

## Research and Theory

# Inventory and perspectives of chronic disease management programs in Switzerland: an exploratory survey

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## Abstract

**Objective:** To describe chronic disease management programs active in Switzerland in 2007, using an exploratory survey.

**Methods:** We searched the internet (Swiss official websites and Swiss web-pages, using Google), a medical electronic database (Medline), reference lists of pertinent articles, and contacted key informants. Programs met our operational definition of chronic disease management if their interventions targeted a chronic disease, included a multidisciplinary team ( $\geq 2$  healthcare professionals), lasted at least six months, and had already been implemented and were active in December 2007. We developed an extraction grid and collected data pertaining to eight domains (patient population, intervention recipient, intervention content, delivery personnel, method of communication, intensity and complexity, environment, clinical outcomes).

**Results:** We identified seven programs fulfilling our operational definition of chronic disease management. Programs targeted patients with diabetes, hypertension, heart failure, obesity, psychosis and breast cancer. Interventions were multifaceted; all included education and half considered planned follow-ups. The recipients of the interventions were patients, and healthcare professionals involved were physicians, nurses, social workers, psychologists and case managers of various backgrounds.

**Conclusions:** In Switzerland, a country with universal healthcare insurance coverage and little incentive to develop new healthcare strategies, chronic disease management programs are scarce. For future developments, appropriate evaluations of existing programs, involvement of all healthcare stakeholders, strong leadership and political will are, at least, desirable.

## Keywords

chronic disease management, Switzerland, exploratory study

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## Introduction

Even though chronic diseases are the leading causes of morbidity, mortality and disability, they are “surprisingly neglected elements of the global-health agenda” [1, p. 2152]. Worldwide, they are responsible for 49% of the burden of disease and 60% of deaths [2]. In high income countries, they represent the 10 first causes of disability-adjusted life years (DALY) and are projected to be the leading causes of deaths in 2030 [3]. The World Health Organization estimates that long-term conditions now account for most of the disease burden in Europe and the US [4]. After the age of 65,

around 70% of the individuals present one chronic disease or more [5]. Because longevity is increasing and populations age, the proportion of individuals who live with at least one chronic condition is likely to increase [6, 7]. Additionally, costs of chronic diseases place a large burden on the healthcare system [8, 9], and they increase as disability rises [10].

In Switzerland, approximately 2/3 of the individuals aged 65 years and over presents at least one chronic condition [11], and figures similar to the international burden of chronic diseases are found [12]. Chronic disease management (CDM) programs are multifaceted interventions aimed at improving quality of care

in patients presenting with such diseases. Thus, if effective, CDM could be very useful for the Swiss healthcare system. However, little is known about the supply of CDM in Switzerland.

According to the Disease Management Association of America (DMAA), “disease management is a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant” [13, webpage]. At best, chronic disease management programs should include processes of population identification, the use of evidence-based guidelines, multidisciplinary teams, patient self-management education, evaluation, process and outcomes measurement, as well as routine reporting and feedback [13]. Several uses and definitions of chronic disease management exist [13–18], and there is no consensus on its definition. Nevertheless, the most recent definitions integrate and describe the individual components of CDM more explicitly [19]. In fact, chronic disease management programs present varying components, duration of interventions, and study populations. Therefore, the comparison of programs is not easy.

The most commonly targeted chronic diseases are diabetes, heart failure, ischemic heart disease, asthma, chronic obstructive pulmonary disease (COPD), and depression. Systematic reviews assessing the effectiveness of CDM programs have shown that they may be effective. For example, CDM programs decreased the risk of hospitalization and mortality in patients with heart failure [20–22], improved glycemic control and screening rates in diabetics [23, 24], improved the walking distance, quality of life and rate of hospitalization of COPD patients [25, 26], decreased the severity of symptoms, and improved treatment compliance as well as satisfaction among patients with depression [27, 28].

Developed in the United States in the 1990s, chronic disease management programs have more recently been implemented in several European countries and used as a system response to problems that most healthcare systems are facing: organizational, medical and economical problems [29, 30]. In Germany, for example, CDM has been introduced nationally as part of a modification of the Health Law. Indeed, since January 2003, CDM programs for five chronic conditions (diabetes, asthma, chronic obstructive pulmonary disease, breast cancer and coronary heart diseases) have been part of the new risk structure compensation scheme of the German statutory health insurance, and started to be implemented nationwide [31, 32]. In this setting, programs are structured and regulated, and need to include a minimum of elements [33].

Switzerland is a small European country of 7.4 million inhabitants, spread over three main language regions

(German, French, and Italian). It is a federal state composed of 26 cantons. While the federal health responsibilities relate to legislative and supervisory roles, the cantons are responsible for the provision, organization and financing of health services, as well as for the development and implementation of health policy. Owing to the large decentralization of political power and a relatively high degree of local autonomy, we can consider that there are 26 slightly different healthcare systems in Switzerland, one for each canton, acting autonomously in the organization of healthcare in their area. Since the new Health Insurance Law came into force in January 1996, universal access to health care has been achieved. Indeed, all Swiss residents have access to basic health insurance coverage that includes a comprehensive package of health benefits identical for all insureds. According to the law, services included should meet criteria for effectiveness, appropriateness and cost-effectiveness, and insurers are obliged to accept applicants, theoretically avoiding risk selection [34–36].

In Switzerland, interest towards chronic disease management (CDM) has been growing recently. CDM is in its infancy and programs have only been implemented lately. No plans have been proposed for the structured development of CDM at the national, cantonal or regional. Individual initiatives exist, however. The objectives of this exploratory survey were to search, list and extract data on existing chronic disease management programs in Switzerland.

## Methods

Based on several definitions [13–18], we decided that programs would meet our operational definition of chronic disease management if their interventions specifically targeted adults (aged 18 years and over) with a chronic disease and included a multidisciplinary team ( $\geq 2$  healthcare professionals). Programs need to last at least six months, to be structured, and to have been implemented and ‘active’ in December 2007. By structured intervention, we meant that activities were described, organized and planned. A structured intervention goes beyond the usual activities of a single practitioner referring a diabetic patient to an endocrinologist or to a dietician, for example. The dimensions of education and use of evidence-based medicine have not been considered as mandatory as inclusion criteria, but their absence was considered a limitation of the program. Because the development of CDM is recent in Switzerland and we did not want to include comprehensive programs only, we purposively used a rather loose operational definition of CDM.

To find chronic disease management programs or programs that could be considered as such in

Switzerland, we used various sources and a search strategy expected to be as comprehensive as possible, but certainly not exhaustive. First, we visited Swiss official websites (i.e. Federal Office of Public Health, Swiss Health Observatory), and then Swiss-only web-pages using the generic internet engine Google with the following key words: 'disease management', 'integrated care', 'case management' and 'managed care'. Then, we searched a medical electronic database (Medline OVID), and checked references from selected documents. Finally, we contacted key informants: personally known individuals, those identified as possibly working in the field through the above-mentioned strategy, individuals responsible for managed care and/or disease management programs in major Swiss health insurance companies and people recommended by previously contacted persons (snow ball strategy).

To facilitate the gathering of information pertaining to selected chronic disease management programs, we constructed an extraction grid that included the eight domains proposed by Krumholz, who developed a taxonomy to help describe and compare CDM programs: patient population, intervention recipient, intervention content, delivery personnel, method of communication, intensity and complexity, environment and clinical outcomes [37]. We also classified the components of the intervention according to the following categories: education/self-management, multidisciplinary (2 or more healthcare professionals described to be actively involved in patients' care), measures and/or feedback (process and/or patients' outcome evaluation, with complementary feedback mechanisms), planned contacts with patients, evidence-based medicine/guidelines, teamwork (specific role for each health professionals ( $\geq 2$ ) included in the program, structured roles organization), program evaluation, action plan. Data were collected during telephone and/or in-person interviews. When available, published documents were used to complement the information.

## Results

Seven Swiss-based programs fulfilling our operational definition of CDM were identified. They are presented in an overview summary in Table 1 and briefly outlined below.

Programs targeted patients with diabetes, hypertension, heart failure, obesity, psychosis and breast cancer. Most identified programs were located in the French-speaking region of Switzerland and implemented between 2001 and 2007 by public hospitals or private healthcare support groups. The annual number of 'active' patients (i.e. patients benefiting from the program) varied between 65 and 250. Most often,

the recipients of the interventions were patients, and the delivery personnel consisted of physicians, nurses, social workers, psychologists and case managers with various backgrounds. Patients and healthcare professionals communicated using face-to-face and telephone contacts, and the interventions were mainly in the ambulatory care sector. In decreasing order of frequency, the explicit components of the interventions were education/self-management, measures and/or feedback, planned follow-up, use of evidence-based medicine/guidelines, teamwork, program evaluations and action plan (Table 2).

The largest and most comprehensive program 'Filière de soins Diabète' [39, 40], was created in 2004 in Western Switzerland. The program, intended for all diabetic patients in the region, is based on collaboration, information dissemination and care coordination among professionals. The components of the program are the «multidisciplinary cell», offering specialized ambulatory care (and access to a network of specialists such as diabetes specialists, dieticians, diabetes nurses, and foot specialists), patient education, and telephone service and follow-up, as well as coordination of care, central data collection and a website with up-to-date information, evidence-based guidelines, and patient education material. The program also developed an electronic medical record (aimed to be) accessible to all healthcare professionals involved in the patient's care. In 2006, an external evaluation was performed. It showed that the program had been successfully implemented and proved to be beneficial for the patients, in terms of reduction in mean Hb<sub>A1c</sub>, total cholesterol concentrations and blood pressure [40].

## Discussion

The results of this exploratory survey show that, in a country with universal health insurance coverage, a majority of physicians working in solo practice and little incentive to develop new healthcare strategies, there are few chronic disease management programs fulfilling our operational definition, and meeting the prerequisites of this concept. However, several others are under development. For example, a cantonal program for a coordinated action plan of indications and follow-up for alcohol dependent patients has officially started in January 2008 in Lausanne [41], and Medgate, a Swiss telemedicine support service, will soon propose CDM to heart failure and diabetic patients. Also, several networks of physicians are beginning to think about and/or develop CDM in various Swiss regions [42–44], and the 'Taskforce Herzinsuffizienz' has set up a theoretical program for heart failure patients [45]. All these initiatives may constitute good opportunities

Table 1. Description of selected Swiss 'disease management' programs

Program name, institution or firm, location	Year of start	Patient population	Intervention components	Healthcare professionals involved	Total number of patients included since start	Number of active patients (end of 2007)
Programme de soins 'cancer du sein' Hôpitaux Universitaires de Genève (HUG), Geneva	2001	Women with first diagnosis or recurrence of breast cancer	<ul style="list-style-type: none"> <li>- Patient empowerment</li> <li>- Pre and post surgery visits with nurse</li> <li>- Follow-up contact (with nurse) if needed</li> <li>- Nurse participation to meetings of all units involved in breast cancer treatment</li> <li>- Multidisciplinary meetings</li> </ul>	Physician Nurse	uk	≈230–250 new patients included every year
Disease Management Hypertonie Medgate, Basel	2004	Adults with hypertension (syst BP >140 mmHg and/or diast BP >90 mmHg)	<ul style="list-style-type: none"> <li>- Education</li> <li>- Self-management (regular home BP measurements and electronic/phone reports/contacts)</li> <li>- SMS feedback-loop to patient's mobile phone (after BP measurement)</li> <li>- Alarm-loop to physician on duty if BP exceeds predefined limits</li> <li>- Regular scheduled telephone follow-up after initial visit to physician</li> <li>- Telephone hotline (24/7)</li> </ul>	Physician Nurse	108	64
Traitement et intervention précoce des psychoses [38] Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne	2004	Patients with first episode of treated psychosis, aged 18–35 years, living in the region of Lausanne	<ul style="list-style-type: none"> <li>- Education</li> <li>- Patient outreach, psychiatric treatment</li> <li>- Contact and involvement of informal caregivers</li> <li>- Assertive community treatment (ambulatory care visits, home visits, intensive community treatment, informal phone and SMS contacts)</li> <li>- Specialized inpatient unit</li> </ul>	Physician Case manager (nurses, psychotherapists, social workers) Psychologist	≈175	≈150
Filière de soins Diabète [39, 40] Association Réseau de Soins de la Côte, Ensemble Hospitalier de la Côte et Groupement Hospitalier de l'Ouest Lémanique, Nyon-Aubonne-Morges	2004	Type 1 or 2 diabetes	<ul style="list-style-type: none"> <li>- Education</li> <li>- Self-management (glycemic control)</li> <li>- Action plan (if patient's autonomy appropriate)</li> <li>- Logbook</li> <li>- Coordination of intervention, communication and exchange of information among providers</li> <li>- Regular scheduled telephone follow-up</li> </ul>	Physician Nurse Dietician Chiroprapist Coordinator	629	NA
Journées obésité Hôpitaux Universitaires de Genève (HUG), Geneva	2004	Patients with body mass index (BMI) ≥30 kg/m <sup>2</sup>	<ul style="list-style-type: none"> <li>- Education</li> <li>- Self-management (diet, physical activity)</li> <li>- Ambulatory whole days (≈10 days during first year), regular visits with one healthcare professional</li> <li>- Art-therapy</li> </ul>	Physician Nurse Dietician Psychologist Art-therapist	189	≈100

Table 1 (Continued)

Program name, institution or firm, location	Year of start	Patient population	Intervention components	Healthcare professionals involved	Total number of patients included since start	Number of active patients (end of 2007)
Medvantis Herz Programme <i>Medvantis (Medi24), Bienne</i>	2007	Patients with clinical and/or echocardiographic diagnosis of heart failure	<ul style="list-style-type: none"> <li>– Education</li> <li>– Self-management (weight measurements, medication card, logbook of the Swiss heart association)</li> <li>– Home visit (1x), and/or regular scheduled telephone follow-up</li> <li>– Telephone hotline (24/7)</li> </ul>	Physician Nurse	≈250	≈100
Diabetes <i>Makora, Zürich</i>	2007	Type 2 diabetes	<ul style="list-style-type: none"> <li>– Education</li> <li>– Self-management</li> <li>– Behavioral coaching</li> <li>– Regular group sessions</li> </ul>	Nurse Dietician Psychologist Physiotherapist	NA	NA

uk=unknown; NA=not available.

Table 2. Explicit components of selected DM programs (decreasing order of frequency)

Component	n
Education, self-management	7
Multidisciplinary (≥2/≥3 healthcare professionals)	7 (3/4)
Measures and/or feedback	7
Planned contacts with patients	5
Evidence-based medicine, guidelines	4
Teamwork	4
Program evaluations	1
Action plan	1

for the further development of chronic disease management programs in Switzerland.

In Switzerland, continuing rises in healthcare expenditures, the rise of the burden of chronic diseases due to population ageing and the increase in life-expectancy, among others, as well as the reorganization of the healthcare system that includes recent discussions on CDM, may constitute a context prone to its development. In addition, since many physicians will retire in the coming decades and a shortage of primary care physicians is likely to ensue [46], major adjustments will need to appear in the medical workforce. This may also favour the development of multidisciplinary approaches to care for chronic diseases.

Programs and models of CDM should be adapted to the Swiss healthcare system, context and culture. However, the organized development of CDM programs could take some time because there is currently not much direct collaboration and care sharing between physicians and nurses or other healthcare professionals as well as between physicians from the hospital and the private ambulatory care sector, and also because each of the 26 Swiss cantons has its specific healthcare system. In addition, appropriate support for the development and evaluation of CDM programs should be available (e.g. appropriate source of evidence, data collection of clinical and process indicators), and regular group discussions and comparisons between leaders and partners of these types of programs should be organized to foster their quality. An additional favourable factor could be the recent interest of the Federal Office of Public Health (Dr. P. Indra, speech at PCS Suisse conference, Solothurn/Switzerland, November 2007) and of the Public Health departments of the Swiss cantons.

Our results need to be interpreted in light of three limitations. First, because the study was exploratory and our resources limited, the listing and description of existing CDM programs cannot be considered exhaustive. More specifically, we do not know whether the larger number of programs found in the French-speaking part of Switzerland reflects a real difference in the

development of CDM, or merely the lack of detection of existing programs in the German-speaking region. For example, the latter may be due to the persistent non-response of contacted persons despite multiple attempts, to the fact that multiple terms are used to designate CDM, or because investigators/physicians do not consider their programs as being CDM, which complicates the search. Second, there is no standard definition of chronic disease management, and our operational definition was rather loose. This was done purposively, however, because we wanted to be as sensitive as possible in identifying CDM programs. We decided to include partial programs and describe their actual components, rather than exclude them. Finally, because our aim was to describe programs that were supposed to be implemented as long-term interventions in patients with chronic diseases, and more comprehensive than for example rehabilitation programs, we did not include programs that lasted <6 months.

In conclusion, the results of this exploratory survey showed that the development of chronic disease management programs is currently very limited in Switzerland. These results should lead to a more comprehensive and larger Swiss study aiming at examining how CDM could be tailored to the Swiss healthcare system using quantitative and qualitative methods surveying the opinion of selected stakeholders in Switzerland (patients, physicians, nurses, insurers, politicians, administrators), and to identify barriers and facilitators to its broad-scale implementation.

For the future development of CDM, the use of a common concept, appropriate evaluations of existing programs, sharing of experiences across programs both at the national and international level, improvement in data collection systems, the involvement and motivation of all healthcare stakeholders, proper reimbursement schemes as well as a strong political will and leadership, are necessary. Such elements may also be mandatory in other jurisdictions.

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