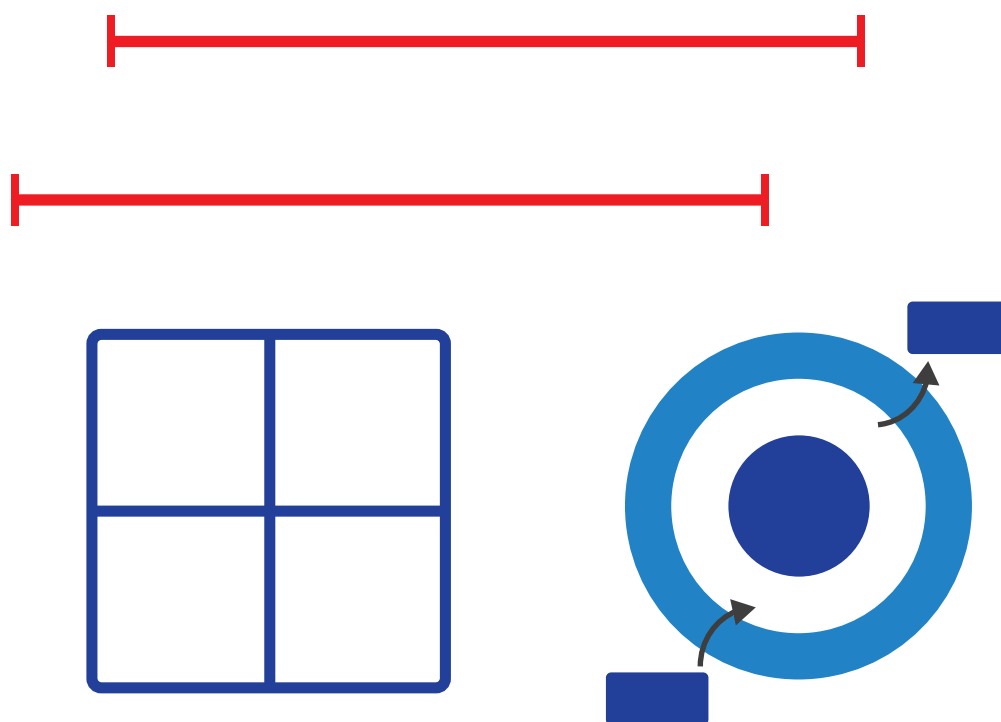


# Engage in the Process of Change; Facts and Methods



Edited by Hanne Tønnesen



CLINICAL HEALTH PROMOTION CENTRE



# Engage in the Process of Change; Facts and Methods

**Edited by Hanne Tønnesen**

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## Abstract

This textbook advocates patients' empowerment for improving health outcomes and health system performance. It emphasizes the important implications of improving communication between patient and health professionals and the adherence to treatment regimens.

Based on research including theories of Stages of Change and Decision Balance, and by incorporating examples from daily clinical practice, this document sets out the guiding principles to support health professionals in better understanding and empowering patients to change lifestyle and behaviour. These principles describe a general approach to patients' empowerment, consisting of three main tools: the LINE, the BOX and the CIRCLE.

It specifically addresses the major risk factors such as smoking, diet, alcohol consumption and physical activity by putting the focus of action upstream to the causes of these types of lifestyle and behaviour. It is built on accumulating evidence, which shows that tailoring interventions to the characteristics of the target audience is key for success.

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# Foreword

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The WHO European Region faces multiple health challenges in an extremely dynamic socio-political context, where persistent health inequalities play an increasingly important role. The level and distribution of health vary within and across countries, with a range of determinants including socio-economic circumstances, lifestyles and behaviours, and health system capacities. Public health policies, functions and governance arrangements impacting health need to be strengthened and made more coherent with a view to increasing levels of health equally.

The WHO Regional Office for Europe has launched the development, with Member States, of a new European policy for health, called Health 2020. The European Health 2020 policy will set out an action framework to accelerate attainment of better health for all, adaptable to the different realities that make up the WHO European Region. In line with this, the European Action Plan for strengthening public health sought to renew the focus on public health by making a real commitment to prevention and health promotion. Within this context, the Regional Office and the WHO Collaborating Centre for Evidence-Based Health Promotion in Hospitals & Health Services have jointly developed this publication addressing the main public health challenges to be tackled through health promotion.

Every health care service provider, both at primary and specialised level of care, has a crucial role to play in improving patients' health. Health promotion may be an integrated part of their clinical pathway, such as smoking cessation following surgery, or in the longer term, keeping them healthy for a longer time. The WHO Regional Office for Europe considers the International Network of Health Promoting Hospitals and Health Services an important partner in the Health 2020 and the European Action Plan.

Based on research, including concepts and theories of the process of change, and incorporating examples from daily clinical practice, this document presents a translation of theory into clinical practice. The document sets out some guiding principles that could support health professionals to better understand and empower patients on their individual journeys towards behavioural change.

We at WHO hope this publication will make an important contribution to the discussion that will lead to a renewed focus on health promotion within a broader and strategic context of the European Action Plan on Public Health.

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# Introduction

This chapter introduces the new WHO European health policy: Health 2020. WHO considers citizens as both consumers and producers of health and health care. The importance of focusing on the individual's lifestyle, behaviour and readiness for change is emphasised. Empowerment of patients is essential for improving health outcomes, and this book gives a theoretical introduction and practical examples of ways of engaging in the patients' changing processes.

At the sixtieth session of the WHO Regional Committee for Europe, Member States gave WHO/Europe a strong, clear mandate to develop the new European health policy, Health 2020, to accelerate progress towards achieving the European Region's health potential. Its purpose is to revitalize public health capacities and services, developing evidence-based policies and governance solutions to sustain health improvements. As a policy umbrella, Health 2020 will also help to ensure coordination and coherence across all work that WHO/Europe, Member States and partners carry out on behalf of and with the population. In line with this, the European Action Plan for strengthening public health brings a renewed focus on public health and a strong commitment to prevention and health promotion.

Individual lifestyles and behaviours have gained increasing focus in the effort to tackle current public health challenges, particularly in the area of non communicable diseases. Four main types of non communicable diseases account for the majority of the mortality and disease burden in the WHO European Region: cardiovascular diseases, cancer, diabetes and chronic respiratory diseases. Tackling the major risk factors such as smoking, alcohol consumption, nutrition and physical activity effectively means putting the focus of action upstream of the causes of these lifestyle and behavioural differences.

Public health programs and activities are more likely to have significant impact if based on a clear understanding of the targeted lifestyle and behaviour, as well as the environmental context. The targeted issues to be tackled must be clearly defined in order to identify their determinants and supporting mechanisms, to define strategies for sustainable change and develop models which incorporate these factors in specific contexts across the WHO European Region.

The readiness to change is an important factor at both individual and population levels. There is accumulating evidence across behaviours such as smoking, nutrition and physical activity that tailoring programs and interventions to better suit the characteristics of the target audience is key for success.

Citizens are both consumers and producers of health and health care. Citizen and patient empowerment is essential for improving health outcomes and health system performance. It has important implications by enhancing communication between patients and health professionals, with the potential to improve treatment adherence, achieve more control over the disease, promote an adequate use of health services and support social inclusion. In fact, deficits in health literacy and patients' participation are among the factors that have contributed most to the widening of health inequalities.

The effect of health promotion may vary according to social and educational backgrounds. Therefore, health education and patient empowerment need to take social determinants into account, in order to avoid the risk of exacerbating health inequalities. Furthermore, health professionals also need to be motivated to allow patients to take a leading role in managing their health and treatments. This implies important changes in the relationship between patients and health professionals, which still remains largely paternalistic.

Another challenge in health promotion involves breaking down the usual barriers between public health services and health care services, through the development of integrated information systems for appropriate health surveillance and a coherent approach. However, policies and interventions from political, economic and environmental sectors have a strong influence on population health. The improvement of health outcomes as a societal goal means that government and all sectors of society are responsible and accountable. A focus on health in all policies addresses complex health challenges by promoting an integrated policy response across the different sectors of society, as well as incorporating current major health concerns into the overall process of policy development.





# Getting Started

This chapter is an introduction for all readers of the book. It introduces the process of change and defines the limits of the field. The chapter describes the role of health professionals, including physicians, nurses, physiotherapists, audiologists, occupational therapists and dieticians, as well as the relationship between the health professional and the patient. The chapter also briefly introduces the importance of documenting implementation and impact.

Every doctor, nurse, physiotherapist, audiologist, occupational therapist, dietician, or any other health care professional in direct patient contact, is faced with patients who, for various reasons, have to change their habits. Each patient expects our genuine support, and likewise we all want to treat and help our patients the best we can.

When it comes to supporting our patients' change of habits, the fact is that many of us simply do not have the necessary knowledge and experience to offer the specific support needed. This is due to the fact that methods of motivation and support may simply be unknown territory. If we do not have the methods and tools needed to give sufficient support, we will spend considerable time and resources with disappointing results.

## Process of change

Behaviour change theories strongly indicate that the use of comprehensive strategies, including multiple interventions or programs developed together in synergistic ways, is more effective than isolated health strategies. These strategies may include regulation, education, behavioural monitoring, motivational techniques and social support, counselling and strengthening community capacity.

The psychologists James O. Prochaska and Carlo C. DiClemente made a significant contribution to this area of knowledge about twenty years ago. They rethought the previous understanding of a linear process of change through numerous studies of people trying to give up smoking (1-3). Several other scholars have contributed to the new understanding. Amongst those were Irving L. Janis and Leon Mann who presented their structured Decision Balance Sheet for supporting patients in their decision to change habits (4). Almost at the same time, William R. Miller described how to prepare people for changing by motivational interviewing (5-7). A further elaboration of these theories will be described in chapter 3.

## Definitions

Throughout this book a number of terms and defini-

tions will be used widely; the most frequently used are explained in the following paragraphs.

## Stages of change

In this book, the stages of change are defined according to Prochaska and DiClemente. They describe the process of changing as a cyclic or spiral model rather than a linear route and they categorize it into five stages: *Precontemplation*, *Contemplation*, *Preparation*, *Action*, and *Maintenance*. Many attempts to change are followed by a Relapse and a Re-start. Where the first three stages focus on change of attitude, the Action and the Maintenance are related to behavioural changes. The point of Relapse can occur at any stage of the process. Finally, when the patient has completed the change, Prochaska and DiClemente use the term *Termination* to describe a permanent change (2;8).

In this book the different stages have been put together in a circle, which helps to illustrate the cyclic process of change (figure 4.4 in chapter 4).

## Decision balance

Decision making was conceptualized in 1977 by Janis and Mann as a decisional "balance sheet" of comparison of potential gains and losses in decision making (figure 4.3 in chapter 4). By reflection and measurement of pros and cons, a decision could be 'balanced' according to the potential gains and losses for both status quo and the implied situation where the change has occurred. In this way, potential ambivalences towards the change will be included in the process. The balance between the pros and cons is individual (4).

## Motivational interviewing

Motivational interviewing was first introduced in 1983 by Miller (7), and further developed by Miller and Stephen Rollnick as a counselling approach to help people change addictive behaviour (5). Motivational interviewing is a redefined form of the process of guiding patients, and it builds on four principles: Resistance, Understanding, Listening, and Empowerment (5). A counsellor's main role is to help, empower, and facilitate the patient. By listening to and understanding the patient's motivation for change,

the counsellor can help the patient to resist the arguments against it. The intention is that the counsellor thereby empowers the patient to explore how he or she can successfully change lifestyle or health behaviour (6).

### **Clinical Health Promotion**

Clinical Health Promotion is defined as patient-centred health promotion, disease prevention and rehabilitation, which actively involve the patient (9). WHO defines Clinical Health Promotion as “the process of enabling people to increase control over, and to improve, their health” (10).

### **Better health gain for patients**

Better health gain in the clinical setting is understood as a greater improvement of physical and/or psychosocial health. This better health gain is obtained by adding health promotion to the patient pathway, thereby improving the outcome in both the short and the long term (11).

### **Limitation and frames**

In this book, the frame of reference is a better health gain for the patient. In contrast, engagement in the process of change towards poorer health (such as by starting smoking) is not a part of this book or the whole concept it addresses. It is unknown whether these contrary processes follow another pattern than that described in the book.

Another limitation is that this book has a clinical approach. It includes the patients' process of change and the related support from health professionals as an integrated part of a patient pathway in a clinical setting. It could take place in a hospital, a GP clinic, a health service centre, a rehabilitation clinic and many other more or less specialised clinical settings. Therefore, health professionals can use this book as a preparation and introduction on how to offer support to patients facing the need for a change in habit or lifestyle.

This book offers an approach to patient-centred care. Patients and their families become part of the health team in making clinical decisions. In addition, patient-centred care considers cultural traditions, personal preferences, values, family situations and lifestyles. This approach requires greater investment in patient education and health literacy, potentially by fostering involvement in civil society. This approach has the potential to improve the perception of care quality, can improve compliance, can reduce unnecessary care and can improve treatment outcomes.

For all these reasons, citizen empowerment and patient-centred health care are considered important

elements for improving health outcomes and health system performance. The patient-centered approach can contribute to better communication between patients and health professionals as well as better adherence to treatment regimens. Eventually it will lead to reduction of inappropriate use of health services, reduction of health care costs, enhanced control over disease, improved health and quality of life.

This textbook differs from other books on health behaviour change through its focus on entering and completing health care programmes with clear goals. For many patients, support, simple advice and empowerment is not sufficient to reach a better outcome. For that reason, it is necessary to follow the patient through the whole journey including the undertaking and completion of the specific patient education and intervention programmes. Good examples are the intensive smoking cessation intervention before surgery, cardiac rehabilitation, consultations with audiologists on using hearing aids, and other activities involving expert clinical help.

### **Roles and relationships**

When it comes to changing lifestyle and behaviours, it is key to give the ownership and the control of the process back to the patients. The role of health professionals is to put and keep the question of change on the agenda, to set the scene, open the dialogue and support the patients as they do the hard work themselves in relevant programmes. The health professionals will still be the experts giving information on the evident effect obtained through achieving changes; e.g. that smoking cessation in relation to surgery halves the complication rate (12).

### **Documentation of implementation and effect**

In the clinical setting, patient-related activities and their outcome, together with complications and other problems, must be documented in the medical records. Overall, the documentation of diagnosis and intervention is well established through the WHO International Classification of Diseases, International Classification of Function, and International Classification of Primary Care (13-15) supplied with national or international classification systems for treatment and care.

In the hospital setting, there seems to be very little documentation in medical records of activities to support patients' changes in lifestyle, with the result that these activities often become invisible in registries of intervention and in activity-based analyses. This situation may be similar for other clinical settings outside the hospitals.

This lack of registration is based on a poor tradition among staff of documenting these particular clinical

activities. Furthermore, the international and national classifications as well as other patient administrative systems often include only few and non-systematic registration codes to cover these activities.

#### Example

Danish surveys has shown that fewer than 10% of patient-related health promotion activities (such as smoking cessation interventions, rehabilitation programmes and diet and nutrition programmes) taking place in hospitals are registered in the National Hospital Patient Registry (16;17).

As a result of this discrepancy between what is delivered and what is registered in hospitals, the health promotion activities are nearly invisible in budgets and balances, registration of procedures and diagnoses, quality management and clinical databases of outcomes. Therefore it is difficult to prioritise resources and to assess the effect of such interventions in terms of outcomes and costs. Simple validated models for documentation and quality management are given in chapter 10.

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# History and Theory

This chapter gives a short overview of the history and theory on which this book is based. The three different theories presented in chapter 1 will all be elaborated in the following.

In the 1970s and 1980s, the research on behavioural change focused on description and application of theoretical models including factors of importance for promoting and maintaining the changes. In this period, psychologists developed and described different theories related to the process of change. Three of those theories have survived and their originators all worked with the challenge of changing behaviour (1-4).

They realised that directing, persuading and forcing individuals to change behaviour did not make any difference. They all developed a better understanding of the process of change, and they described different ways in which the individuals could be helped by a therapist using a more guided and semi-structured approach.

The theories have been further developed over time, and the methods are now part of the daily routine of many practitioners in many different health care settings.

The theories and approaches have been criticised for not being universal, and the critics have been criticised for not understanding, using or evaluating the ideas correctly.

## Health behaviour change

### History

Motivational Interviewing (MI) was first conceptualised by William R. Miller in 1983 as a brief intervention for problem drinkers (2). He defined motivation as an interpersonal process. The approach was based on ideas from experimental social psychology with a focus on processes like attribution and self-efficacy. By examining consultations in which there was disagreement between the patient and counsellor involved, Miller began wondering what effect the interaction between the counsellor and the patient could have on the outcome of the consultation. He suggested that the patients' readiness to talk openly about their thoughts on why and how they would undergo change was affected by the counsellors' way of speaking to the patients. Patients' resistance was often a result of a confrontational approach by a counsellor. Miller focused on the cognitive dissonance between

continuing problem behaviour and the awareness of its negative consequences as the driving element in the process towards a decision to change (2).

### Theory

Instead of trying to talk clients into changing, the counsellor should aim to elicit the patients' own motivation to change. Conceptualising motivation as an interpersonal process leaves room for the counsellor to influence the patients in their motivational process (2). The counsellor can facilitate this process by motivational interviewing, thereby avoiding denial, low self-esteem and low self-efficacy. This process was originally described in a schematic diagram with 6 steps (2):

1. Eliciting self-motivational statements that can be facilitated by asking the patient about his or her own concerns followed by empathetic reflections.
2. Objective assessment such as physical examination or asking about alcohol.
3. Education, where the counsellor responds to the patient's need or request for clear information.
4. Summary of 1-3.
5. Transition, during which it becomes clear whether the patient is ready for action or not.
6. Negotiation of alternatives relating to the result of 5.

### Practice

MI has evolved over time. It is described as a living method (5) that has moved from therapeutic specialist settings to be used in primary care and other community settings (6).

From the beginning of the 1990s, the focus of MI began to be broadened beyond problem drinking, and tested on other health problems where a change in behaviour was needed. Many adaptations have been published since then, covering a vast variety of Health Care areas such as diabetes, cardiovascular diseases, psychosis, etc. In various clinical trials, MI has been evaluated as more effective than usual treatment or no treatment in encouraging patients' willingness to enter and complete treatment as well as to participate in follow-up (7).



### 3.1 MI includes three main concepts, four basic principles, and three core skills (8)

#### 3 Concepts:

Readiness  
Ambivalence  
Resistance



#### 4 Principles:

Express empathy  
Develop discrepancy  
Roll with resistance  
Support self-efficacy



#### 3 Skills:

Empathetic listening  
Eliciting self-motivation  
statements  
Responding to resistance

In practice, MI is more flexible and adaptable than it originally seemed to be, and functions as a schematic description (2). MI is a style and an approach for counsellors working with patients experiencing a need or a wish to change a behaviour that is damaging their health. MI gains major advantages by being patient-centred and replacing a confrontational style with a guiding style between the health professional and the patient.

The guiding style enhances patient commitment to change and adherence to treatment (9). MI helps patients talk themselves into a change (10). MI will work as an empowerment of the patients' own will to change their health behaviour. Because of the development of MI over time, the following is based exclusively on the most recent publications.

### Guiding Style

In the guiding style, the health professional behaves like an educated guide and offers the relevant information after asking and listening. By asking, the health professional invites the patient to evaluate why and how a change should be made. The intention to change behaviour has to come from the patient because his or her articulated reasons for change will trigger the actual change. In order to be supportive of this process, it is necessary to have an understanding of the patient's perspective on the current situation, the patient's motivation for the change and what obstacles might be in the way of this process.

The process of behavioural change differs from other health care consultations, as the answer to problems that have arisen probably lies with the patient. A main role of the health care professional is to listen to the patient's contemplation, and expressed understanding, of the challenges - a role that many at first will find difficult. This does not mean that the role of giving information should be neglected, but the information is only useful if the patient understands, accepts and sees the benefit of the information. The information is followed up by asking what the implications would be for the patient (11).

### Strategies for support

An important element in the MI is to be able to identify the "change talk": i.e. when the patient talks about why and how he or she may change habits. Once this situation is established, it is necessary to have clear strategies that allow the patient to work with his or her strengths instead of focusing on weaknesses (9). The health professional elicits the motivation to change and empowers the patient instead of recommending, persuading or directing. At that stage, it is right to introduce the guiding style and the following strategy. In this way, the health professional keeps control over the consultation, and at the same time, the patient keeps the responsibility for changing.

Most patients feel ambivalent about whether they should change or not. However, in MI the development and articulation of discrepancies often facilitate the changing process. It is beneficial to ask about pros and cons to help them in the decision process.

The next strategic step would be to focus on how important the change is for the patient at this point and how confident the patient feels about the change he or she is about to undergo. The health professional needs to respond according to the answers.

If the patient is ready to change, it is helpful again to go back to the guiding style, this time aiming to elicit the patient's solution. Again the health professional asks, listens and offers useful information (9).

### Decisional balance

#### History

Irvin L. Janis and Leon Mann first described Decisional Balance (DB) in the field of Psychology in 1977 (12). Here they used a Decisional Balance Sheet as an approach to personal conflicts and ambivalence. DB was developed to help clarify objects, evaluate alternatives and consequences and consider implementation in a more sophisticated way than simply considering pro and cons (12). DB has had a significant influence on later behavioural psychology.

---

## Theory

An underlying basis for Janis and Mann was an examination of the different types of decisions made in daily life. The many types of decisions were characterised by the decision makers' difficulties in creating an overview of the process and the outcome of their decisions (12). Janis and Mann state that there is no way of giving quantitative scores for the success of a decision, there can only be subjective ratings of the post-decisional satisfaction or regret. By examining extensive literature, Janis and Mann extract a list of criteria to determine the quality of a decision-making procedure. The more criteria the person fulfils, the more likely he or she is to stand by the decision made. A meeting of all criteria is characterised as vigilant information processing (13). Janis and Mann explain that the vigilant information process is not a matter of all or nothing, but manifests itself from situation to situation through varying degrees of involvement. The vigilance can be seen as a consideration of different alternatives or an evaluation of the consequences made by the decision maker.

Janis and Mann's theoretical considerations were that stress emerging from decisional conflicts might lead to failure in achieving decision making of high quality. The level of stress is individual, but an overall observation was that stress arises from the possible losses that wrong decisions might lead to. Based on research on persons undergoing stressful decision making, Janis and Mann conclude that one of the indicators of successful decision making is a thorough contemplation of all consequences of the decision (11). They state that errors of omission and commission on the DB Sheet will increase the decision maker's vulnerability to negative feedback. As a tool for a thorough contemplation of these consequences, Janis and Mann use a DB Sheet developed as far back as 1959 (12). Several models have been described over time, however only a version with four squares is used today (figure 4.3).

## Practice

Janis and Mann's research shows that many dropouts are caused by a lack of comprehension of all potential pitfalls. The DB Sheet works as a procedure for filling in gaps (12). The decision maker will have to reflect on eventual setbacks and losses by putting words to blanks in the comprehension of the different possible consequences arising from the future decision. In this way, the DB Sheet arouses the decision maker's awareness of his or her wishes or hopes for the preferred alternatives. It also gives the necessary framework and time to reflect. It is assumed that decision making follows the same general pattern, despite individual differences in tolerance of decisional conflict and approaches to resolving it (13). Therefore DB can be used in many situations.

At first glance, the DB seems most useful for patients in the early stages of considering a change in their habits (14). Nevertheless, it can be used in all stages involving ambivalence and decision making in practice. The DB can be used as an interview - both verbal and written - but it is also very useful as a tool for generating dialogue. Completing DB in relation to a change may support adherence to treatment and result in better outcomes (15).

## Stages and processes of change

### History

In 1982, James O. Prochaska and Carlo C. DiClemente introduced the concept of Transtheoretical Therapy (4), which was two years later refined into the Transtheoretical Model (TTM) (16). TTM construes behavioural change as an intentional process that unfolds over time and involves progress through a series of stages of change (16). TTM integrates processes and principles of change from across leading theories, hence the name Transtheoretical.

### Theory

Prochaska and DiClemente early identified five stages and ten processes of change a person making a change in lifestyle will undergo. They described the process of change and the five stages as a cyclic model. In this way, they introduced a different perception of the process, which differed from the, at that time, linear understanding of a changing process. The five stages were later on supplemented by an additional stage, which describes the completion or termination of the changing process. All six stages will be further described in the following.

### Precontemplation

Precontemplation is the initial stage in which individuals are not intending to take action in the foreseeable future, usually assessed as the next six months. People can be in this stage due to a lack of awareness of the health consequences of certain behaviour. Or, they can be demoralised about their ability to change, like millions of people who have tried to lose weight multiple times in multiple ways. This stage is often misunderstood to mean that these people do not want to change. The history of demoralised individuals indicates that they want to change, but they have given up on their ability to do so.

### Contemplation

Contemplation is the stage in which individuals are intending to change in the next six months, but not in the next month. They are more aware of the benefits or pros of changing, but can also be acutely aware of the cons, such as having to give up favourite foods or having to risk failure. Decisional conflict between the pros and cons can lead to profound ambiva-



lence reflected in the motto: “When in doubt, don’t act.” With smokers intending to quit in the next six months, without help, less than 50% will quit for 24 hours in the next 12 months.

### Preparation

In the preparation stage, individuals are intending to take action in the next month. Their number one concern is, “If I act, will I fail?” The emphasis here is helping them to be well prepared, because most people know from growing up that the better prepared they are in academics or athletics, the more likely they are to reach their goals.

### Action

In the Action stage, change is typically overt and observable, with individuals having stopped smoking or started exercising. This is the busiest stage, where people have to work the hardest to keep from regressing to an earlier stage. Many people believe the worst risks for relapse will be over in a few days or few weeks. We find that people who progress through action work the hardest for about six months, which represents the steepest part of relapse curves across addictions (3). So, Action is defined as being risk free for six months and it is important to encourage individuals to think of this time as the behavioural equivalent of life saving surgery. Following such surgery, would they give themselves six months to recover? Will they let others know they won’t be at their best and will need more support? This is the type of priority needed to progress through this tough time.

### Maintenance

Maintenance is the stage in which people are free from their problem for six months to five years. People are considered cured from cancer after five years without remission. For many people, it may take five years to get free from behavioural causes of cancer. During this stage, individuals do not have to work as hard, but they do have to be prepared to cope with common causes of relapse. These are times of distress, when people are anxious, depressed, bored or stressed. Most human beings cope with stress by increasing unhealthy habits. We try to prepare people to cope with such temptations through healthy alternatives, like talking with a supportive person, walking or relaxing.

### Termination

Termination is the stage in which people are totally confident that they are never going back to their high-risk behaviour and have no temptation to return. With addicted alcohol abusers and smokers in their first five years of abstinence, about 20% have reached this stage (17). These people can put all of their change efforts into enhancing other aspects of their lives. But, for many it may mean a lifetime of

maintenance. The ideal goal is for the new healthy behaviour to become automatic and under the control of a stimulus such as taking an aspirin every day at the same time and place.

As described, the six stages mentioned above should be seen as a cyclic model rather than a linear model. In chapter 4 (figure 4.4) the six stages and an additional stage for relapse has been assembled in a circle, which works as an illustration for the different stages a person undergoes in his or her process of change.

### Practice

Applying TTM begins by assessing which stage patients are in and then helping them set realistic goals, like progressing to the next stage. Research shows that if we pressure patients to progress quickly from precontemplation to action, there can be unforeseen consequences of dropping out of treatment, changing until treatment is over and then quickly relapsing or simply lying.

### Precontemplation

What principles can help patients’ progress from the precontemplation stage to the contemplation stage? A meta-analysis of the pros and cons of changing for 48 health behaviours revealed remarkable results (18). The cons are greater than the pros in Precontemplation and the pros are higher in Contemplation. So, the first principle of progress is to raise the pros. With sedentary individuals, we would have them list the benefits they could get from regular physical activity, and then challenge them to try to double the list. Most have five or six and we tell them there are over 60. If we see the list going up, it’s like seeing blood pressure coming down. We know our behaviour medicine is working.

### Contemplation

In contemplation, pros and cons are exactly tied, reflecting profound ambivalence. From Contemplation to Preparation, cons come down, so the second principle is to help lower the cons. The number one con for physical activity is time, therefore some individuals lower this con by riding an exercise bicycle where they can multi-task and review an article for work, or catch up on the news. Others may volunteer to help coach their child’s soccer team and so, all at the same time, get some physical activity, do community service, meet parents and have fun. Fortunately, the cons have to decrease only half as much as the pros increase, so we put twice as much emphasis on raising the pros.

### Preparation and action

In the Preparation stage, pros outweigh the cons, so individuals are encouraged to take action when they have a favourable balance. Once in action, the

individuals can use their growing list of pros to put other processes of change into operation. When writing down on their To-Do list, "walking for my heart", individuals make a daily commitment based on the process of self-liberation from Existential Therapy. When they look at the list they are cued to action based on stimulus control from Behaviour Therapy. When they scratch off their list, they are reinforcing themselves based on Skinnerian Theory. As they move from one pro to the next each week, like "walking for my weight", "my sleep", "my self-esteem", and "my sex life", they will progress and maybe end up running. Over time, they are using Physical Activity to affirm so much of their body, selves, and others based on self-evaluation from cognitive theory and self-psychology.

This description illustrates how different principles and processes are applied to produce progress at different stages of change. This integrative approach leads to the development of Computer Tailored Interventions (CTIs) by which individuals are assessed on TTM variables related to their current stage. Their assessment is compared to a normative database and they can be given feedback on how they are applying principles and processes compared to peers who make the most progress.

Over time, individuals may give themselves feedback, such as: "Congratulations, you have progressed two stages, which means you have about tripled your chances of taking effective action in the next few months."

Such CTIs have been found in randomised population trials to be effective with a growing range of problems, including smoking, exercise, diet, stress, depression, and medication adherence. The percentage in action or maintenance stages at long-term follow-up ranges from about 25% for smoking (19), to about 45% for exercise and diet (20), to over 65% for stress (21) and medication adherence (22). These results are with populations where typically the majority - about 80% - would be labelled as unmotivated when we proactively reach out to them at home, school, work or in clinics to offer help matched to their personal needs. Results can be remarkably robust with very comparable outcomes for smoking, for example, with adolescents and older smokers, Hispanic and African-American smokers, and smokers with mental illness (23).

Similar interventions have been found to be just as effective when we treat populations for three or four behaviours at the same time (24). Individuals working on three behaviours are just as effective as those

working on two, who are just as effective as those working on one. But very few people take action on more than one behaviour change at a time because they are often not ready. So they can be progressing through early stages on two behaviours, for example, while they are working to maintain action on a single behaviour. Over time, the outcome is a much greater impact on populations with multiple health risk behaviours who have the highest risks for morbidity, disability, mortality, lost productivity and increased health care costs.

## The influence of the theories

Though the three models TTM, MI and DB are based on quite different theories they all relate to the process of change. Thus, DB has been described in relation to the MI(14) and to the Stages of Change (25) and both TTM and DB have been described in relation to MI (26).

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# The Operational Model

This chapter describes how the three elements presented in chapter 2 are combined in an operational model, and how this model is translated into practice. The Operational Model is easy to use and flexible to adapt to the individual patient, the condition and the clinical pathway. The model is therefore useful for doctors and other health care professionals, who want to support their patients through the process of change. Examples of dialogues from practice are given.

## Facts

Each of the theories and elements described in chapter 2 have benefits. They have been broadly tested and used. However, in relation to patients you may find that using only one is not sufficient in the concrete clinical situation, and often the patient will have the same feeling (1). This might especially be the case if the patient needs to undertake a giant step and change an unhealthy behaviour immediately in order to achieve a better outcome of the present clinical pathway.

Today, we have to accept that in order to make a change of lifestyle, hospital patients require more support and intensive programmes than brief interventions and motivational support (2;3). Furthermore, the large majority of patients often feel very positive about the introduction of lifestyle changes followed by support from the clinical setting (4;5).

The possibility of a significant health gain within a very short time increases the attraction of changing behaviour in the clinical setting. Some settings and patient pathways could allow more time for smaller steps and longer processes. The clinical setting has been described as 'a teachable moment' or 'a window of opportunity' for changing health behaviour (5-8).

To fulfil the patient's need for support during the different stages of change, a translational and operational model has been developed. For clinical practice the Operational Model has integrated three tools that are all helpful to health care professionals in supporting the patient: the LINE, the BOX and the CIRCLE. The three tools fit directly into the patient pathway, which will be illustrated at the end of this chapter (figure 4.5).

## Practice

### CASE

Dr. Peter Kirkby has found that several of his patients returned to the lung clinic with recurrent exacerbation of chronic obstructive pulmonary disease (COPD), because they continued to smoke in spite of his instructions. Today Dr. Kirkby is rather frustrated. He has already spent a lot of energy trying to persuade his patient, Mr. Hanson, to attend the smoking cessation clinic. Mr. Hanson seems to listen and accept Dr. Kirkby's recommendations, but nothing happens afterwards.

Most health care professionals will probably recognise Dr. Kirkby's frustration from similar situations, when a patient does not follow a simple, obvious and rational way to obtain a better outcome, but instead continues a risky behaviour followed by more severe illness and problems. The Operational Model could help Dr. Kirkby to stay professional and to return the responsibility for, and ownership of, the smoking cessation to the patient.

Dr. Kirkby has already taken the important step of clarifying whether the patient is smoking and succinctly informing him about the close connection between smoking and the development as well as aggravation of COPD. He has also recommended the patient to give up smoking. Now the time has come for Dr. Kirkby to leave the scene and let Mr. Hanson do the hard work of travelling through the process of change. Dr. Kirkby has to limit his role to that of supporting the journey in a relevant way.

In the beginning it is more difficult to keep (relatively) quiet and stay away from the scene than you might expect; however it is beneficial to the process if the patient gets the necessary room for reflection and action. It is also important for the patient to feel the confidence of Dr. Kirkby. In return, Dr. Kirkby can look forward to the feeling of professional satisfaction



when the patient achieves change, instead of his former feeling of frustration.

## The LINE

A LINE is easy to use for setting the scene and opening the dialogue. This tool is just a simple visual analogue scale (VAS) from zero to ten, but its simplicity makes it possible to keep the focus on the process instead of the technicality. It is convenient to use printed forms to be filled in by the patient with a pen; however a piece of paper or a whiteboard can be used instead. It only takes a few minutes to give information, ask the questions and get the answers.

The LINE involves two personal questions for the patient: one concerning the importance of changing lifestyle immediately, and one concerning the patient's self-confidence in his or her capability to make that change (figure 4.1 and 4.2). The clinical approach means that the patient reflects and decides on an informed basis; therefore the health professional will need to inform the patient of the clinical consequences of unchanged behaviour when he or she introduces the LINE.

An important part of the model is that it is the patient who fills in the forms and responds verbally to the questions. Dr. Kirkby should not argue with Mr. Hanson or tell him that he has a problem. It is necessary for Mr. Hanson to have the time and silence needed for reflection. It may be the first time he has reflected in this way, and the first time Dr. Kirkby has listened to this kind of reflection.

### 4.1 The importance of giving up smoking (9;10)

#### Inform your patient:

Smoking aggravates your lung function and may reduce the effect of medication.

#### Ask your patient:

On a scale from zero to ten, how important is it for you to quit smoking immediately?



If Mr. Hanson was to choose number 6 without commenting on this, Dr. Kirkby could follow with up a short question such as, “Why did you rate the importance as a 6 and not a 3?” and then keep quiet again until the patient has ended the reflection and response.

Mr. Hanson may answer, “I chose number 6 because my lungs are not functioning well and I can hardly walk to the second floor. And on top of that, my grandchildren don't like that I smoke”. In this way, Mr. Hanson comes up with individual reasons for giving up smoking. Dr. Kirkby will have to stay quiet and neutral during the patient's reflection, as the effect of listening to one's own voice has greater impact than that of listening to someone else speaking.

### 4.2 Self-confidence ranking of success in the process of change (9;10)

#### Inform your patient:

By quitting your cigarettes you can improve your lung function and the effect of your medical treatment

#### Ask your patient:

If you decided to give up smoking, to which degree would you then be able to do it?



After Mr. Hanson has filled in the form, he may share his reflections. If not, Dr. Kirkby could add a similar question to the one above, about why Mr. Hanson has rated his decision as a 5. Mr. Hanson: “I chose number 5 instead of 3 because I know that my daughter would support me – and that would be a great help.” Dr. Kirkby could also add a question like, “What would it take to increase your capability from 5 to 7?” It is important that Dr. Kirkby should not attempt to take over the responsibility for the situation. If Mr. Hanson keeps quiet, Dr. Kirkby could put another question, “What can I do to help you to move from number 5 to 7?”

The LINE is a tool that enables the clinician to understand relatively quickly how the patient sees the importance of change and how confident he or she feels about entering and completing the process of change. This information is closely related to the individual patient and conditions. Now the patient has opened the door to what really matters.

More individual information will be gathered from the next tool, the BOX (see below). It will be helpful for the next steps in the process of change.

## The BOX

Dr. Kirkby should then proceed to introduce the BOX, which complements the LINE by supporting the patient's further reflection. It consists of four open squares to be filled in, and reflects the ambivalence that is often related to a process of change.

### 4.3 Use of the BOX to open the dialogue (9-11)

1: What are the advantages of going on smoking?	2: What are the disadvantages of going on smoking?
3: What are the disadvantages of giving up smoking?	4: What are the advantages of giving up smoking?

Questions within the quadrants of the decisional balance BOX are selected to reflect concerns of situational or personal impacts of smoking cessation. Questions are most easily personalised through careful listening.

It is important that Dr. Kirkby should not misinterpret ambivalence as lack of motivation. It is part of the process of changing to feel some ambivalence, and the BOX is an easy way to map this at the individual level. Again, Dr. Kirkby should keep quiet and let the patient do the work. If he cannot keep quiet, he can repeat the last words said by the patient, or he can support the reflection by saying, "So, on the one hand you say that you have to give up smoking because of your health and your grandchildren. But on the other hand, you are afraid that you are not able to stop. I can see that this is a difficult situation?" The question mark at the end of the sentence indicates curiosity instead of conclusion, judgment or tiredness.

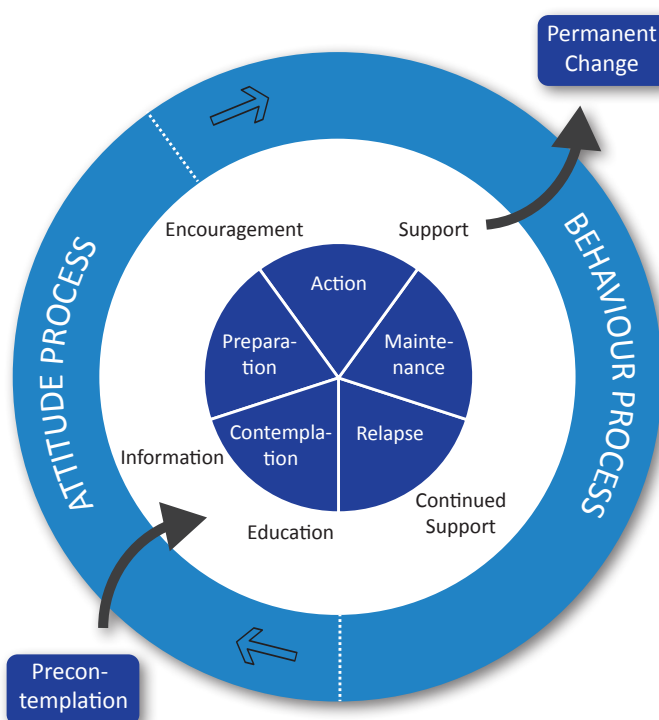
After completing the LINE and the BOX, Mr. Hanson has taken the first steps on the hard road towards giving up smoking. He has reclaimed ownership of the process. Mr. Hanson is the personal specialist in his own situation and condition, while Dr. Kirkby is the professional specialist. They have reached a common and clearer picture of the reasons for smoking and for giving up smoking, what Mr. Hanson can build on in the process of change, and how Dr. Kirkby can support him.

At this time it is relevant to introduce the CIRCLE, which is predominantly a tool for Dr. Kirkby to consult alone.

## The CIRCLE

In contrast to the LINE and the BOX, the CIRCLE is not a tool you usually need to employ directly in your dialogue with a patient. The CIRCLE is an illustration of the different stages a person will go through when he or she is undergoing the process of change. It may be of interest to the patient to know the different stages; however the CIRCLE is above all a tool for the professional to understand which initiatives are appropriate in the support of the patient. The different initiatives depend on where the patient is in the process.

### 4.4 The CIRCLE (9-11)



Inside the blue circle the different stages between the precontemplation and the permanent change are shown. In the white circle, different kinds of action from the clinician are indicated. The outer light blue circle gives an overview of the stages related to changes of attitude and behaviour.

As mentioned in Chapter 2, the process of change has been compiled as a circular process. This means that the stages of Relapse and Permanent Change have been added to the stages first introduced by Prochaska and DiClemente. The two additional stages could be seen as a further development of the stage, which Prochaska and DiClemente calls *Termination*. By dividing the stage of Termination into two stages, the CIRCLE provides a further understanding of the challenge of maintaining the change. Eventually, the stage of Maintenance will lead to either a relapse or a stage of Permanent Change. This addition gives a broader view of the whole process (figure 4.4).

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### **Precontemplation**

This is the first stage of change, where the patient is not worrying about his or her behaviour and has no plans for making a change. The plan for a change in behaviour is very distant - more than six months away.

### **Contemplation**

In this stage, the patient becomes ambivalent about his or her behaviour but has started reflecting on making a change. The plan is to change behaviour within the next six months.

### **Preparation**

In this stage, the patient is concerned with how to complete the behaviour change, and is planning to change behaviour within the next month.

### **Action**

This is the stage where the patient has recently changed behaviour and is committed to maintaining the new lifestyle. This stage lasts about six months.

### **Maintenance**

In this stage, the patient has now lived with the change for at least six months and therefore pays decreasing attention to maintaining the new lifestyle behaviour.

### **Relapse**

In some cases, the patient may experience a relapse and go back to his or her previous behaviour. He or she will then have to start again, but always at a higher level of experience and knowledge. The stage of relapse can happen repeatedly, as it is the case for many smokers for instance.

### **Permanent Change**

In this stage, the patient has integrated the new behaviour as a part of his or her identity and can now resist temptations to resume the old behaviour.

Most patients who have filled in the LINE and the BOX will have passed the pre-contemplation stage, but Dr. Kirkby still has to keep the responsibility for the process in the hands of the patient. To continue the dialogue it could be helpful to ask Mr. Hanson something like, *“What should happen now? You seem to have many good reasons to change your smoking habits. What will you do?”*

Depending on the answer, the CIRCLE can help Dr. Kirkby to know what to do. If Mr. Hanson is in the early stages, information is needed, and if he has started the actual action, encouragement and support is the right approach.

## **The Operational Model**

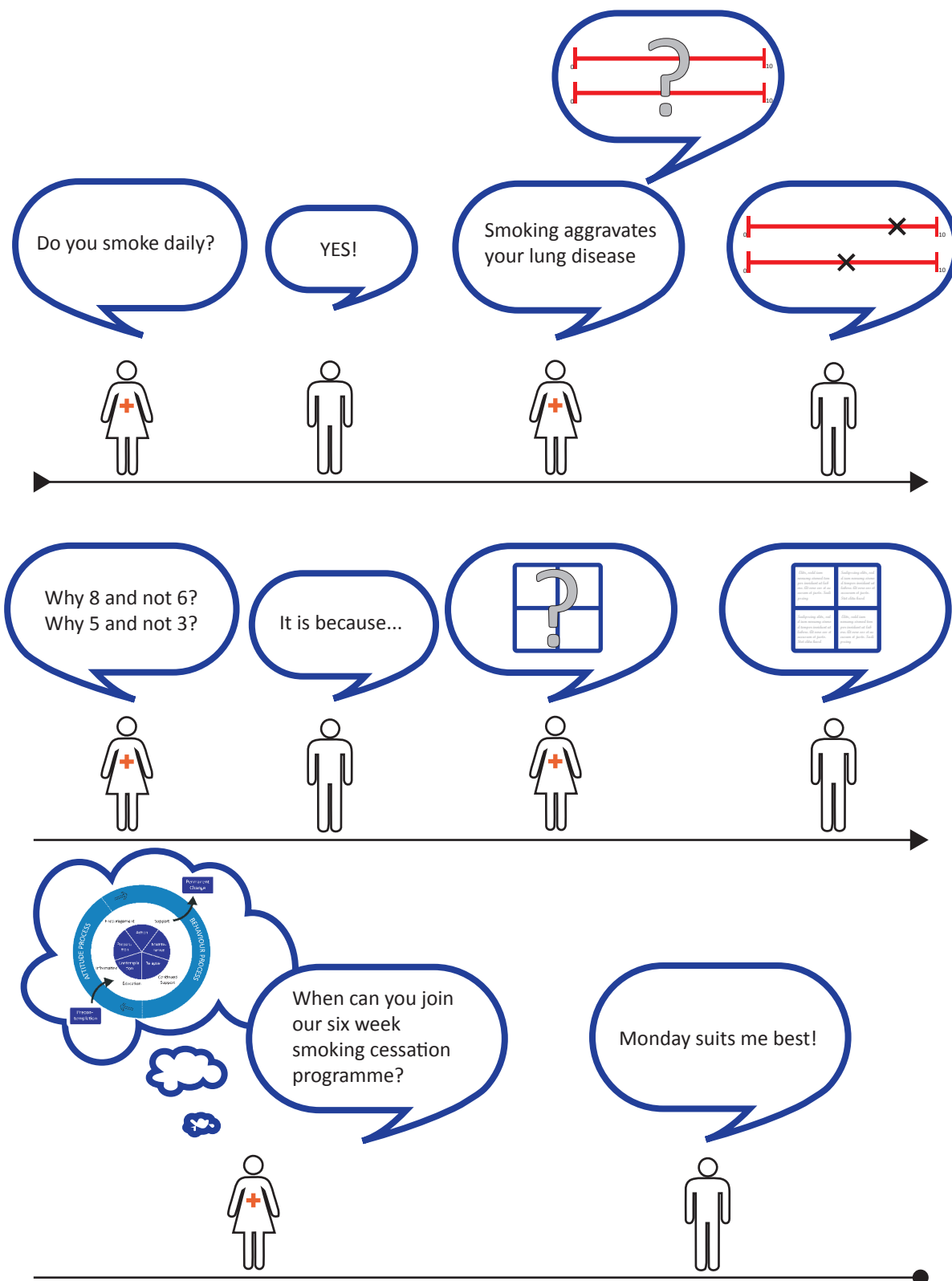
Overall, Dr. Kirby may also use the whole Operational Model as a professional tool to support himself in his guidance of patients. He will often feel a professional calm and satisfaction in always knowing what the next step is. In figure 4.5 below, the integration of the LINE, the BOX and the CIRCLE in the clinical pathway is illustrated.

When faced with a patient who has doubts about a necessary change in lifestyle, The Operational Model can be of great help. The LINE is usually the first tool to be introduced. The LINE works as a self-efficacy ranking, where the patient is given the opportunity to reflect on the change he or she is about to face. Where the LINE is used to make the patient start reflecting, the BOX works as a tool to help the patient weigh the pros and cons in the given situation and to illustrate the patient's ambivalence towards the behavioural changes. The CIRCLE is a tool to help the health care professional to follow and understand the different stages of change the patient will undergo.

The following chapters will give you more information about the use of The Operational Model with different groups of patients and in different clinical settings.

As you will experience in the following chapters, the Operational Model works as a process-related tool for support of patients, but in order to make the changing process really effective, the Operational Model cannot stand alone. The use of the Operational Model needs to be supplemented with a referral to a standardised programme for intervention. Evidence shows that brief interventions have little or no effect. Support in the process of change should be based on evidence about effective interventions.

#### 4.5 The Operational Model as support for health care professionals



The figure shows how the LINE and the BOX are used as tools for dialogue between clinician and patient. The CIRCLE is not presented for the patient, but is instead a tool that helps the clinician understand where the patient is in his or her process of change.



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# The Operational Model used 5 in a surgical setting

This chapter introduces the use of the Operational Model in a surgical setting. Surgical patients will benefit from a change through health promotion activities, and in this change, the LINE, the BOX and the CIRCLE can be of great help. Surgical patients are often only admitted for a short period of time, which means that personal contact has to be established immediately, and the tools and interventions applied need to be very effective.

In the case mentioned in this chapter, a surgeon uses the tools to support a patient who is faced with the challenge of having to stop drinking alcohol prior to hip surgery.

## Facts

The outcome after surgery and other kinds of treatment is closely related to four main parameters: diagnosis (malignant or benign); treatment (curative or palliative); organisation (for example, staff training or the use of evidence-based clinical guidelines); health and co-morbidity of the individual patient. The burden of disease and length of surgical pathway for the individual patient have been improved over recent centuries through better diagnostics and treatment. The improvement of organisation has been in focus over the last few decades, but the additional investment in health promotion for patients has only been the focus of attention in recent years.

The most frequent complications in relation to surgery are infections, wound complications, cardiopulmonary problems and bleeding episodes in the immediate postoperative period (1-3). The increased complications related to patients' alcohol intake exist for both men and women after major and minor surgical procedures, open surgery and day case surgery, as well as after acute and planned operations. An average intake above two units per day seems to be the threshold. The complication rate increases to about 50% for a patient already drinking hazardously; i.e. 3-4 units per day. The complication rate increases to about 300-400% with an average intake of 5 or more units per day - this is also applicable in the case of patients without addiction or other alcohol-induced diseases such as liver cirrhosis, pancreatitis or polyneuropathy (2).

The explanation is that alcohol significantly reduces organ function, thereby reducing the organs' usual extra capacity. This includes reduced immune capacity, subclinical cardiac insufficiency, and haemostatic imbalance prior to surgery as well as an increased stress-response to the surgical trauma during the op-

eration. Therefore, patients whose alcohol intake is at hazardous levels become more vulnerable to the operation compared to patients with an average intake of 0-2 units per day (4-7).

A study has shown that alcohol cessation for a period of just four weeks prior to surgery is sufficient to halve the development of postoperative complications requiring treatment as well as to improve organ functions including immune capacity, cardiac function, haemostatic balance and surgical stress-response (8). The effect of alcohol reduction on surgical outcome has not yet been proven (9).

## CASE

Mr. Jensen is scheduled for his secondary hip prosthetic replacement due to very painful arthritis. Mr. Jensen is 62 years old. He has a body mass index of 25.2 kg/m<sup>2</sup>. He likes to share a bottle of good red wine with his wife every day and he enjoys a brandy in the evening. He does not smoke and does not suffer from chronic diseases (other than the arthritis – the indication for arthroplasty). The first hip replacement resulted in complications and delayed recovery. This time Mr. Jensen hopes for a better outcome.

In the case, Mr. Jensen appears to take the lion's share of the bottle of red wine nearly every evening, but even though he suffers no health problems from doing so, his risk of developing complications after surgery will be increased by about 300-400%.

Mr. Jensen has other alternatives than just hoping for a better outcome. He can actually benefit significantly

from a preoperative programme that includes information, motivational support and the concrete four week alcohol cessation intervention programme (10).

## Practice

The gold standard programme (GSP) for alcohol cessation interventions prior to surgery consists of five meetings in four weeks, where the patient meets with a trained health promotion nurse. The GSP includes medication - supervised disulfiram in small dosage (11) - as well as prophylactic treatment of alcohol withdrawal symptoms and prophylactic B-vitamins according to the general recommendations (12).

The agenda for intervention in surgical settings is often different from the situation at the general practitioner's or in other settings. The surgical agenda is characterised by a fixed operation date, a relatively short preoperative period, and a minimal hospital stay - at least in the case of a complication-free pathway. Surgical patients therefore need an alcohol intervention programme, which takes place in the outpatient period as well as during the hospital stay. The programme should be very effective, since there will seldom be time to repeat it. This means that these patients need to pass through the different stages of change relatively quickly (figure 4.4) compared to other patient groups. It is important for us to remember that the level of motivation is not uniform. For instance, surgical patients seem more willing to change than patients in other settings (13).

### EXAMPLE FROM PRACTICE

Some departments put up posters emphasising that they speak openly about alcohol and smoking. Thereby, the patients and their relatives are prepared for and actually expect the doctors and nurses to ask about the patient's use of alcohol and tobacco. This information is also included in the patient information.

## Use of The Operational Model

Mr. Jensen will be offered the GSP for alcohol cessation described above, as this is the only evidence-based programme to reduce the complication rates hitherto (10). But before he commits himself to the programme, Mr. Jensen needs to understand and accept that giving up alcohol is the right solution during the surgical period.

The opening dialogue to the alcohol cessation programme includes an introduction of the Operational Model: The LINE, the BOX and the CIRCLE. The information and the questions should be specially targeted at the surgical patient, the operation and the increased risk of complications for patients drinking too much.

In contrast to the example illustrated in chapter 4, the use of the LINE will in this case include three questions and not just two (figure 5.1, 5.2, 5.3). The complications in relation to surgery generate a need for another level of reflection from the patient.

### 5.1 The risk of complications (14;15)

#### Inform your patient:

All surgical interventions can cause complications, but many complications are preventable. An important element in the prevention is your own effort.

#### Ask your patient:

Mr. Jensen, on a scale from zero to ten, how important is it for you to avoid complications?



Most patients will of course give a high ranking of the importance of avoiding complications; this makes an excellent beginning to the dialogue. The next two questions for Mr. Jensen follows the same method as figure 4.1 and 4.2.

### 5.2 The importance of giving up drinking (14;15)

#### Inform your patient:

Patients with an excessive alcohol intake develop 3-4 times more complications after surgery compared to other patients

#### Ask your patient:

Mr. Jensen, on a scale from zero to ten, how important is it for you to give up drinking in relation to your operation?



The next step will be to inquire about Mr. Jensen's self-confidence ranking.

### 5.3 Self-confidence in giving up drinking (14;15)

#### Inform your patient:

You can reduce your risk of complications after surgery to about half if you stop drinking 4 weeks before the operation

#### Ask your patient:

If you decide to give up drinking in relation to the operation, to which degree would you then be able to do it?



The LINE is a tool to facilitate Mr. Jensen's reflection on the challenge to stop drinking. As explained in chapter 3, the LINE is not meant as a tool for grading your patient's considerations about the change of health behaviour or his ability to undergo such a process. The LINE is a tool for giving the patient room for reflections about the change and for opening related dialogue; the actual ranking is secondary to the action of the patient in grading his consideration.

An important part of Mr. Jensen's contemplation and preparation is a further reflection on what benefits a change of drinking habits will bring to his life. The BOX provides Mr. Jensen with an opportunity to think about pros and cons, and by this gives him an idea of the impact of the change he is about to face.

### 5.4 Use of the BOX to open the dialogue (14-16)

1: What are the advantages in continuing your usual intake of alcohol?	2: What are the disadvantages in continuing your usual intake of alcohol?
3: What are the disadvantages of giving up drinking alcohol?	4: What are the advantages of giving up drinking alcohol?

## Impact

The impact includes a tremendous effect on drinking cessation in the perioperative period. About 80-90% of surgical patients who undertook the four-week GSP for alcohol cessation intervention stopped drinking in preparation for the operation. The postoperative outcome is also significantly improved with the development of fewer complications (10). A recent interview study of surgical patients with hazardous alcohol intake showed a positive attitude to the GSP (17).

#### EXAMPLE OF EFFECTS

An alcohol intervention with a 5 -10% effect means that you have to treat 20 to 40 alcohol patients (number needed to treat (NNT) = 20 to 40) to have one extra patient free of complications, while another programme with a 90% effect results in NNT = 2 to 3, i.e. you only have to treat 2-3 alcohol patients to experience one extra complication-free patient (2).

Until now, no studies have followed the long-term effect of the GSP on drinking habits. However, a similar perioperative GSP for smoking cessation intervention has shown a surprisingly high continuous cessation rate of 21-33% after one year (18-21).

A challenge in connection with the implementation is the fact that surgical patients are not the only people who need to change their habits: many surgeons and anaesthesiologists are also in need of a change of practice. Furthermore, in order to integrate more health promotion activities into the operative pathway, the surgical staff and the organisation need to change their tradition and culture. Swedish orthopaedic surgeons set an impressive example in their comprehensive efforts to reach out to all smokers undergoing elective orthopaedic operations through their national programme: A Non-smoking Operation (22).

Overall, the increased rate of complications after surgery has tremendous consequences for the individual patient drinking too much as well as for society as a whole. The extra costs have been estimated at 29-48€ per capita in Denmark depending on the model of calculation (23). This corresponds to 14.3-23.6 billion € for the entire region of the European Union if the frequency and distribution of surgery and alcohol are similar to the Danish numbers. Even at a lower frequency and distribution, the costs are massive for complications that are potentially preventable.



## Recommendation

- Surgeons, anaesthesiologists and staff should inform their patients with a high alcohol intake about the increased risk of complications after surgery and the very significant effect of giving up drinking 4 weeks prior to surgery.
- Due to the fixed operation date, timing is everything; therefore the alcohol cessation intervention programme must be a highly effective one like the GSP. Fortunately, surgical patients have a positive attitude to risk reduction in general.
- Experienced staff can use the Operational Model that especially focuses on supporting surgical patients to enter the GSP for alcohol cessation.
- The staff should also be trained in the GSP itself, which includes patient education, supportive medication and follow-up.

## Further research and development

We need to know more about the Operational Model's possible long-term effects on lifestyle, functionality and lifestyle-induced illness. More intervention studies on different patient groups and different settings would also be beneficial.

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# Cardiologists Engaging in the 6 Process of Change

This chapter introduces cardiac rehabilitation, which is proven to have great impact on the recovery of cardiac patients. Comprehensive cardiac rehabilitation programmes often last between four and twelve weeks and have a broad focus on changing different risk-related health behaviours.

In the case mentioned in this chapter, Mr. Peterson is undergoing a rehabilitation programme at the Coronary Care Unit. He is faced with the need for a permanent change of lifestyle and health behaviour.

Cardiac rehabilitation programmes were first developed in the 1960s. The goal of the programmes is to ensure the best possible physical, psychological, and social conditions for patients who have undergone a heart attack. These refined conditions will help the patients, by their own efforts, to preserve or resume their former level of function in society. This is directed towards maintaining job activities, as well as influencing the underlying disease and the prognosis of the patient with coronary heart disease.

## Facts

Meta-analyses of 21 randomised clinical trials performed in the 1980s provided data on the effect of cardiac rehabilitation on long-term mortality from cardiovascular causes (1), and a recent Cochrane analysis shows that cardiac rehabilitation is effective in reducing cardiac mortality (2).

Today, cardiac rehabilitation consists of a multi-faceted and multi-disciplinary approach to overall cardiovascular risk reduction in programmes, which include assessment and modification of risk factors.

According to the World Health Organisation, three phases after a heart attack can be distinguished (see 6.1). The rehabilitation programme begins immediately during the stay in the Coronary Care Unit (CCU), but the main part takes place after discharge.

Phase I is the acute treatment in the coronary care unit until discharge. Phase II is the outpatient programme from discharge until return to vocational activities or the ability to manage daily activities. Phase III is the further course after phase II. The interval between inpatient (phase I) and outpatient (phase II) programmes should be as short as possible, preferably no more than 1-2 weeks. Early attendance reduces the level of anxiety and depression.

The duration of the initial rehabilitation programme usually ranges from four to twelve weeks. In order to maintain a healthy lifestyle, continuation of the programme in the follow-up phase (III) should be coordinated together with the general practitioner (3).

**6.1** The three phases after a heart attack

Phase I (days)	Phase II (weeks-months)	Phase III (months-years)
Inpatient	Outpatient	Primary Care patient
Acute treatment at CCU	Cardiac Rehabilitation Clinic	Follow-up
Prevention of immediate relapse	Risk factor Assessment + Reduction	Long-term Goals
Smoking cessation	- Smoking cessation Intervention	
Referral to Rehabilitation	- Dietary counselling (incl. alcohol)	
	- Physical Activity > 30 min / day	
	- Vocational Counselling	
	- Adjustment of medication	

## CASE

Mr. Peterson is a 55 year old sales manager travelling many hours in his car every day. He began smoking at the age of 16, and today he is moderately overweight. He is now discharged from the coronary care unit four days after his first heart attack. Before the heart attack he had never been hospitalised. Mr. Peterson undergoes PCI for revascularisation (Percutaneous Coronary Intervention = 'balloon dilatation' of a coronary artery).

At discharge Mr. Peterson takes four different drugs every day. He is scheduled for his first visit in the Rehabilitation Clinic on upcoming Wednesday.

Today, the hospital stay for a heart attack has been shortened to a few days, and the main focus is on the acute treatment including initiation and monitoring of medications, such as aspirin, beta-blockers and statins. However, at the CCU Mr. Peterson will receive short information and recommendation to enter a tailored cardiac rehabilitation programme at an affiliated rehabilitation clinic.

Furthermore, while in hospital Mr. Peterson will automatically engage in the first steps of towards a change of lifestyle. Since Mr. Peterson is hospitalised at a smoke-free hospital, he will start a programme of smoking cessation before leaving the CCU. The first step towards relevant dietary modification is also taken during the hospital stay, since all available food on the CCU menu fulfils the dietary criteria for heart-healthy food.

## Practice

On the following Wednesday, Mr. Peterson attends his first meeting at the Cardiac Rehabilitation Clinic. Here Dr. Adons presents herself as Mr. Peterson's overall contact person and she explains the programme at the clinic. At this first meeting, Dr. Adons and Mr. Peterson assess his condition and lifestyle factors. Mr. Peterson explains that since his discharge, he has been searching the Internet, where he has found information indicating that alcohol protects the heart. Mr. Peterson has taken the advice literally and now drinks one bottle of wine every day. He is very keen on not becoming or feeling drunk, so he drinks the first glass of wine in the morning and then waits two to three hours before the next glass.

Dr. Adons explains that during his outpatient programme, Mr. Peterson will be working with different health care professionals on a reduction of his

risk factors. Mr. Peterson will continue his smoking cessation and Dr. Adons refers him to a Gold standard smoking cessation programme, where an experienced instructor will work with him. Mr. Peterson will also be working with a dietician on establishing a heart healthy diet, he will be working with a physiotherapist on a programme for increasing his physical activity, and he will at different times have consultations with Dr. Adons or the nurse regarding his overall rehabilitation and his medication.

Dr. Adons also uses the first consultation to inform Mr. Peterson about his increased risk of another heart attack and of early death due to his risk factors. An online program showing the reduction in risk by changing lifestyle illustrates the information. Dr. Adons stresses that a change of lifestyle will significantly lower this risk.

Before initiating the programmes for lifestyle changes, Dr. Adons inform Mr. Peterson about the following:

- A smoking cessation intervention will reduce the risk of further non-fatal heart attacks, and the cardiovascular mortality rate is reduced by up to 50% over a two-year follow-up period.
- Modification of dietary habits has an important role in cardiac rehabilitation through a significant reduction in total mortality.
- Excessive alcohol intake should be avoided, since alcohol is directly toxic for the cardiac muscle cells, and thereby can increase the risk for reduced muscle function of an already ischaemic heart – and for development of alcoholic cardiomyopathy over time.
- Due to the adverse effects of obesity on other risk factors, reduction of weight is important.
- Physical-activity counselling and exercise training in rehabilitation programmes have been shown to reduce the risk of total mortality, cardiovascular mortality, and fatal re-infarctions. An increased physical activity level and improvement in cardio-respiratory fitness are also associated with better survival.

Dr. Adons is aware that at first it may feel overwhelming for Mr. Peterson to be informed of all the risk factors at once, but she is also aware of the importance of Mr. Peterson being informed of his overall condition and what challenges he is faced with. By informing him about all the risk factors, Dr. Adons will give Mr. Peterson the required knowledge for deciding what actions to take. Dr. Adons is fully aware of the huge load of information, and by repeating important information and handing out written information Dr. Adons helps Mr. Peterson to remember more details after the meeting.

Dr. Adons then continues the consultation with an introduction of the LINE:

6.2 Importance and self-confidence rating (4;5)

**Ask the patient:**  
Mr. Peterson following the information, on a scale from 0 to 10, how important is it for you to avoid another heart attack?

0 10  
'Not important' 'Of highest importance'

**Ask the patient:**  
How important is it for you to change your lifestyle as described in the combined rehabilitation programme?

0 10  
'Not important' 'Of highest importance'

**Ask the patient:**  
If you decided to start on the rehabilitation programme, to which degree would you then be able to complete it?

0 10  
'Not important' 'Of highest importance'

After completing the three LINEs, the necessary time is given for Mr. Peterson to reflect on this new input and realisation. Dr. Adons leads the structure of the dialogue based on Mr. Peterson's marks on the three LINEs, but she leaves the decisions and the pace of the consultation to Mr. Peterson. When Dr. Adons believes Mr. Peterson is ready to continue, she introduces the BOX, which will give Mr. Peterson time to reflect on the advantages and disadvantages both of a continuation of his existing lifestyle and of a change in lifestyle (figure 6.3).

6.3 Use of the BOX to open the dialogue (4-6)

1: What are the advantages of continuing to live as you have done so far?	2: What are the disadvantages of continuing to live as you have done so far?
3: What are the disadvantages of entering a rehabilitation programme?	4: What are the advantages of entering a rehabilitation programme?

Like most other patients recovering from a recent heart attack, Mr. Peterson decides to do what he can to improve his prognosis. The LINEs, the BOX and the subsequent dialogue with a health care professional help Mr. Peterson to reflect on the process of change he is about to embark on. It is important to remember that the use of the Operational Model will not work sufficiently alone, but has to be followed by tailored programmes suited to the patient's needs and preferences.

Dr. Adons and the rest of the staff at the Cardiac Rehabilitation Clinic will coordinate their efforts and collaborate in their work with Mr. Peterson. Since Mr. Peterson is to embark on different lifestyle changing processes, the health care professionals at the Cardiac Rehabilitation Clinic will have to be aware of how Mr. Peterson is succeeding in the different overlapping processes of change. The CIRCLE will help the staff maintain the overview and guide their support of Mr. Peterson's process of change.

Recommendation

Today, several existing international guidelines describe the best evidence-based practice of cardiac rehabilitation (7-9). The World Health Organisation recommends several elements included in the programme in addition to evaluation and adjustment of the medical treatment (See 6.4) (10).

All patients should receive professional support and specific interventions including motivational support related to the patient's individual risk factors.

Instead of informing about and dealing with one risk factor at a time, it is less time-consuming to give information on all related risk factors at once. In addition, a combined focus on all risk factors will also give the patient a greater comprehension of the full rehabilitation programme. In general, interventions targeting a combination of several risk factors are better than, or at least as good as, single-factor interventions.

Impact

Heart disease is one of the most common causes of premature death and ill health. The impact of adding effective cardiac rehabilitation to the cardiac patient pathway would therefore be to reduce both relapse of the heart disease and complications. In addition, other lifestyle diseases would be prevented or reduced by the comprehensive rehabilitation programmes recommended today. These programmes consist of a multi-faceted and multi-disciplinary approach to overall cardiovascular risk reduction in clinical health promotion programmes, which include the assessment and modification of risk factors.



#### 6.4 Evaluation and Intervention in addition to engaging in the process of change

	Evaluation	Intervention
<b>Patient assessment</b>	Medical history Physical examination	Compose patient care programme
<b>Nutritional counselling</b>	Obtain estimate of daily food intake incl. alcohol Assess eating habits	Prescribe dietary modifications Individualise eating plan Educate and counsel patient (and relatives)
<b>Smoking cessation</b>	Document smoking status	Provide formal smoking cessation programme Update status at each visit
<b>Weight management</b>	Measure weight, height, and circumference Calculate BMI	In patients with BMI>25 establish reasonable short- and long term goals Develop a combined diet, exercise and behavioural programme
<b>Exercise training</b>	Obtain an exercise test	Develop a documented individualised exercise programme for aerobic resistance training
<b>Psychosocial management</b>	Use interview and/or standardised measurement tools to identify psychosocial distress	Offer individual education and counselling Develop supportive rehabilitation Cooperate with mental health specialist
<b>Discharge therapy</b>	Evaluate relevant long-term therapy	Monitor dose adjustments and side effects

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# The Operational Model Used 7 by Audiologists

In this chapter, the setting is the audiologist's clinic. The focus is on how the Operational Model can be used in support of patients with hearing loss. In the case mentioned in this chapter an audiologist is faced with a patient who is not convinced that his hearing loss is a big problem, but has agreed to visit the clinic to meet his family's concerns.

This chapter will also explore the potential benefit of having the patient's life or communication partner present at the consultation.

An audiologist's work is often very technical and practical. The focus of a consultation is often on the hearing aid itself and the technicalities that the use of the hearing aid implies. This specific focus is of course an essential part of the consultation, as the applicability of the hearing aid and its functions are fundamental to the use of the device. But many audiologists and patients forget to give the necessary attention to the challenge implied by a change in lifestyle such as the use of a hearing aid. An additional challenge for audiologists is the fact that some patients with an actual hearing loss have yet to experience the loss themselves, while others do not see the hearing loss as a problem in their daily life.

## Facts

Experience among audiologists is producing increased knowledge about the broader perspectives of consumers and also about the challenges related to the process of making attitudinal, emotional and behavioural changes (1-4). Nevertheless, the standard hearing aid dispensing practice in many cases still just follows the technical protocols given by hearing aid dispensers (3).

It would behove all audiologists to reflect on the perceptually monumental task they are asking of their patients. Asking someone to step beyond his or her comfort zone by redefining a lifelong self-image as someone who is full and complete and accepting a new image as someone with a hearing loss may indeed be asking a lot (1).

Patients who are not yet ready to commit to a change present clinicians with their greatest challenge. These patients frequently leave the clinic without committing to the steps they must take, despite their families' strong desire for them to do so. Patients in the early stages of recognition of the need for change may simply be told to return in six months or a year for a repeat evaluation.

In the early stages of change (figure 4.4), audiologists often give their patients brief and clear information about the personal impact of untreated hearing loss and the benefits of improved hearing. Unfortunately, if the information and subsequent advice are presented without understanding of the challenges related to the process of behavioural change and the emotions that may follow confirmation of hearing loss (e.g. fear, anxiety, confusion, guilt), many patients may not be able to attend fully to the problem-solving recommendations provided (5-7).

## CASE

Mr. Rogers is a 67 year old retired mechanic. He has come to the clinic for a hearing evaluation at the behest of his wife and adult son. He recognizes that stress levels have increased at home and that his family blames this largely on his hearing. However, he is not fully convinced that he is the primary reason for the difficulties.

Testing of Mr. Rogers' hearing reveals borderline normal hearing through 750 Hz with bilaterally sloping sensory loss toward the higher frequencies leveling at 60 to 65 dB HL at 3 and 4 K Hz. There is a slight recovery at 6 and 8 K Hz consistent with his history of employment related noise exposure. Middle ear immittance testing with reflexes is consistent with cochlear pathology.

In the case above, Mr. Rogers is slowly realising that his hearing is not what it used to be and that his hearing loss has become a problem for his family. But before the audiologist and Mr. Rogers can embark on a discussion on the practical use of hearing aids, Mr.

Rogers needs to realise and accept fully that hearing aids are the right solution for him.

The experience of clinical audiologists shows that detailed discussions of a patient's audiogram and the implications of measured hearing deficits on speech reception cannot build the same motivation as is created through a personal exploration of the negative impacts of hearing loss identified by one of any number of self-assessment tools developed for audiologists. External encouragement devised by hearing aid laboratories or by the audiologist in the form of anecdotes, celebrity product endorsements or time sensitive financial inducements can never take the place of recognized internal motivators.

In addition to being an expert on the technicality of the hearing aids, the audiologist should also be trained and engaged in the process of change. One of the greatest means to facilitate this exploration is through a ranked grading of the importance of making a change and the patient's feeling about it (the LINE), as well as the establishment of a "cost-benefit analysis" of both the status quo and the new situation that a change will imply (the BOX).

## Practice

The Operational Model is useful in situations with audiological patients like Mr. Rogers, who are in the early stages of change: patients who have yet to recognise fully the effects of their hearing loss on their own lives, or whose concerns or fears about change have yet to be challenged. The Operational Model provides an opportunity for the audiologist to open up a dialogue with Mr. Rogers.

The dialogue should be open and invite the patient and his or her attending communication partner to ask any questions on their minds, including technical questions about the overview statements made by the audiologist. Questions may be related to hereditary issues, progression of the loss, unilateral or bilateral fittings, cost of hearing aids or any number of other possibilities. Until these issues are addressed, patients can rarely pay full attention to recommendation details.

When the audiologist senses reluctance on the patient's part, it is not usually further technical information which is needed. Just as audiologists expect their patients to make changes, audiologists also must be willing to make changes in their clinical practice to achieve a greater level of success. Rather than falling back on the provision of further information about test findings and hearing loss impact, consider a presentation of The Operational Model to invite Mr. Rogers to articulate his own need for a change and to reflect on his hearing loss.

### 7.1 Importance of an improvement of hearing (8;9)

#### Inform your patient:

Both major and minor hearing loss produces communication frustrations within family and other social contexts. Improving hearing can reduce these problems.

#### Ask your patient:

Mr. Rogers, looking at a scale from 0 to 10, how important is it for you to improve your hearing?



A moment of silence will frequently yield more information for the audiologist to work with. Greater use of silence at many clinical junctures is often one of the audiologist's best supports (10;11). The response could be anything between zero and ten; the exact value does not matter as much as Mr. Rogers' self-reflection. The use of the LINE allows for a powerful visual tool to open the dialogue on the patient's terms (12). The LINE can in this way generate a needed focus and an opportunity to explore the directions one is choosing to take in life.

### 7.2 Self-confidence rating (8;9)

#### Inform your patient:

Hearing aids can often improve the hearing significantly.

#### Ask your patient:

If you decided to start using the necessary hearing aids, to which degree would you then be able to do so?



Again, the response could be anything between zero and ten. The audiologist could follow-up with the following question, "What would it take to increase the rating to a 5 instead of a 3?" The point is not to emphasize the actual number, but to give Mr. Rogers the chance to reflect on what the action of change would require. This follow-up question may help him to express concerns that should be addressed, but which no amount of external motivation-building could have revealed.

If the self-confidence ranking is low - let's say Mr. Rogers has rated his ability at 1 - an appropriate follow-up question would be, **“Why do you think your ability in this is 1 and not 0?”** When supporting patients, it is important to empower them by focusing on their strength and building confidence. So if the patient, like Mr. Rogers, has put his rating as low as 1, you will still be able to help the patient to focus on his potential and resources.

As described in Chapter 4, the BOX provides another visual tool to help patients place their hearing loss into a more meaningful framework. The BOX is useful primarily to encourage deeper self-reflection and to handle the patient's ambivalence about using hearing aids. It gives the patient permission to talk about negative feelings, to reveal fears of technology, previous failure to complete difficult tasks, concerns about what others will think if hearing aids are worn and other yet unvoiced concerns.

### 7.3 Use of the BOX to open the dialogue (8;9;13)

1: What are the advantages of not using hearing aids?	2: What are the disadvantages of not using hearing aids?
3: What are the disadvantages of using hearing aids?	4: What are the advantages of using hearing aids?

It is important that the audiologist lets the patient take the lead. The items placed in the upper left quadrant are probably real concerns for the patient and thus deserve the audiologist's recognition. They may represent the comfort experienced when things remain the same, the safety in knowing that one need not learn something new, or the money saved by not purchasing hearing aids.

After reflection on the benefits of maintaining the status quo, attention is directed to the costs of inaction (upper right quadrant). Once again, the patient should be given the time to think of these costs without the audiologist offering his or her opinion. While surveys suggest that in most cases the patient's partner is not actively engaged in the hearing consultation (2), the benefits of having both parties present for this exercise are apparent. This quadrant may be filled with responses that recognize arguments that

arise due to hearing loss, the continued frustrations at home when misunderstandings occur, withdrawal from social activities, an inability to hear grandchildren, or any number of consequences of hearing loss. The final two quadrants in the BOX often mirror the items listed in the first two quadrants.

Completion of the BOX reveals to both the patient and the audiologist the costs of inaction and the benefits of moving forward - most frequently with a clear weighting toward change. Acknowledgement of another person's concerns does not imply that we necessarily believe they are valid or that we agree with them. Acknowledgement simply provides needed recognition that the changes we are asking a patient to make are not always easy.

### Group sessions with relatives and other communication partners

Research has shown that there can be an increased effect in giving the following consultation in a group setting (14). People other than the patient often see and contribute a different perspective on the effects that the condition has on the patient and on how the patient responds to treatment recommendations, providing valuable information to the providers of services.

The group format provides an opportunity for people to share what they have done to help them to deal with the condition, for instance, how beneficial it is to inform other people that one has a hearing loss and to tell them what to do to be better understood. Perhaps most importantly, the group situation provides a safe forum for both the person with hearing loss and the communication partner(s) to talk openly with others who understand their issues and concerns about problems and difficulties they are experiencing.

The person who is hard of hearing may have been telling his or her communication partner for a long time that talking without first getting the listener's attention produces communication and relationship problems. The communication partner may also have been complaining for a long time that the person with hearing loss does not pay attention. In both instances these issues may not have been adequately considered and processed. However, if someone from outside the immediate relationship expresses the same concern, the individual will often pay better attention to what has been said.

It is instructive that people will often “hear” what is said by someone else's partner, when their own partner has been saying the same thing for a long time, but it has not registered. For this reason, it is most important to elicit information from group members



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about their experiences of problems, issues, and concerns related to their hearing loss.

### The Operational Model used in group sessions

The LINE is an effective means for helping patients and their partners realise to what extent there is agreement or disagreement on important issues related to the hearing loss and the use of hearing aids. The BOX allows both the patients and their partners to see more clearly which issues present factors that influence compliance with acquiring and using hearing aids.

The use of both of these tools with the communication partner present will enhance motivation for many patients, who will find that they will take steps to improve their hearing to help a communication partner even though they were not eager to help themselves.

### Impact

The use of the Operational Model can have a significant impact on the success of audiologists' clinical endeavours. It has only recently been introduced for systematic use among audiologists; however the first results and responses are very positive. An apparent part of the success is that more patients will use their hearing aids, which will improve their quality of life. The patients will rediscover the lost feeling of being heard and listened to, and will gain confidence that new problems can be solved in collaboration with the audiologist. They may even return sooner in the future, with the result that new problems can be dealt with as soon as they emerge.

A use of the Operational Model in the audiologist's clinic will have great significance for the patient, his partner and everyone in his surroundings, but it will also have an impact on society as a whole, by providing better functioning citizens.

### Recommendation

A routine use of the Operational Model will provide the audiologist with first-hand knowledge of the personal impact hearing loss may have on an individual.

You could go beyond your professional comfort zone and use the Operational Model on yourself. First you might ask, **"How important is it to me to support my patients?"** Secondly, as a clinician you should ask yourself, **"How strongly do I believe in my own abilities to make changes in my clinical practice to promote greater successes?"**

### Further Research and Development

While "evidence-based practice" is a key buzzword in recent years, audiologists must recognise that the use of the Operational Model is a new practice within audiology. Early experiences have shown a positive effect on patient outcome, but nevertheless we need to do more research in the field by randomised clinical trials or at least controlled clinical trials. Furthermore, we need to interview patients about their preferences and experiences of the consultation, and we need to teach and train staff to a sufficient level of competence.

The outcome measurements could include hours per day of using hearing aids as well as ratings of satisfaction with hearing aids and audiology services for both patients and attending communication partners.

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# Special Patient Groups

The need of a change in lifestyle or health behaviour is a challenge that many different groups are faced with. In this chapter five distinctive patient groups are introduced: pregnant women, children and their parents, patients at the Emergency Department, elderly patients and mentally ill patients. The five groups of patients all illustrate different situations and circumstances, which can occur when working with the Operational Model.

## Pregnant women

Many pregnant women have a special motivation for lifestyle changes because of an added wish to protect the foetus. Studies show that attempts to stop smoking during pregnancy have the highest success rate (1). One of the midwife's important tasks is to inform and advise the pregnant woman on health and lifestyle changes. Apart from increasing the risks to her own health, the overweight pregnant woman will eventually serve as a role model for her child.

The midwife is the primary contact person throughout the pregnancy, which means that as a midwife you will have an opportunity to form a close relationship with the pregnant woman; this combined with the pregnant woman's special level of motivation for a lifestyle change will secure a better effect from the interventions and programmes offered.

Overweight and obesity present a significantly increased risk of complications for the mother and child during the pregnancy as well as the birth (2). The number of overweight people among the population in the western world, including pregnant women, is severely on the rise. Statistics show that in 2009, 33,6% of all pregnant Danish women were overweight with a BMI over 25, and 12,6% were obese with a BMI over 30.

Among the early complications is an increased risk of spontaneous and habitual abortion (3). A rise in BMI is associated with an increased risk of hypertension and pre-eclampsia as well as pre-gestational diabetes (4). In addition, children of overweight parents have four times the risk of becoming overweight themselves compared to other children (5).

At a consultation with the midwife, Eva raises concerns about her weight, and the midwife uses the opportunity to start a dialogue about Eva's eating habits and lifestyle. The midwife is fully aware that weight loss is hard work, and that the acknowledgement and the motivation to change belongs to Eva. However, the midwife can inform, support and encourage Eva in the process of change she is about to undertake.

### CASE

Eva is 24 years old and expecting her first child. Eva's pre-pregnant BMI was 31. Eva has a sedentary job, the family's food habits are characterised by being easy and quick. Eva wants to reach a normal weight and to live a healthier life for the sake of her child and herself.

The midwife could start by asking, "Eva, do you think you have habits which affect your weight in an undesirable way?" Eva: "Yes, actually I think there are several unhealthy habits in my life."

The midwife has to be careful not to take over the responsibility for the process, so she will make sure the option of action stays in the hands of Eva. "Can you think of a habit you can change in a positive direction for you and your weight?" In this way, Eva will start a reflection on her own: "We always eat gravy for dinner. Maybe I could stop that. I will probably be tempted when my husband is eating it, and I know that he could never live without it. It would be difficult. I also buy a buttered roll every morning on my way to work – this I could definitely stop doing".

With her questions, the midwife tries to discover how far Eva believes a change of eating habits is possible. Introduction of the LINE adds to Eva's reflection concerning self-confidence.

The midwife then opens the dialogue on ambivalence with neutral questions about Eva's reflection on the advantages and disadvantages of changing her eating habits (figure 8.1).



### 8.1 Use of the BOX to open the dialogue (6-8)

1: What are the advantages of continuing your current eating habits?	2: What are the disadvantages of continuing your current eating habits?
3: What are the disadvantages of changing your eating habits?	4: What are the advantages of changing your eating habits?

To elaborate on the reflection, the midwife can continue: “How would it be for you not to eat a buttered roll every day?” Eva: “Easy – that way I don’t have to stand in line at the bakery. It has become a routine more than an actual need. A co-worker asked me if we should start eating rye bread in the morning since she also wants to lose weight. It would be good to do it together. I will bring rye bread tomorrow and low fat cream cheese instead of butter. And then I might continue to eat gravy once in a while”.

For many patients in the process of changing lifestyle and health behaviour, the motivational support alone is not enough.

The overweight pregnant woman may also participate in group consultations where the midwife functions as a coordinator, planning different presentations from other health care professionals about diet, exercise, psychological factors and overweight. The idea is to integrate physical, mental and social elements, which in combination will facilitate lasting weight loss and a healthier lifestyle.

#### Impact

Midwives report that the participants express joy and pride in accomplishing a difficult project (9;10). So far, results imply that the weight-loss course has brought significant improvements in many of the participants’ self-esteem and a higher belief in their own abilities to change their eating-habits. This has created a stronger basis for the sustainability of a new kind of health behaviour and lifestyle by the woman – which will also benefit the child (11).

#### The child and the parents

The development of many severe diseases in childhood depends on an interaction between genetic and environmental factors. During recent decades an increase in lifestyle related disorders such as asthma,

allergic diseases, overweight/obesity and psychosomatic symptoms has been reported in many countries with a Western lifestyle.

The major risk factors are exposure to smoking, over-eating, reduced physical activity and alcohol consumption. It is very important to obtain validated information about these risk factors from parents in order to evaluate their possible influence on their children and to implement relevant prevention and treatment, but information from parents on these lifestyle factors may often be biased and under-reported.

However, validated information on the degree of exposure to risk factors is a precondition for relevant intervention and treatment. That emphasizes the need for better education of health professionals in communication skills. In order to improve skills in communication with parents and children, courses for clinical staff were introduced.

#### CASE

At the Hans Christian Andersen Children Hospital there was a lack of systematic identification of parents whose alcohol use was excessive. The hospital decided to introduce courses in motivational interviewing (see chapter 2) to improve the skills of the staff in communication with parents and children.

During one year, 43 staff members from Hans Christian Andersen Hospital conducted motivational dialogues with 779 parents, and 11% of the parents were screened positive for risky alcohol behaviour. This motivational interviewing was successful in mapping parents’ alcohol consumption and in identifying parents with risky alcohol consumption habits (12).

As a result, it has been decided that all staff members with patient contact at the HCA Hospital should attend courses in motivational interviewing in order to improve skills in communication with sick children and their parents. This procedure is expected to give more valid information about all lifestyle related risk factors, such as exposure to tobacco smoking, parental alcohol consumption, physical activity and calorie intake, and also more valid information on compliance with and adherence to medical treatment and health promotion. After identification of lifestyle related risk factors, the parents are encouraged to change their unhealthy lifestyle by following a specific programme.

Children in families with excessive alcohol issues form

a high-risk group as substantial alcohol consumption has a damaging influence on children emotionally, cognitively, socially and physically. In the EU it is estimated that one in six adults drink at hazardous or harmful levels, defined as at least 40 g alcohol per day for a man and 30 g for a woman (13).

A person's excessive use of alcohol affects close relatives, especially children. These children tend to have frequent contact with general practitioners and are admitted to hospital more often because of accidents, incontinence, persistent headaches, stomachaches, nausea, muscle and skeletal pain or infections (12).

### Impact

Alcohol consumption and risk factors are sensitive issues; health care professionals need knowledge, qualifications and adequate training in communicating with parents to deal with this taboo, to enable them to reach out to the children with increased illness due to their parents' unhealthy lifestyle.

## The patient in the Emergency Department

There is considerable evidence supporting identification and the provision of brief interventions in injured patients with alcohol related problems (14-17). Many of these patients are unlikely to seek primary medical care for these problems on their own. Thus, the physician in the emergency department (ED) often serves as the de facto primary care physician, and is often the only clinician with an opportunity to provide health promotion to these patients. Such interventions have been shown to decrease alcohol consumption, improve liver function tests, lower blood pressure, and reduce risky behaviours - leading in turn to fewer alcohol-related injuries and other health problems (14).

Currently, emergency physicians do not routinely offer lifestyle interventions, and there is little instruction in emergency medicine residency curricula on how to do so. Traditionally, emergency care usually takes place in a busy, overcrowded environment where patient flow and management of urgent problems assumes greater priority than preventive care that might benefit the patient in the future.

However, except for unstable patients, most patients require blood and radiographic tests that require them to remain in the ED for several hours while awaiting the results. It may not always be practical for the busy ED physician to perform the intervention, but a non-physician staff member with short-term training and experience can capitalize on this waiting time and provide an intervention even in the busiest settings.

A well thought out start-to-finish plan is necessary to implement an ED intervention programme, and to establish the foundation upon which an effective programme should be built (18).

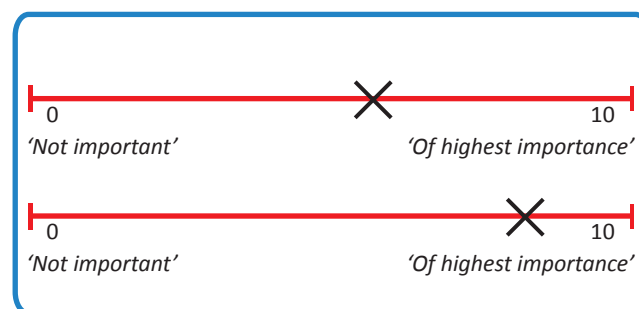
### CASE

Mr. Garcia is 36 years of age and was brought by the ambulance into the emergency department. After having jumped from a 1.5 m wall while working on a building site, he presents with a swollen and painful left ankle. Clinical and radiographic examination reveals the need for an operation to repair a fracture. Preparations for the procedure include blood sampling and measurement of blood alcohol concentration (BAC).

Mr. Garcia comments that there should not be any trace of alcohol by now, however yesterday night his blood alcohol concentration might have been higher.

Dr. Mir is aware that the desire to talk about the subject has to come from Mr. Garcia, "**What is your perception of the importance of changing your alcohol consumption?**" Mr. Garcia expresses his perception by supplying examples of good and bad effects of alcohol, as he has experienced it. Subsequently, Dr. Mir introduces the LINE (Figure 8.2), where Mr. Garcia ranks the importance of giving up alcohol as 6 out of 10. After elaborating on Mr. Garcia's rating, Dr. Mir introduces another LINE and asks Mr. Garcia to rate his confidence in his ability to reduce his alcohol consumption, or to stop altogether. Mr. Garcia: "**I would rate this an 8 out of 10, as I have good support at home.**"

### 8.2 Ranking of importance of stopping drinking & self-confidence (6;7)



Finally, after also discussing the BOX, Mr. Garcia expresses the need to drink less on days when he does drink, and would like to avoid these "binges." Dr. Mir

discusses plans and approaches that might help him to achieve this goal by relying on the patient's own resources and support systems, including enlisting the support of family and friends, and avoiding certain events and places that serve as drinking triggers. He also agrees to meet with an advisor from the alcohol unit within the next few days to talk things over.

The provision of motivational support did not consume an excessive amount of the physician's time. Mr. Garcia appreciated the support and interest from Dr. Mir, which helped him to follow through with his plan.

### Impact

The ED is an obvious setting for assisting patients in embarking on the process of changing lifestyle and health behaviour. Alcohol problems are present in up to one-third of patients admitted in the ED as a whole, and in nearly 50% of the patients with an injury-related ED admission (19).

### The elderly patient

Elderly people run a particularly high risk of rapidly decreasing physical function when they become acutely ill. The strength and quality of the muscle fibres are quickly diminished by bed rest (20-22). It takes a long time to regain the previous level and many will never do so (23). Consequently, it is important to motivate acutely ill elderly patients to be mobilised as soon as possible in spite of feeling ill and tired and being near a welcoming bed (24).

Family members and caregivers are important co-workers and their impact should never be forgotten. If they do not know and understand the reason for early mobilisation, they consider every attempt to be a psychological and physical attack on the patient's integrity.

Motivation for the elderly to be mobilised may be communicated both verbally and non-verbally. The most important issue is to reveal the patient's psychological barriers. A lot of factors need to be considered, primarily diagnoses and the reasons why the patient is immobile. If there is no medical contraindication against mobilisation it is important to put every effort into this issue from the beginning along with the treatment of the basic disease. It is always possible to find a suitable level of mobilisation even if the patient must stay in bed for medical treatment (25), or if, for example, walking with the full weight on both legs is not advisable. The biggest challenge is to motivate the patient and even more importantly to motivate the family and the caregivers to guide the patient in the proper direction. The tools used depend on the patient's social background, prior habits and present cognitive functions.

### CASE

Mrs. Hansen is 82 years old and living alone. She has fallen in her kitchen and suffered a hip fracture. Before her accident, her physical function had been deteriorating, but still she managed without help. She has had some hearing loss for several years, but did not want to use her hearing aids.

After surgery she becomes anaemic and is very tired. She feels most comfortable in bed and is not motivated to leave it. In an agreement with her daughter, Mrs. Hansen decides to return to her own apartment, once she is able to get out of bed and to use the bathroom on her own. Her daughter clearly states that her mother should be allowed to stay in bed as long as she is tired

When an elderly patient like Mrs. Hansen is admitted, the patient and relatives should be informed about mobilisation, social meals, training etc. The patient and relatives should be informed about the reasons for the staff's consistent focus on support in these matters. In the initial conversation, questions about the patient's personal wishes are a good way to discover barriers and set up clear goals. It is a good idea to hand out brochures and copies of meeting reports to the patient, relatives and caregivers, so that all information is shared.

On the first day after surgery Mrs. Hansen and her daughter are invited to a conversation with the contact nurse, the nurse assistant and the doctor. At the meeting Mrs. Hansen is wearing her hearing aids. They are not working very well, so an external hearing aid with a microphone, called "listen to life", is employed.

The conversation starts with the introduction of everybody in the room. The doctor follows up by repeating the main information on mobilisation from the hospital brochure and then asks, "**What level of functionality do you want to achieve, and what are your biggest problems?**" Mrs. Hansen immediately feels that she is taken seriously, and only a few supplementary comments from her daughter and caregivers are necessary.

To start with, Mrs. Hansen expresses unrealistically high goals when she is discharged, as she wants to return to the same level of functionality as before the accident. Therefore, more realistic goals are agreed upon. The caregivers suggest a five-day stay in the hospital and a realistic plan for the future, which Mrs.

Hansen accepts. After the meeting, a copy of the report is given to Mrs. Hansen and her daughter.

### **Supporting activities**

After the conversation, Mrs. Hansen has a bath and her hair is washed and curled. She is dressed in her favourite red shirt and blue skirt. Now she feels comfortable but tired. She rests on her bed for an hour before a physiotherapist comes to give her some training. They focus on training Mrs. Hansen to get out of bed, go to the bathroom and finally to go to the dining room. Mrs. Hansen is a bit shy about meeting the other patients, so she makes a number of excuses, but the therapist asks her just to look into the dining room. As Mrs. Hansen sees the tables with their coloured cloths, matching tablemats, flowers, friendly people, and a couple of staff members helping the patients, she decides to stay and enjoy the food served.

Mrs. Hansen and her daughter now understand why the caregivers are not allowing Mrs. Hansen to stay in bed and instead put a little pressure on her to walk in the corridor with her walking aid. After five days Mrs. Hansen is able to get out of bed by herself, she is able to manage a visit to the toilet and she goes from her bedroom to the dining room with the help of her walking aid. Mrs. Hansen has reached the goals for her hospital stay and feels fit to go home.

### **Impact**

Elderly people are very vulnerable to traumas, diseases and hospitalisation. The benefit of introducing aggressive rehabilitation is therefore tremendous for the individual patient, the relatives, the hospital and society as a whole. The sharing of information among all involved increases the possibility of co-operation and reduces potential frustration.

### **The mentally ill patient**

Around the world, 1 % of the population suffers from schizophrenia (26). At first glance 1 % is a low incidence rate, nonetheless there are considerable implications for health and economics. In terms of years lived with disability, schizophrenic disorders rank fourth in the top ten of all diseases (27). This is for two reasons: the disease starts in early adulthood and it tends to become chronic (28). Beside the advances in acute treatment nowadays, there are advances in evidence-based strategies to prevent relapse rates and chronicity as well. Among others these are, for example, cognitive behaviour therapy and family intervention (29-32).

The starting point was psycho-education, a well used technique to help patients to cope better with the disease and to have a better outcome and lower relapse rates (32). Many studies show convincing effects of

psycho-education: it cuts relapse rates in the first year after acute crisis by half and is thus as effective as psycho-pharmacotherapy. Psycho-education promotes empowerment and active participation, and supports resilience and the sense of coherence as well (33). Yet it covers only the needs of the patients and not the needs of their families. Families, however, are engaged to help patients and patients want the support of their families (34).

However, in everyday practice there is a gap between guidelines and implementation. Only about one in five patients and one in fifty relatives get the necessary support in the form of structured information about the disease and strategies for coping (35). In addition, only about two in five of all patients follow the given recommendations (36). These facts emphasize the need to design and implement new strategies for mental health promotion for patients with schizophrenic disorders.

#### **CASE**

A new family intervention for patients with schizophrenic disorders and their relatives was developed at the Health Promoting Vitos Phillips Hospital. Four to five patients and their partners or other family members are invited to ten weekly group sessions with 12-15 participants.

The first five sessions focus on information about the disease, possibilities of treatment and strategies for crisis prevention and intervention according to the usual programme of psycho-education. The next five sessions focus on techniques for improving communication within the family or partnership through role-play. These communication strategies cover techniques derived from behaviour therapy such as active listening, making legitimate demands, problem solving and coping with stress. After half a year, the group members are re-invited to discuss the techniques learned and their transfer to family life.

The staff discovered that through this multifamily intervention the relapse rates could be reduced from three in five patients to one in five annually. In addition, the staff also found that after a three-month period the patients participating in the multifamily intervention benefited, compared to the control group,



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in a global assessment of social functioning as well as physical quality of life.

This new initiative shows a process of change at different levels:

- The attitudes of the patients and their relatives are influenced by a remarkable increase of knowledge about the illness, the treatment possibilities, and the ability to deal with the illness and to develop strategies of crisis prevention and crisis intervention. Thus, the participants report a considerable increase of self-confidence and also of belief in the ability of their relatives to deal with the illness. Family members feel safer and more comfortable through the improvement of family communication.
- The attitudes of the group leaders change in the way they look at the ability of patients to cope with the illness. They learn that patients and their relatives have remarkable resources to deal with a chronic mental disease.

So far, the process of recovery shows increased confidence as well as improved resilience of patients and their relatives.

### **Impact**

Several studies are ongoing in this field in order to obtain more knowledge at a higher level of evidence. Multifamily intervention has been shown to be a particularly powerful instrument of mental health promotion and a new randomised clinical trial supports the staff experiences mentioned above (37). Further to this, patients with a low sense of coherence obtain more benefit from the multifamily intervention than patients with high sense of coherence. This means that the patients in most need get the greatest benefit from the intervention. It is therefore important that health promoting mental health services change their routines of information-giving and support by including patients and their relatives at any stage of treatment in the multifamily intervention.



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# Teaching and Training of Staff 9

This chapter focuses on the importance of a well-trained staff. Different levels of staff education are introduced with comments on the content of each level. Later paragraphs deal with methods of education and participants' perspectives, including a special focus on evaluation of teaching and training.

In order to support your patients in changing their lifestyle and health behaviour, there is a need to professionalise the field of patient education. Knowledge, skills, educational resources and a positive attitude towards patient education are a major part of this clinical professionalism. To build staff capacity will require a planned approach to the teaching and training of clinical staff who engage in the process of change. Once the field has become a natural part of undergraduate education, the need for postgraduate teaching and training will be reduced.

It is important to be able to support the patients without taking over all responsibility for decision making, and thereby making the patients more and more invisible in the whole process. The great need for education in this specific clinical field means that any situation where a patient is undergoing the process of change should also be considered a learning situation for the staff involved.

## Content and Levels of Education Programmes

Competences in patient education are developed through theoretical education as well as teaching and training in day-to-day clinical practice. Most of the theoretical education will take place as part of the undergraduate or postgraduate education in groups using the method of problem based learning, where practical exercises will include apprenticeship, peer-to-peer training or training in multi-disciplinary contexts (1). Education in this field can be at different levels, from the basic to the specialist or master's level. Beyond this, there is a need for competent leadership to ensure that patient education is well regarded and resourced.

## Competences at leadership level

It is often necessary to offer further education in competences at leadership level to health planners and health developers, consultants, professors and researchers as well as others with responsibility and consultancy at management level.

At this level you should be able to:

- Describe and evaluate the best evidence based practice, which includes the highest level of evi-

dence, staff competences and patient preferences.

- Evaluate the impact and costs of the different programmes.
- Plan, implement and assure the quality of practice.
- Understand and interpret analysis, description and evaluation of new initiatives and programmes.
- Initiate support and follow up.
- Report on research and disseminate the results.
- Plan strategically in relation to Medical Technology Assessment, which combines evaluation, technology/evidence, patient perspective, organisation and economic perspective.

## Specialist or Master's Degree Level

At the specialist or master's degree level, there is a need for education of resource managers and/or key members of the staff involved in planning, organising, evaluating and further developing the area. Education at the levels of diploma, first degree and master's degree is relevant for different clinical professions. The development of competences will include learning from daily practice and theoretically grounded teaching.

The education programme would include:

- Engagement in the process of change: definitions, frameworks, underlying values and ethics.
- The process of change: models, actors and interdisciplinary collaboration.
- Response to patient roles and perspectives.
- The staff as role models, professionalism and staff perspectives.
- Goals, tools, methods and outcomes.
- Planning, implementation, evaluation, documentation and quality assurance.

Building the capacity of teams to support patients in the process of change requires specialists to teach and train other staff members. It would therefore be beneficial to include teaching, training and supervision of colleagues as a part of the specialist programme. (Please see table 9.1 for an outline of a programme for a three-day course on the evidence-based smoking cessation intervention programme for smokers undergoing surgery).

## 9.1 A smoke-free operation - an international course

### Day 1: The surgical patient

Smoking and surgical outcome, Pathophysiology, Evidence of intervention, Patient preferences, Staff competences  
The Operational model (LINE, BOX and CIRCLE)

### Day 2: The Gold Standard Programme (GSP):

Manual patient education including smoking history, dependency and treatment, risk situations, relapse prevention, documentation in the SCDB (6)  
Homework: Training in GSP

### Day 3: Supervision in GSP and Colleague education

Examination and certificates  
Homework: Education of colleagues

*The table shows the programme for a three-day course at Master's level for the surgical staff. The teaching method is Problem Based Learning with supervision, presentations, group work and homework.*

## Basic level of training

Every clinical practitioner - doctor, nurse, midwife, physiotherapist, audiologist, occupational therapist, dietician or other health care professional with direct patient contact - needs to have a basic understanding of their role, competences for engaging patients in the process of change and the subsequent programmes of treatment (Table 9.2). These are obtained through mandatory modules in undergraduate education as well as through practical training and supplementary visits in the field, to departments, clinics and centres. The basic lessons to be learned include knowledge of problems and models of intervention, terminology, theory, methods and practice.

## Methods of education

When professionals engage with patients to support them during their processes of change, the professionals may feel that their professionalism and the health sector's culture and traditions are being challenged. This is because the traditional use of medical technologies often has a limited focus on patient involvement and participation. Patients may expect or even ask the clinicians to make the important decisions. The familiar "fix me" and "we will fix you" attitudes do not work in this area. Instead, engaging patients in the process of change requires another kind of technology, including encouraging of patients to take part in an intervention programme. The follow-up process will often require an effective collaboration between patients, groups of staff from various specialities and sectors.

It is important that the methods of education are

related to real life and that they activate students. Problem based learning, which is used for educating medical students at universities all over the world, is highly relevant for education in changing processes. The approach is based on theoretical principles of teaching and training adults; it focuses on gaining knowledge and the ability to communicate, collaborate, solve problems, take responsibility for learning and exchange knowledge and experience, as well as respect for others (1).

To secure the best results, it is very important to specify the goal of the required competences (table 9.2).

## 9.2 Specification of the goals of competence

<b>Knowledge</b>	<ul style="list-style-type: none"><li>• Theoretical knowledge – can be classified in many levels in relation to deeper understanding</li></ul>
<b>Skills</b>	<ul style="list-style-type: none"><li>• Cognitive skills – use of theoretical knowledge in troubleshooting, analysis, synthesis etc.</li><li>• Technical/practical skills – manual skills</li><li>• Interpersonal competences – communication, collaboration.</li></ul>
<b>Attitudes</b>	<ul style="list-style-type: none"><li>• Attitudes are expressions of the person's values – basic opinions and norms based on an ethical, moral, cultural and possibly political foundation. Attitudes are expressed in behaviour and statements.</li></ul>
<b>Experience</b>	<ul style="list-style-type: none"><li>• Range and type of activities – operations, procedures, various types of patients and medical problems.</li></ul>
<b>Habit of action</b>	<ul style="list-style-type: none"><li>• Converting knowledge, skills, attitudes and experience into adequate action and management of problems in practice.</li></ul>

For the most effective education, it is important to evaluate teaching and training processes sufficiently and at different points (Please see examples on methods for evaluation in table 9.3 below).

A logbook could be introduced for this specific teaching area on engaging patients in the process of change. It is a good tool to follow up on practical activities (documentation of individual activities and experiences) and it should be signed by the supervisor or mentor in the department, centre or office responsible for teaching and training the student.

It would be relevant to have examinations after both the basic module and the specialist education, and preferable on Objective Structures Clinical Examination (OSCE) (2). It is however, important to adjust the comprehensiveness of the exam to the length of the

education that should be evaluated. For shorter modules or courses, the most practical form of evaluation is a multiple-choice test (passed or failed) aligned with the duration of the module or the course (Table 9.3). At this evaluation form, the teacher should be aware of the risk of under-reporting learning in practical skills (3).

At the specialist level, the best form of assessment would be an observational test such as an objective, structured clinical examination or a video observation of a consultation in the clinical setting (Table 9.3).

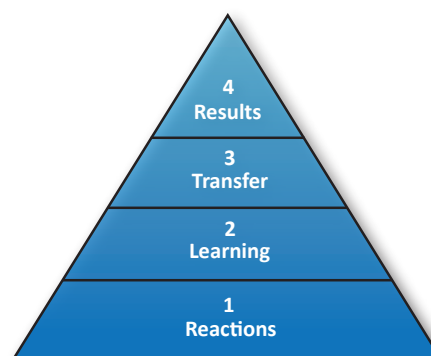
### 9.3 Examples of methods of assessment of the process

<b>Knowledge</b>	<ul style="list-style-type: none"> <li>Multiple-choice assignments.</li> <li>Essay assignments – written exam.</li> <li>Oral exam.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>Clinical decision-making: patient management problems (PMP).</li> <li>Clinical skills: direct observations of execution in simulated scenarios.</li> <li>Objective Structures Clinical Examination. (OSCE) or observation in the clinical setting (on location or video).</li> <li>Communication, collaboration: OSCE, feedback from others – possibly patients.</li> </ul>
<b>Attitudes</b>	<ul style="list-style-type: none"> <li>Assessment of behaviour. Can be done by a supervisor, other colleagues, possibly patients – individually or combined, a so-called 360°-assessment, multiple peer assessment or multiple source assessment.</li> <li>Assessment of reflective reports on specific issues or incidents.</li> <li>Assessment of statements and response to other statements or behaviour, e.g. in connection with teamwork or at conferences. Can be done by a supervisor, other colleagues or other personnel.</li> </ul>
<b>Experience</b>	<ul style="list-style-type: none"> <li>Experience-log – quantitative recording of activities accomplished, e.g. operations, procedures and patients.</li> <li>Cusum-scoring – recording of procedures with a qualitative element – recording of success rate.</li> </ul>
<b>Practice habit</b>	<ul style="list-style-type: none"> <li>General assessment of habit of actions. Can be done by a supervisor, colleagues, other personnel and possibly patients – individually or in combination (multiple source assessment).</li> <li>Assessment of reflective reports on the quality of own practice and management of issues.</li> <li>Portfolio-assessment – assessment of a collection of documentation on habits of actions and their results. Portfolios are different materials from several sources.</li> </ul>

## Student and staff perspective

Those receiving teaching and training are the key persons in its subsequent implementation in daily practice. The bottom line of the teaching and training in clinical health promotion is a better health gain for patients. It is therefore important to evaluate whether staff members' new competences make a difference to the patients they see on a daily basis at the clinic. To do this, Kirkpatrick has described a model with four interdependent levels for evaluation (Figure 9.4) (4;5).

### 9.4 Four Levels of Learning Evaluations



1. Reactions: How do the participants react and feel about the various aspects of course and training?
2. Learning: What have the participants learned from the course and training?
3. Transfer: How well have the participants applied the skills learned in their work?
4. Results: What are the results of the application of the training in daily practice?

The four levels are interdependent, as every level influences the next level. The participants' reaction and feeling about the course and training will affect the level of learning, which again will have an effect on how well the participants will apply the content of the course in their working procedure. The final result of the application at the clinics and departments is similarly dependent on the other levels.

The last step is usually evaluated against standards and indicators as an integrated part of the quality management process that already takes place or is under implementation in the health sector.



### Evaluation comments

Evaluation comments from an international course on the use of the Operational model for Audiologists (the comments are all made anonymously).

"... I used the decisional balance BOX with a client recently; it really helped her to clarify why she felt so 'stuck'. All I did was write her words in the BOX as she spoke, and then I gave it to her to look at and reflect on. She said it was like a 'light bulb moment'." (Level 2)

"... The tools are something that I can really see would help me and would be possible for me to implement. They are perspectives that we always knew but never quite knew how to apply in our daily training and therapy. I am looking forward to going back to work and feel inspired." (Level 3)

"I am beginning to grasp the concepts and would love to try to use the tools in the clinical setting. The tools (The LINE, BOX and CIRCLE) could provide a means of getting patients to engage more and to actively participate in guess what: collaboration! I think all patients, myself and other professionals would benefit from the materials and theories presented." (Level 4)

*The three comments relate to levels 2 to 4 in Kirkpatrick's Model for Evaluation.*

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Typically, health professionals value the development of expertise that leads to effective practice and better patient outcomes. They may therefore be enthusiastic about learning how to support patients in developing healthy decisions and lifestyles. However, where health professionals do not highly value communication with patients, for example if they are pessimistic about whether people can actually make and sustain changes in health behaviour, they may be less interested in education and training in this sub-field of practice.

Additionally, mentoring of staff can be very important in shaping positive staff attitudes and maturing their understanding of the process of patient education.

# Quality Management: Standards and Indicators

This chapter introduces quality management and describes a basic model for good quality practice: the plan – do – check – act cycle. The chapter then presents three simple internationally evaluated models for the documentation and registration of implementation in practice and follow-up for effect. Later in the chapter, an example of how to start implementation is given, which also includes a description of support at local and regional level.

When implementing a new evidence-based method or activity, like the gold standard programme (GSP) for smoking cessation intervention prior to surgery (1), it is important to assure the quality of performance. Thereby you can evaluate whether the new method works for the benefit of your patients in real life – and whether it makes a difference to outcomes. Now and then it is relevant that we ask ourselves the simple question: Do we really achieve a better health gain for our patients by adding this method or that activity?

Many tools and methods have been developed during the last decades for quality assurance (2). There are substantial differences with regard to how, why and when these tools should be used, but they have one common denominator, which in fact is the basis for all quality improvement: without data, without knowing the current performance and which objectives are to be achieved, there can be no quality improvement.

Hitherto, the focus has mainly been on data describing the existence of organisational structures and the use of procedures for diagnostics, treatment and care. However, the time has come when quality management should also include clinical health promotion, clinical outcome and effect over time.

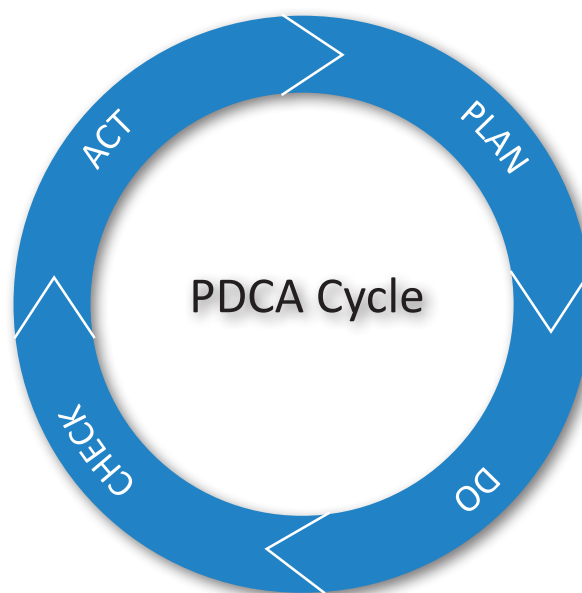
Thus, the starting point for improving the quality of clinical health promotion must be quality assessment. This is reflected in the best known quality improvement tool, the plan-do-check-act cycle.

## Plan-do-check-act (PDCA) cycle

Walter Shewhart originally conceived the PDCA cycle as early as the 1930's (3). The model provides a framework for the improvement of a process or system (Figure 10.1).

The four elements are plan, do, check and act. The first represents **planning**; an activity, project or procedure with the aim of improvement. This entails analysing what you intend to improve, looking for ar-

**10.1** Plan-Do-Check-Act Cycle for quality improvement in hospitals and health services



eas that hold opportunities for change and deciding where the greatest return on investment can be realised. To **do** is understood as to carry out the change or test (preferably on a small scale) and implement the change you decided on in the first phase.

**Check** entails reviewing the results and analysing failure and success. This is a crucial step in the PDCA cycle. After you have implemented the change for a short time, you must determine how well it is working. You should ask yourself, “Is this really leading to improvement in the way I had hoped?” You must decide on several measures by which you can monitor the level of improvement. By **acting** you adopt the change, abandon it, or run through the cycle again.

## Methods for assessment of quality

As indicated above, measurement is a central tenet of quality improvement. However, it is important

that the assessment is easy to do, clinically relevant, sufficient and simple at the same time, and without consuming too much time or other resources. In addition, there has to be a clear and clinically relevant plan for using the data; otherwise you merely gain more bureaucracy instead of better health.

Approaches to quality assessment can be grouped broadly into internal and external assessment. Self-assessment and accreditation are the most common forms of assessment. Self-assessment is a process used by healthcare organisations to assess their level of performance accurately in relation to established standards and to implement ways of maintaining continuous improvement. It enables staff to identify areas of good practice and areas in need of improvement.

Accreditation is based on self-assessment, but followed up by an external peer assessment process. The external assessment typically results in an overall evaluation of hospital quality, in identifying priority areas for improvement and in a formal declaration that the hospital is accredited (provided the required level of performance is achieved).

Evidence shows that self-assessment contributes to the goals of quality assurance in many ways. It is a low cost method influencing individual behaviour so as to increase compliance with standards, to clarify areas for improvement, to give participants ownership of the process of improvement and to improve the communication between supervisors and subordinates (4).

There are two main lessons to be learned through the process of self-assessment. Quality improvement requires data on performance and a culture favourable to improvement. Without data on actual performance, no clear direction for quality improvement can be recommended. Without a culture of participation and support, data on the quality of care cannot be obtained and even less can quality improvement proposals be implemented.

### Assessment of Quality according to Standards and Indicators

A well-established way of implementing new activities is the use of evidence-based clinical guidelines on 'how-who-when-what to do'. The clinical guidelines are to be followed-up through specific standards and indicators as a part of the quality management that may already take place. Standards and indicators are based on two complementary approaches to quality assessment.

**Standards** and their more detailed sub-categories

describe the agreed-upon level of achievement. Examples: guidelines should exist for the rehabilitation of patients with chronic obstructive lung disease, or psychiatric records should include smoking status. Related to the individual standard is a list of measurable elements that address what is required to be in full compliance with the single standard.

**Indicators** mainly address the health care processes and the outcome. Even though the success of the process lies in the hands of the patient, you will still need a scale of measurement in order to evaluate your own effort. The indicators provide the quantitative tool to assess performance over time, and they are typically described in numbers or percentages (5). Examples: percentage of psychiatric patients referred to a smoking cessation programme, or percentage of patients with hearing loss using their hearing aids for more than six hours per day at the three months follow-up.

In relation to Quality Management, it is important to remember that the expected level of success is seldom much higher than 80%. This is due to the 80-20 Principle, stating that you spend 20% of the resources to reach 80% of the goal, but 80% of the resources to reach the last 20%.

### Data collection

The data for evaluation of the fulfilment of standards and the meeting of success levels of indicators are collected from, for example, patient administrative systems such as electronic medical records, clinical quality databases and online books of guidelines and procedures, surveys, and audits of the medical records (5).

For instance, surveys are very useful to evaluate the awareness of guidelines among staff and to follow-up for the use of prescribed hearing aids. Medical record audits are useful sources for the documentation of smoking history, the number of daily smokers, and cessation rates.

### From invisibility to visibility

Previously, health promotion activities in hospitals and health services were invisible because there did not exist systematic standards, indicators or registration models in this area. This lack meant that the support of patients changing lifestyles, or an offer of nutrition intervention, could not be registered or reimbursed through the usual patient administration systems.

To accommodate this need for registration, a growing International Network of Health Promoting Hospitals and Health Services established by WHO (HPH

Network) developed standards and explicit criteria for assessment, documentation and registration. Three studies from the network are presented below.

At the beginning of 2012, the HPH Network had more than 860 member hospitals and health services globally, together employing close to a million staff members and receiving patients from the related communities representing about a billion inhabitants.

Because of the network's development of standards and criteria for assessment, it is today possible to document, register and reimburse health promotion needs, activity and outcome in the same way as is done for diagnoses, operations and other treatments.

### Standards for Health Promotion in Hospitals

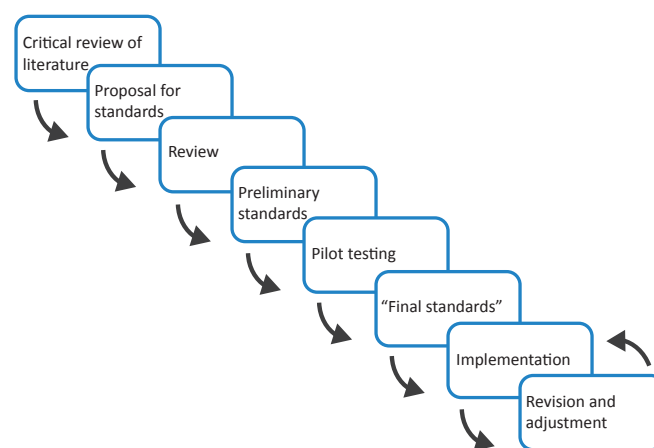
One study from the HPH Network reported on the development of standards for health promotion in hospitals (6). The study consisted of two steps, the development of standards and the subsequent evaluation. The first step was aimed at identifying evidence-based health promotion issues, which could realistically be integrated with existing hospital quality management systems. This meant excluding the broader areas of health promotion such as community involvement and environmental issues (7), which should then be included in the next step.

Following the recommendations of the ALPHA programme from the International Society for Quality in Health Care, the HPH Network developed standards for health promotion in hospitals (see 10.2). The standards take into consideration the health potential of individuals and stress the importance of motivating them through information, motivational coun-

selling, training and other activities to realise their health potential.

The standards for health promotion in hospitals address five domains: I management policy, II patient assessment, III patient information and intervention, IV promoting a healthy workplace and V improving continuity and cooperation, according to the WHO definition of Health Promoting Hospitals and Health Services (8).

#### 10.2 Standards developed according to the ALPHA programme



The related self-assessment tool defines health promotion activities to cover both concrete actions (such as assessing patients for risk factors and providing information) and complex interventions (such as empowering the patient to play an active role in the management of his or her condition). See table 10.3 for an overview of the content and structure of the tool.

**10.3 Standards and description of related domains from the self-assessment tool**

Standard	Description of the domain	Sub-Cat.	ME	Ind.
I. Management policy	The organisation's commitment to implementing patient involvement and HP as part of the overall organisational quality improvement system	6	17	3
II: Patient assessment	Obligations of health professionals to systematically assess information and HP needs in partnership with the patient	5	8	3
III. Patient information & intervention	Informing patients of planned activities, empowering patients for an active partnership and facilitating the integration of HP activities in patient pathways	5	8	3
IV. Promoting a healthy workplace	Establishing conditions for the development of the hospital as a healthy workplace and environment	4	16	9
V. Continuity & cooperation	The organisation's planned approach to collaboration with other health service providers, institutions and sectors, including hand-over of patients	4	19	4
Total		24	68	21

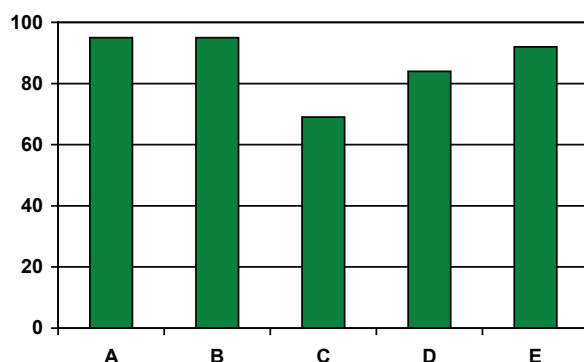
*Sub-Cat: Sub-Category. St: Sub-standards. ME: Measurable elements. Ind: Indicators*

The second step was carried out after the development of the standards and the related self-assessment tool and consisted of an evaluation performed among 38 hospitals from 8 countries; Czech Republic, Germany, Ireland, Italy, Lithuania, Slovenia, Sweden, and South Africa. After a pilot implementation the hospitals were asked whether:

- A. their participation in the self-assessment was useful;
- B. they had identified new potentials for quality improvement activities;
- C. the work related to data collection could be incorporated into normal practice;
- D. they could recommend other hospitals interested in health promotion to carry out a self-assessment;
- E. all HPH members should carry out a self-assessment.

(Results, table 10.4 below)

**10.4 Results of a pilot evaluation of the WHO-HPH Standards (in %)**



The revised tool (5) has been translated into Chinese, Estonian, German, French, Italian, Slovak, Arab and Spanish, and further translations are underway. Some National and Regional HPH Networks have decided to make self-assessment against the standards an entry requirement for joining the network, while other countries are in the process of integrating the standards into their national hospital accreditation systems.

### The HPH Doc-Act model

The second study from the HPH Network should be seen in addition to the standards mentioned above. In the study, the HPH Network developed a simple model for a systematic registration of the most important and frequent clinical health promoting activities. This Documentation Model for Health Promoting Activities (HPH Doc-Act) is compatible with the current patient administration systems (9;10).

In order to be meaningful to clinicians, the HPH Doc-Act model is closely related to the clinical patient pathway, together with the two other parts in the HPH Self-assessment tools (see 10.3). The model does not focus on the many details of the methods used, but only on whether the patient has received it.

The HPH Doc-Act consists of two parts; one part for documentation of motivation (for the change of attitude) and the other for documentation of the subsequent intervention or comprehensive rehabilitation programme (related to the following change of behaviour). By this, The HPH Doc-Act reflects the two main stages in the process of changing lifestyle: the change of behaviour and the change of attitude (Table 10.5).

In order to make sense, the registration should relate accurately to the health promotion activities that have taken place (and which are documented in the medical record).

- Some patients change lifestyle without the need for any clinical intervention. They find the support in themselves and their family or others around them. This group of patients will not require documentation by the HPH Doc-Act.
- Other patients only need the motivational support. This second group will appear with documentation for the motivational support exclusively.
- Many patients require both the motivational support and a proper intervention programme to be able to change their lifestyle and maintain the new lifestyle. They would need documentation for both.

**10.5 The registration model (HPH Doc-Act) for clinical health promotion with the specific 15 Danish National Classification codes for registration**

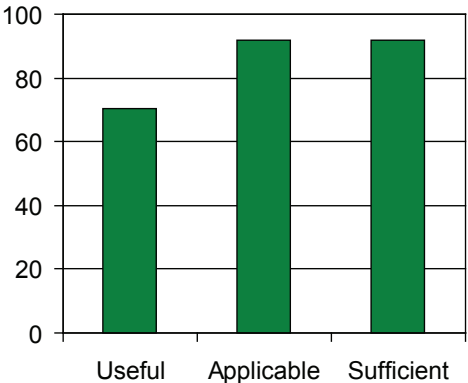
7 codes for motivational support and counselling		8 codes for intervention, after-treatment and rehabilitation	
Smoking	BQFS01	Tobacco cessation programme	BQFT01
Alcohol	BQFS02	Alcohol intervention	BQFT02
Nutrition	BQFS03	Nutrition programme	BQFT03
Physical activity	BQFS04	Physical activity	BQFT04
Psycho-social relations	BQFS05	Psycho-social support for other risk factors	BQFT05
Other risk factors	BQFS06	Medicine after-treatment	BXAB0
-	-	Patient education	BVDY04
Integrated counselling (comprising several elements)	BQFS07	Integrated rehabilitation (comprising several elements)	BQFT19



The HPH Doc-Act model is built up in the same way as registration for surgical activities, and it can be used for (quality-based) reimbursement in a similar way. To keep it simple, the model includes only the main activities; however every code from the International Classification of Diseases system (ICD) (11-13) and other national/regional classification systems can be added, so as to reach the required level of detail.

Specialist clinicians experienced in documentation and registration from nineteen departments/hospitals in six countries have evaluated the HPH Doc-Act (9;10). The large majority found the model understandable, applicable, and sufficient for their specific groups of patients from areas such as internal medicine, cardiology, geriatric, orthopaedic surgery and psychiatry (9;10) (Results in figure 10.6).

**10.6** The results of the clinical evaluation of the HPH Doc-Act Model (in %)



### The HPH DATA Model

Soon after finalising the evaluation of the Documentation of Health Promotion Activities, the clinicians requested a similar model to document the patients' needs for those health-promoting activities described in the HPH Doc-Act model mentioned above. In response, the HPH Network initiated a third study on development and evaluation of an easy-to-use HPH data model.

More than 60 departments / hospitals participated in the study, conducted by clinical specialists originating from 11 countries (Austria, Canada, Czech Republic, Estonia, Germany, Italy, Norway, Switzerland, and Taiwan PoC).

The HPH DATA Model includes nine questions for the documentation of five health determinants of major importance for the clinical outcome. It is developed for a categorisation of patients into two groups; those in need of health promotion activities in their patient

pathway, and those without such a need. In this way the model can help clinical staff to decide systematically on the appropriate health promotion activity to offer the individual patient. The HPH DATA Model and the results of the evaluation are shown below in (see 10.7 and 10.8). The agreement across specialities and countries was remarkably high (10;14).

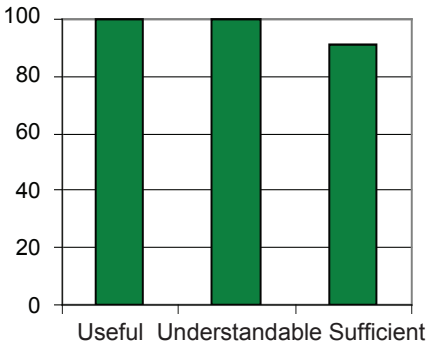
**10.7** The HPH DATA Model. Any yes-answer would categorise the patient into the group that should be offered the relevant HP activity.

Documentation	Yes	No
<b>Is the patient at risk of malnutrition?</b>		
Does the patient have a BMI < 20.5?		
Has the patient suffered from weight-loss in the past month?		
Has the patient suffered from decreased food intake in the last week?		
Is the patient severely ill (sepsis, burns, etc)?		
<b>Is the patient overweight?</b>		
Does the patient have a BMI > 25?		
Is the patient's waist-measurement > 80 cm (W) or > 94cm (M)?		
<b>Is the patient physically active &lt; 1/2 hr / day?</b>		
<b>Does the patient smoke daily?</b>		
<b>Does the patient drink &gt; 14 units/wk (W) or 21 (M)?</b>		

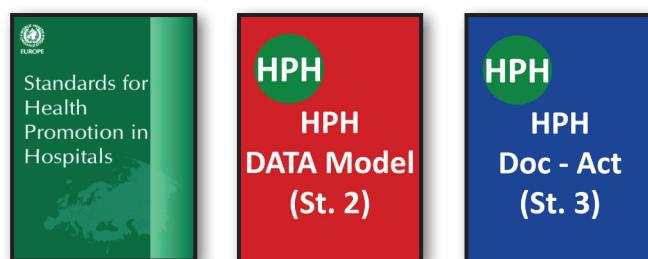
### WHO-HPH Standards, HPH DATA and HPH Doc-Act working together

The HPH DATA and HPH Doc-Act models fit directly into WHO HPH Standard II and III for health promotion in hospitals (see 10.9). Standard II relates to patient assessment, while Standard III concerns patient information and intervention (5;6).

**10.8** The results of the clinical evaluation of the HPH DATA Model (shown in %).



**10.9** Both the HPH DATA model and the HPH Doc-Act model are parts of the overall WHO Standard for Health Promotion in Hospitals.

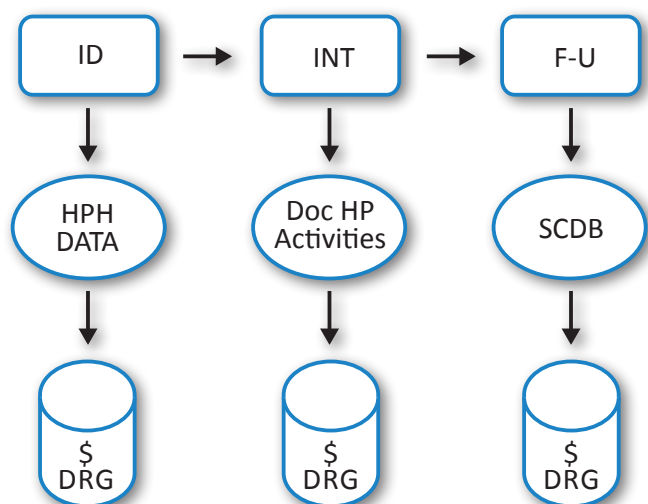


- I. Management policy of HP
- II. Patient Assessment
- III. Patient Intervention & Info
- IV. Promoting a healthy workplace
- V. Continuity and cooperation

Furthermore, the two models can be directly connected to the Diagnosis Related Group's (DRG) reimbursement system without technical barriers (15).

Several countries, regions and local health services have fully or partly implemented the HPH DATA and HPH Doc-Act models in their classification system and the WHO-HPH Standards in their quality management.

#### 10.10 The clinical HP pathway



Identification (ID) and intervention/ rehabilitation (INT) correspond to diagnosis and treatment in the traditional patient pathway. The follow-up (F-U) in clinical HP (e.g. the smoking cessation database, SCDB) (16) is also similar to follow-up after treatment in quality registries.

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# Standards and Indicators in Practice

# 11

This chapter provides examples of how the standards and indicators described in chapter 10 can be used in practice. These examples may provide inspiration to help you to start implementing them in your own area.

## Follow-up for effect in practice: A smoking cessation database ([www.scdb.dk](http://www.scdb.dk))

An example of monitoring effect through effect indicators, taken from the Danish National Smoking Cessation Database, shows that there is room for quality improvement.

Almost every smoking cessation intervention which takes place in Denmark, follows the gold standard programme (GSP) for groups or individuals. All interventions and follow-ups for effect are documented in the nationwide quality database on smoking cessation (1). The results are published on the public website, [www.scdb.dk](http://www.scdb.dk). Though the cessation rates are good compared to those achieved by other national programmes, the new goals to be met in the future have been set even higher (Table 11.1).

The GSP includes five face-to-face meetings over six weeks with a trained instructor, nicotine replacement therapy according to individual nicotine dependency, a manual-based patient education programme as well as a follow-up after six months for continuously maintained smoking cessation from intervention to follow-up.

As shown above in the PDCA cycle (Figure 10.1), in order to improve quality, data collection needs to be followed by interpretation of the results for identification of successful areas to be sustained as well as areas with potential for improvement.

In the example from monitoring smoking cessation rates after intervention it became clear that while more effort should be devoted to all the indicators (1 to 5), the priority was to increase the frequency of completers. Interestingly, most municipal authorities are already reaching the new goals for follow-up procedures. Related action plans should be defined and put into practice, and the quality measurement should be repeated over time.

## Experience from practice: PDCA Cycle in US Trauma Centres

The following guide is intended to help Trauma Centres start and continually improve their action for alcohol screening and motivational support requirements (2).

### Plan

#### 1. Make a case for ED Lifestyle Interventions.

Collect and distribute literature to appropriate staff.

#### 2. Organise the Project

Having one highly placed person approve the programme does not ensure adequate support. Support from key people throughout the organisation is necessary. These include hospital administrators, clinical leaders of the ED, nursing staff leadership, social workers, and other stakeholders.

#### 3. Working Toward a Common Perspective

Decide which behaviours will be targeted. Reach a

**11.1** Monitoring the effect of smoking cessation intervention 2009-10 (1)

Quality Indicators	Results	New quality goals
1. Smokers who completed the programme (= Completers)	59%	80%
Smokers who were followed-up at the end of the programme	99%	-
Smokers who were followed-up after 6 months	70%	-
2. Completers who were smoke-free at the end of the programme	70%	80%
3. Completers who were followed up after 6 months	71%	80%
4. Completers who were continuously smoke-free after 6 months	42 %	50%
5. Completers' satisfaction (4 & 5 points on a Likert scale from 1 to 5)	87 %	90%

consensus by developing a common understanding of the need for the intervention programme, how it works, and how staff will work together to ensure its success.

#### 4. Decide on Who Will Provide the Intervention

Factors include time availability, knowledge and experience, interpersonal skills, and willingness.

#### 5. Decide on Who Should Be Screened

Ideally, everyone should be screened, but it is appropriate to avoid screening patients below a certain age and certain other types of patients. This will reduce the total number of screenings to be performed, and will economise on time.

#### 6. Decide on Screening Procedures

Determine which questionnaires will be used, how screeners will obtain the forms, how results will be documented, and how the person who will perform the intervention (if not the screener) will obtain the results.

#### 7. Decide on Intervention Procedures

Decide when an intervention will be delivered, how long it will take and what elements the intervention will consist of.

#### 8. Decide on Referral Procedures

Develop procedures to be followed when patients are found to have a serious problem such as addiction.

#### 9. Seeking Long-Term "Buy-In" for the Programme

In order to succeed, the programme must become a part of the ED's clinical routines, and be broadly supported by all involved. Review the plan with all supervisors whose workers will be affected, make joint decisions, and solicit suggestions to win support.

### Do

#### 10. Initiate Training

Decide who will be trained to perform screening and intervention procedures, and what type of training they will need. Schedule and promote the training. Develop the content and structure of the training sessions, and identify web-based and other training resources.

#### 11. Prepare for Start-Up

Announce start-up, remind, offer thanks, give hands-on help, address unforeseen issues, encourage staff, give feedback and show appreciation.

### Check

#### 12. Initiate Quality Improvement

Identify the number of patients screened out of the target population, the percentage who screened positive, the percentage of screen-positive patients who

received an intervention or referral, and other aspects of the programme.

### Act

#### 13. Refining the Programme

Improve service through experience and research. Provide feedback to front-line staff to familiarise them with programme successes. Learn from others. Eventually run through the PDCA Cycle again.

It is important to publish your work to build further support by letting your organisation's leaders know how you are doing, and to let local community leaders, citizens and organisations hear how this new health service is benefiting their community.

### Experience from Practice: How the WHO-HPH Standards are used in Taiwan

Hospitals and health services from the Regional HPH Network in Taiwan perform a self-assessment against the WHO-HPH standards when they apply to become members.

The life expectancy at birth has increased significantly over the last decades to 82 years for women and 75 years for men in the region, comparable to the levels in the UK and US, while the total health expenditure is lower at only 6.2 % of the nation's Gross Domestic Product. The density of hospital beds and medical facilities is high. The National Health Insurance offers universal coverage of care with low co-pay, and the patients have full right to choose their providers. The overall satisfaction rate is as high as 80%.

Taiwanese hospitals and health services operate under very competitive conditions. The staff must continuously improve themselves to maintain their competitiveness. New projects or interventions targeted at hospitals have to be clearly defined, efficient and helpful to achieve clinical and managerial aims such as cost-saving, morale raising, better health gain or higher satisfaction.

### Different strategies at different levels

At the regional level and the organisational level, there are several strategies to facilitate effective learning and change. The HPH Network in Taiwan has translated the self-assessment tool and the standards as well as other material into Chinese. This includes a crosscheck of the WHO-HPH standards with the Taiwanese Hospital Accreditation Standards and points out comparable areas in which HPH self-assessment and improvement can help hospitals do better.



### CASE

Mr. Wu is the CEO at a teaching hospital. He has heard about the value-adding idea that a hospital can add to patients' health gain by proactively assessing their needs and systematically providing appropriate health promotion services. He thinks this is excellent both for the patients' benefit and for the transmission of the core professional value of healthcare to staff. However, Mr. Wu doesn't know how to get started. With limited time and resources, he asks if there is any existing guidance to follow, which will give the best chance of success.

Dr. Lee works at the same hospital. He has recently upgraded his competence in supporting patients who are trying to give up smoking. However, his clinic is very busy and Dr Lee is not sure he always remembers to ask about the patients' smoking status. Moreover, there is no place in the electronic information system to record the results, so Dr. Lee does not know whether he is improving. Dr. Lee seeks help from his department chief and IT personnel. Neither can change the system "solely for his personal need".

## Newcomer Programme to support implementation of WHO-HPH Standards

Mr. Wu can find the relevant guidance in the HPH Network. If his hospital is not an HPH member yet, but wants to join, he can benefit from the intensive Newcomer Programme established by the Taiwanese HPH Network. The network supports the implementation of the WHO-HPH Standards in upcoming and new member hospitals and health services through:

- HPH Core Courses in different geographic areas to introduce the trends and policy of quality management, contents and meaning of the standards, and to disseminate experiences of performing self-assessment and examples of best practices on the different standards;
- A site visit at the new member hospital by consultants; this includes the hospital's presentation on self-assessment, plan of organisational improvement and major health promotion projects, exchange of experiences, clarifying possible misinterpretations of standards, and giving comments and suggestions to support the hospital's improvement.

The Regional Taiwanese HPH Network supports all the member hospitals and health services through the following activities, which Mr. Wu also can benefit from:

- Exchange of experience and knowledge at conferences, workshops and other learning activities such as the annual selection of "Model HPH", "best practice in the redesign of delivery processes" and "best practice in the health promoting workplace", as well as through support to participate in the annual International HPH Conferences;
- Analyses of the collective results of all members' self-assessments, identification of common weaknesses and strengths, development of common improvement programmes for members, and monitoring of the change in self-assessment results.

## Organisational level

Hospital managers will not consider becoming HPH members unless they realise that health promotion is important to their hospitals and that the HPH Network can support them in doing a better job. At the organisational level, there are several things Mr. Wu can do to facilitate the process of self-assessment and effective change at the hospital.

As the hospital manager, Mr. Wu is recommended to identify and involve interested and competent staff members like Dr. Lee. Mr. Wu should, as soon as possible, shape the vision of becoming a health-adding organisation, articulate the meaning of that vision to staff, patients, community and the organisation itself, and make it visible and audible throughout the organisation. That will help employees like Dr. Lee to embark on quality assessment and improvement of their engagement in the process of change. Furthermore, Mr. Wu should:

- Designate a working group led by the superintendent or a deputy superintendent and a qualified person as the coordinator, encourage clinical and administrative departments to work together, and educate key personnel (e.g. by enabling them to attend the HPH core course);
- Start with staff health promotion and then continue to patients and the community by identifying their needs through assessments. Then report and discuss the results at hospital meetings;
- Perform self-assessment against WHO-HPH standards and point out existing activities, processes and successes as well as areas for improvement; invite experts from champion hospitals to share experiences (benchmarking), and allow de-



- partments to set their own goals or priorities;
- Lead by example, report progress to celebrate and problems to improve, encourage innovation and fun, provide competitions and prizes;
- Participate in HPH Network model hospital selection and international conferences.

## HPH Network in Taiwan and its HPH membership process

In general a National or Regional HPH membership includes membership of the International HPH Network, which has to be recommended and approved by the National or Regional Coordinator. Individual memberships are accepted only if there is no existing HPH Network in the Nation or Region. The National or Regional Networks can add specific membership criteria to the International criteria – as the Taiwanese Network (among others) has done.

The Taiwanese network has been the fastest growing in the International HPH Network. The number of HPH members in the Taiwanese Network has expanded from 5 to more than 60 members within 4 years of its establishment.

The membership process of the Taiwanese HPH Network has three steps:

1. When a hospital wants to become a member, it begins the membership process as a “preparatory member” in order to gain access to relevant materials and information on training courses.
2. The hospital performs a self-assessment against the WHO-HPH Standards, and applies for a site visit.
3. If the hospital passes the site visit (which usually is not difficult), it receives an International membership valid for four years. Renewal of membership requires continued participation in learning activities and re-assessment of 2 and 3.

As experience shows, Taiwanese hospitals welcome the International WHO-HPH standards. At an evaluation they said that “by checking the items one by one, we’re very glad to know that we are doing well enough; at the same time, we also know where we can improve. It saves a lot of time” – and that “performing self-assessment against the WHO standards makes the HPH concept clear and do-able. It enables hospitals to do the right things from the start”.

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Changing lifestyle and health behaviour should build on best evidence-based practice in the same way as diagnostics and treatments. The evidence-based platform includes the evidence itself, together with staff expertise and patient preferences. All together these three elements constitute Best Evidence-Based Practice in this field.

Previously, knowledge of the process of changing lifestyle and health behaviour was predominantly based on experiences and to some degree feelings. The outcome measurements often focused exclusively on satisfaction. Today the focus is on creating evidence-based practice, and the outcomes include hardcore factors like mortality, morbidity, complications, readmission to hospitals and length of stay, as well as satisfaction. This change in focus ensures a continuous development and an evaluation of new methods to approve sustainable and effective changes in lifestyle and health behaviour. It also ensures that only effective methods are used and that useless procedures are eliminated or replaced by effective procedures.

Most health care professionals are taught and trained in basic research methodology at the undergraduate level. In addition, research in this specific field requires interdisciplinarity and collaboration. Patients undergoing the process of change toward a better lifestyle or health behaviour also want to get the health gain related to this process. The clinicians, the nurses, the physiotherapists, the audiologists and all other health professionals involved in the process of change need to be able to recommend the best evidence-based intervention. To do this it is necessary to base the recommendations on the highest level of evidence and the best quality of research.

## 12.1 Evidence-based practice includes three main elements



### Best Evidence

There is a longstanding medical tradition of establishing evidence through quantitative research methodology. However, when it comes to engagement in the process of change there is a further need for interdisciplinary research, and the use of qualitative methods as well as quantitative. The last is especially relevant when it comes to staff competences and patient preferences.

Significance is closely related to establishment of evidence. In research, finding a significant result means that it has probably not occurred by chance alone. The conventional level of significance, i.e.  $p < 0.05$ , is the probability that a finding occurs less than 5 times in 100 by chance alone (1). The consequence is that 1 in 20 significant results originate only by chance. Therefore it is often recommended that studies should be repeated.

On the other hand, even repeated significance is not always sufficient to secure useful results in clinical daily life. Two different interventions for smoking cessation may both show significant effect, as this example shows:

#### EXAMPLE

A recent Cochrane review showed that a brief intervention including motivational interviewing techniques had a significant short-term effect on the cessation rate for smokers undergoing surgery.

The Gold Standard Programme (GSP) mentioned in chapter 9 is another example of an intervention showing a significant short-term effect on the cessation rate among smokers undergoing surgery (2).

Both interventions are evidence-based, but the GSP is far more effective than the brief intervention programme. This could easily be seen by a calculation of the number of patients needed to undergo intervention in order to have one patient stop smoking. In the example above, the number needed to treat (NNT) for

the brief intervention is 7 patients, while the NNT for the GSP is only 2. This means that the GSP is about 3 times more effective in spite of both programmes being of significance in the short term. Significance is important and required; nevertheless it is important to interpret carefully the relevance of the significance.

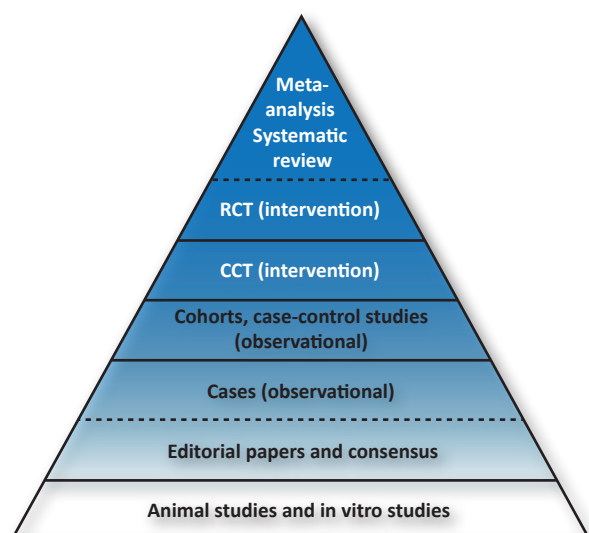
To further describe the differences between the two interventions, a brief intervention including motivational interviewing and nicotine replacement therapy neither changes the complication rate significantly after surgery nor the one-year cessation rate. In contrast the GSP is followed by a significant reduction in both postoperative complications and the number of smokers after one year.

## Level of evidence

The level of evidence is given by the study design, as shown in 12.2. It is easy to score the level of evidence by the pyramid presented by professor Martin Eccles and colleagues (3). The pyramid is classified with the highest level of evidence in the top. When it comes to intervention, observational studies are seldom sufficient. Therefore, you need to look for randomised clinical trials (RCT), which represent the highest level of evidence.

Many studies evaluating associations and correlations between different factors and outcomes are not ranked at the highest level of evidence. It means that interpretation of those results should be done very carefully. Nevertheless, many of the lower ranked study designs are very relevant, because they often generate new hypotheses to be tested in the design of RCTs.

**12.2 Categories of evidence.** The top three levels, representing evidence gathered through interventions, are all superior to studies based on observation, opinions and animal or in vitro studies.



## Quality Evaluation

In addition to evaluating the level of evidence it is always important to evaluate the quality of the study: if the quality is low, even a study ranking high in evidence level is seldom implementable or clinically relevant. High quality cannot compensate for low level of evidence and vice versa. It is important that future studies in this field should be at a high level of evidence as well as being of high quality.

Several scores have been developed to give the criteria for high quality. An often-used assessment form from the Cochrane Collaboration (4) is shown in 12.3. The quality is assessed by an individual evaluation of the domains listed in the table. There are no exact numbers or criteria for the different domains, but they all need to be considered.

### 12.3 Assessment of Quality in RCTs

- Inclusion rate
- Allocation of intervention
- Allocation concealment
- Blinding
- Incomplete data outcome
- Intention to treat
- Follow-up rates

## Staff Competences

Another important element in best evidence-based practice is the staff competences (figure 12.1). Competences include both knowledge and experience in a certain field. Therefore teaching and training of staff on how to engage into the process of change are crucial (see also chapter 10). The importance of competent staff has been shown repeatedly. Staff-related research often uses qualitative methodology; however, quantitative methods are also applicable in this area, as this example shows:

### EXAMPLE

Among patients from the Emergency Department of Internal Medicine 100 consecutive smokers were offered motivational interviewing by the staff nurses. Forty-seven of the 100 smokers accepted the offer and underwent the motivational interviewing. Nurses trained specifically in smoking cessation intervention offered the same intervention to another 100 smokers from the same department. Among those 100 smokers, 97 accepted the offer and had the motivational interviewing before leaving the department (5).

The use of clinical expertise and experience in helping to meet the needs and wishes of the patients as well as in conducting an intervention is highly relevant.

In addition, the lifestyle and health behaviour of the staff themselves are also important when supporting patients in relation to the changing process. If, for instance, health professionals were smokers this would influence the probability of their patients engaging in the process of giving up smoking. Staff members with a particular kind of unhealthy lifestyle or behaviour also overlook or neglect the opportunity to support patients in changing other kinds of lifestyle and health behaviour such as overweight patients and excessive drinkers (6).

However, the best evidence combined with highest level of staff competences will be insufficient if they do not allow for the patient's preferences.

## Patient preferences

Patient preferences are the last of the three important elements in best evidence-based practice. Even the best evidence combined with the highest level of staff competences is not sufficient if it does not fit into the patient's preferences. Best evidence-based practice should be seen as a combination of the three basic elements: best evidence, staff expertise and patient preference (7).

When it comes to changing lifestyle and health behaviour most patients want to undergo these changes and are relatively highly motivated to engage in the process of change:

### EXAMPLE

An interview with smokers undergoing pre-operative smoking cessation intervention as part of the surgical pathway revealed that the patients were satisfied and became further motivated by being offered this smoking cessation intervention programme (8). Another study has shown that half of the patients allocated to a control group were disappointed by not being offered the same smoking cessation intervention programme as the intervention group (9). This study showed that about 80 % of patients undergoing elective surgery wanted the hospital to support them in changing their lifestyle in relation to surgery (10).

ten think that you know what patients prefer, but it may be more relevant to ask the patients themselves. Their motivation and the positive attitude with which the patients meet you may be surprising.

Patient-driven research is a very new area of research where the patients themselves participate in the development of the hypothesis, the study design, the methods, the collection of data, the analysis and interpretation as well as writing or editing the scientific paper (11).

The patient perspective is an important addition to the more traditional way of performing research. The patient perspective has also become an implemented part of Cochrane systematic reviews.

The research methods most often used are qualitative studies. As health care professionals you may of-

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# Summary and Online Interactive Chapter

Besides acting as a summary of the textbook, this chapter also acts as an invitation to all readers to start using the Operational Model in their daily practice. The online chapter gives readers and users of the Operational Model the opportunity to share their knowledge and experiences of the Model. Further to this, the online chapter gives you as a user the opportunity to stay updated on new knowledge and development within the field.

As you have seen throughout the book, the Operational Model can be used in many settings with different groups of patients. The use of the Operational Model is highly applicable and easy to implement.

The LINE is the first tool to use when you engage in your patient's changing process. The LINE is a tool for opening the dialogue and a self-confidence ranking tool for the patient. Remember that the actual ranking is less important than the opportunity for the patient to reflect on the process that he or she is about to embark on.

The BOX gives the patient the opportunity to articulate his or her ambivalence towards the change and hereby reflect on the pros and cons of the consequences of a change in lifestyle or behaviour.

Where the LINE and the BOX are both tools used directly in the consultation or dialogue with the patient, the CIRCLE is a tool meant only for the health professional. The CIRCLE acts as an overview of the different stages a person will go through when he or she is undergoing the process of change.

Remember, the Operational Model is not an independent tool that can stand alone in practice. The Operational Model can be used in consultations and other dialogues, but the consultation should always be followed up with a referral to a tested programme.

## The online interactive chapter

In addition to the chapters presented in this book an interactive chapter has been developed online. This interactive chapter works as a setting for sharing of knowledge and experiences regarding the use of the Operational Model. The idea is that by filling out an online form at <http://www.whooc.org/opmodel> readers can share their experiences on the application of the Operational Model.

We would like to invite all present and future users of the Operational Model to elaborate on their use of the model. By sharing their experiences on how and to which patient group the model was applied, users may in turn inspire other readers and users.

The online interactive chapter makes possible a steady flow of updates and thus enables readers to keep up to date on the newest knowledge and evidence in the field of engagement in the processes of change.

*On the next page you will find a template, which you can also find online. We urge you to fill in the template online and in this way share your experiences with other users.*

<p><b>Written by:</b></p> <p>Title &amp; name:</p> <p>Affiliation (Hospital/Health service, Department, Clinic, etc.):</p> <p>Address:</p>	<p>Date of report:</p> <p>Email address:</p>
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**Patient/client/person Group**

What group was the Operational Model applied to?

How many times have you used the Operational Model?

**Setting for the use of the Operational Model**

In which settings have you applied the Operational Model? (Primary/secondary care, specialty, private/public, in- or outpatient, etc.):

What Process of Change were the patients/clients/ persons faced with (e.g. what was the purpose of the change in lifestyle or behaviour)?

How was the Operational Model used?


Which elements of the Operational Model were applied?

What programme were the patients/clients/persons referred to subsequently?

**Practical use**


How useful and applicable did you find the Operational Model:

*Understandable*



0 10

*Applicable*



0 10

What was the feed back from the patients/clients/persons faced with the Operational Model?

In your specific setting, what facilitated the Operational Model in your group of patients/ clients/persons?

Did you experience any barriers in your use of the Operational Model?

Do you have any recommendations for future users of the Operational Model?

<p>The fulfilment of this template is confirmed by Author (date &amp; signature):</p> <p>The fulfilment of this template is confirmed by Editor (date &amp; signature):</p>
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