ministry of health framework for an integrated family-medicine model of care. All schools and colleges educating nurses in Tajikistan were expected to deliver the new curriculum from 2002, with 1000 newly qualified nurses graduating each year. In addition, an accelerated six-month post-qualification programme for existing community nurses was introduced at the country's postgraduate institute.

WHO invited Glasgow Caledonian University in Scotland to provide consultancy services to assist with the development of curricula, materials and leadership expertise. The university's School of Nursing, Midwifery and Community Health (which is also a WHO collaborating centre) led workshops for nurse educators and facilitated study visits to the United Kingdom for the newly appointed nurse leaders. WHO funded a series of leadership workshops and also provided facilitative and administrative support for all subsequent visits.

The Asian Development Bank funded the preparation of course materials and the introduction of a family nurse teacher-training programme from which over 500 nurses have graduated.

The Aga Khan Health Services, Tajikistan, the main source of funding, supported the development of a nursing development centre at national and



regional level (Gorno Badakhshan). It appointed two experienced nurses to lead the project in Tajikistan and assisted in the development and production of learning materials. A nongovernmental organization, Zdravplus, provided some funding for conferences, workshops and materials.

As of early 2008: the programme has produced 2000 qualified family health nurses; 500 post-qualifying family health nurses have undertaken the accelerated training; a new curriculum for the preparation of general and family health nurses has been produced; a qualitative evaluation of the impact on the health status of the communities where the family health nurses were working has been conducted; 150 head nurses have been prepared as mentors; and a curriculum development leadership team has been established in the capital, Dushanbe.

## **29. THAILAND:**

### **Training nurses to work in their own communities**

This project develops “nurses of the community” through participatory processes with key stakeholders – namely local administrative organizations, the local community hospitals and the school/faculty of nursing. In developing a community health-care system, the project is exploring the knowledge underlying the development of such a system while also building the capacity of key stakeholders to contribute to the development of nurses through knowledge-sharing.

A strong cohort of nurses is being developed to work in and with their own communities. They are all local people who receive support from their respective administrative organizations to study for a bachelor’s nursing degree at the collaborating faculty or school of nursing. They also participate in learning activities jointly designed by the collaborating community hospital and the faculty. After graduation the nurses work for their respective local community health services which generally serve approximately 10 000 people.

The project was initiated in 2002 at the Faculty of Nursing, Khon Kaen University, with the support of WHO, 10 community hospitals and 12 local administrative organizations. In 2006–2007, the Thai Health Foundation provided funding to involve four more nursing education institutions. By 2008, two main funding agencies had supported the participation of 33 nursing education institutions, more than 300 local administrative organizations and nearly 60 community hospitals throughout Thailand.


The first cohort of nurses graduated and returned to their home communities to work in 2006. The project has followed them as they work under the management of their local services and in collaboration with community hospitals, within their own communities and nearby. The nurses are able to provide essential services to the target population, especially mothers and children, older and disabled people, and those with chronic diseases. They also work to empower groups – youth groups, elderly groups, self-help groups and voluntary groups – in the community and focus on healthy activities, disease surveillance and control and welfare. Some of the nurses are also involved in local policy development to improve the quality of life. Statistics show that the number of hospital admissions has been reduced as a result of surveillance of both communicable and noncommunicable diseases, and health promotion activities.

### **30. UNITED KINGDOM (1 - England): Providing support to homeless people**

The Westminster Homeless Health Team was set up to improve the health, the health care and social inclusion of homeless people in central London. It was established as a nurse-led service in 2005 to address inequities and support access to mainstream services. (Homeless people are defined as rough sleepers, hostel dwellers and people living in temporary accommodation, squatters and people of no fixed abode.)

The team works in partnership with three voluntary organizations and is based in their day centres for the homeless. The team's interventions are intended to prevent unnecessary attendance at hospital emergency departments, facilitate mainstream registration with general practices, support partnership working, and encourage people to take responsibility for their own health.

The clinics are run on-site five days a week. They offer drop-in, opportunistic primary care to an extremely vulnerable population and provide immediate access to specialist nurses, general medical practitioners, counsellors and a podiatrist. Registered nurse prescribers are able to prescribe medicines for any condition, including specified controlled drugs. The team comprises a clinical manager (a registered nurse), six specialist nurses, five sessional general practitioners (GPs), four sessional counsellors and an administrator, with input from a podiatrist and information technology support. They conduct comprehensive health assessments, and work opportunistically when necessary to address the physical, mental and social-care needs of the clients.



The service is fully funded by the National Health Service; it has an annual budget of around £750 000 (nearly US\$ 1.5 million) and works collaboratively with other organizations such as housing and social services, voluntary agencies and Westminster City Council.

Evaluation of the service has revealed regular annual increases in the number of clients seen and consultations completed. This in turn indicates a reduction in inappropriate emergency-department attendance and hospital admissions. The counselling service now runs at four sites. The fact that 77% of the clients attend their appointments is a clear indication of the programme's effectiveness in establishing a therapeutic relationship with this hard-to-reach group.

### **31. UNITED KINGDOM (2 – Scotland):**

#### **Developing a generic model for community health nursing**

A review conducted in 2006, entitled Visible, Accessible, Integrated Care: a review of nursing in the community, concluded that the current position of community nursing in Scotland was undesirable and unsustainable. “Undesirable” because it would not meet future population needs, and “unsustainable” because of its twin challenges: the changing population demography and the profile of the community nursing workforce.

The review concluded that a generic approach to nursing work in the community would be the most appropriate way forward. It recommended that, rather than increasing the specialization of the workforce, a role for the community health nurse should be developed. This could be done by absorbing the disciplines of district nursing, health visiting, school nursing and family health nursing into a new, single discipline that would build on the strengths of nursing in the community. This new service module would: adopt a strong partnership approach with individuals, carers, families and communities; work as part of nursing and multidisciplinary, multi-agency teams; focus on providing services that meet local needs and reflect government priorities; and practise according to the seven elements of nursing in the community. (These elements, identified by extensive consultations, are: to work directly with individuals and their carers; to adopt a public health approach to protecting the public; to coordinate services; to support self-care and enablement; to meet the needs of communities; to provide anticipatory care; and to work in a multidisciplinary, multi-agency context.)

Four pilot sites are participating in the development of the new service model. It will then be tested and refined during the planning and early implemen-

tation stages to ensure that it is adaptable to the needs of the diverse communities, taking into consideration the differences between urban, rural and remote areas and the wide range of health needs.

Funds have been identified for a two-year pilot phase, and the project is being overseen by a national programme board with subgroups that focus on aspects such as education, workforce and workload, evaluation, the patient and the public. The pilot phase is currently moving to the implementation phase. Evaluation of the impact of the new service model will measure the contribution of nurses to meeting government policy goals. It will also focus on the experiences of individuals, families, communities, nurses and professional colleagues.

### **32. UNITED STATES (1):**


#### **Integrated care for people with mental illness**

Since 1998, the University of Illinois at Chicago College of Nursing has worked with Thresholds Psychiatric Rehabilitation Centers, in metropolitan Chicago and its suburbs to provide integrated primary care to mentally ill clients. The University of Illinois Integrated Health Care (IHC) Program is a local project that locates primary care clinics in existing Thresholds' centres. As a not-for-profit nurse-managed centre, the IHC Program is a vehicle through which faculty, family-nurse practitioners and mental health clinical nurse specialists provide integrated physical and mental health care for people who have serious mental illnesses and are either at risk, or also have, co-morbid chronic physical disease.

The IHC Program is staffed by seven family nurse practitioners, two psychiatric nurse specialists, two registered nurses, two medical technologists, two nurses (in management posts), and undergraduate and graduate students of nursing and other health professions. All the master's prepared nurses are faculty in the College of Nursing and preceptors of the students rotating through IHC clinics. In 2007, 934 unduplicated members (257 new to the IHC clinics and 677 returning) were seen at IHC clinics, and 4222 clinic visits were made – an average of 4.5 visits per member.

The IHC Program is funded by third-party payers, grants, private donations and the College of Nursing; volunteers donate time. Since 2007 it has qualified for enhanced reimbursement from Medicare and Medicaid, as well as other benefits. It has also received a five-year Health Resources and Services Administration grant to extend its services to underserved clients with severe





mental illness who are unable or unwilling to leave home to seek primary and chronic-care management. The 2008 combined annual budget for the IHC Program is US\$ 1 195 100.

The IHC Program has developed a robust database to support outcome monitoring, analysis and evaluation. Data analysis has led to modifications to care-delivery methods, education of members, and quality monitoring. All IHC advance practice nurses participate in peer review, work closely with Thresholds case managers and psychiatrists, and refer members to medical and other specialists in the community as needed. Outcome data demonstrate a strong uptake of the service and improvements in a range of physiological parameters.

### **33. UNITED STATES (2):**

#### **Volunteer nurses fight cancer in a rural community**

The Webster County Cancer Education Project began as a means to address health-care disparities related to cancer incidence and mortality in a small, distressed, Appalachian county in rural West Virginia. It is a collaboration between multiple local, regional, state and out-of-state health and service providers, community members, and the Women's Health Nurse Practitioner and Midwifery graduate programme of the University of Pennsylvania School of Nursing.

The project's main aim is to reduce cancer incidence and mortality, with an emphasis on breast and cervical cancer prevention. The population in the area is 9719; nearly a third of the families is below the poverty line. The people working in the project include the coordinator and other volunteers/representatives from the community, faculty from the school of nursing programmes in advanced-practice nursing, and representatives from collaborating health-care and service agencies.

The services provided include educational programmes on primary and secondary cancer prevention and early detection; cancer screening clinics that provide appropriate free screening for community members; and data analysis on the impact of these services, including evaluation of successful outreach to people rarely or never screened, and the number of positive screenings.

Funds have been donated from a range of sources. The West Virginia Breast and Cervical Cancer Screening Program provides free Pap smears and mammograms; the University of Pennsylvania School of Nursing offsets the cost of

obtaining students' nursing licenses in West Virginia. Other donors include Pfizer Pharmaceuticals and a further 15 collaborators who have contributed in different ways, either as individuals or as organizations. In-kind resources have been given by local and state partners and the West Virginia Osteoporosis/Arthritis Foundation.

Although the project is in its early stages, graduate nursing students from the Women's Health Nurse Practitioner and Midwifery programmes have already volunteered to serve as providers in the free reproductive cancer-screening clinical events that are being provided at the request of local women. The volunteers undergo intensive preparation in rural health-care issues and Appalachian culture. To date, over 100 women have participated in the three screening clinics; many of them had rarely or never been screened for breast or cervical cancer in the past. Referrals were made for appropriate follow-up.


#### **34. UNITED STATES (3):**

##### **Group antenatal care promotes breastfeeding**

The CenteringPregnancy® Program conducted at the University of Illinois in Chicago provides health promotion, group-peer support, a collaborative patient-provider relationship, and self-management training and activities. The programme aims to increase women's psychosocial well-being and healthy behaviour in order to reduce adverse maternal and infant outcomes and disparities.

This is a local pilot project that replaces the individual-visit model of antenatal care for poor, obstetrically low-risk women with a group-visit model. The target population comprises 110 low-income African-American women who receive antenatal care in an urban public health clinic. Funding has been provided by the March of Dimes, Illinois Chapter, and ongoing support is provided by insurance reimbursement of antenatal services.

The group antenatal-care model consists of 10 two-hour visits beginning at 16–18 weeks and continuing until delivery, following the recommended schedule for antenatal care. Each group of pregnant women is led by a nurse-midwife and a co-facilitator, either a clinical nursing-support staff member or a graduate nursing student. At each group visit, the women practise self-care skills such as measuring their weight and blood pressure, each woman undergoes a short assessment with the nurse-midwife provider in the group space, and the remaining time is used to discuss concerns as a group, ask questions and explore the new roles of pregnancy, parenting and motherhood.



The women also receive health information on keeping themselves safe and healthy during pregnancy and beyond.

Focus groups of pregnant women, providers and health-centre staff report that the programme has benefited the women who participated, despite implementation challenges such as scheduling changes. The women report that they enjoy sharing their pregnancy experience with other women. Compared to women in individual care, the women in CenteringPregnancy attended considerably more antenatal visits (9.7 versus 8.3) and gained appreciably more weight during pregnancy (32.2 pounds versus 28.5 pounds). They were also significantly more likely to have initiated breastfeeding during hospitalization (59% versus 44%); at hospital discharge 44% were breastfeeding exclusively, compared to 31% of the women in individual care.

### **35. UNITED STATES (4):**

#### **Drop-in primary care clinics boost child immunization**

The nurse-run immunization clinics started as a local project based at Valencia Health Services, a primary care practice in the Mission district of San Francisco. It provides comprehensive health services to over 2200 ethnically-diverse children and adolescents. Vaccines are administered during routine well-child visits and also during acute and follow-up visits.

Initially a triage (registered) nurse was responsible for triage and clinical-care management and provided immunization-only services during regularly scheduled provider clinics. However, funding for the triage nurse position ended in 2007. Despite this, the drop-in immunization services continue, the patients being integrated into regularly scheduled provider clinics.

To support dedicated hours for drop-in immunizations, clinic staff include nurse practitioners, paediatricians, medical assistants, administrative workers, a registered nurse, a business manager and a clinical director. Mount Zion Health Fund and the California Department of Health Services awarded US\$ 32 324 to establish the drop-in immunization services that are provided free to those who need them.

Within the first two months of the project the immunization up-to-date (UTD) rates for one-year-olds and two-year-olds increased by 8% and 4% respectively. The total number of immunizations increased from 1364 doses in 2006, to 3841 doses in 2007. New software, available in 2008, for tracking UTD rates is expected to reveal an improvement of at least 10–20% across the age span for UTD immunization rates over the past year.


### 36. UNITED STATES (5):

#### **Encouraging active living and healthy eating**

Active Living by Design and Healthy Eating by Design are two projects that aim to increase active living, physical activity, healthy eating and improved nutrition among residents of the Logan Square Neighbourhood of Chicago. Based on a primary care model, they are run by a collaboration that was initiated by the University of Illinois at Chicago College of Nursing, with the Illinois Health Education Consortium and the Logan Square Neighbourhood Association. Staff work with the community to identify health needs that they then endeavour to meet through a variety of feasible and affordable programmes. The programmes are community-based or school-based and serve children, their families, the school staff and the larger community. The community members are primarily low-income Hispanic immigrant families. Over 95% of the children at the focal school meet federal income guidelines for free school meals. Most families speak Spanish at home; English is their second language. The activities are run by personnel employed by the various partners and coordinated by a community organizer for health who is employed by the Logan Square Neighbourhood Association. All the other staff have a high school diploma, at least, and include community AmeriCorps Chicago Health Corps members and a volunteer.

Funding has been obtained from a wide and diverse range of donors and contributors – primarily the Robert Wood Johnson Foundation that gave US\$ 34 250 for 2006–2007 – and are supplemented by grants totalling US \$105 668 from 16 other organizations. Substantial in-kind donations exceeding US\$ 68 000 have been received from a further 14 organizations.

Doctoral-prepared nurses and a health economist evaluate the activities and outcomes, using a combination of quantitative and qualitative methods that include: community-wide surveys of physical activity behaviour and perceived barriers to activity; in-class monitoring of fruit and vegetable consumption; before-and-after assessments of children's knowledge of the health benefits of physical activity and good nutrition; school-wide assessments of body-mass index (BMI) relative to age, and more. Students and teachers are interviewed to gather their opinions. Attendance, disciplinary, and student performance data from the school's database are also studied to assess the programme's effects on student behaviour and learning. During the year that a healthy fruit or vegetable snack was provided daily to all first-grade children, their attendance and performance on standardized state tests improved, visits to the school nurse's office decreased, and visits to the school disciplinary office dropped dramatically.



The team administered “before and after” assessments of children’s knowledge of the health benefits of physical activity and good nutrition, using the pre-and post-knowledge surveys provided by the “Take 10! curriculum” (<http://www.take10.net>). Descriptive statistics and chi-square tests with a significance level of  $p < 0.05$  were used to analyse the data. Statistically significant changes in knowledge of physical activity were found for 10 of the 11 learning objectives for all grades ( $p < 0.001$ ). Changes in nutrition knowledge varied considerably across classrooms and grades; the evaluation tools provided with the curriculum did not perform well psychometrically with this population.

### **37. UNITED STATES (6):**

#### **Nurse-led primary care reduces risk of noncommunicable disease**

This local programme introduces nurse-managed centres into the community. It includes a group of two main family practice clinics and three outreach clinics, staffed entirely by nurse practitioners from the Faculty of the School of Nursing, University of Michigan. The aim is to increase access to health care for vulnerable populations in the Washtenaw county area, demonstrating innovative models of nursing care in the community while educating students from various schools in the university.

The project is staffed by seven nurse practitioners, three medical assistants, a part-time biller, a full-time office manager, a part-time medical social worker and a part-time public health specialist. A group of 20 volunteer translators/interpreters works in 6 languages. At any time, either one or two research programmes are under way and postgraduate and undergraduate nursing students are involved in the clinics. The University’s Department of Family Medicine is contracted to provide physician consultation to the clinics.

Funding is primarily provided by patient-care reimbursement (58% in 2006–2007). Service grants account for 18% in any given year and community donations also have a place. The School of Nursing provides infrastructure support, and the University of Michigan Provost provides the remaining 24% required to underwrite the educational mission of the clinics.

The outcomes for chronic-disease patients in the programme are in the upper percentages. Hypertensive patients receive annual eye examinations and the blood pressure of most of them is under control. The diabetic patients maintain a high level of control of their diabetes, as well as co-morbidities such as obesity and hypercholesterolemia. The women over 40 have yearly mammograms.

The clinical outcomes are reviewed every year so the nurses are able to track the outcomes against the interventions annually.

### **38. UN ADMINISTERED PROVINCE OF KOSOVO:**

#### **Professional training oriented towards the provision of primary care in a post-conflict setting**

The aim of this programme is to contribute primarily to the short-term and medium-term development of nursing and midwifery in Kosovo, while also working with the government chief nurse to plan for the long-term future of the nursing profession, with nurses being the primary care providers. The intention is to use education to reorient the nursing and midwifery professions towards a level of primary health care that meets both European Union and WHO standards. The University of Pristina is working with Glasgow Caledonian University (Scotland), to develop a three-year programme. A problem-based learning approach is being used to encourage critical thinking.

The programme has 12 staff members from Scotland, each of whom has either a master's degree or a doctorate in nursing. Most of the academic staff from Pristina have their doctorates; they are complemented by clinical nurses and medical practitioners from community health centres who act as mentors.

The project was initially funded by a single grant of €1.8 million (US\$ 2.8 million) from the European Union. The annual cost of around €400 000 a year (US\$ 630 000) is now absorbed into Kosovo's education budget. Under the supervision of the European Agency for Reconstruction, all the equipment that had been either donated or purchased with project funds was handed over to the medical faculty in 2006.

By early 2008, 20 midwifery students and 34 nursing students had completed the programme. The emphasis in the final year was on clinical practice in the community. Students enjoyed the opportunity to work as semi-autonomous primary care practitioners. The education-for-health module gave them an opportunity to raise funds and develop an education campaign on diabetes mellitus, focusing on its negative effect on feet. The launch of their campaign coincided with World Health Day so a lot of publicity was generated throughout Kosovo, with three television stations reporting on the project.



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