



CLINICAL HEALTH PROMOTION

Research & Best Practice for patients, staff and community

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Editorial Office

WHO-CC, Clinical Health Promotion Centre
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Sweden

The Official Journal of

The International Network of Health Promoting
Hospitals and Health Services



CLINICAL HEALTH PROMOTION

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Aim

The overall aim of the journal is to support the work towards better health gain by an integration of Health Promotion into the organisational structure and culture of the hospitals and health services. This is done by significant improvement of a worldwide publication of clinical health promotion based on best evidence-based practice for patient, staff and community.

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Editorial

Importance of a global strategy for the International Network of Health Promoting Hospitals and Health Services (HPH)

A good strategy bridges the gap between the situation today and the future goals and vision

Raffaele Zoratti, Ida RK Bukholm, Jerneja Farkas-Lainscak, Susan Frampton, Bozena Walewska-Zielecka, Manel Santiñà, Jürgen Pelikan, Hanne Tønnesen

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Why a global HPH strategy?

Having a strategy serves the purpose of focusing. Having a strategy helps to select a few, tangible and specific areas that should be improved in order to reach the concrete goals or guiding vision. The Global HPH strategies, past and new, are not just a nice pieces of paper or a collection of fancy buzz-words, but rather a strong and relevant tool with clear actions and clear measurable elements that outline the key practical steps towards fulfilling the overall goal of HPH.

The overall HPH goal is better health gain by improving the quality of health care, the relationship between hospitals and health services, the community and the environment, and the condition for and satisfaction of patients, relatives, and staff (1).

According to the HPH constitution, HPH “shall works towards incorporating the concepts, values, strategies and standards or indicators of health promotion into the organizational structure and culture of hospitals and health services” (2).

In general, implementation is easier said than done and a major challenge in real life. For this reason, it might well be difficult to know exactly what to do to, how to do it, who should do it, when and where to do it and so on, in order to achieve successful integration. In the health care setting, systematic implementation is crucial to reaching out to all patients and staff in order for them to individually benefit from effective health promotion, which of course in turn benefits both the organization and society as a whole.

Consequences of insufficient implementation

If only a minority of our patients and staff receives health promotion programs, then these would often tend to be the strongest, and those that already are characterized by more health and less needs for health promotion to begin with.

Those with the highest level of needs, however, hold the greatest potential for better health gain, but simultaneously they are all too often more silent and not as visible – especially when it comes to patients with very unhealthy lifestyle and poor socio-economic conditions. These groups rarely have a strong patient organization backing them and they are very rarely the ones to loudly require health promotion activities themselves in order to get a better health gain.

For that reason, it is truly paramount to implement systematic identification of needs for health promotion to all patients and staff according to e.g. the HPH DATA Model (3) - followed by systematic delivery of related health promotion activities to those in need. By such a simple need-triggers-action method, those with the highest need and most potential for improvement get the most services (4). In this way, the hospitals and health services of HPH can reach out to the otherwise un-reachable, socio-economically challenged groups and truly harvest the many great effects of patient-centered health promotion.

Definitions

It is curious to note that the origins of the word “strategy” actually relate to war and



Editorial

its leadership, as the art of planning and directing over-all military operations and battle movements (or the plan itself). Today, we hear it over and over in organisational contexts, regarding: A plan of action designed to achieve a long-term or overall aim (5)

Many more detailed definitions have been developed, as one might imagine, but usually the gist of it is similar to the above. If the mission is the aim of your daily activities and the vision is what you want to obtain in the future, then the strategy should be the practical steps that would take you closer to the vision.

How is the global HPH strategy developed?

Over time the global HPH strategy has supported different elements of the implementation towards the ambitious goal of better health gain. The elements have always been related to the mission and objectives of the HPH Constitution, the obligations outlined in the National/Regional HPH Network agreement with the International HPH, and the Letter of Intent that all HPH members have signed.

The global strategy is presented and recommended by the Governance Board and approved by the General Assembly. It usually runs for three years, and the fulfillment is evaluated closely and through the mandatory progress reports every second year, which are completed by all National/Regional HPH Networks and HPH Task Forces.

The first HPH strategy was developed for 2009-10 after a very long process (6). It followed the HPH Constitution from 2008 and the priorities given by the General Assembly, which then tasked the Governance Board with the developmental phase, in order to detail specific success criteria, activities, goals and monitoring.

The Governance Board spent many working hours to develop those – and already for the following HPH Strategy, it was decided to involve an international expert in development of organizations and change management, Mr. Tune Hein, who has since then offered in-kind support of the strategic work of the HPH Network.

The structure and content of the global HPH strategy over time

The HPH strategy has common areas of priority for both Governance Board, National/Regional HPH Networks and HPH Task Forces; however, the activities are different. Most often, the Governance Board has the International focus, while the National/Regional HPH Networks have a more local focus and the HPH Task Forces have a thematic focus.

The strategy is related as well as limited to a specific time period, because the relevance and needs for focusing on specific subjects change over time:

2009-2010	Quantitative Growth; Partnerships & Alliances; Standards & Indicators (including qualitative growth) (6)
2011-2013	Growth & Member Care; Visibility & Publication: Partners & Affiliated Members; Qualitative Growth, Overall Implementation of HPH Strategy (7)
2013-2015	WHO-HPH Standards & Indicators; Teaching & Training; Communication & Advocacy; Advancement of Clinical Health Promotion Research; Overall Implementation of HPH Strategy (8)

New areas of priorities in the upcoming global HPH strategy?

2016-2018	WHO-HPH standards; capacity & Awareness; Development and Sustainability
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The new strategy has many new sub-elements, including:

- updated WHO Standards with the newest evidence and coverage of other health services than hospitals;
- local HPH day to increase awareness
- clarification of the responsibility and role of the national/regional coordinators;
- stakeholder analyses
- HPH member benefits

For the first time, the strategy also directly outlines the level of individual hospital and health services members, who are not yet part of an established National/Regional Network. In this way the new global HPH strategy includes all HPH members and levels and supports the overarching goal of a better health gain for patients, staff and community as well as the environment.

References

- (1) HPH Constitution (<http://hphnet.org/attachments/article/5/Constitution%20and%20Mou%20signed.pdf>)
- (2) World Health Organization; Groene O (ed) Manual for implementation of health promotion in hospitals 2010
- (3) Tønnesen H, Svane JK, Lenzi L, et al: Handling Clinical Health Promotion in the HPH DATA Model. Clin. Health Promot. 2012; 2:5-11
- (4) Tønnesen H, Christensen ME, Groene O, et al: An evaluation of a model for the systematic documentation of hospital based health promotion activities: results from a multicentre study. BMC Health Services Research 2007; 7:145
- (5) <http://www.oxforddictionaries.com/definition/english/strategy>
- (6) HPH Strategy 2009-10 (<http://hphnet.org/attachments/article/123/HPH%20Strategy%202009-2010.pdf>)
- (7) HPH Global Strategy 2011-2013 (<http://hphnet.org/attachments/article/1715/HPH%20Global%20Strategy%202011-2013.pdf>)
- (8) HPH Global Strategy 2013-2015 (<http://hphnet.org/attachments/article/2149/HPH%20Strategy%202013-2015.pdf>)



Patient-centered lighting environments to improve health care in the intensive care unit

Alawi Luetz¹, Helmut Piazena², Björn Weiss¹, Annette Finke³, Thomas Willemeit³ and Claudia Spies¹

Background Sleep abnormalities and disturbances of the circadian rhythm are known to negatively affect recovery for patients in the Intensive Care Unit (ICU). Daylight is the most important stimulus to entrain circadian rhythmicity by suppression of melatonin production. Therefore, light therapy seems a promising intervention to improve patients' outcome. This study examined photometric parameters of different electric light sources in the ICU.

Methods Light measurements were conducted in the ICU of a tertiary care medical centre in Germany (NCT02143661). We assessed spectral irradiance, illuminance, luminance, correlated colour temperature and colour rendering index of a fluorescent tube lamp (FL1), a fluorescent lamp with micro-lens optic (FL2) and a newly developed LED light-ceiling. Measurements were determined at patients' eye level. Spectral irradiance was assessed with a double monochromator spectroradiometer. Circadian effective irradiance was calculated by weighting the spectral irradiance with the action spectrum for melatonin suppression and by integration over all effective wavelengths.

Results The new LED light-ceiling revealed higher illuminance levels than FL1 and FL2 (1,900 to 2,750 lux vs. 260 to 750 lux and 500 to 1,400 lux). The colour rendering index was higher for the LED ceiling than both fluorescent lamps (97% vs. 74% and 77%). FL2 exceeded the threshold level of absolute glare (>10,000 candelas). The circadian effective irradiance was high for the LED ceiling compared to FL1 and FL2 (1.98 - 2.89 W/m² vs. 0.29 - 0.5 W/m² and 0.41 - 1.16 W/m²)

Conclusion Only the newly developed LED light-ceiling provided sufficient circadian effective irradiance for maximal melatonin suppression without entering the area of absolute glare. These results should be considered when designing future health-promoting environments for critically ill patients.

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Introduction

Health promotion in critically ill patients is a challenge due to intensive therapy and monitoring requirements.

Sleeplessness during critical illness is one of the most frequent stressors reported by Intensive Care Unit survivors (1;2). In fact, several studies reported abnormalities of sleep quantity and quality with a significant decrease in slow wave sleep (SWS) and rapid eye movement (REM) sleep. In addition, several studies revealed that critically ill patients suffer from alterations in their circadian rhythm of melatonin production (3;4). Shigeta and colleagues found a marked increase of postoperative 24-hour melatonin patterns in ICU patients who developed delirium and additional complications (5). The reported high melatonin levels in patients with the highest severity of illness might be one possible explanation

for nocturnal melatonin administration showing inconsistent results regarding clinical outcome (6;7).

Until now, nocturnal sedation was a common and widely accepted method for treating sleeplessness in the critically ill patient. However, recent studies highlighted that even small doses of sedatives impair restorative sleep (8). Additionally, sedation is associated with increased mortality and a higher risk for transitioning to delirium (9).

As a consequence of these findings, using light therapy to maintain or entrain circadian rhythm seems an adequate intervention that might have a much better risk-benefit ratio than those used in clinical routines today.

Guidelines for ICU design recommend a daylight source for every patient room and artificial light that can be dialed up



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and down to minimize circadian rhythm disruptions (10;11). But what makes a light source adequate in supporting circadian rhythmicity of a critically ill patient? Experimental data from healthy adults show that besides timing and duration, the effectiveness of light interventions in suppressing melatonin production depends on spectral irradiance, illuminance and luminance of the light source (12-16).

The primary aim of this study was to compare photometric parameters of three different electric light sources in the ICU. Furthermore, the study aimed at estimating potential circadian efficacy and side effects of the investigated light sources for exposed patients.

Methods

Light measurements (LMs) were conducted in the ICU of a tertiary care medical center in Germany. These LMs were part of an observational study, which has

been registered under the ClinicalTrials.gov identifier NCT02143661. The Ethics Committee of the Charité - Universitätsmedizin Berlin approved the study (EA1/019/14) and waived requirement for obtaining informed consent for LMs and publication of these results.

Patient room configurations, modifications and light sources

The anaesthesiologic ICU at the Charité Medical Center, where LMs took place, consists of seven 2-bed patient rooms. Patient rooms are arranged around a centrally located workstation. All rooms provide visual access to the courtyard with a window area of approximately 11 m² per room. Patient rooms 2 and 3 provide windows facing northeast whereas rooms 4 and 5 have windows facing southeast. One bed is placed on the window side and the other bed is placed on the door-side of each room (Figure 1).

Figure 1 Design and arrangement of the rooms in the intensive care unit at Charité.



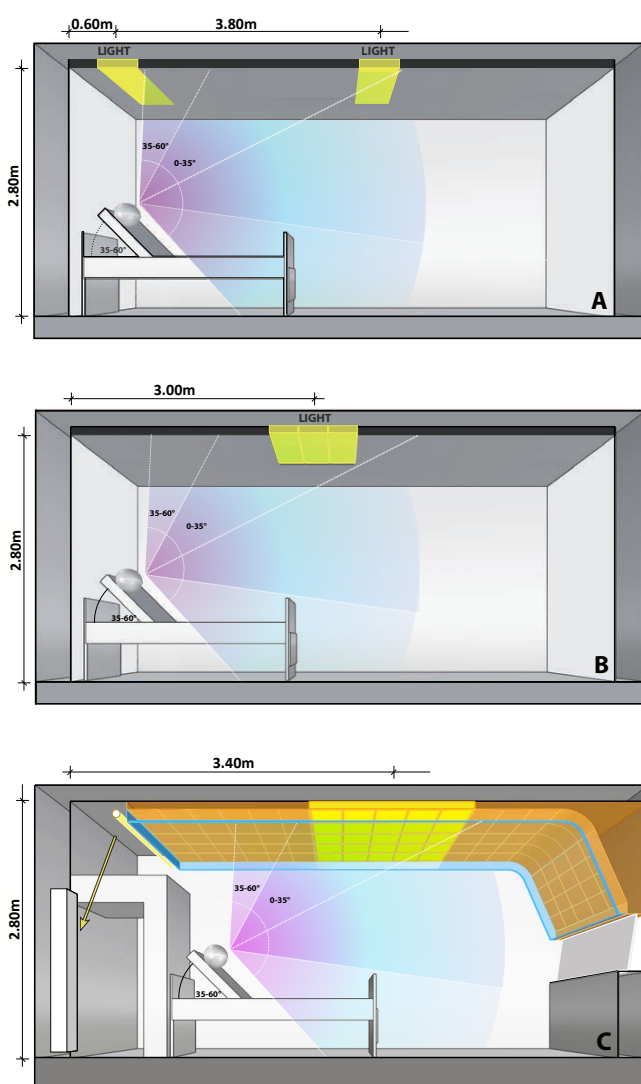


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LMs in standard patient rooms with fluorescent tube ceiling lamps

The first series of LMs was performed at the window- and the door-side of patient rooms 4 and 5 on 11/26/2012, 12:30 am. Each bed place was equipped with two white light fluorescent tube ceiling lamps (FL1). The size of the radiation emitting area was 1.5 m x 0.4 m for each lamp. One of the two lamps was placed within the patient's field of view (Figure 2a).

Figure 2a-c Illustration of investigated electric light sources in ICU patient rooms.



All 2-bed patient rooms provide visual access to the courtyard with a window area of 11 m². (A) Two white light fluorescent tube ceiling lamps (1.5 m x 0.4 m for each lamp); (B) White light fluorescent ceiling lamp with micro-lens optic (1.5 m x 0.9 m); (C) Modified ICU room with new light-ceiling at the window-side (6.1 m x 2.4 m). The light-ceiling at the door-side bed is 4.6 m x 2.4 m. The light-ceiling integrates 2 different light-emitting diode (LED) layers: The whole area of the light-ceiling is equipped with a layer of RGB modules which have red, green and blue (RGB) LEDs. The second layer consists of white light high-performance LEDs (yellow colored area, 1.8 m x 2.4 m).

LMs in standard patient rooms with a fluorescent ceiling lamp and micro-lens optic

The second series of LMs was performed at the window-side of patient rooms 2 and 3 on 11/26/2012, 13:30 pm. Each bed place on the window-side was equipped with a white light fluorescent ceiling lamp (FL2). It included a micro-lens optic for optimising light distribution and glare control. The light output area was 1.5 m x 0.9 m (Figure 2b).

LMs in modified patient rooms with LED light-ceiling

After extensive rebuilding of patient rooms 4 and 5, a third series of LMs was performed at both bed places of the modified patient rooms 4 and 5 on 01/16/2015, 12:30pm.

The major goal of the redesigning process was to create an ICU bedroom that produces measurable improvements in the physical and psychological states of patients, visitors and staff. Beside interventions aimed at noise reduction, workflow optimisation and infection control, we conducted modifications to improve lighting conditions in the room: One integral part of the new room concept is a new light-ceiling for each bed that extends from the head above the patient down to the patient's feet. Every light-ceiling integrates two different layers of light-emitting diodes (LEDs). The first layer consists of RGB modules that have red, green and blue LEDs. The light ceiling at the window-side comprises 12,960 RGB LEDs and covers an area of 6.1 m x 2.4 m. Due to room configurations, the light-ceiling and the door-side is smaller, comprising 9,942 RGB LEDs which covers an area of 4.6 m x 2.4 m. In addition, each of the light-ceilings includes a second layer of 3,456 white light high-performance LEDs covering an area of 1.8 m x 2.4 m (Figure 2c).

Light measurements and calculation of photometric parameters

We assessed photometric light measures of the three different artificial light sources with regard to visual light effects as well as non-image-forming functions. All LMs were determined at patients' eye level when lying with back flat on the bed (scenario 1, patient looks straight upward towards the ceiling) and when lying in bed with a head-of-bed elevation of 35 degrees (scenario 2, patient looks into the lamp).

Measurements of spectral irradiance have been carried out by means of a double monochromator spectroradiometer (type OL 754, Optronik Inc. Orlando/FL., USA), equipped with an Ulbricht sphere as optical entrance window. We used spectral steps of 1 nm, and a spectral



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resolution of 1 nm within the wavelength range of 300 nm and 780 nm. Before starting the measurements, the spectroradiometer was calibrated by using a 200 W tungsten standard lamp (traceable to the National Institute of Standards Technology (NIST)), whereas wavelength calibration was performed using a ^{180}Hg -lamp.

Parameters for characterisation of visual light effects

We quantified illuminance levels (lux, lx) and luminous intensity (candela, cd/m²) of the different lighting environments. Luminance is a measure of how bright a light source is perceived. This parameter becomes especially important when using light sources with high illuminance levels as patients might experience discomfort glare when looking at it. We used a radiometer (Minilux, MX Elektronik, Berlin) equipped with a 13° tube adapter for measurements of luminance levels.

Additionally, we assessed light quality: The correlated color temperature (CCT) is a measure of the perceived color of white artificial light sources whereas the color rendering index (CRI) quantifies the capability of a light source to illuminate object colors "realistically" and "acceptably". Daylight, a reference light source in the CRI system, has a maximum CRI of 100 %.

Parameters for characterisation of non-image-forming (NIF) functions

For estimation of potential circadian efficacy, we computed circadian effective irradiance (E_c) of the distinct light sources and compared values with mean thresholds for maximal melatonin suppression (healthy young adults: 0.3 W/m² and healthy people > 60 years old: 0.6 W/m²) (16).

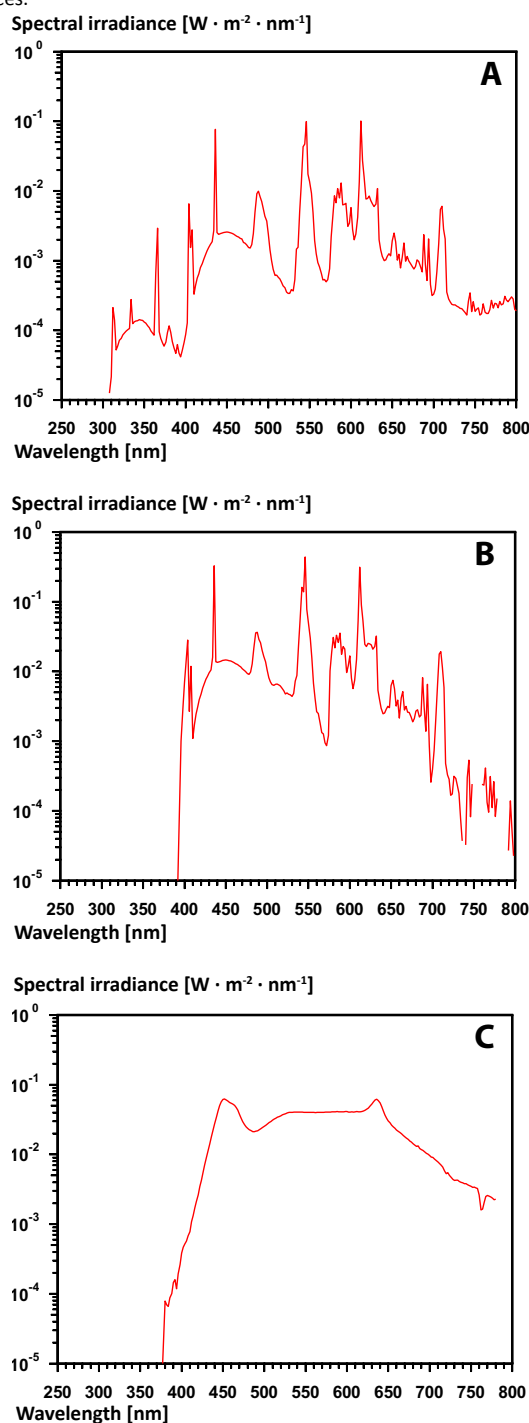
Illuminance, circadian effective irradiance and CRI values were calculated by using measured data of spectral irradiance. These data were weighted by the spectrum of visual sensitivity of human eyes during daylight conditions and integrated over all included wavelengths. Circadian effective irradiance values were determined by weighting with the action spectrum for melatonin suppression according to Thapan et al. and Brainard et al. (12;13) which also were integrated over all included wavelengths.

Results

Both types of fluorescent lamps (FL1 and FL2) showed discontinuous spectral slopes with typical narrow band peaks in the violet, blue, green, yellow, orange and red

part of the spectrum (Figure 3a-b). In contrast, the spectrum of the LED light-ceiling revealed a more balanced distribution with only two broadband peaks in the blue and the red wavelength range (Figure 3c).

Figure 3a-c Spectral irradiance of the different electric light sources.



Spectral horizontal irradiance of the fluorescent lamp (FL1), the fluorescent lamp with micro-lens optic (FL2) and (C), the newly developed LED light-ceiling.



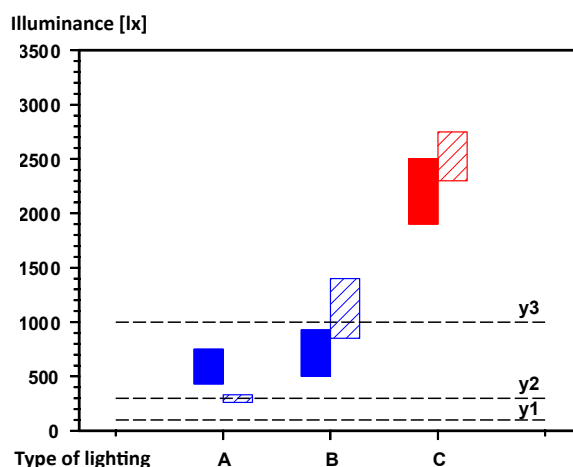
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Visual light effects of the different lighting environments

Illuminance levels at bed-places equipped with FL1 ranged from 430 to 750 lx when looking straight upwards toward the ceiling and from 260 to 330 lx when looking into the lamp. FL2 revealed higher illuminance levels: 500 to 930 lx when looking straight up on the ceiling and 850 to 1,400 lx when looking towards the lamp.

The LED light-ceiling provided sufficient illuminance for medical inspection (≥ 1000 lx) even without looking directly into the light source (1,900 to 2,750 lx) (Figure 4).

Figure 4 Illuminance of the different light sources.



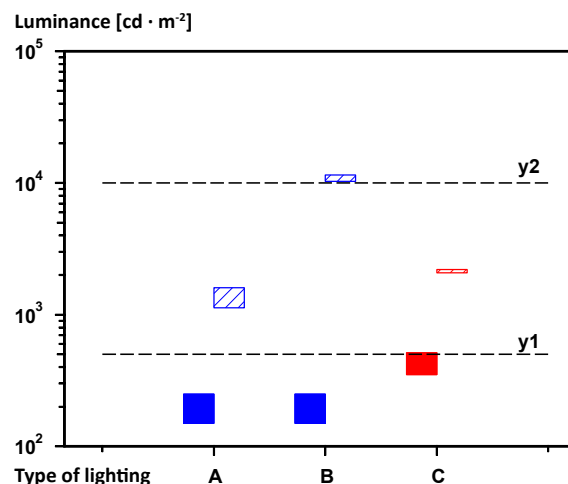
Range of measured illuminance values for the different types of lighting (see Figure 2a-c). The dashed lines indicate illuminance thresholds according to European lighting and emergency lighting standards for the Intensive Care Unit (EN DIN 12-464-1): (y1) 100 lx, threshold for accepted light level; (y2) 300 lx, threshold for reading; (y3) 1,000 lx, threshold for medical inspection. Measurements were taken at patients' eye level when lying in bed and looking straight upwards toward the ceiling (scenario 1, filled bars) and when lying in bed with a head-of-bed elevation of 35 degrees (scenario 2, bars with stripes).

For patients looking straight up on the ceiling, all of the three different light sources showed luminance levels below the threshold for relative glare (≤ 500 cd/m²).

When looking into FL2, luminance levels exceeded the threshold of absolute glare (10,000 cd/m²) ranging from 10,300 to 11,500 cd/m² (Figure 5).

Colour quality between artificial light sources differed significantly: the CCT's of FL2 (4843 K) and the LED-based light-ceiling (4606 K) were more toward the cool or blueish end of the spectrum when compared to FL1 (3907 K).

Figure 5 Luminance of the different light sources.



Range of measured luminance values for the different types of lighting (see Figure 2A-C). The dashed lines indicate luminance thresholds according to [16]: (y1) 500 cd · m⁻², threshold of relative glare; (y2) 10,000 cd · m⁻², threshold of absolute glare. Measurements were taken at patients' eye level when lying in bed and looking straight upwards toward the ceiling (scenario 1, filled bars) and when lying in bed with a head-of-bed elevation of 35 degrees (scenario 2, bars with stripes).

The CRI was 97% for the LED-based light-ceiling versus 77% and 74% for FL1 and FL 2 (Table 1).

Table 1 CCT, CRI and relative circadian efficacy for the different electric light-sources.

Type of Electric Light Source	CCT (k)	CRI (%)	k _{cv} (W · m ⁻² · klx ⁻¹)
Fluorescent Tube Lamp (FL1)	3907	77	0.6667
Fluorescent Lamp with micro-lens optic (FL2)	4843	74	0.8300
LED light-ceiling	4606	97	1.0419

CCT, Correlated Color Temperature; k, Kelvin; CRI, Color Rendering Index; kcv, relative circadian efficacy; W, Watt; m, Meter; klx, kilolux.

Non-image-forming (NIF) effects of the different lighting environments

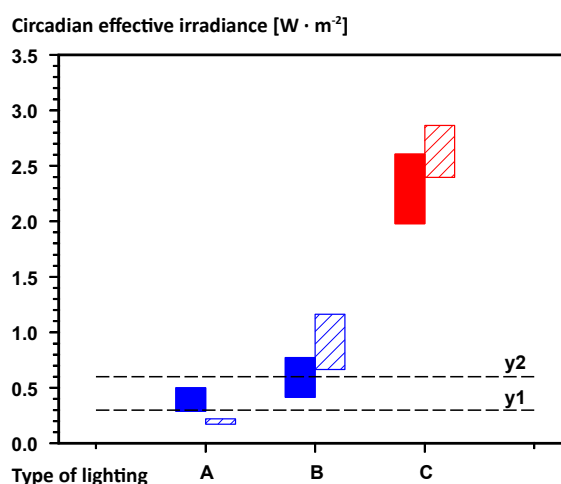
The circadian effective irradiance (E_c) of FL1 exceeded the mean thresholds for maximal melatonin suppression in healthy young adults when looking straight up to the ceiling. However, all calculated values for FL1 remained below the mean threshold level for maximal melatonin suppression in healthy elderly adults. FL2 revealed sufficient E_c values for melatonin suppression in healthy young adults, independently of the patient's position in bed. In contrast, E_c thresholds for the elderly were exceeded when looking straight into the new fluorescent lamp only. The E_c values of the newly



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developed LED light-ceiling exceeded mean threshold for both, healthy young adults and patients > 60 years (Figure 6).

Figure 6 Circadian effective irradiance of the different light sources.



Range of measured circadian effective irradiance values for the different types of lighting (see Figure 2a-c). The dashed lines indicate the thresholds for maximal melatonin suppression [16] for (y1) healthy young adults ($0.3 \text{ W} \cdot \text{m}^{-2}$) and (y2) elderly adults 60 years and older ($0.6 \text{ W} \cdot \text{m}^{-2}$, b). Measurements were taken at patients' eye level when lying in bed and looking straight upwards toward the ceiling (scenario 1, filled bars) and when lying in bed with a head-of-bed elevation of 35 degrees (scenario 2, bars with stripes).

Discussion

This study is the first that investigated photometric parameters of lighting conditions for critically ill patients, considering both, visual as well as non-visual effects. All patient rooms showed equal configurations but were equipped with different artificial light sources. The study results showed distinct differences between characteristics of the three lighting environments, which has important implications for the design of patient-centered lighting environments in the ICU.

The European lighting standards (DIN EN 12464-1) recommend illuminance levels of at least 300 lx for simple examinations and 1,000 lx for bedside treatments and emergencies in the ICU. Our data revealed that only rooms equipped with the large LED light-ceiling provided sufficient illuminance levels at all times. Illuminance values for FL1 were below the recommended standards, even at the window side. Although FL2 showed an overall higher illuminance, measurements revealed inconsistent results: Levels of 1,000 lx could only be achieved when looking straight into the light source.

For the medical team, especially when doing invasive interventions such as central venous catheterization, the accurate illumination of object colours is important and increases patient safety. Therefore, the CRI of light sources used in the ICU should exceed 90% (DIN EN 12464-1). This specified CRI requirement was fulfilled only at bed places equipped with the LED-based light-ceiling.

Even ceiling lamps with high illuminance levels are not necessarily appropriate to provide a constant illuminance of 1,000 lx and sufficient colour rendering. In that case, portable lamps or installations of additional artificial light sources with flexible light guide arms are used in clinical practice. However, these light sources usually have a small light emitting area and very high luminance levels which probably induce significant glare in awake patients. Consequently, to avoid deep sedation and discomfort for patients, especially during invasive procedures, spotlighting with high luminance levels should be avoided and must be used with care.

We analysed NIF functions of the three lighting environments regarding potential circadian efficiency for patients treated in the corresponding ICU rooms. Exceedance of the mean threshold for maximal melatonin suppression in adults aged >60 years, was only achieved by the LED-based light-ceiling.

The circadian effective irradiance of FL2 exceeded the mean threshold level for older people as well, but only when looking straight towards the light source. However, the measured luminance exceeded the threshold of absolute glare (17) for patients looking directly at the new fluorescent lamp. One of the reasons for the observed threshold overrun is the relatively small light emitting area of FL2 compared to the LED light-ceiling.

In fact, illuminance as well as circadian effective irradiance values of the LED ceiling were more than twice as high than those measured for FL2 but without entering the zone of absolute glare. Surprisingly, patient rooms with FL1 never reached the mean threshold level of maximal melatonin suppression in healthy people aged >60 years - neither at the door nor at the window side of the room.

Data from studies performed in cohorts of non-ICU patients suggest that exposure to natural daylight significantly reduces the severity of postoperative pain (18), the length of hospital stay (19;20) and mortality (21). Within a secondary analysis of a prospective cohort study, Wunsch and colleagues compared the outcome of critically ill patients with subarachnoid haemorrhage.



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hage treated in ICU rooms with or without windows. The authors found that the presence of a window did not improve outcome in those patients (22). In fact, LMs in the neonatal ICU revealed that illuminance of natural light entering through the window decreased considerably with distance from the window: The illuminance dropped from 550 lx directly in front of the window down to 130 lx with a 2-metre distance from the window (23). In light of these previous findings and our study results it seems unlikely that the illuminance of natural daylight from windows can trigger circadian photoentrainment in patients lying in bed with distance from the window of 1-metre or more.

A recently published randomised controlled trial showed no effect on either delirium incidence, or secondary outcome parameters of a dynamic light application therapy in the ICU (24). The lighting technology used in the study consists of the same type of fluorescent lamps (FL2) that have been evaluated in our experimental design. Simons and colleagues reported a peak illuminance level of <800 lux which is considerably lower compared to values obtained in our setting. The data indicate that the lighting system used in the study might not have been biologically effective regarding melatonin suppression.

Besides the technical specifications of the light source used, the clinical condition of the patient is essential for the effectiveness of a lighting intervention. The light needs to hit the retina to induce NIF functions, such as the suppression of pineal melatonin production. As discussed by Simons and colleagues, most of the patients in their study were sedated and had their eyes closed during the acute disease phase. This fact makes a biological effect of the used light intervention even more unlikely. Previous studies showed that high-illuminance light therapy with 10,000 lx has no effect on plasma melatonin concentrations in sedated ICU patients (25).

The fact that most critically ill patients still receive at least moderate or light sedation for a limited amount of time, emphasises that evaluation about the efficiency of specific light interventions must include a detailed reporting of daily sedation levels. Patients with light sedation (Richmond Agitation Sedation Scale (RASS) -2, briefly awakens to voice, eye-opening and contact <10 seconds) (26) might profit more from such light therapies compared to patients with moderate sedation levels (RASS -3, movement or eye opening to voice but no eye contact). Therefore, detailed documentations of daily sedation levels should be incorporated into the analysis of future lighting interventions.

Our study has the following limitations: Most importantly, we supposed mean threshold levels for relative and absolute glare as well as circadian effective irradiance measured in healthy adults to estimate the potential circadian efficiency of light sources for ICU patients. One should interpret our study results with caution as threshold levels for ICU patients might differ from those in healthy adults. Moreover, our study provides experimental data without showing clinical results that prove the efficiency of the light interventions. The next important step is to evaluate the health promoting benefits for different patient groups in the ICU.

Conclusion

The newly developed LED-based light-ceiling was the only light source which provided sufficient color rendering. Additionally, the LED ceiling exceeded thresholds for maximal melatonin suppression in young and older adults without entering the area of absolute glare. Further studies are needed to determine corresponding threshold levels for different ICU patient groups.

Key messages

- ICU patients might benefit from rooms equipped with the large LED ceilings as they provided sufficient lighting for maximal melatonin suppression without entering the area of absolute glare
- Daylight from windows did not provide adequate lighting for circadian entrainment of ICU patients
- Light sources with high illuminance levels and small light emitting areas must be used with caution as they might induce discomfort glare in patients

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Authors' contributions

AL did substantial contributions to conception and design, acquisition, analysis and interpretation of data, drafting the article, revising it critically for important intellectual content and final approval of the version to be published. HP did substantial contributions to conception and design, acquisition, analysis and interpretation of data, revising the article critically for important intellectual content and final approval of the version to be published. BW, AF, TW and CS did substantial contributions to conception and design, analysis and interpretation of data, revising the article critically for important intellectual content and final approval of the version to be published.

Competing interests

AL, TW and CS have a patent 10 2014 215 211.9 pending. TW has a patent 10 2014 215 212.7 pending. AL and BW received personal fees from Dr. F. Köhler Chemie, and personal fees from Orion-Pharma outside the submitted work.

Outside the submitted manuscript, CS has grants from Grünenthal, grants from Dr. F. Köhler Chemie, grants from Roche, grants from MSD, grants from Orion Pharma, grants from Outcome Europe Sàrl, grants from B. Braun Melsungen, grants from AiF, grants from BDA, grants from BMBF, grants from DKH, grants from DLR, grants from German Research Society, grants from GIZ, grants from inner university grants, grants from Stifterverband, grants from European Commission, personal fees from ConvaTec International Service GmbH, personal fees from Pfizer Pharma, personal fees from Vifor Pharma, personal fees from Fresenius Kabi, personal fees from Georg Thieme Verlag. HP reports, that he has no competing interest.

References

- (1) Novaes MA, Aronovich A, Ferraz MB, Knobel E. Stressors in ICU: patients' evaluation. *Intensive Care Med.* 1997; 23:1282-5.
- (2) Chahraoui K, Laurent A, Bioy A, Quenot JP. Psychological experience of patients 3 months after a stay in the intensive care unit: A descriptive and qualitative study. *J Crit Care.* 2015; 30:599-60.
- (3) Mundigler G, Delle-Karth G, Koreny M, Zehetgruber M, Steindl-Munda P, Marktl W, et al. Impaired circadian rhythm of melatonin secretion in sedated critically ill patients with severe sepsis. *Crit Care Med.* 2002; 30:536-40.
- (4) Li CX, Liang DD, Xie GH, Cheng BL, Chen QX, Wu SJ, et al. Altered melatonin secretion and circadian gene expression with increased proinflammatory cytokine expression in early-stage sepsis patients. *Mol Med Rep.* 2013; 7:1117-22.
- (5) Shigeta H, Yasui A, Nimura Y, Machida N, Kageyama M, Miura M, et al. Postoperative delirium and melatonin levels in elderly patients. *Am J Surg.* 2001; 182:449-54.
- (6) Bourne RS, Mills GH, Minelli C. Melatonin therapy to improve nocturnal sleep in critically ill patients: encouraging results from a small randomised controlled trial. *Crit Care.* 2008; 12:R52.
- (7) Ibrahim MG, Bellomo R, Hart GK, Norman TR, Goldsmith D, Bates S, et al. A double-blind placebo-controlled randomised pilot study of nocturnal melatonin in tracheostomised patients. *Crit Care Resusc.* 2006; 8:187-91.
- (8) Kondili E, Alexopoulou C, Xirouchaki N, Georgopoulos D. Effects of propofol on sleep quality in mechanically ventilated critically ill patients: a physiological study. *Intensive Care Med.* 2012; 38:1640-6.
- (9) Shehabi Y, Bellomo R, Reade MC, Bailey M, Bass F, Howe B, et al. Early intensive care sedation predicts long-term mortality in ventilated critically ill patients. *Am J Respir Crit Care Med.* 2012; 186:724-31.
- (10) Thompson DR, Hamilton DK, Cadenhead CD, Swoboda SM, Schwindel SM, Anderson DC, et al. Guidelines for intensive care unit design. *Crit Care Med.* 2012; 40:1586-600.
- (11) Valentin A, Ferdinande P. Recommendations on basic requirements for intensive care units: structural and organizational aspects. *Intensive Care Med.* 2011; 37:1575-87.
- (12) Brainard GC, Hanifin JP, Rollag MD, Greeson J, Byrne B, Glickman G, et al. Human melatonin regulation is not mediated by the three cone photopic visual system. *J Clin Endocrinol Metab.* 2001; 86:433-6.
- (13) Thapan K, Arendt J, Skene DJ. An action spectrum for melatonin suppression: evidence for a novel non-rod, non-cone photoreceptor system in humans. *J Physiol.* 2001; 535(Pt 1):261-7.
- (14) Wright KP, Jr., Gronfier C, Duffy JF, Czeisler CA. Intrinsic period and light intensity determine the phase relationship between melatonin and sleep in humans. *J Biol Rhythms.* 2005; 20:168-77.
- (15) Santhi N, Thorne HC, van der Veen DR, Johnsen S, Mills SL, Hommes V, et al. The spectral composition of evening light and individual differences in the suppression of melatonin and delay of sleep in humans. *J Pineal Res.* 2012; 53:47-59.
- (16) Piazena H. Light-Controlled Melatonin Suppression Considering Person's Age. *Proceedings of CIE 2010 "Lighting Quality and Energy Efficiency."* 2010:232-3.
- (17) Piazena H, Franke L, Uebelhack R, Kockott D, Völker S. Cirardiane Wirk-samkeit der Sonnenstrahlung. *Tageslicht.* 2004; 1:41-5.
- (18) Ulrich RS. View through a window may influence recovery from surgery. *Science.* 1984; 224:420-1.
- (19) Walch JM, Rabin BS, Day R, Williams JN, Choi K, Kang JD. The effect of sunlight on postoperative analgesic medication use: a prospective study of patients undergoing spinal surgery. *Psychosom Med.* 2005; 67:156-63.
- (20) Taguchi T, Yano M, Kido Y. Influence of bright light therapy on postoperative patients: a pilot study. *Intensive Crit Care Nurs.* 2007; 23:289-97.
- (21) Beauchemin KM, Hays P. Dying in the dark: sunshine, gender and outcomes in myocardial infarction. *J R Soc Med.* 1998; 91:352-4.
- (22) Wunsch H, Gershengorn H, Mayer SA, Claassen J. The effect of window rooms on critically ill patients with subarachnoid hemorrhage admitted to intensive care. *Crit Care.* 2011; 15:R81.
- (23) Bullough J, Rea MS, Stevens RG. Light and magnetic fields in a neonatal intensive care unit. *Bioelectromagnetics.* 1996; 17:396-405.
- (24) Simons KS, Laheij RJ, van den Boogaard M, Moviat MA, Paling AJ, Polderman FN, et al. Dynamic light application therapy to reduce the incidence and duration of delirium in intensive-care patients: a randomised controlled trial. *Lancet Respir Med.* 2016; 4:194-202.
- (25) Perras B, Meier M, Dodt C. Light and darkness fail to regulate melatonin release in critically ill humans. *Intensive Care Med.* 2007; 33:1954-8.
- (26) Sessler CN, Gosnell MS, Grap MJ, Brophy GM, O'Neal PV, Keane KA, et al. The Richmond Agitation-Sedation Scale: validity and reliability in adult intensive care unit patients. *Am J Respir Crit Care Med.* 166. United States 2002. 1338-44.



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The WHO-HPH recognition project: fast-track implementation of clinical health promotion - a protocol for multi-center RCT

Hanne Tønnesen^{1,2,3}, Jeff Kirk Svane², Oliver Groene⁴, Shu-Ti Chiou⁵

Abstract

Background Clinical health promotion comprises services delivered in health care to address daily smoking, risky alcohol use, overweight/obesity, malnutrition and physical inactivity. Clinical health promotion significantly improves treatment results and patient safety. Accordingly, it is a core component of overall quality in hospitals. To further implementation, the World Health Organization and the International Network of Health Promoting Hospitals and Health Services have developed standards and models based on quality management and accreditation/recognition strategies. However, these implementation strategies have only been sparsely investigated in randomised trials. The aim of the present study described in this protocol article is to evaluate the effect of a fast-track program for implementation on delivery of clinical health promotion services and the associated health gain of patients and staff.

Methods Clinical hospital departments are recruited through an open call. The departments are randomized to either fast-track implementation or to continue their usual implementation routines. The intervention group departments measure baseline, produce a quality plan on own results, implement for 1 year and then re-measure. The control group departments wait 1 year following allocation to perform just the baseline measurement.

The primary outcome is physical, mental and social health status of patients and staff. The secondary outcome is clinical health promotion service delivery to address patients' needs thereof. The data will be analyzed as intention-to-treat.

Discussion Today, a total of 48 clinical departments from 11 countries/regions are included. This is the first study ever to evaluate the health effect of a fast-track implementation program for clinical health promotion.

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Background

It is well-known that the overall burden of disease is heavily influenced by smoking, alcohol, unhealthy nutrition and physical inactivity (1). As a result, there is widespread need for health promotion activities throughout society; in families and at work places, in schools and in institutions and other settings. The need also exists in health care settings, and here too, it is quite substantial in scale; 80-90% of patients have risky lifestyle factors that aggravate their patient pathways (2). Additionally, strong evidence highlights the significant benefits of health promotion intervention in patient pathways. Applying health promotion activities directly in health care settings means supporting patients to quit daily smoking, control alcohol-drinking and nutrition, and maintain a healthy level of physical activity. Interventions addressing this have been termed "clinical health promotion" (CHP) (3;4), and have been proven to increase patient safety and

improve treatment results in the areas of surgery, internal medicine, obstetrics and psychiatry (5-9) and be cost-effective (10). Consequently, CHP is a core element in high quality health care (11-13) in line with other evidence-based clinical interventions.

To facilitate CHP implementation, the World Health Organization (WHO) and the International Network of Health Promoting Hospitals and Health Services (HPH) have developed and validated a set of standards and indicators (14;15) following the International Society for Quality in Health Care criteria (16). Two supplementary models used for practical clinical documentation of CHP needs and services delivered were also developed and validated internationally (17;18). These models help clinicians and managers with implementation of CHP: namely diagnosing the patients' needs for CHP (e.g daily smoking) and delivering the related interventions (e.g. smoking cessa-



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tion counselling). These tools have been implemented completely or in part in national or regional health services in several countries including Sweden, Denmark and Ireland.

A general challenge in health care settings is real-life implementation of new evidence for the benefit of patients. This is also the case for CHP (19;20). Accordingly, it is necessary to develop, describe and evaluate a fast-track implementation program to increase integration speed. Such a fast-track program should build on the commonly used strategies for implementation; such as quality management, staff training and recognition/accreditation.

However, these commonly used strategies have only been sparsely investigated in high quality research designs like randomised trials. Until now, just one study has evaluated the effect of accreditation, but without including health measurements as an outcome (21).

Methods/design

The aim of the present study is to evaluate the effects of a fast-track program for implementation of CHP on frequency of delivery of CHP services and on health gains of patients and staff.

The main study hypothesis is that clinical hospital departments allocated to the fast-track program for CHP will display improved health gains for their patients and staff after one year, compared to the control group departments that continue usual implementation routines. The secondary hypothesis is that the intervention group departments will display more frequent delivery of CHP services.

The study is a multi-national, randomized trial with two arms. The clinical department is the unit of randomization and measurement - not individual patients. This approach is necessary to test the program's effect on overall organizational performance of the clinical department.

The study takes place in various types of surgical, medical and psychiatric hospital departments.

Material

There is a total of 48 clinical departments participating, 21 in Taiwan, 8 in the Czech Republic, 4 in Croatia, 4 in Thailand, 3 in Slovenia, 2 in Estonia, 2 in Japan, 1 in Denmark, 1 in Malaysia, 1 in Canada and 1 in Indonesia. Inclusion is conducted through an open call for participation to all 29 National/Regional HPH Net-

work Coordinators, who are asked to present the call to their member hospitals. The call is repeated at the International HPH Conferences each year and in the related scientific journal of Clinical Health Promotion (www.clinhp.org). Participation is approved by each participating hospital's CEO, the head of the participating department and the National/Regional HPH Coordinator.

Inclusion criteria

All clinical hospital departments treating inpatients and/or outpatients are eligible for inclusion; university as well as non-university hospitals with rural, mixed or urban catchment areas, but each included hospital can have only one clinical department participate in the study.

Exclusion criteria

Palliative care departments, paediatric departments, nursing homes, non-hospital clinics, and primary care facilities are excluded, as the WHO standards and the other tools are not yet validated for these types of clinical settings.

Processes, interventions and comparisons

The randomization is computerised using blocks of unknown sizes between 3 to 8. Stratification is done for each participating regional/national HPH Network. The randomisation is performed by an independent researcher, who is not otherwise involved with the study. Randomization envelopes are opaque and sealed by the independent researcher. The allocation was video recorded. The study is by nature not blinded, but all statistical analyses are undertaken by a blinded, independent researcher not otherwise involved in the project.

Outcomes

The outcomes were measured and analysed at department level. The health gain among patients and staff is calculated via health related quality of life using SF-36 health questionnaires for self-reporting on eight dimensions of physical and mental health. This questionnaire has been translated and validated worldwide (22).

The health promotion deliveries are measured by:

- self-assessment tools: WHO-HPH standards for health promotion in hospitals with a total of 40 measurable elements and 18 indicators provided in a manual (11), the 9-question HPH DATA Model (17) and the 16-deliverable services HPH DOC-ACT Model (18).
- internal audit of 50 medical records, where the



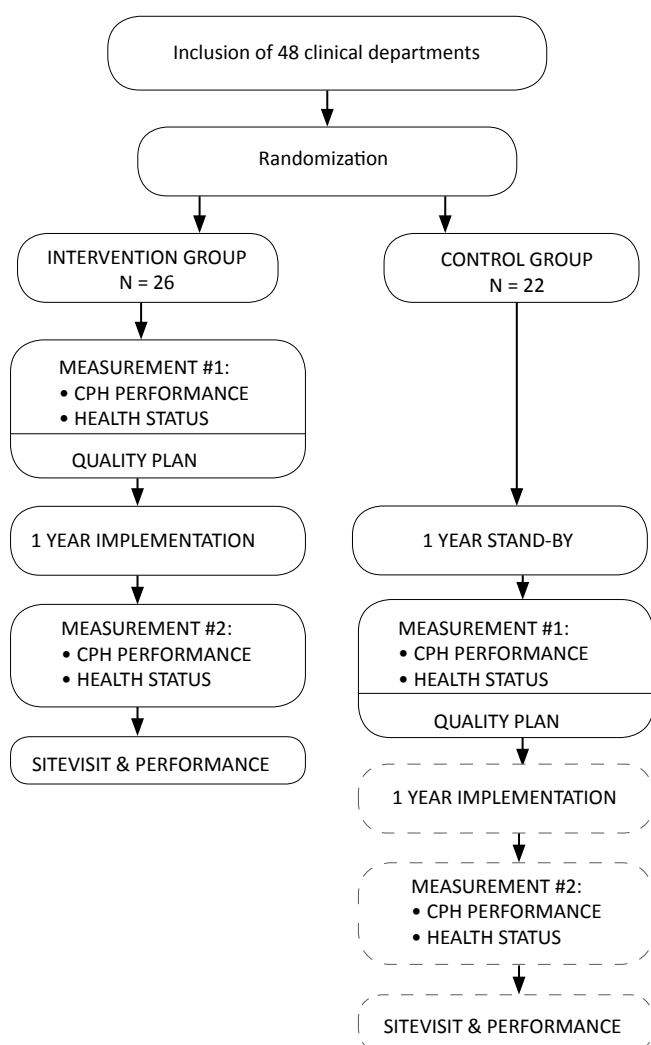
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HPH DATA Model is used for practical clinical assessment of patient needs for CHP services and the HPH DOC-ACT Model for assessment of CHP service delivery.

Intervention

After allocation, the intervention group departments (IGD) measure their baseline CHP performance and health status of patients and staff (see data collection, below). After measuring, IGD produce a quality plan for CHP according to the fast-track program and based on analysis of own baseline results. The quality plan is then implemented over 1 year, at which point CHP performance and health status are re-measured in the same way as for baseline – and followed by a site visit for validation (Figure 1).

Figure 1 Trial Profile



Comparison

The control group departments (CGD) wait 1/2-1 year after allocation, and they then perform their measurement similar to baseline of IGD. The waiting period reduces possible contamination from results on usual implementation routines. All CGD are offered support to use the fast-track implementation program after the IGD have finalized their implementation period.

Data collection

All data collected are anonymized locally at the source. No type of person-identifiable information is transferred. Reported data from participating centres is in electronic or paper format. Upon receipt by research group and initial data validation, all data is entered into the electronic project databases using numeric codes. All data is stored on an internal hospital drive, secured by Capital Region Denmark CIMIT to avoid risk of data loss. Only project staff and researchers have access to the anonymous database and archives.

SF-36

The health status at each department is based on data collected from up to 200 consecutive patients, who visit the department in the month immediately prior to inclusion in the study. If 200 patients are not seen in that particular month, the department only includes the patients of that month. Data from all staff employed in the department (at any point) during the same month are also collected.

WHO HPH standards

The self-assessment of CHP delivery is done with a total of 40 measurable elements and 18 indicators provided in the WHO HPH standards manual (11) (Table 1).

The WHO HPH standards cover 5 areas:

1. policy for health promotion
2. patient needs assessment
3. patient information and intervention
4. creation of a healthy workplace
5. continuity and collaboration with outside providers and other sectors

HPH DATA Model

The HPH Data Model is used for practical clinical assessment and documentation of patient needs for CHP services. It fits directly into WHO HPH standard 2 (above), and precedes the HPH DOC-ACT Model below. It is used for internal audit of 50 consecutive and anonymized medical records on patients in contact with IGD and CGD. The period assessed is one month before inclusion corresponding to the measurement of



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Table 1 WHO-HPH standards and measurable elements

Standard 1: Management Policy

- 1.1.1. Aims and mission include HP
- 1.1.2. Minutes reaffirm agreement w HPH
- 1.1.3. Quality/business plans include HP
- 1.1.4. Personnel and functions ID'ed for HP
- 1.2.1. There is a budget for HP
- 1.2.2. HP procedures available
- 1.2.3. HP structures and facilities can be ID'ed
- 1.3.1. HP intervention data captured
- 1.3.2. Assessment of HP established

Standard 2: Patient Assessment

- 2.1.1. Guidelines to ID lifestyle risk exist
- 2.1.2. Guidelines have been revised
- 2.1.3. Guidelines to ID HP needs exist
- 2.2.1. Assessment is documented
- 2.2.2. Guidelines for reassessing HP needs
- 2.3.1. Info from referring DR available in MR
- 2.3.2. MR documents social/cultural background

Standard 3: Patient Information & Intervention

- 3.1.1. Information given is recorded in MR
- 3.1.2. HP activities are documented in MR
- 3.1.3. PT satisfaction assessment integrated in QM
- 3.2.1. General health information is available
- 3.2.2. Info about highrisk diseases is available
- 3.2.3. Information on PT organizations available

Standard 4: Healthy Workplace

- 4.1.1. Working conditions comply w N/R directives
- 4.1.2. Staff comply w health and safety
- 4.2.1. Intro training on HP policy given to new staff
- 4.2.2. Staff aware of HP policy
- 4.2.3. HP performance appraisal system exists
- 4.2.4. Practices made by multidisciplinary teams
- 4.2.5. Staff involved in policy-making
- 4.3.1. Policies on health issues available for staff
- 4.3.2. Smoking cessation programmes offered
- 4.3.3. Annual staff surveys are carried out

Standard 5: Continuity and Cooperation

- 5.1.1. Regional policy taken into account
- 5.1.2. List of partners available
- 5.1.3. Collaboration based on regional health plan
- 5.1.4. Plan for collaboration w partners available
- 5.2.1. Follow-up instructions given
- 5.2.2. Procedure for info exchange exists
- 5.2.3. Receiving organization gets info on PT
- 5.2.4. Rehab plan documented in MR

World Health Organization (2010). Implementing health promotion in hospitals: manual and self-assessment forms. (11)

SF-36 above. It continues backwards until 50 medical records are obtained. The HPH DATA Model comprises 9 questions that cover the 5 main risk factors (smoking, risky drinking, overweight/obesity, malnutrition and physical inactivity) influencing the treatment results of the patients. The model has been shown to be easy to understand and use, with a low inter-variation in the clinical setting (17), (table 2).

Table 2 HPH Data Model: Document risk in medical records

	Yes/No	Risk?
A. Risk of malnutrition		
A1. Does patient have a BMI < 20.5 ?	<input type="radio"/> <input type="radio"/>	<input type="radio"/>
A2. Has patient suffered from weight-loss in the past month?	<input type="radio"/> <input type="radio"/>	
A3. Has patient suffered from decreased food intake in the last wk.?	<input type="radio"/> <input type="radio"/>	
A4. Is patient severely ill (sepsis, burns, etc.)?	<input type="radio"/> <input type="radio"/>	
B. Overweight		
B1. Does patient have a BMI > 25 ?	<input type="radio"/> <input type="radio"/>	<input type="radio"/>
B2. Is patient's waist-measure > 80 cm (W) or 94cm (M) ?	<input type="radio"/> <input type="radio"/>	
C. Physical inactivity		
C1. Is patient physically active < 1/2 hour / day ?	<input type="radio"/> <input type="radio"/>	<input type="radio"/>
D. Smoking		
D1. Does patient smoke daily ?	<input type="radio"/> <input type="radio"/>	<input type="radio"/>
E. Drinking		
E1. Does patient drink > 14 drinks/wk (W) or 21 (M) ?	<input type="radio"/> <input type="radio"/>	<input type="radio"/>

Note: YES to ANY of the questions in group (A, B, C, D or E) equals RISK

HPH DOC-ACT Model

This model is used for assessment and documentation of patient-related CHP service deliveries, either as short face-to-face intervention or as the longer and more intensive interventions with repeated meetings. This model fits into standard 3 (above), and it follows the HPH DATA Model. The model includes 2x8 CHP activities, table 3. Clinical specialists responsible for coding treatment in the clinical setting have found the model understandable, applicable and adequate (18). The data collection is performed as described above for the HPH DATA Model.



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Table 3 HPH Doc-Act Model: Documentation of Clinical Health Promotion activities in medical records

Counselling or motivational interviewing done regarding:	DRG Code
Smoking	BQFS01
Alcohol	BQFS02
Nutrition	BQFS03
Physical activity	BQFS04
Psycho-social relation	BQFS05
Other risk factors	BQFS06
Integrated counselling (consisting of several factors)	BQFS19
Intervention, rehabilitation or after-treatment done regarding:	
Tobacco cessation	BQFT01
Alcohol intervention	BQFT02
Nutrition	BQFT03
Physical activity	BQFT04
Psycho-social support	BQFT05
Medicine after-treatment	BQFT06
Patient education	BVDY04
Integrated rehabilitation (consisting of several elements)	BQFT19

Note: DRG codes from Danish National Board of Health used here for illustration purposes.

In Denmark, the reimbursement for each resembles ordinary visit to primary care or out-patient clinic.
www.medinfo.dk

Quality plan

The template for making the required CHP quality plan for fast track implementation follows the traditional instructions for quality assurance and is shown in figure 2. The department's own data is the base for formulating the quality plan, milestones, actions and 1-year timeline. Minor adjustments to the plan are allowed and often necessary according to changes in hospital structure, patient group and staff in order to reach the milestones (Figure 2).

Follow-up

After the 1-year implementation, the baseline measurements are repeated for IGD, but this time covering the period of the month immediately following the 1-year implementation.

Data validation through site visit

The study participation for IGD concludes with a site visit that takes place after collection of follow-up data. The site visit focuses on validation of results on the WHO-HPH standards. The visit entails interviews with the staff and patients as well as an external audit of about 5 random medical records together with the local medical staff (and a trained interpreter in case of non-English language) to validate the internal data collection. At the visit, a certificate is issued outlining fulfilment of the WHO HPH standards, exclusively.

Figure 2 Template for Quality Plan

Baseline Status	Target Areas	Goals																																																																																																																				
<p>Here, please use the main results from the data collection. We advice that your mark each item in colours (green, yellow and red) according to the inherent room for improvement, so that green items are areas that are ok already, yellow are areas in need of some improvement and red are areas in need of significant improvement.</p> <p>MR Audit Form Patient Assessment: Patient Information and Intervention: Continuity and Cooperation:</p> <p>Patient Survey Physical Health: Mental Health: Pain: Health-Related Limitations: Patient Satisfaction: Follow-Up Instructions: Awareness of Health Promotion Policy:</p> <p>Staff Survey Physical Health: Mental Health: Pain: Health-Related Limitations: Staff Satisfaction: Awareness of Health Promotion Policy: Safety, Risks and Work-Related Injuries: Introductory Health Promotion Training: Staff Assessment: Absenteeism: Burn-out:</p> <p>Organizational Data Form Management Policy: Patient Assessment: Patient Information and Intervention: Promoting a Healthy Workplace: Continuity and Cooperation:</p>	<p>Please list the target areas here</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p>	<p>Please list the related goals here</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p>																																																																																																																				
<p>Implementation Plan (12 months)</p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="12">Months (first year)</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> <th>11</th> <th>12</th> </tr> </thead> <tbody> <tr> <td>TARGET AREAS</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>-</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>-</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>-</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>-</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>-</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>-</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>				Months (first year)												1	2	3	4	5	6	7	8	9	10	11	12	TARGET AREAS													-													-													-													-													-													-												
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Statistical analyses

The analyses will be conducted at department level and comparisons are made between IGD and CGD using intention-to-treat. The data is presented as median and range (but also as mean and SD for easy use in case of future meta-analysis). The health status from SF-36 will be analyzed with Mann-Whitney test, while frequencies will be compared by Fisher's exact test. An external researcher blinded for group allocation will conduct all analyses on the anonymized data using StataCorp LP's STATA 14 statistics software. P-value below 0.05 is considered significant.

Since no studies have been performed hitherto on health gain in this context, it would be difficult to make a meaningful power calculation for this primary outcome. However, looking for a minimum relevant difference of about 1/3, the calculation of the secondary outcome below should be sufficient – also for the health gain analyses. The power calculation of the secondary outcome is based on the literature, assuming that frequency of CHP service deliveries is no higher than 40% of the needed (control departments $\pi_2=0.4$) (18). With a minimum relevant difference in deliveries of CHP services of 30 % ($\delta=0.3$) between the intervention and control groups, the expected outcome is 70 % (intervention departments $\pi_1=0.7$). Accordingly, 40 departments would be needed in each arm, considering 80% power and 5% two-sided significance.

Nevertheless, full inclusion for this study has not been reached before a scheduled update and revision of the WHO standards in 2016.

Organization

Clinical Health Promotion Centre, Bispebjerg-Frederiksberg Hospital, Copenhagen University, is responsible for project organization, data collection and administration and is in close collaboration with the participating Coordinators from the National/Regional HPH Network, the hospital managements, the heads of departments and the local HPH Hospital Coordinators. The National/Regional HPH Coordinators and the hospital HPH Coordinators are responsible for project support, while the hospitals' managements and heads of department are responsible for local project progress, collection of data, quality plan and implementation.

The project is approved by Copenhagen University as part of the PHD study for Jeff Kirk Svane, who is supervised by Professor Hanne Tønnesen (Main Supervisor; Copenhagen) and Professor Shu-Ti Chiou (Co-Supervisor; Taipei). Professor Oliver Groene (London) is International Project Advisor.

Financial and budgetary administration

The IGD and CGD fund their own study participation, primarily the individual hospitals and/or the ministry of health (Taiwan and Czech Republic). Bispebjerg-Frederiksberg Hospital in Denmark and Region Skåne in Sweden fund the project administration and local research staff.

Discussion

This is going to be the first randomized study on a fast-track implementation strategy to include health gain as an outcome in addition to service deliveries. The focus is on integrating health promotion into the clinical treatment in order to obtain better treatment results and prognoses on short as well as longer term. The improved outcomes of individual programs at patient-level are already shown for patients in e.g. internal medicine, surgery, psychiatry and obstetrics (23;24). The education of staff members to improve CHP service delivery, and regarding their own health as such, are also important in this work, along with collaboration across departments and sectors.

Status

Until now, the first baseline data on the WHO HPH standards have shown variation in fulfilment of the 40 elements between hospital departments (Taiwan and the Czech Republic), leaving room for improvement. Our main outcomes of health gain and CHP deliveries has not yet been published as the study has not finished yet.

The first departments were recruited in 2012, and by October 2015, 48 departments had been included. At that time, it was made official that WHO Europe would conduct a 2016 update and revision of the WHO standards for health promotion in hospitals (11). Therefore, the inclusion for this present study was halted prematurely at the 48 already included departments (representing 60% of the intended 80 departments), since the WHO standards are a main tool used in the study's data collection.

A main issue has been logistics and time consumption around project agreement by departments, which had to be signed by the department head and hospital director before inclusion. Also, several delays with data submissions have been experienced.

Bias and limitations

While the real-life conditions set-up is a strength, it is a limitation that all clinical departments included in the study are from HPH Network member hospitals, which



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might reduce the generalization to non-HPH hospital settings. Furthermore, it should be noted that all data are collected by self-assessment and self-reporting, which may introduce selective reporting biases with overestimation of performance.

The reduced number of participants will introduce a high risk of a type-2 error, and thereby risk of overlooking results that could have been of significance if the planned sizeable study was completed. However, even a sizeable study could not reduce a risk of type-1 error, which would require repetition of the study. It is a strength to report the results in accordance with the level of randomization (i.e. at department level), thus avoiding the further bias introduced by potential cluster randomization.

Plan

During 2016, all remaining in-coming data from the hospital departments will be collected, analyses conducted and results made public.

Abbreviations

- CHP: Clinical health promotion (incl. smoking cessation support for daily smokers, alcohol cessation support for excessive drinkers, nutritional support for obese or malnourished patients and physical activity support for the physically inactive).
- CGD: Control group department
- HPH: The International Network of Health Promoting Hospitals and Health Services
- IGD: Intervention group department
- SF-36: The Short Form Health Survey with 36-items for patient-reported of patient health
- WHO: World Health Organization

Ethical considerations

Participation will not cause departments, their patients or their staff any risk. However, it will entail approximately 100 hours of staff time per participating IGD and 50 hours per CGD. This resource allocation seems ethically balanced by the potentially possible improvement in health gain and CHP deliveries for the benefit of the patients and staff. Participation in the study only takes place after informed consent before inclusion by the involved hospital management, the head of the participating department, the National/Regional HPH Coordinator, and the local hospital HPH Coordinator. Also, the utilized components are already validated and implemented or being implemented, in part of in full, in several hospitals all over the world (see www.hph-net.org).

Ethical approval for this study was obtained from the Scientific Ethical Committee in the Danish Capital Region (International Studies) and Danish Data protection Agency (J.nr.2012-41-0152). Approval is also obtained by all relevant national/regional/local ethical and research authorities (such as internal review boards) as per the regulations and requirements in each hospital/region/nation.

The intervention is conducted without following any individual patient or staff member, with all data anonymized at the source (at data collection) before transferal and storage at WHO-CC in secured files with access for the research team only – in order to fully guarantee confidentiality and security.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

- HT: Initial idea, drafted protocol, revised and approved manuscript. International Principal Investigator.
- JKS: Drafted manuscript, approved manuscript and revised protocol. International Project Leader.
- OG: Revised and approved the protocol and manuscript. International Project Advisor.
- STC: Revised and approved the protocol and manuscript, Responsible for included departments and data collection in Taiwan. International co-supervisor for PHD Study.

All authors have made substantial contributions to conception, design and acquisition of data. All authors read and approved the final manuscript.

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References

- (1) Vos T, Flaxman AD, Naghavi M, et al. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; 380:2163–2196.
- (2) Oppedal K, Nesvåg S, Pedersen B, Skjøtskift S, Aarstad AK, Ullaland S, Pedersen KL, Vevatne K, Tønnesen H. Health and the need for health promotion in hospital patients. *Eur J Public Health*. 2011; 21:744–9
- (3) Tønnesen H, ed. Good Clinical Health Promotion Practice. *Clin Health Promot* 2014; 39–40. http://www.clinhp.org/iframe/Vol4_Issue2_p39_40.pdf
- (4) Danish National Board of Health (2005). Terminologi: Forebyggelse, sundhedsfremme og folkesundhed. <http://sundhedsstyrelsen.dk/~media/CA0B2ED9165F4C908DB3117BA4764058.ashx>
- (5) Anderson L, Taylor RS. Cardiac rehabilitation for people with heart disease: an overview of Cochrane systematic reviews. *Cochrane Database Syst Rev* 2014 Dec 12; 12:CD011273.
- (6) Thomsen T, Villebro N, Møller AM. Interventions for preoperative smoking cessation. *Cochrane Database Syst Rev*. 2014 Mar 27; 3:CD002294
- (7) Oppedal K, Møller AM, Pedersen B, Tønnesen H. Preoperative alcohol cessation prior to elective surgery. *Cochrane Database Syst Rev*. 2012 Jul 11; 7:CD008343.
- (8) Taylor G, McNeill A, Girling A, Farley A, Lindson-Hawley N, Aveyard P. Change in mental health after smoking cessation: systematic review and meta-analysis. *BMJ* 2014; 348:g1151; 1–22.
- (9) Gade P, Lund-Andersen H, Parving HH, Pedersen O. Effect of a multifactorial intervention on mortality in type 2 diabetes. *N Engl J Med* 2008; 358:580–591.
- (10) Pedersen B, Hansen PE, Tønnesen H. Scand-Ankle: Cost-effectiveness of Alcohol Cessation Intervention in Acute Fracture Surgery. *Clin Health Promot* 2014; 2 suppl:1–68.
- (11) World Health Organization (2010). Implementing health promotion in hospitals: manual and self-assessment forms. WHO Regional Office for Europe, Copenhagen. http://www.euro.who.int/__data/assets/pdf_file/0009/99819/E88584.pdf
- (12) World Health Organization (2013). Health 2020: A European policy framework supporting action across government and society for health and well-being. World Health Organization Regional Office for Europe, Copenhagen. www.euro.who.int/__data/assets/pdf_file/0006/199536/Health2020-Short.pdf
- (13) World Health Organization (2013). Global action plan for prevention and control of non-communicable diseases 2013–2020. World Health Organization, Geneva. http://www.who.int/nmh/events/2013/revised_draft_ncd_action_plan.pdf
- (14) Groene O, Jorgensen SJ, Fugleholm AM, Garcia Barbero M. Standards for health promotion in hospitals: development and pilot test in nine European countries. *Int J Health Care Qual Assur Inc Leadersh Health Serv* 2005; 18:300–7.
- (15) Groene O, Alonso J and Klazinga N. Development and validation of the WHO self-assessment tool for health promotion in hospitals: results of a study in 38 hospitals in eight countries. *Health Promot Int*. 2010; 25:221–9.
- (16) www.isqua.org
- (17) Tønnesen H, Svane JK, Lenzi L, Kopecky J, Suurorg L, Bukholm IRK, Hsu ST, Hübner M, Krogerus S, Kellner-Rechberger S, Masiello MG and the HPH Networks in Tuscany, Italy; Spain; Ontario, Canada and Germany. Handling Clinical Health Promotion in the HPH DATA Model: Basic Documentation of Health Determinants in Medical Records of tobacco, malnutrition, overweight, physical inactivity & alcohol. *Clin Health Promot* 2012; 2:5–11.
- (18) Tønnesen H, Christensen ME, Groene O, O’Riordan A, Simonelli F, Suurorg L, Morris D, Vibe P, Himel S and Hansen PE. An evaluation of a model for the systematic documentation of hospital based health promotion activities: results from a multicentre study. *BMC Health Services Research* 2007; 7:145.
- (19) Svane JK, Chiou ST et al. Integration of health promotion in clinical hospital departments: standards fulfilment, documentation of needs and service delivery. *Clin Health Promot* 2015; 1:11–17.
- (20) Svane JK, Raisova B et al. Clinical Health Promotion in the Czech Republic: Standards Compliance and Service Provision. *Clin Health Promot* 2014; 4:15–21.
- (21) Salmon JW, Heavens J, Lombard C, Tawrow P. The Impact of Accreditation on the Quality of Hospital Care: KwaZulu-Natal Province, Republic of South Africa. 2003. Quality Assurance Project, University Research Co., LLC. USA.
- (22) McHorney, Colleen A.; Ware, John E.; Raczek, Anastasia E. The MOS 36-Item Short-Form Health Survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs. *Med Care* 1993; 31:247–263.
- (23) Tønnesen H, ed. Clinical treatment + clinical health promotion = Better treatment results immediately. *Clin health promot* 2013; 3–4. http://clinhp.org/iframe/Vol4_Issue1_p3_4.pdf
- (24) Tønnesen H, ed. Pregnant smokers: Room for improvement. *Clin Health Promot* 2015; 3–4. http://www.clinhp.org/iframe/Vol5_Issue1_p3.pdf



Alcohol consumption and physical activity among healthcare workers

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Abstract

Aims The study analysed the relation between consumption of wine/beer/hard liquor and the practice of physical activity in everyday life for healthcare professionals.

Methods A descriptive survey design was used. A representative sample (n=914) of healthcare practitioners who work in a teaching hospital have participated. Data were collected through the distribution of self-reported questionnaires.

Results 47.4% drank wine/beer occasionally. 16% consumed approximately half a litre daily, while 1.3% had a daily consumption of one litre or more. Fewer consumed hard liquor occasionally and only 1% on a regular basis. 26.1% declared to not practise physical activity, while 71.2% affirmed to do it occasionally and 2.1% regularly. Reporting no performed physical activity were associated to wine/beer consumption but not to hard liquor consumption.

Conclusion Health promotion programs should not only target the general population, but also target the health care personnel.

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Introduction

The international literature has provided evidence that excessive consumption of alcohol leads to an increase in diseases and an aggravation on injury outcomes (1). Also sedentary behaviour and physical inactivity as well as alcohol consumption are associated with adverse health outcomes (2). The word “sedentary” is applied to people who spend most of their day either sitting or lying down without doing any kind of physical activity (3). Physical inactivity is defined as “doing no or very little physical activity at work, at home, for transport, or in discretionary time” (4). Knowing the epidemiological data related to healthcare professionals’ lifestyles is a critical step towards supporting a culture of health promotion. For both staff and patients in the last two decades a lot of researchers have dedicated themselves to the study of alcohol consumption among physicians and medical students (5-11) and among healthcare professionals (12-15). Despite evidence showing the impacts of alcohol consumption on global health, studies have documented the existence of different attitudes and habits among physicians, and a relation to the risk of alcohol consumption (16-18).

Unsurprisingly, also among doctors, men have a higher alcohol consumption than women; they drink more frequently, consume a higher amount of alcohol per occasion and at a more hazardous or harmful level (6;11;19).

The research on healthcare workers’ physical activity, however, is much rarer (20-22). The few studies that have been carried out have highlighted that despite the significant education of healthcare workers on health promotion and healthy lifestyles, this knowledge is not always transferred to their own behaviour.

The aim of the study was to explore the relation between consumption of alcohol and the practice of physical activity in everyday life for healthcare professionals.

Materials and Methods

Survey design

The survey was anonymous. Each of 3150 staff members were contacted through the intranet with an invitation to participate in the study. No financial or material incentives were offered in exchange for participation. The questionnaire was administered by the Parma University Hospital from January to April 2013. The results were distributed to all pro-



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professionals, managers/coordinators, and other involved services.

Sample

The Academic Hospital of Parma is a teaching general hospital with 1250 beds, located in the Parma Province (which has about 447.000 inhabitants). The sample of n=914 respondents was considered representative (CI=99%) compared to the reference population (n=3.150).

Questionnaire

A brief self-report questionnaire was administered to investigate the alcohol consumption behaviours and physical activity. The questionnaire was distributed in 2013 in order to explore the phenomenon for the first time in the Parma University Hospital, and the survey has not been repeated since then.

The questionnaire consisted of two parts: Part A collected demographic information: gender, age, profession (physicians, nurses, health technicians, health workers, other employees), marital status (married/cohabitant, single, separated/divorced, widower), instruction degree (primary school, secondary school, high school diploma, bachelor degree) and workplace (clinical unit/service, office, other/vehicle). Part B reported the frequency of alcohol consumption and physical activity through the following questions:

1. "Do you do any physical activity?" (1 = No, 2 = Yes, occasionally, 3 = Yes, I play sport at a competitive level),
2. "Can you indicate your habits with respect to the assumption of wine/beer?" (1 = I don't consume neither wine nor beer, 2 = I consume them only occasionally, 3 = I consume them with an approximately 1/2 litre daily dose, 4 = I consume a wine/beer daily dose equivalent or higher than 1 litre)
3. "Can you indicate your habits with respect to the assumption of hard liquor?" (1 = No, 2 = Yes, occasionally, 3 = Yes, regularly).

Statistical analysis

The demographic information of the respondents (gender, age, marital status, instruction degree, profession, and workplace) was descriptively expressed as numbers and percentages (Table 1). The association of demographic variables as gender and age with the drinking behaviours and physical activity was analysed through Mann-Whitney's test and χ^2 test in order to obtain the risk estimate and the crude Odd Ratios values (OR with 95% CI).

A multinomial logistic regression method was used for verifying which of the respondents' demographic characteristics were found to be significant predictors for

Table 1 Characteristics of the healthcare personnels

	n = 914	%
Gender *		
Women	685	74.9
Men	225	24.6
Missing	4	0.4
Age *		
20-30	85	9.3
31-65	829	90.7
Marital status †		
Married/cohabitant	532	58.2
Single	251	27.5
Separated/divorced	109	11.9
Widower	17	1.9
Missing	5	0.5
Education †		
High school diploma	440	48.1
Bachelor degree	373	40.8
Secondary school	92	10.1
Primary school	4	0.4
Missing	5	0.5
Profession †		
Nurses	400	43.8
Health technicians	109	11.9
Health workers	108	11.8
Employees	92	10.1
Physicians	86	9.4
Other	117	12.8
Missing	2	0.2
Workplace †		
Clinical Unit / Service	772	84.5
Office	118	12.9
Vehicle	3	0.3
Other	16	1.8
Missing	4	0.4
Total	914	100.0

the dependent variables (wine/beer consumption, hard liquor consumption, and physical activity). All dependent variables (wine/beer consumption, hard liquor consumption, and physical activity) have been recoded into dichotomous (presence/absence of consumption or activity) and the adjusted OR values have been reported. The relation between healthcare workers' drinking behaviours and their physical activity has been evaluated according to the Pearson χ^2 test. All statistical analyses were performed through SPSS 17.0 software. 95% CI not including the value one and p-value <0.05 were considered statistically significant.

Results

Overall, 28.2% declared that they were not consuming beer or wine, while 71.3% declared that they did not consume hard liquor at all. Furthermore, 26.1% declared that they were not physical active (Table 2).



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Table 2 Level of physical activity and drinking habits

1. "Do you do any physical activity?"			
No	239	26.1	
Yes, occasionally	651	71.2	
Yes, I play sport at a competitive level	19	2.1	
No reply	5	0.6	
2. "Can you indicate your habits with respect to the consumption of wine/beer?"			
I don't consume neither wine nor beer	258	28.2	
I consume them only occasionally	433	47.4	
I consume them with an approximately ½ litre daily dose	146	16.0	
I consume a wine/beer daily dose equivalent or higher than 1 litre	12	1.3	
No reply	65	7.1	
3. "Can you indicate your habits with respect to the consumption of hard liquor?"			
No	652	71.3	
Yes, occasionally	180	19.7	
Yes, regularly	9	1.0	
No reply	73	8.0	

* Crude OR calculated through the Pearson Chi-Square Risk Estimate

† Adjusted OR calculated through the Multinomial Logistic Regression

Drinking behaviour

Table 3 shows that wine/beer consumption was significant more frequent among women (OR 1.272; 95% CI 1.186–1.363). More women also declared an occasional consumption of hard liquor (OR 1.339; 95% CI 1.182–1.517). A subanalysis on the physicians reported contrary results, however, with men consuming more alcohol both in relation to hard liquor ($p < 0.014$) and to wine/beer ($p < 0.022$). Age was not related to wine/beer consumption, but staff members of 31 years and older seemed more likely to consume hard liquor than their younger colleagues ((OR 1.112; 95% CI 1.038–1.190). Marital status was not a significant predictor of wine/beer consumption, but showed higher risk of consuming hard liquor (OR 1.405; 95% CI 1.185–1.665). Furthermore, single healthcare workers seem more likely not to consume hard liquor compared to the other groups (OR 0.540; 95% CI 0.435–0.671). Living alone was associated to no consumption of hard liquor.

Physical activity

Table 3 shows the sample characteristics that are associated with physical activity. There was no relation to gender (OR 1.061 95% CI 0.979–1.149). Hospital staff of 31 years and older were more probable to be physically active than their younger colleagues (OR 1.066; 95% CI 1.025–1.109). The marital status variable is not associated with health care practitioners' physical activity. Health workers were more likely to be physically active (OR 1.877; 95% CI 1.039–3.390) than other professionals.

The workplace variable was a significant predictor for physical activity; working in an office (OR 0.256; 95% CI 0.101–0.645) and in clinical units (OR 0.208; 95% CI 0.076–0.570) were associated with physically inactivity.

Drinking behaviours and physical activity

People who were physically inactive had a higher risk (Pearson $\chi^2=5.136$, $p < .023$) of consuming wine/beer (OR 1.314; 95% CI 1.041–1.659), but not hard liquor consumption (Pearson $\chi^2=2.241$, $p < .134$).

Discussion

This study explored the reported lifestyle behaviours and physical activity of healthcare professionals working in the north of Italy.

Women declared a higher consumption of both wine/beer and hard liquor than men, except for physicians where more men reported higher alcohol consumption. This is in agreement with the majority of the literature (6;11), which has, however, not homogeneous results. (8). A recent survey of 3,213 Canadian doctors found that only 1.3% of men and 0.8% of women had consumed five or more drinks at the same occasion within a year (11). However, the literature also highlights alcohol consumption for other healthcare workers, such as nurses and pharmacists (12–15). In 2007/2008 a survey showed that 95% of nursing students consumed alcohol and 19% of the female students had exceeded the recommended weekly limit in Ireland (15). A recent study on 1691 health workers in a hospital located in the north of Italy affirmed that the prevalence of at risk alcohol consumption among hospital workers was low (14). However, health workers who work in inpatient wards showed tendencies of hazardous alcohol consumption. The result showing that hospital staff members who are 31 years or older have a higher prevalence of consuming hard liquor than younger healthcare workers is in agreement with a study from 1985 which showed that younger doctors drank less and were more conscious of alcohol as a public health problem than their older colleagues (28).

The literature on physicians' alcohol intake indicates that the surgical specialty might be a risk factor for hazardous drinking among German and Norwegian doctors (9) but not for Australian doctors (29). This difference could be seen as a difference between countries with different cultural background. A recent Italian study (14) indicated that health care workers who work in inpatient wards display at risk alcohol consumption. This result could not be repeated in the present study, as the questionnaire did not distinguish between any alcohol intake and hazardous drinking or between professional occupations and workplaces for alcohol



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Table 3 Characteristics associated with healthcare personnels' drinking behaviors and physical activity

	HARD LIQUOR CONSUMPTION (Yes)			WINE/BEER CONSUMPTION (Yes)			PHYSICAL ACTIVITY (Yes)		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Gender *									
Women	1.339	1.182-1.517	0.001	1.272	1.186-1.363	0.001	1.061	0.979-1.149	0.166
Men	0.507	0.403-0.637							
Missing									
Age *									
20–30									
31–65	1.112	1.038-1.190	0.001	1.028	0.983-1.075	0.250	1.066	1.025-1.109	0.000
Marital status †									
Married	1.405	1.185-1.665	0.001	1.025	0.909-1.157	0.684	0.751	0.273-2.066	0.579
Single	0.540	0.435-0.671	0.001	0.855	0.664-1.100	0.217	0.517	0.183-1.461	0.213
Separated/divorced	0.918	0.597-1.410	0.697	1.020	0.686-1.516	0.924	0.496	0.166-1.485	0.210
Widower	.	.		.	.				.
Missing									
Education †									
High school diploma	1.327	0.945-1.863	0.103	1.186	0.870-1.617	0.281	1.270	0.914-1.764	0.154
Bachelor degree	.	.	.	.	.	.	.	.	.
Secondary school	1.341	0.725-2.481	0.350	1.202	0.703-2.057	0.502	3.031	1.872-4.908	0.001
Primary school	0.682	0.061-7.609	0.756	.	.	.	.	.	.
Missing									
Profession †									
Nurses	0.716	0.370-1.385	0.321	0.774	0.414-1.446	0.422	1.299	0.746-2.117	0.294
Health technicians	1.143	0.674-1.937	0.621	1.035	0.656-1.633	0.884	0.845	0.443-1.612	0.609
Health workers	0.940	0.488-1.810	0.853	0.607	0.328-1.123	0.112	1.877	1.039-3.390	0.037
Administrative personnel	0.871	0.444-1.709	0.688	1.131	0.627-2.040	0.682	1.400	0.746-2.628	0.295
Physicians	0.223	0.345-1.282	0.223	0.610	0.318-1.169	0.136	1.131	0.586-2.182	0.714
Other	0.950	0.580-1.555	0.838	0.893	0.579-1.376	0.607	1.288	0.810-2.046	0.285
Missing									
Workplace †									
Clinical Unit / Service	0.595	0.132-2.685	0.499	0.893	0.302-2.644	0.839	0.208	0.076-0.570	0.002
Office	0.461	0.097-2.181	0.329	0.699	0.220-2.215	0.543	0.256	0.101-0.645	0.004
Vehicle	.	.	.	.	.	.	.	.	.
Other	.	.	.	.	.	.	.	.	.
Missing									

* Crude OR (Chi-Square test)

† Adjusted OR (Multivariate Logistic Regression)



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drinking behaviours. Another interesting result is that variables such as professional occupation and workplace are not significant predictors for healthcare practitioners' alcohol consumption but rather predictors for physical inactivity.

Our results confirmed that high intensity physical activity is a rare characteristic (16;17), but the majority of our hospital staff exercised occasionally or regularly (2.1%). In line with the literature, our results on physical activity are not related to gender but to age (17;25).

Physical inactivity among healthcare workers

An Egyptian study involving 382 physicians found that 84% declared to be sedentary with no or irregular physical activity (16). One study (25) found that only around 25% of the hospital staff in South Africa was engaged in regular exercise and/or physical activity. A recent study conducted among $n=798$ nurses and community healthcare workers in Brazil (18), reported that >95% needed additional information on physical activity guidelines. Another study conducted with Polish healthcare workers (17) found that the prevalence of competitive sports was low. However, no significant gender differences were found when considering the division into different professional groups. A high level of physical activity was a rare characteristic for the majority of the healthcare workers studied. One independent risk factor for low physical activity was found to be working as a doctor.

The healthcare workers' lifestyles and health promoting practices

Recent studies have found strong associations between doctors' personal habits and their related counselling practices (26;27). The deeper insight into their own health and health habits physicians gain, the more realistic and effective their advice to patients will be (28). In general, health professionals' own alcohol use may also play an important role in their interaction with their patients (22;29).

Most of the cross-sectional evidence (11;15;26) showed that higher level of personal physical activity were associated with greater promotion of physical activity practices from the healthcare personnel. These findings suggest that an empirical link exists between health professionals' physical activity habits and their promotion of physical activity to patients with health issues. Studies and interventions on prevention and health promotion issues have to focus on the population of the healthcare workers in order to explore their attitudes and behaviours (13). In fact, the healthy lifestyles of healthcare workers have a double importance: They matter both for the professionals' personal health

and for the quality of the prevention practices that they recommend to their patients.

Our results indicate that healthcare personnel of 31-years and older were most likely to be engaged in some kind of physical activity, while other studies found the younger persons to be more active. The profession variable seems to be a significant predictor for physical activity in our study, where health workers were more likely than other workers to be physically active. Interestingly, our research shows that staff members who consume wine/beer also have a higher risk of being sedentary. However, this association was not found for hard liquor.

Another recent study (12) investigating the health behaviours of pre-registered nurses found that 40% of the respondents reported binge drinking and were not physically active enough to benefit their health.

A study based on a sample of pre-registered nurses indicated that those who were physically inactive were more likely to report any type of alcohol consumption than their active counterparts (13). On the other hand, a recent literature review has indicated a positive association between alcohol consumption and physical activity across all ages (30). For both studies on alcohol consumption and on physical activity, different definitions and categorisations are used, why comparison across the literature can be difficult.

Limitations of the study

Our study included a large sample of healthcare staff, but with a low inclusion rate, which could cause over-interpretation of the results, and thus limit the generalisability to other settings locally, nationally, and internationally. The associated model of alcohol intake behaviour and physical activity narrowly focused on six important factors, including personal characteristic and workplace (job, working setting), but without controlling for other relevant factors also associated with a healthy work life; such as smoking and overweight, as well as experience of stress and burn-out amongst others, which may add further restrictions to the generalisability.

The data are self-reported, based on the individual recall memory, and the adopted questionnaire was not a validated instrument. Usually, alcohol intake is under-reported (31), and this may also be an issue in this study. The questionnaire scale was too simple a tool to detect the details of lifestyles of alcohol consumption and physical activity, for example, by considering the behaviours' frequencies. However, the use of a self-reported instrument can be a strategy to increase



Research and Best Practice

professionals' involvement in and attention to health and safety issues. Furthermore, when the study do not distinguish between the levels of alcohol consumed on a weekly basis, it is difficult to interpret the results and to compare to literature where the weekly dose is often the alcohol measurement.

Further research must be carried out in order to explore the epidemiology of alcohol drinking behaviours and physical activity among different health professionals.

Conclusion

The results of the present research indicate that the majority of the participating staff declared to consume alcohol, especially wine/beer, and only a minority of the personnel have declared to engage in physical activity regularly. Furthermore, it seems that healthcare personnel consuming wine/beer also were more likely to have a sedentary lifestyle, but this association was not significant for consumption of hard liquor. The health promotion programs focussing on alcohol consumption and physical activity should target not only the general population but also specific groups, such as healthcare personnel, in order to raise their awareness of own risk behaviour and the benefits of leading a healthy lifestyle. The healthcare professionals own healthy lifestyles are at the base of their personal and professional choices.

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Conflicts of interests

None declared

References

- (1) World Health Organisation. Global status report on alcohol and health 2014. 2014; 1–392. Available from: http://www.who.int/substance_abuse/publications/global_alcohol_report/msbgsruprofiles.pdf
- (2) Booth FW, Chakravarthy M V, Gordon SE, et al. Waging war on physical inactivity: using modern molecular ammunition against an ancient enemy. *J Appl Physiol* 2002; 93:3–30.
- (3) Van Uffelen JGZ, Wong J, Chau JY, et al. Occupational sitting and health risks: A systematic review. *Am J Prev Med* 2010; 39:379–88.
- (4) Bull F. Defining physical inactivity. *Lancet* 2003; 361:258–9.
- (5) Sebo P, Bouvier Gallacchi M, Goehring C, et al. Use of tobacco and alcohol by Swiss primary care physicians: a cross-sectional survey. *BMC Public Health* 2007; 7:5. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1781430/nhttp://www.ncbi.nlm.nih.gov/pmc/articles/PMC1781430/pdf/1471-2458-7-5.pdf>.
- (6) Voigt K, Twork S, Mittag D, et al. Consumption of alcohol, cigarettes and illegal substances among physicians and medical students in Brandenburg and Saxony (Germany). *BMC Health Serv Res* 2009; 9:219.
- (7) Wells KB, Lewis CE, Leake B, et al. Do physicians preach what they practice? *JAMA J Am Med Assoc* 1984; 252:2846–8.
- (8) O'Cathail M, O'Callaghan M. A profile of hospital consultants: the health practices of a cohort of medical professionals. *Ir Med J* 2013; 106:134–6.
- (9) Rosta J. Hazardous alcohol use among hospital doctors in Germany. *Alcohol Alcohol* 2008; 43:198–203. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18208862>
- (10) Rosta J, Aasland OG. Changes in alcohol drinking patterns and their consequences among norwegian doctors from 2000 to 2010: A longitudinal study based on national samples. *Alcohol Alcohol* 2013; 48:99–106.
- (11) Frank E, Segura C. Health practices of Canadian physicians. *Can Fam Physician* 2009; 55:810–811.
- (12) Blake H, Harrison C. Health behaviours and attitudes towards being role models. *Br J Nurs* 2013; 22:86–94.
- (13) Blake H, Malik S, Mo PK, et al. "Do as say, but not as I do": are next generation nurses role models for health? *Perspect Public Heal* 2011; 131:231–9. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21999028>
- (14) Cona M, Gerbaudo L, Violante B. Alcohol consumption risk among health care workers of the Santa Croce e Carle Hospital of Cuneo: index of prevalence, predictors and enforcement actions to dissuade alcohol consumption. *Med Lav* 2013; 104:93–106. Available from: <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=medl&NEWS=N&AN=23789516>
- (15) Burke E, McCarthy B. The lifestyle behaviours and exercise beliefs of undergraduate student nurses: A descriptive study. *Health Education* 2011; 111:230–46.
- (16) Rady M, Sabbour SM. Behavioral risk factors among physicians working at Faculty of Medicine - Ain Shams University. *J Egypt Public Health Assoc* 1997; 72:233–56.
- (17) Biernat E, Poznańska A, Gajewski AK. Is physical activity of medical personnel a role model for their patients. *Ann Agric Environ Med* 2012; 19:707–10.
- (18) Burdick L, Mielke GI, Parra DC, et al. Physicians', nurses' and community health workers' knowledge about physical activity in Brazil: A cross-sectional study. *Prev Med Reports* 2015; 2:467–72. Available from: <http://linkinghub.elsevier.com/retrieve/pii/S2211335515000716>
- (19) Juntunen J, Asp S, Olkinuora M, et al. Doctors' drinking habits and consumption of alcohol. *BMJ* 1988; 297:951–4.
- (20) Kenna GA, Wood MD. Alcohol use by healthcare professionals. *Drug Alcohol Depend* 2004; 75:107–16.
- (21) McAuliffe WE, Rohman M, Breer P, et al. Alcohol use and abuse in random samples of physicians and medical students. *Am J Public Health* 1991; 81:177–82.
- (22) Bakhshi S, While AE. Health professionals' alcohol-related professional practices and the relationship between their personal alcohol attitudes and behavior and professional practices: A systematic review. *Int J Environ Res Public Health* 2013; 11:218–48.
- (23) Aasland OG, Amundsen A, Bruusgaard D, et al. Drinking habits among Norwegian physicians. *Nord Med* 1988; 103:85–89.
- (24) Nash LM, Daly MG, Kelly PJ, et al. Factors associated with psychiatric morbidity and hazardous alcohol use in Australian doctors. *Med J Aust* 2010; 193:161–6.
- (25) Skaal L, Pengpid S. The predictive validity and effects of using the trans-theoretical model to increase the physical activity of healthcare workers in a public hospital in South Africa. *Transl Behav Med* 2012; 2:384–91.
- (26) Fie S, Norman IJ, While AE. The relationship between physicians' and nurses' personal physical activity habits and their health-promotion practice: A systematic review. *Health Educ J* 2012; 72:102–119.
- (27) Abramson S, Stein J, Schaefele M, et al. Personal exercise habits and counseling practices of primary care physicians: a national survey. *Clin J Sport Med* 2000; 10:40–8.
- (28) Lobelo F, de Quevedo IG. The Evidence in Support of Physicians and Health Care Providers as Physical Activity Role Models. *Am J Lifestyle Med* 2014 Jan 21. Available from: <http://ajl.sagepub.com/cgi/doi/10.1177/1559827613520120>
- (29) Aalto M, Hyvönen S, Seppä K. Do primary care physicians' own AUDIT scores predict their use of brief alcohol intervention? A cross-sectional survey. *Drug Alcohol Depend* 2006; 83:169–73.
- (30) Piazza-Gardner AK, Barry AE. Examining physical activity levels and alcohol consumption: Are people who drink more active? *Am J Health Promot* 2012; 26:e95–104.
- (31) Tønnesen H, Nielsen PR, Lauritzen JB, Møller AM. Smoking and alcohol intervention before surgery: evidence for best practice. *Br J Anaesth* 2009; 102:297–306.



News from the International HPH Network

Legacy statement from the chair of the HPH Governance Board, Dr. Raffaele Zoratti

After four years, Dr. Raffaele Zorratti is ending his term in the Governance Board of the International Network of Health Promoting Hospitals. Dr. Zoratti has for the last two years acted as the chair of the Governance Board, and the HPH Network would like to thank him for his dedicated work and leadership.

Dr. Zoratti have asked for the opportunity to thank the HPH Network and the many members for the support and encouragement he has experienced during his term as chair.

Dear friends and colleagues,

I would like to thank all of you for the support and the opportunity I have had to serve the International Network of Health Promoting Hospitals and Health Services as Chair of the Governance Board (GB). It has been a wonderful and stimulating experience working with all the outstanding GB members, the WHO Collaborative Centers and the Secretariat. Thank you so much, really, to all of you!

I joined the HPH Network in 2012, as a delegate for the Italian National Coordinator at the 20th International HPH Conference in Taipei, and very soon I became involved in the GB, first as Vice-chair and then as Chair from 2014 to 2016. It has been an amazing and fruitful experience to participate in the board meetings, in the Age-Friendly Health Care Task Force, in the Scientific Committee for the HPH Conferences, and in the HPH-Award Standards and Strategy groups, where I had the opportunity to share my thoughts with you and improve the health promotion issues.

During these four years, I deeply appreciated your efforts in sustaining the HPH values in your hospitals and health services and spreading its mission in your countries, keeping in mind that at the centre of our work is the “person who needs care” and that our effort is “to take care of the patient”.

As a clinician, I would like to stress the importance of bringing health promotion inside the hospitals through:

- Interventions addressed to patients, staff and community on healthy lifestyle improvement;
- Continuity of care (integrated patient pathways between hospital, health services, community services);
- Patient education activities;

- Inter-cultural approach to hospital services with equity in health care for migrants and other vulnerable groups;
- Projects (Pain-free Hospital, Smoke-free Hospital);
- Staff safety;
- Reception capacity of the structures, resources re-allocation through lowering costs and increasing patient safety.

We have to support our hospitals and health services in promoting health and disease prevention, not only as a mere expression of goodwill by some professionals, but by attracting the attention of health professionals, administrators and institutions.

I’m grateful to see the good collaboration between the network members; I have to thank the Italian HPH Network for doing it in a time with shortage of economic resources; To put health promotion in the strategic lines to pursue an integrated governance of public health structures is a real challenge.

I am confident that the International HPH Network will continue to develop and expand under the leadership of the new chair, encouraging and supporting new members worldwide. Participation in the Health Promoting Hospitals and Health Services Program represents an opportunity of improvement for hospitals and health services in their continuous effort to meet the complex demands from their stakeholders and to be an integral part of a health service network.



Dr. Raffaele Zoratti
Chair of the Governance Board
The International HPH Network
April 2014-June 2016



News from the International HPH Network

The New Haven Recommendations to be released at the 24th International HPH Conference in June 2016

This year at the 24th International HPH Conference, a document focusing on patient and family involvement will be discussed and endorsed by the conference participants and the International Network of Health Promoting Hospitals and Health Services (HPH Network).

The document is called the “New Haven Recommendations on partnering with and involving patients and families in health promoting hospitals and health services”.

The idea of the “New Haven Recommendation” arose during the preparation of the 24th International HPH Conference, which will take place at Yale University in New Haven, Connecticut on June 8-10, 2016.

The document builds upon the main conference theme “Creating a Culture of Health through Innovation & Partnership” as well as the long experience of the local host, Planetree, with regards to facilitating patient- and family-centered care.

In particular, the recommendations refer to three priorities:

- a) enable patient and family involvement within direct service provision (micro-level);
- b) enable patient, family, and citizen involvement on the organizational / hospital level (meso-level);
- c) enable patient, family, and citizen involvement in planning healthcare delivery systems and policy (macro-level).

With the New Haven Recommendations, the HPH Network marks the essential role of patients as co-producers of their own health as well as the role of families and citizens as co-designers of healthcare delivery. Thereby, the HPH Network aims to move forward new ways of thinking as well as novel approaches to involve health care stakeholders and ultimately to promote the “active and participatory role of patients (and families)”. This goal which was already emphasized in one of the first HPH policy documents has now the potential to become a reality in reoriented health services.

After the 24th International HPH Conference, the final version of the New Haven Recommendations will be available at the following websites: www.hphconferences.org/connecticut2016 www.hph-hc.cc www.hphnet.org

HPH Material in local language needed

We would like to direct all readers’ attention to the HPH website, where the International HPH secretariat continuously works on publishing all HPH documents online: www.hphnet.org

The secretariat has added Google Translate, so that visitors can have the website displayed in 50+ languages. Following this improvement, the secretariat wants to update the website with local language HPH materials.

This is why we kindly ask all National/Regional HPH Coordinators, to please send us any HPH material that has been translated into your local language, so the secretariat can support the existing and future members in your regions even better.

Please send any translated HPH materials you have on file to: info@hphnet.org





News from the International HPH Network

Save the date - the 25th International HPH Conference will take place in Vienna on April 12-14, 2017

The city of Vienna and the Austrian National HPH Network have been elected by the HPH General Assembly to host the 25th International HPH Conference. Thus, for its 25th anniversary, the International HPH Conference will come back to where it all started.

The Austrian National HPH Network has decided to focus on the pressures health care sectors are faced with today, thereby considering aspects and inputs from the history of the International HPH Network. The working title of the conference is:

“Health Promoting Health Care in times of crises – lessons from the past, directions for the future”

The University of Vienna, the “Alma Mater Rudolphina Vindobonensis”, was chosen as venue for the conference. Thus, participants will experience the ambience and history of one of the oldest universities in Europe.

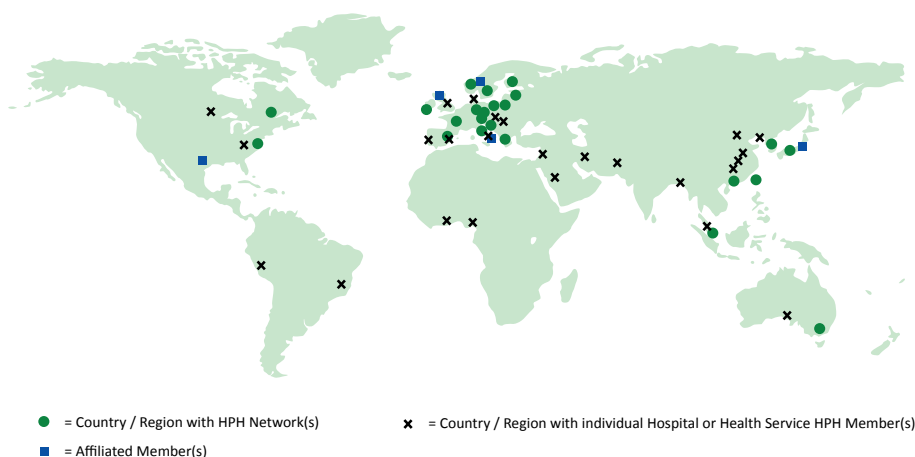
The conference and associated site-events will take place in the week of Good Friday, with the annual HPH Summer School and site-visits on April 10-12, 2017. As the conference ends on Good Friday, participants will have the opportunity to spend the Easter Weekend in the beautiful city of Vienna.

Continuous updates about the conference are available at: www.hphconferences.org/vienna2017

Member update of the HPH Network

As of May 24, 2016, the International HPH Network has a total of 688 active member hospitals, health services and affiliated members. The members are from 6 continents, 39 countries, from 28 National/Regional HPH Networks.

HPH World Map



Become a member of the International HPH Network

If your hospital, health service or organisation is interested in joining the International HPH Network, go to HPH Website and read more on what HPH can do for your organisation and why health promotion is vital for the improvement of health for patients, staff and community.

For more information, visit:
www.hphnet.org



News from the International HPH Network

Sweden obtains full national HPH coverage

About the Swedish HPH Network

The Swedish National HPH Network has existed since 1995 and has today a total of 89 members nationwide.

The network have a strong collaboration with the health authorities in Sweden and have had financial support from the Swedish Ministry of Health & Social Affairs for several years.

Contact:

Swedish HPH Coordinator
Margareta Kristenson
margareta.kristenson@liu.se

The Swedish National HPH Network has now got HPH members in all of Sweden's 21 Landsting - *County Councils* - thus having achieved full national coverage.

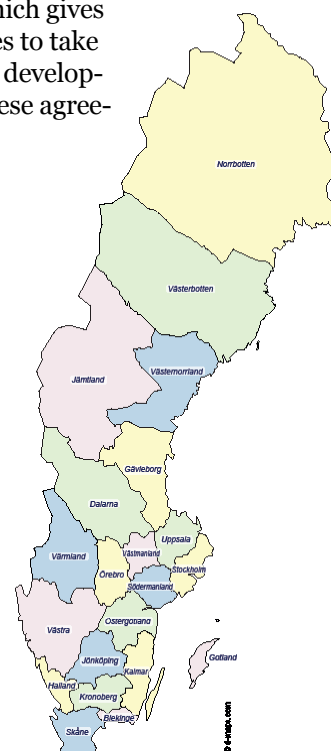
The Swedish National HPH Network has decided a set-up, where each of its counties is an HPH member, and the size of each of these memberships is set in accordance to the numbers of hospitals. The choice of using counties as members was made by the members themselves, based on the experience that governance is central for the possibility for hospitals/health services to develop.

Having counties as members means that the decision to become member lies at the political level, and that membership is a means for politicians to be supported in the development of health services.

The county approach also enhances a strong collaboration across sectors. This has been evident in new applications from counties where there used to be only single hospital members. The new applications encompass "cross county projects"; such as the development of a

smoke-free policy for all hospitals and clinics.

Also, being member as a county means that the member comprises those who define the agreements and purchasing system, which gives possibilities to take part in the development of these agreements.



Affiliate Membership: An Alternative Entry-Point to the HPH Network

Earlier this year, The Standish Foundation for Child and Family Centered Healthcare decided to join the HPH Network as an Affiliate Member. They are an organization with a dedicated focus on implementing better child and family practices into hospitals.

As an organization with no direct clinical patient contact, The Standish Foundation did not qualify as a regular HPH member, but as others have done the last couple of years, they instead signed up as an Affiliate Member with many of the same privileges.

Becoming an Affiliate Member of the HPH Network, the Standish Foundation has access to an inspiring network of knowledgeable and dedicated professionals working with Evidence-based Health Promotion in many varieties and shapes.

We would like to welcome The Standish Foundation for Child and Family Centered Healthcare to the International HPH Network.

To learn more about the Affiliated HPH Membership, go to Membership at: www.hphnet.org

