



Clinical Health Promotion in the Czech Republic: Standards Compliance and Service Provision

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Abstract

Background Clinical health promotion significantly improves treatment outcomes in hospitals and health services on both long and short term. Therefore, the World Health Organization (WHO) and the International Network of Health Promoting Hospitals & Health Services (HPH) developed and validated three easy-to-use tools that have been implemented by many national, regional and local health care organisations as part of their quality management framework. However, the compliance with and use of these standards and models, as well as the actual provision of health promotion services, are seldom published. The aim was to evaluate the compliance with the current WHO-HPH Standards and the related documentation models compared with the international baseline data from 3 historic control groups from 2005, 2008 and 2012.

Methods In a cross-sectional design, 8 clinical departments from the Czech Republic were included, and 400 consecutive medical records from a random date were evaluated. Data were collected on standards compliance and service provision using 3 tools: the 5 overall WHO-HPH Standards (2005); the HPH DOC-ACT model (2007) on clinical health promotion intervention; and the HPH DATA model (2012) for medical records documentation of the patients' need for health promotion intervention. The international baseline data originated from the historic control groups of 38 hospitals in 8 countries (2005); 17 from six countries (2007) and 68 from 11 countries (2012).

Results The overall compliance with the WHO-HPH Standards is significantly higher at present compared to the international baseline data (2005); the compliance rates were 66% versus 53%, respectively ($P < 0.01$). The patients' current needs for health promotion intervention were documented to a similar degree as in the historic control group, and the percentages were 66% (26-98%) versus 66% (29-94%), respectively. The provision of health promotion intervention to patients who need it is significantly lower at present, with an overall rate of 16% (13-24%) versus 30% (10-36%), with $p < 0.05$ for motivational activities. Additionally, 14% (13-20%) versus 23% (6-40%), with $p < 0.01$, had documented intervention programmes. Further 16-27% compared to 0-3% ($p < 0.01$) of the patients in need had insufficient information for identifying whether any interventions had taken place.

Conclusion The overall compliance with the WHO-HPH standards is high at present. However, there is inadequate provision of clinical health promotion activities to patients in need, indicating that substantial benefits would result from implementing clinical health promotion. New research on implementation strategies is urgently needed.

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Introduction

Clinical health promotion is a patient-centred approach to healthcare services characterised by integrating health promotion into the clinical pathway. The benefits of clinical health promotion include improved treatment results, lower costs and better patient safety (1-3). Health promotion in hospitals and health services also includes promoting healthy clinical workplaces. The overall goal is better health gain for patients, staff and community.

In general, the reported benefits of health promotion are often from long-term assessments (4-6). In addition to reducing the burden of disease, there appears to be a tremendous clinical effect on short term, such as through improving outcomes in diabetes patients via comprehensive health promotion and rehabilitation programmes (7), reducing postoperative complications by introducing intensive health promotion interventions before surgery (8-11) and improving mental health through smoking cessation



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intervention in psychiatry and other settings (12).

Therefore, systematic implementation of effective health promotion programmes has become a key quality component in hospitals and health services, along with clinical effectiveness and patient safety (13-15). Based on the International Society for Quality in Health Care criteria (www.isqua.org and 16), the World Health Organisation (WHO) and the International Network of Health Promoting Hospitals & Health Services (HPH) developed, validated and published 5 overall standards for health promotion in hospitals (17). Conventionally, hospital quality management involves planning, implementation, evaluation, and continuous improvement of all clinical and non-clinical activities. The WHO-HPH Standards fit directly into these quality improvement efforts by helping managers and staff assess and improve health promotion activities and their provision (16;18).

Alongside the standards, two other tools have been developed and internationally validated to support the implementation of and follow-up on health promotion in daily clinical practice. All tools are easy to use and independent of local documentation routines. Altogether the tools are:

- The five WHO-HPH Standards with 40 measurable elements that can be used at the hospital or department level for addressing health promotion. They span the domains of 1) management policy, 2) patient assessment, 3) patient information and intervention, 4) promoting a healthy workplace and 5) continuity and co-operation (Figure 1) (17).
- The two models for auditing medical records at the individual patient level:
 - HPH DATA with 9 questions for documenting the patients' needs for health promotion (Table 2) (19).
 - HPH Doc-Act with 15 international codes for documenting the health promotion activities provided (Table 3) (20).

The DATA Model serve to visualise health promotion needs in the medical records, and the Doc-Act Model serves to visualise the related activities provided (such as identification of daily smoking and the following participation in a cessation course). They serve as practical ways to measure the medical record documentation of WHO-HPH Standards 2 and 3, respectively. They were developed in international working groups and have been tested by clinicians, who found them understandable, applicable and sufficient. The tools are characterised by high inter-observer reliability across specialities and countries (19;20).

Many national, regional and local health services have implemented, completely or in part, the WHO-HPH Standards and the two supportive tools as part of their quality management framework. However, assessing health promotion needs and administration of health promotion activities in the clinic is still a novel field, and knowledge on the present compliance rate and progress is sparse.

Therefore, the aim of this study was to evaluate current compliance with the WHO-HPH Standards and related documentation models in the Czech Republic compared with the international baseline data in three historic control groups from 2005, 2008 and 2012.

Methods

The study design is cross-sectional with a comparison between current and international baseline data from historic control groups (primarily from Europe, but other continents are also included).

The inclusion criteria for the present Czech group were clinical departments responsible for patient treatment at member hospitals of the International Network of Health Promoting Hospitals & Health Services (www.hphnet.org). Both in-patient wards and outpatient clinics were included; however, only one department from each hospital was included in the study. Exclusion criteria included paediatric and palliative departments as well as nursing homes, because the WHO-HPH standards and one of the tools have not been validated for these patient groups (16;19).

We assessed compliance by categorising measurable elements from the WHO-HPH Standards as either compliant or non-compliant. For the HPH DATA Model and the HPH Doc-Act Model, medical record data were registered as either categorisable, i.e. cases where information was sufficient for identifying the patient's need for health promotion (e.g., a high risk patient: "The patient smokes ten cigarettes per day" or a low risk patient: "No smoking during the last 3 years") or not categorisable, i.e. cases lacking sufficient information for identifying the patient's need for health promotion (e.g., "the patient smells of tobacco"). (see Table 2)

Study Participants and Setting

Eight clinical departments from eight HPH member hospitals in the Czech Republic responded to an open call and were included in the study after informed consent from both department and hospital management. Three were departments of lung diseases, and the remaining departments were internal medicine, surgery, orthopaedic surgery, nephrology and cardiology.



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The departments were from different types of hospitals. According to national health care regulations, Czech authorities and/or private quality accreditation programmes externally assessed all hospitals.

The international baseline data were obtained from historic control groups. The WHO-HPH Standards data originated from 38 hospitals in eight countries: the Czech Republic, Ireland, Lithuania, Slovenia, South Africa, Sweden, Germany and Italy (21). Overall, 14 of the 38 hospitals had undergone external quality assessment. Hospital characteristics are given in Table 1.

Table 1 Characteristics of the eight current departments and 38 international hospitals from the historic control group

		Present group	Control group
Status of hospital	Public	5/8	32/38
	Private not for profit	1/8	4/38
	Private for profit	2/8	2/38
Type of hospital	Community hospital	3/8	21/38
	Large teaching general	1/8	7/38
	University hospital	3/8	4/38
	Specialised hospital	1/8	6/38
Catchment area	Rural	0/8	3/38
	Urban	1/8	8/38
	Mixed	7/8	27/38
Number of beds	<200	0/8	5/38
	200 to 399	3/8	11/38
	400 to 599	2/8	9/38
	>599	3/8	13/38
HPH Member	Yes	8/8	28/38
	No	0/8	10/38

The historic baseline data for the HPH DOC-ACT model were obtained from 17 clinical hospital departments in 6 countries: Estonia, Ireland, Italy, Canada, Sweden and the United Kingdom. These were departments of surgery, orthopaedic surgery, internal medicine (including lung disease), geriatrics, psychiatry and paediatrics (20).

The historic baseline data for the HPH-DATA model were collected in 68 clinical departments at different hospitals in 11 countries/regions: Austria, Czech Republic, Estonia, Finland, Germany, Italy, Canada, Norway, Spain, Switzerland and Taiwan (19). The departments were from large and small hospitals as well as university

hospitals with in- and out-patients from internal medicine (including lung diseases), cardiology, nephrology, oncology, geriatrics, surgery, orthopaedic surgery, urology and emergency settings and intensive care units.

Data collection

The current study's eight participating departments in the Czech Republic received an information manual, technical support, and an online template for anonymous data collection. The data collection process took 6-8 months and was similar to that described for the historic control groups (19-21). The process elements were:

1. A self-assessment tool for WHO-HPH Standards at each department (17;21)
2. HPH tools for the internal audit of 50 x 8 consecutive medical records performed at a random date before involvement in the project (DATA Model, Doc-Act Model) (19;20)

The WHO Country Office and the Ministry of Health of the Czech Republic performed all translations. The Danish Data Protection Agency for international studies, the Internal Research Boards of Bispebjerg Hospital and ethics board of each participating hospital approved the project. All person-identifiable data collected from patients and staff were anonymised at the source.

Data analysis

The compliance scores were categorised by rating each of the 40 measurable WHO-HPH Standards elements as non-compliant or compliant. It is worth noticing that category of non-compliance thus also included partially compliant scores. We calculated the number of compliant scores for each of the five standards as well as for the overall fulfilment. Results were presented as percentages. The level of indicator fulfilment was also calculated as percentages.

The standard compliance results were compared with the previous findings from the historic control group. However, the five standards previously assessed in the historic control group originally included 68 measurable elements that were later reduced to the 40 measurable elements used today (16;21). Also, the compliance score was originally categorised as compliant, partially compliant and non-compliant; so only the compliant category from the historical control group was used for comparison with the present group. This was done with Fisher's exact tests and a p-value lower than 0.05 was considered statistically significant.



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Results

WHO-HPH Standards

The eight clinical departments from the Czech Republic had a compliance of 60% for standard 1, 73% for standard 2, 50% for standard 3, 65% for standard 4 and 78% for standard 5. The overall compliance was significantly higher in the present group: 66% (8 departments across 40 measurable elements, 210 instances of compliance of 320 possible) compared to 53% (38 hospitals across 68 measurable elements, 936 instances of compliance of 2584 possible) in the historic control group ($p < 0.01$). Compliance results were consistent by each department; however, the number of departments was too small to allow further statistical analyses on this basis.

3 of the 40 measurable elements belonged to the lowest score quartile (0-2 instances of compliance); 2 of these lacked compliance in all of the departments. 10 constituted the highest quartile (7-8 instances of compliance); 7 of these were met with full compliance in all departments (Figure 1).

The HPH DATA model

The documentation of patients' needs for health promotion intervention was similar to the historic control group; 66% (26-98%) had information that was categorisable versus 66% (29-94%) ($p = 0.85$), respectively. Physical activity and alcohol consumption had the worst documentation, and these categories were not significantly

cantly different between the present and historic control group. The details are given in Table 2.

The HPH Doc-Act model

The actual provision of health promotion intervention to patients with identified needs in the present group was significantly lower than in the historic control group. Documented motivational activities for nutrition (24 vs. 32%), physical activity (21 vs. 36%), psychosocial relations (16 vs. 30%) and integrated counselling (13 vs. 33%), were significantly lower in the present group than in the historic group ($p < 0.01$). Only motivational activities for alcohol was higher in the present group (15 vs. 10%) ($p < 0.01$) (Table 3).

Documented intervention programmes for physical exercise (14 vs. 29%), psycho-social support (15 vs. 21%) and integrated rehabilitation (13 vs. 29%) were significantly lower in the present group also ($p < 0.01$). Just intervention programs for smoking cessation (13 vs. 8%) and alcohol (13 vs. 6%) were higher ($p < 0.01$) (Table 3).

Overall, 16% (13-24%) in the present group versus 30% (10-36%) in the historic control group ($p < 0.05$) had documented motivational activities and 14% (13-20%) in the present group versus 23% (6-40%) in the historic control group ($p < 0.01$) had documented intervention programs. An additional 16-27% of the patients in the present group had insufficient information for identi-

Figure 1 Compliance results of the 40 measurable elements in the five WHO-HPH Standards for Health Promotion in hospitals, which were measured by eight clinical departments in the Czech Republic

Standards/Substandards	Departments 1-8								Total
	A	B	C	D	E	F	G	H	
1.1.1. Aims and mission include HP		x	x	x	x		x	x	6
1.1.2. Minutes reaffirm agreement w HPH	x	x		x	x	x	x	x	7
1.1.3. Quality/business plans include HP				x	x	x		x	5
1.1.4. Personnel and functions ID'ed for HP	x	x	x	x	x	x	x	x	8
1.2.1. There is a budget for HP									0
1.2.2. HP procedures available		x	x	x	x		x	x	6
1.2.3. HP structures and facilities can be ID'ed				x	x	x		x	5
1.3.1. HP intervention data captured	x	x		x				x	4
1.3.2. Assessment of HP established					x			x	2
Total Standard 1: Management Policy									60%
2.1.1. Guidelines to ID lifestyle risk exist		x		x			x	x	4
2.1.2. Guidelines have been revised		x		x			x	x	4
2.1.3. Guidelines to ID HP needs exist		x	x	x	x			x	5
2.2.1. Assessment is documented	x	x	x	x	x	x	x	x	7
2.2.2. Guidelines for reassessing HP needs	x	x	x	x	x	x	x	x	8
2.3.1. Info from referring DR available in MR	x	x	x	x	x	x	x	x	7
2.3.2. MR documents social/cultural background	x	x		x	x		x	x	6
Total Standard 2: Patient Assessment									73%
3.1.1. Information given is recorded in MR				x	x	x		x	5
3.1.2. HP activities are documented in MR									0
3.1.3. PT satisfaction assessment integrated in QM	x			x	x	x	x	x	6
3.2.1. General health information is available		x	x	x	x			x	5
3.2.2. Info about highrisk diseases is available		x	x	x	x			x	5
3.2.3. Information on PT organizations available				x			x	x	3
Total Standard 3: Patient Information & Intervention									50%

Substandards:	Departments 1-8								Total
	A	B	C	D	E	F	G	H	
4.1.1. Working conditions comply w N/R directives	x	x	x	x	x	x	x	x	8
4.1.2. Staff comply w health and safety	x	x	x	x	x	x	x	x	8
4.2.1. Intro training on HP policy given to new staff		x		x				x	4
4.2.2. Staff aware of HP policy		x		x				x	3
4.2.3. HP performance appraisal system exists		x	x	x	x		x	x	6
4.2.4. Practices made by multidisciplinary teams		x	x	x	x		x	x	6
4.2.5. Staff involved in policy-making		x	x	x	x		x	x	6
4.3.1. Policies on health issues available for staff				x			x	x	3
4.3.2. Smoking cessation programmes offered	x			x			x	x	4
4.3.3. Annual staff surveys are carried out			x		x		x	x	4
Total Standard 4: Healthy Workplace									65%
5.1.1. Regional policy taken into account		x	x	x	x		x		5
5.1.2. List of partners available	x	x	x	x	x	x	x	x	8
5.1.3. Collaboration based on regional health plan	x	x	x	x	x		x		6
5.1.4. Plan for collaboration w partners available		x	x	x	x			x	4
5.2.1. Follow-up instructions given	x	x	x	x	x	x	x	x	8
5.2.2. Procedure for info exchange exists	x	x	x	x	x	x	x	x	8
5.2.3. Receiving organization gets info on PT	x		x	x	x		x	x	6
5.2.4. Rehab plan documented in MR	x		x	x	x		x		5
Total Standard 5: Continuity and Cooperation									78%
Total Number of measurable elements (of 40)	17	27	27	36	29	10	33	31	
Total All standards									66%



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Table 2 HPH DATA Model for assessing health promotion needs: The medical record audit results for the documentation of health promotion needs in the present group (400 patients) and historic group (1360 patients) (results expressed as %; W: women; M: men)

		Categorisable (%)				Not categorisable (%)	
		High risk patients		Low risk patients		Unknown	
		Present group	Historic group	Present group	Historic group	Present group	Historic group
A-1	Is the patient's BMI below 20.5?	9	12	81	56	10	32
A-2	Has the patient lost weight in the past three months?	11	15	56	44	33	41
A-3	Has the patient had reduced appetite in the past week?	10	16	38	43	52	41
A-4	Is the patient severely ill? (i.e. stress-metabolic)	63	31	35	63	2	6
B 1	Is the patient's BMI above 25?	60	31	31	35	9	34
B-2	Has the patient's waist exceeded 80 cm (W) or 94 cm (M)?	13	12	13	17	74	71
C-1	Is the patient active less than 30 min/day? (Moderate intensity with pulse increase, e.g. walking, cycling, training)	23	17	23	37	54	46
D-1	Does the patient smoke daily?	20	22	69	64	11	14
E-1	Does the patient's drinking exceed the recommend limits? (Women: 7 weekly, Men: 14)	2	9	59	62	37	29

Table 3 HPH Doc-Act Model for assessing health promotion activities: The medical record audit results for the documentation of health promotion activities in the present group (400 patients) and historic group (1360 patients) (results expressed as %).

		Present Group	Historic Group
7 codes for motivational counselling and motivational interviewing technique related to:			
Tobacco	(BQFS01)*	16	17
Alcohol	(BQFS02)*	15	10
Nutrition	(BQFS03)*	24	32
Physical activity	(BQFS04)*	21	36
Psycho social relations	(BQFS05)*	16	30
Other risk factors	(BQFS06)*	23	25
Integrated counselling (consisting of several factors)	(BQFS19)*	13	33
8 codes for intervention, rehabilitation and after treatment:			
Smoking cessation programme	(BQFT01)*	13	8
Alcohol intervention programme	(BQFT02)*	13	6
Nutrition programme	(BQFT03)*	20	22
Physical exercise intervention	(BQFT04)*	14	29
Psycho social support	(BQFT05)*	15	21
Medical optimisation / Adjustment of medication	(BXAB0)*	-	40
Patient education programme	(BVDY04)*	-	23
Integrated rehabilitation (consisting of several factors)	(BQFT01)*	13	29
Others		20	-

*Systematic classification of treatment and care in Denmark

fyng whether an intervention had taken place, which was significantly worse than the control group (0-3%) ($p < 0.01$; Table 3).

Discussion

The purpose of this study was to evaluate current compliance with the WHO-HPH Standards and related documentation models in the Czech Republic compared with historic control group data.

We found that general compliance was significantly higher than in the international baseline data from 2005 and that patients' needs for health promotion were documented to a similar degree. However, we also found that actual provision of health promotion services to patients is significantly lower in the present group.

Based on the sparse literature on integration of effective health promotion into clinical routines, hospital staff, managers and patients generally have a positive approach to health promotion quality management (21-23). The patients usually express acceptance of and preference for effective health promotion programmes that can reduce their complications and period of recovery (24-26). And patients have even been found to be disappointed if informed of, but not offered, health promotion programmes for improving their treatment results (27).

Many healthcare services have included some or all of the three tools assessed in this study – examples are the national quality management programmes in Ireland, Sweden and Denmark, amongst others. Many more health services and hospitals have implemented these



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tools regionally and locally.

The main focus of this implementation has been on quality management, policy making, managerial decision-making and measuring the progress by meeting process-related standards and indicators, such as maintaining health promotion policies, clinical guidelines, lists and follow-up procedures. However, it is possible that quality management may have limited, or less than anticipated, effect on delivery of care (28;29).

Recording patients' needs for health promotion is a necessary prerequisite for systematically offering effective programmes to at-risk patients. Offering relevant and effective treatment usually follows the identification of symptoms and diagnoses. This is the case for pneumonia, fractures, diabetes, hypertension, mental illness and so on. In contrast, diagnosing smoking, malnutrition, risky alcohol drinking and physical inactivity are only seldom followed by relevant and effective intervention offers, even though such health promotion interventions could improve treatment outcomes.

To benefit from adding clinical health promotion to patient pathways, the focus needs to be on implementing a patient-centred activity and verifying its effectiveness with a later assessment. An important element of implementing health promotion interventions is educating and training the staff, since the implementation rate has been shown to double when the staff is both competent and engaged (30).

Additionally, a successful, systematic implementation of clinical health promotion would help patients in high-risk and marginalised groups who often face poor treatment outcomes - thus reducing health inequity.

Bias and limitations

This study has a number of biases and limitations. However, some of these biases and limitations are balanced. First, the use of historic control groups may introduce systematic bias, either due to improving the implementation over time from continuously increasing the interest in health promotion or reducing the implementation because of short-sighted resource cutting for health promotion activities in an economic crisis.

Another bias relates exclusively to the WHO-HPH Standards, which historically included a higher quantity of measurable elements than the current version. A higher number of elements increase the possibility of chance compliance, which in turn reduces the differences between the two groups. On the other hand, compliance to a given standard may be low when it includes more

measurable elements, especially if the elements are interdependent. That, however, was not the case in the present study.

Furthermore, the historic control group data were measured for entire hospitals with many departments instead of for individual departments alone; therefore, the requirement for compliance was broader compared to individual departments, which may explain some of the differences between the present and historic control groups. Nevertheless, the management policy, common guidelines and general process standards often cover all departments simultaneously, which facilitates compliance for the entire hospital.

A limitation of the present study is the use of only International HPH Network member hospitals. Generalisation of the results outside of HPH member hospitals and health services should be considered.

Conclusions

This study clearly shows that the main challenge of health promotion performance and service provision is related to the implementation of the activities. Additionally, quality management strategies and action plans should focus on the individual patient's needs and include a follow-up to assess progress on specific items. Introducing standards and patient assessment is of little avail, if one does not first ensure that these can be implemented and can contribute to health gains.

The benefits of the systematic implementation of effective health promotion programmes are substantial; offering health promotion can prevent complications, re-admissions, prolonged recovery and other undesired elements in a patient's clinical pathway. New competences in clinical health promotion should be developed for patients and relatives, forming a better bridge with primary health care. Additionally, the staff members should be offered more training and knowledge as well as a workplace that offers to enhance their health.

The societal effects of health promotion activities are predominantly economic. They include the reduced use of health care recourses for individual high-risk patients, which are due, in the short term, to reduced complications, shorter recovery and fewer re-admissions. In the long term, clinical health promotion can also help reduce aggravation of existing, and development of new, chronic diseases.

The main scientific ramifications of this study include highlighting the need for further investigations on this



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topic. Additionally, we need to develop high-quality studies on effective implementation strategies with the aim of connecting quality management to the provision of evidence-based, effective health promotion interventions in clinical care settings

Contribution details

Conception and design: JKS, HT

Acquisition of data: BR, ZS, ZD, MR, JC, MV, MO, JKS, HT

Analysis and interpretation of data: JKS, HT

Drafting the article: JKS, HT

Revising the article critically for important intellectual content: BR, ZS, ZD, MR, JC, MV, MO, JKS, HT

Final approval of the version to be published: BR, ZS, ZD, MR, JC, MV, MO, JKS, HT

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Competing interests

None declared.

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