


The  - method

INTERMED Complexity Assessment Grid
(IM CAG version 6)

Copyright by and Intellectual Property of INTERMED Foundation 2009

Content

- **Development and intellectual property**
- **Introduction to the INTERMED method**
- **Its structure**
- **The variables and their Clinical Anchor points**
- **Description of the variables and their interrelations**
- **The scoring of the variables**
- **The interpretation of the scoring leading to a management plan**
- **The collection of the required information through the interview**
- **List of English publications**

Copyright by and Intellectual Property of INTERMED Foundation 2009

Development and intellectual property

The goal of the INTERMED is to provide a rapid, yet comprehensive, assessment of an individual presenting for medical care that supports individual case planning and management and allows for the development of an empirical database on complex health care needs to support planning, evaluation, and research activities.

Since 1995 an international group (Huyse (NL), Lyons (USA), Stiefel (SW), Slaets (NL) and De Jonge (NL) ea) has synchronized their individual research and clinical strategies to develop an integrated approach towards the complex medically ill supported by an European grant¹. It has resulted in the development of the INTERMED-method: a practical, visualized approach to risk and needs management, including decision support and outcomes management²³. To ensure appropriate interprofessional communication –essential to integrated care- the risk and needs variables have been operationalized according to communimetric principles⁴, the risk and needs levels are visualized in colors (green, yellow, orange and red) and organized in a table (“grid”). For its assessment a structured interview has been developed⁵.

The development of the INTERMED-method is empirical based (see “List of publications”). Version 4 and version 5.1 were the versions used for the majority of population- and intervention-studies. In 2006 an overview of the method, including its interview, the scoring, the consequences for treatment and a compilation of existing research have been described⁶. Version 6 has been developed in 2008 and 2009 to solve a series of remaining ambiguities and to make the method more generic to be applicable for epidemiologic studies as well as primary and secondary care. There are 2 specialized versions that are currently in a process of validation; a *Geriatric version* and a *US Case Management version*. In addition there is a specialized pediatric version in development: the PIM CAG. The method is supported by a webservice (www.intermedfoundation.org).

The INTERMED foundation has registered intellectual property and copyright on the method and its related documents.

¹ Biomed1-HSR framework: The development of a Screening Instrument for the Detection of Psychosocial Risk Factors in patients admitted to general hospital wards. Grant-number: BMH1-CT93-1180

² Huyse FJ, Lyons JS, Stiefel FC, Slaets JPJ, de Jonge P, Fink P, Gans ROB, Guex P, Herzog Th, Lobo A, Smith GC and Strack van Schijndel R. "INTERMED": A method to assess health service needs: I. Development and reliability. *Gen Hosp Psychiatry* 21, 39-48, 1999

³ Stiefel FC, de Jonge P, Huyse FJ, Guex P, Slaets JPJ, Lyons JS, Spagnoli J and Vannotti M. "INTERMED": A method to assess health service needs: II. Results on its validity and clinical use. *Gen Hosp Psychiatry* 21, 49-56, 1999

⁴ Lyons JS. The complexity of communication in an environment with multiple disciplines and professionals: Communimetrics and decision support. *Med Clin N Am* 90 (2006);693-701

⁵ Huyse FJ, Lyons JS, Stiefel FC, Slaets JPJ, de Jonge P, Latour C: Operationalizing the Biopsychosocial Model. *The INTERMED*. Editorial. *Psychosomatics* 42-1:5-13, 2001

⁶ Huyse FJ and Stiefel Eds. Integrated care for the complex medically ill. *Medical Clinics of North America*. Elsevier Philadelphia July 2006.

Introduction to the INTERMED-method

In the literature relevant arguments have been presented why assessment and treatment of psychosocial co-morbidities should be integrated in the provision of general medical care⁷. Psychosocial co-morbidities - highly prevalent due to an increase in numbers of the elderly and of patients with chronic diseases - influence the outcome of various somatic diseases and are associated with (a risk for) excessive health care utilization, diminished quality of life, survival and compliance with treatments, which represents a major obstacle to effective medical care. Moreover, several symptoms co-occur in psychiatric and somatic syndromes: for example, some psychiatric disorders such as depression have somatic symptoms or physiological and behavioural mechanisms have been described surpassing the borders between somatic and psychiatric disciplines, such as between depression and coronary artery disease and diabetes mellitus. Finally, many risk factors for somatic and psychiatric diseases are shared, for example in the concept of frailty or in the metabolic syndrome.

Despite these arguments integrated care according to the bio-psycho-social model of disease has not been implemented in standard general health care, resulting in under-treatment of psychiatric and psychosocial co-morbidities. Although several attempts have been made to operationalize the bio-psycho-social model of disease and to develop related assessment instruments, efficient methods to use in general clinical care are still lacking. The issue of how to approach bio-psycho-social morbidity thus remains an important challenge.

The INTERMED-method aims to operationalize the bio-psycho-social model of disease and to fill the gap between general medical and mental health care. Its purpose is to improve healthcare providers awareness of patients integrated health risks and needs through its systematic assessment and representation in the Complexity Assessment Grid in order to counteract these risks and deliver preventive and thereby cost-effective care. The risks are predictive for negative outcomes of care.

The INTERMED is an interview-based instrument to assess case and care complexity and allows a quick evaluation of bio-psycho-social health risks and the related treatment planning. In the following chapters the core-characteristic of the INTERMED-method are described.

⁷ Amongst others, these have been extensively described in a series of articles by an international group of authors in a book which articles can be accessed through Pubmed called **“Integrated Care for the Complex Medically Ill” Huysse FJ and Stiefel FC in Medical Clinics of North America Elsevier June 2006.**

Its structure

The primary goal of the IM-method is to improve the flow of information and the communication with complex patients and among their health providers. Basic to this goal is the integrated organisation of the information in a grid and its measurement/scoring with communimetric principles⁸. Here the description of the Complexity Assessment Grid follows:

- The grid has horizontal rows and vertical columns
- The rows are the “Systems” referring to the general systems approach
- The “Columns” divide the systems in time segments: “History”, “Current State” and “Vulnerability/Prognosis”). Thereby the columns create in every “system” three “Domains”
- The “Domains” contain “Variables” describing “Health Risks and Needs”
- The “Variables” are divided in 4 items for scoring leading to a risk- and need level defined by “Clinical Anchor Points”
- These variables are:

Chronicity	Is patient known with physical illness/disease
Diagnostic Dilemma	Were physical symptoms clarified
Symptom severity/Impairment	Physical functioning
Diagnostic/Therapeutic challenge	Complexity of current physical problem
Barriers to coping	Interferences of coping with medical problems
Psychiatric dysfunction	Psychiatric history
Resistance to treatment	Capacity to collaborate with treatment
Psychiatric symptoms	Severity of symptoms
Job and Leisure Activities	Social integration reflected by work and leisure
Social dysfunction	Quality of relations
Residential instability	Stability of housing
Poor Social Support	Availability of help
Access	Barriers such as insurance, distance, language and culture
Treatment Experience	Trust in health professionals
Organization of Care	Numbers and sectors of participating health professionals
Coordination of Care	Quality of communication and coordination

⁸ Lyons JS (2006). The complexity of communication in an environment with multiple disciplines and professionals: Communimerics and decision support. Med Clin N Am 90:693-701.

It leads to the following grid

	History	Current State	Vulnerabilities
Biological	Chronicity <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Severity of symptoms <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Complications and life-threat <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>
	Diagnostic dilemma <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Diagnostic challenge <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	
Psychological	Restrictions in coping <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Resistance to treatment <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Mental health threat <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>
	Psychiatric dysfunction <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Psychiatric symptoms <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	
Social	Restrictions in integration <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Residential instability <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Social vulnerability <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>
	Social dysfunctioning <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Restrictions of network <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	
Health System	Intensity of treatment <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Organization of care <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Coordination of healthcare <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>
	Treatment experience <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	Appropriateness of referral <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="text"/>	

Copyright by and Intellectual Property of INTERIM

The variables and their Clinical Anchor points

Biological

Chronicity (HB1) (History)

Explanation

- 0 - Less than 3 months of physical dysfunction
- 1 - More than 3 months of physical dysfunction or several periods of less than 3 months
- 2 - A chronic disease
- 3 - Several chronic diseases

Diagnostic Dilemma (HB2) (History)

Explanation

- 0 - No periods of diagnostic complexity
- 1 - Diagnosis and etiology was clarified quickly
- 2 - Diagnostic dilemma solved but only with considerable diagnostic effort
- 3 - Diagnostic dilemma not solved despite considerable diagnostic efforts

Symptom Severity/Impairment (CB1) (Current State)

Explanation

- 0 - No symptoms or symptoms reversible without intensive medical efforts
- 1 - Mild but notable symptoms, which do not interfere with current functioning
- 2 - Moderate to severe symptoms, which interfere with current functioning
- 3 - Severe symptoms leading to inability to perform any functional activities

Diagnostic/Therapeutic Challenge (CB2) (Current State)

Explanation

- 0 - Clear diagnoses and/or uncomplicated treatment
- 1 - Clear differential diagnoses and/or diagnosis expected with clear treatments
- 2 - Difficult to diagnose and treat, physical cause/origin and treatment expected
- 3 - Difficult to diagnose or treat, other issues than physical causes interfering with the diagnostic and therapeutic process

Complications and Life Threat (VB) (Vulnerabilities)

Explanation

- ? - Unknown
- 0 - No risk of limitations in activities of daily living
- 1 - Mild risk of limitations in activities of daily living
- 2 - Moderate risk of permanent and/or substantial limitations of activities in daily living
- 3 - Severe risk of physical complications with serious permanent functional deficits and/or dying

Copyright by and Intellectual Property of INTERMED Foundation 2009

Psychological

Barriers to Coping (HP1) (History)

Explanation

- 0 - Ability to manage stress, such as through support seeking or hobbies
- 1 - Restricted coping skills, such as need of control, illness denial, or irritability
- 2 - Impaired coping skills, such as non-productive complaining or substance abuse but without serious impact on medical condition, mental health, or social situation
- 3 - Minimal coping skills, manifest by destructive behaviors, such as substance dependence, psychiatric illness, self-mutilation, or attempted suicide

Psychiatric Dysfunction (HP2) (History)

Explanation

- 0 - No psychiatric dysfunction
- 1 - Psychiatric dysfunction without clear effects on daily function
- 2 - Psychiatric dysfunction with clear effects on daily function
- 3 - Psychiatric admission(s) and/or permanent effects on daily function

Resistance to Treatment (CP1) (Current State)

Explanation

- 0 - Interested in receiving treatment and willing to cooperate actively
- 1 - Some ambivalence though willing to cooperate with treatment
- 2 - Considerable resistance, such as non-adherence with hostility or indifference towards health care professionals and/or treatments
- 3 - Active resistance to medical care

Psychiatric Symptoms (CP2) (Current State)

Explanation

- 0 - No psychiatric symptoms
- 1 - Mild psychiatric symptoms, such as problems with concentration or feeling tense
- 2 - Moderate psychiatric symptoms, such as anxiety, depression or mild cognitive impairment
- 3 - Severe psychiatric symptoms and/or behavioral disturbances, such as violence, self-inflicted harm, delirium, psychosis, or mania

Mental Health Threat (VP) (Vulnerabilities)

Explanation

- 0 - No risk of psychiatric disorder
- 1 - Mild risk of psychiatric symptoms, such as stress, anxiety, feeling blue, substance abuse or cognitive disturbance; mild risk of treatment resistance (ambivalence)
- 2 - Moderate risk of psychiatric disorder requiring psychiatric care; moderate risk of treatment resistance
- 3 - Severe risk of psychiatric disorder requiring frequent ER-visits and/or hospital admissions; risk of refusal of treatment for serious psychiatric disorder

Copyright by and Intellectual Property of NERMED Foundation 2009

Social

Job and Leisure Problems (HS1) (History)

Explanation

- 0 - A job (including housekeeping, retirement, studying) and having leisure activities
- 1 - A job (including housekeeping, retirement, studying) without leisure activities
- 2 - Unemployed now and for at least 6 month with leisure activities
- 3 - Unemployed now and for at least 6 month without leisure activities

Social Dysfunction (HS2) (History)

Explanation

- 0 - No social disruption
- 1 - Mild social dysfunction; interpersonal problems
- 2 - Moderate social dysfunction, such as inability to initiate or maintain social relations
- 3 - Severe social dysfunction, such as involvement in disruptive social relations or social isolation

Residential Instability (CS1) (Current State)

Explanation

- 0 - Stable housing; fully capable of independent living
- 1 - Stable housing with support of others, e.g. family, home care, or an institutional setting
- 2 - Unstable housing, e.g. no support at home or living in a shelter; change of current living situation is required
- 3 - No current satisfactory housing, e.g. transient housing or dangerous environment; immediate change is necessary

Poor Social Support (CS2) (Current State)

Explanation

- 0 - Assistance readily available from family, friends, and/or acquaintances, such as work colleagues, at all times
- 1 - Assistance available from family, friends, and/or acquaintances, such as work colleagues, but possible delays
- 2 - Limited assistance readily available from family, friends, and/or acquaintances, such as work colleagues
- 3 - No assistance readily available from family, friends, and/or acquaintances, such as work colleagues, at all times

Social Vulnerability (VS) (Vulnerabilities)

Explanation

- 0 - No risk of changes in the living situation; adequate social support and integration
- 1 - No risk of changes in the living situation but additional social support and/or increased integration is needed, e.g. home health care
- 2 - Risk of need for temporary or permanent admission to facility/institution in the foreseeable future
- 3 - Risk of need for temporary or permanent admission to facility/institution now

Copyright by and Intellectual Property of INTELLECTED FOUNDATION 2009

Health System

Access to Care (HHS1) (History)

Explanation

- 0 - Adequate access to care
- 1 - Some limitation in access to care due to insurance problems, geographical reasons, language, or cultural barriers
- 2 - Difficulties in access to care due to insurance problems, geographical reasons, language, or cultural barriers
- 3 - No adequate access to care due to insurance problems, geographical reasons, language, or cultural barriers

Treatment Experience (HHS2) (History)

Explanation

- 0 - No problems with healthcare professionals
- 1 - Negative experience with healthcare professionals (self or relatives)
- 2 - Requests for second opinions or changing doctors more than once; multiple providers; trouble keeping consistent and/or preferred provider(s)
- 3 - Repeated conflicts with doctors, frequent ER-visits, or involuntary admissions; forced to stay with undesirable provider due to cost, provider network options, or other reasons

Organization of Care (CHS1) (Current State)

Explanation

- 0 - Primary care/General practitioner only
- 1 - Specialist services either in the general health care or mental health/SUD care
- 2 - Both general health care and MH/SUD care services
- 3 - Hospitalization or transfer from a hospital of patients, who qualify in ambulatory care on Level 2

Coordination of Care (CHS2) (Current State)

Explanation

- 0 - Complete practitioner communication and good coordination of care
- 1 - Limited practitioner communication and coordination of care; primary care physician coordinates medical and MH/SUD services
- 2 - Poor communication and coordination of care among practitioners; no routine primary care physician
- 3 - No communication and coordination of care among practitioners; primary ER use to meet non-emergent health needs

Health System Impediments (VHS) (Vulnerabilities)

Explanation

- ? - Unknown
- 0 - No risk of impediments to coordinated physical and MH/SUD care
- 1 - Mild risk of impediments to care, e.g. insurance restrictions, distant service access, limited provider communication and/or care coordination
- 2 - Moderate risk of impediments to care, e.g. potential insurance loss, inconsistent practitioners, communication barriers
- 3 - Severe risk of impediments to care, e.g. little or no insurance, resistance to communication and coordination among providers

Description of the different variables and their interrelations

BIOLOGICAL AXIS OR SYSTEM

History

Risks related to the patient's physical history over the past five years are documented here. They concern episodes of physical complaints, existing chronic diseases and how these complaints and diseases were diagnosed.

“Chronicity”

This variable concerns the existence of physical complaints or diseases. The risk scores are based on the following information: Has the patient suffered any periods of physical complaints or diseases over the past five years. Did these complaints or diseases disappear, or were diseases diagnosed requiring chronic care such as diabetes, heart failure, kidney diseases, rheumatic diseases or Parkinson's disease. In this risk also chronic diseases existing longer than five years are documented.

Relation to other variables: Chronic diseases imply that patients have to develop, or have developed, a long-term relation with healthcare personnel and that the quality of this relation is very important. The quality of this relation is documented in the risk “Treatment experience”. In addition, chronic illness implies that patients have to cope with their illness (“Barriers to Coping”) and to adhere to treatment regimens (“Resistance to Treatment”). Epidemiological evidence reports that chronic diseases have a tendency to cluster. A third of patients with a chronic disease have several chronic diseases. An example is the combination of diabetes, heart failure and kidney diseases. This phenomenon is called “multi morbidity”. A crucial aspect in the treatment of these patients with multiple morbidities is the adjustment of their individual treatments (“Organization of Care” and “Coordination of care”). Recently an elderly patient with multi morbidity was discussed in JAMA⁹. If she complied with all the recommendations of the different specialists who treated her, it would be a full time job to adhere to their treatment recommendations, including the prevention of their further development. As illustrated by this example the focus of treatment of patients with chronic diseases should be coordinated care (“Health System Impediments”). Moreover, as epidemiological research reports, psychiatric disorders are significantly more frequent associated with chronic physical diseases (“Psychiatric Dysfunction” and “Psychiatric Symptoms”). For example, the prevalence of depressive disorders in the general population is about 4%, in patients with diabetes it is between 11 and 13%, in patients with heart failure around 15%, and in patients with kidney disease, cancer or HIV it can increase to 30%¹⁰. The most important effect of these psychiatric disorders is their negative impact on the adherence of the patient to the treatment (“Resistance to Treatment”) and diagnostic and therapeutic (drug) interactions (“Diagnostic/Therapeutic Challenge”). Another risk

⁹ Boyd CM, Darer J, Boult C, ea.. Clinical practice guidelines and quality of care for older patients with multiple co-morbid disease. Implications for pay per performance. *JAMA* 2005;294:716-724

¹⁰ Such relation –a higher frequency of psychiatric disorders in patients with chronic illness- is also seen in anxiety disorders, substance use disorders and dementia in the frail elderly.

are the consequences for the medical treatment for instance in patients with a depressive disorder who are sero-positive or have AIDS (“Diagnostic/Therapeutic challenge”). Therefore, scoring one or several chronic diseases on this risk should automatically lead to a treatment plan including the principles of chronic care as formulated by Wagner: longitudinal multidisciplinary care taking into account psychosocial components, and mutually adjusted between the several participating professionals, focussing on adherence to therapy, co-treatment of psychiatric disorder and focus on the quality of the relation with the patient.

“Diagnostic dilemma”

This variable concerns whether or not the patient has been seeking care for physical complaints over the past five years, and whether or not these complaints have been resolved. Physical complaints may indicate a physical disease. However, the majority of physical complaints (about 70% in patients in primary care) gradually disappear and cannot be identified by doctors as a disease¹¹. This can be related to several causes. Many persons are having waxing and waning physical complaints without any sign of a disease. People may also have physical complaints that cannot be linked to a disease as the disease did not have enough illness expression to be determined at the moment of the investigation for example in illnesses/diseases, which develop very slowly and with diverse symptoms patterns. Often these concern system diseases like SLE or rheumatoid diseases. In addition, physical complaints can be part of the symptom pattern of a psychiatric disorder; for example patients with a panic disorder have in their own experience during an panic attack only physical complaints such as pain on the breast, dizziness, a dry mouth or tingling sensations in their extremities; or patients with a depressive disorder have many physical complaints too, like fatigue and pain. Research reports that patients with more than four complaints of pain whether or not these complaints are caused by a physical illness such as cancer, suffer in about 50% of a depressive disorder.

Relation to other variables: Consequently, unresolved physical complaints can be an indication for undetected complex physical illness (“Diagnostic Challenge”); however more often it refers to the risk of a longer lasting or current psychiatric disorder (“Psychiatric Dysfunction” and “Psychiatric Symptoms”). In addition, it is most important in patients with unexplained physical complaints to consider the interaction with health care personnel, and patients’ trust in health care delivery (“Treatment Experience”).

¹¹ Jackson JL, Passamonti ML. The Outcomes Among Patients Presenting in Primary Care with Physical Symptoms at 5 Years. JGIM. 2005;20.

Current state

Here the expression of physical complaints, the related impairment, and their influence on activities of daily living is described. In addition, diagnostic questions or complex treatment strategies is documented.

“Symptoms severity/impairment”

The severity of a patient’s physical complaints is an important determinant of patient’s capacity to function independently. In case of an acute illness most often these symptoms will disappear or diminish, while in an existing chronic disease these symptoms might disappear, remain or increase.

Relation to other variables: This future risk is specified in the variable describing the Vulnerability/Prognosis: “Complications and Life Threat”. The more serious the physical complaints and the related impairment are, the more important is the planning of a rehabilitation period to prevent the risk of becoming dependent of family and friends (“Poor social support”), or in need of additional arrangements and care, such as home care or even a change of residence (“Residential instability” and “Social Vulnerability”).

“Diagnostic/therapeutic challenge”

Here, a risk comparable to the risk in the domain History “Diagnostic Dilemma” is described. Patients may not have physical symptoms that result in diagnostic questions and the treatment for their disease might be clear and unequivocal. However, it might be that physical complaints are related to a complex physical disorder (rare or systemic disease) that requires extensive diagnostic evaluation or more complex treatment regimes or to a psychiatric disorder and/or psychosocial stressors. This is an additional increase of the complexity of the treatment of the patient, since the patient must become convinced that other “causes” of his physical complaints should be explored.

Relation to other variables: There is a relation between this risk “Diagnostic/Therapeutic Challenge” and the risks “Diagnostic Dilemma”, “Barriers to coping”, “Psychiatric Dysfunction” and “Psychiatric Symptoms”.

Vulnerability/prognosis

“Complications and Life Threat”

Whilst for the scoring of the variables of the “History” and “Current State” columns the information collected in the interview was crucial, this variable build on the risks described in “History” and “Current State” into account and translates these in the health providers (your) understanding of the needs for the period of three to six months to come.

Relation to other variables: It is self evident that the higher this risk is, the higher the risk of becoming dependent of others or facilities (“Poor Social Support” and “Residential Instability”).

PSYCHOLOGICAL AXIS OR SYSTEM

History

Here risks impeding patients coping capacities and psychic stability are described.

“Barriers to Coping”

Patient’s style of coping has an important impact on the way patients experience their physical diseases and express their complaints, as well as the way they experience health professionals (“Diagnostic Dilemma”, “Diagnostic Challenge”, “Treatment Resistance” and “Treatment Experience”). Whether or not the patient is capable to face problems in an appropriate way, such as through seeking help and support from others, or prevents brooding by seeking distraction, is assessed here. An important prerequisite for adequate coping is the adequacy of cognitive processes. Patients with a restricted intellectual capacity such as being mentally retarded, patients with dementia or brain injury suffer of impaired coping and can react obstructive, anxious or enraged, as they cannot grasp the impact and consequences of their problems. In addition, patients with personality disorders suffer of impaired coping; for instance such patients might react with quarrels, might ignoring problems or blame others. Moreover, in patients with personality disorders the existence of substance abuse such as alcohol, drugs and psychoactive substances are an important barrier to coping. Finally, automutilation and suicidal ideation are important indicators of a diminished capacity of coping.

Relation to other variables: Patient’s coping capacity has an important impact on patient’s capacity to work (“Job and Leisure problems”) and their relations with others (“Social Dysfunction”).

“Psychiatric dysfunction”

Here the risk of psychiatric vulnerability is described. Since epidemiological research reports that patients with psychiatric disorders, especially depression, in their past have an increased vulnerability for new episodes of the disorder, this variable is rated in a lifetime perspective. This can be explained by the following example: when in a patient during pregnancy diabetes manifests itself and disappears after pregnancy, it is a sign of an increased risk to develop diabetes in a later phase of life. This example is comparable to the appearance of mood disorders during pregnancy. For instance, a lady in her fifties, who is referred for complaints diagnosed as cancer, who in the period of her pregnancy suffered of a period of depression, is at an increased risk for a new episode of depression. It happens that patients treated successfully for depression or an anxiety disorder earlier in their lives do not get appropriate treatment at recurrence of those symptoms.

Relation to other variables: Patients who have a long-lasting psychological vulnerability have often impaired coping skills (“Barriers to Coping”) and have an increased risk of recurrence. In patients at risk for the development of dementia due to memory problems and who were functioning psychologically well during their lives, these symptoms are primarily scored under (“Psychiatric Symptoms”) part of Current State. (See there). However, when these cognitive complaints exist longer and had a real impact on the psychological functioning, these are also scored under this variable (“Psychiatric Dysfunction”).

Current state

Here one of the most important risks with a negative impact on the outcome of care is documented: The patient's willingness and capability to collaborate with treatment and the risk for a presenting psychiatric disorder?

“Resistance to treatment”

This variable evaluates the patient capacity to comply with treatment recommendations, including drugs, health behaviour and life-style.

Relation to other variables: Patient's collaboration is determined by multiple aspect such as patient's capacity to face his problems (“Barriers to Coping”), earlier negative experiences with health care personnel (“Treatment Experiences”), the complexity of treatment recommended and the adjustment between health care providers (“Organization of Care” and “Coordination of Care”). Of importance in some countries, having health insurance is a prerequisite for a patient to be able to collaborate in the care needed (“Access to Care”). The variable “Psychiatric Symptoms” describes whether the patient has complaints indicative of a current psychiatric disorder. It is important to distinguish between mild symptoms such as being tense, feeling blue, unable to concentrate or problems with memory, symptoms everybody every now and then may have, or symptoms that have an influence on daily functioning. When a patient has several complaints and if these complaints exist most of the day or week or appear in episodes with a major impact on patient's functioning, there is an increased probability of the existence of a psychiatric disorder. This risk for medical outcome is even less favourable when there also are behavioural problems such as bouts of aggression. Epidemiological research has reported over and over again that psychiatric disturbances depression in combination with physical diseases is related to negative outcomes of illness and increased morbidity and mortality. For instance in patients with diabetes and depression, impaired self care, increased smoking, unhealthy diet behaviour, decreased physical exercise, lower quality of life and higher HbA-1C are reported than in diabetic patients without depression. Adequate care for mental disorders such as a depression is related to “Access of Care”, “Organization of Care” and “Coordination of Care”.

Vulnerability/prognosis

“Mental Health Threat”: With the data collected in the “History” and “Current State” domains, one determines patient's mental needs (“Vulnerability/prognosis”), including patient's capacity to collaborate with the treatment:

SOCIAL AXIS OR SYSTEM

History

The level of patient's social embedment is described on the basis on his availability of work, leisure activities and the quality of his relations.

“Job and Leisure Problems”

This variable documents whether or not the patient has a job and whether or not he has leisure activities. Reading books or having leisure activities at home, which not really contribute to social relations, are regarded still as a decreased risk as people are able to enjoy themselves actively.

Relation to other variables: Social class, social embedment and work are – as is reported in research- important determinants of the outcome of care. This can be related to several other risks. Patient's understanding his illness and health can be influenced by another cultural background (“Access to Care” and “Barriers to Coping”), which influences patient's capacity to adherence to treatment (“Resistance to Treatment”). Another important factor is that patients with poor social circumstances often have problems with access to care due to inadequate insurances or financial problems (“Access to Care” and “Organization of Care”).

“Social Dysfunction”

This variable describes the threats to the quality of patient's relationships. Having conflicts is a part of human relationships. Having repeated conflicts in several relations such as partner, work, and friends can be seen as an increased risk for negative health outcomes of patients.

Relation to other variables: Not being able to start or maintain relationships as can be seen in patients with personality disorder or cognitive decline (“Barriers to coping”, “Psychiatric dysfunction”), can be a risk that should be taken into account in the treatment plan as it leads to a complicated relationship with the health care system. Repeated involvement in disruptive social relationships including repetitive physical aggressive acts can be a sign of a personality disorder which coincides with “Barriers to Coping” as well as the relationship with health care personnel (“Treatment Experience” and “Resistance to Treatment”).

Current state

Here risks for impaired medical outcome related to the stability of patient's current living situation and the strength of their social network are described.

“Residential Instability”

This variable describes whether patient is capable to live independently or whether the patient is only able to stay at home as a result of the support of others. For instance in case of an elderly suffering of cognitive decline or a physical handicap who is able to stay at home due to the support of a healthy partner. If a person is not adequately supported this could lead to filthiness and not being able to take care of themselves, serious self-neglect as can also be seen in patients with psychosis or addiction

Relation to other variables:

It is evident that a poor and instable housing situation does not contribute to a beneficial outcome of illness, specifically if good self care such as in diabetes is required (“Chronicity” and “Resistance to Treatment”) and is most negative in patients with chronic illnesses where compliance is importance. On the other side coping disabilities and psychiatric morbidity (“Barriers to Coping” and “Psychiatric Dysfunction”) have an effect on patients' capacity to live on oneself.

“Poor Social Support”

This variable describes the risk of impoverished social embedment in terms of patient's social network. The assessment of this variable takes the availability of next of kin, family, friends and possibly colleagues into account.

Relation to other variables: Social support has been identified as one of the most important factors for coping with illness, psychiatric disturbances and medical outcome (“Barriers to coping”, “Chronicity” and “Symptoms Severity/Impairment”).

Vulnerability/prognosis

Here possible threats to patient's social stability are described and the related care needs. Such risks could lead to interventions, including additional care at home or temporarily or permanent admission to a facility or institution.

HEALTH CARE SYSTEM

History

In this domain access to care and the level of trust in health care professionals are described.

“Access to Care”

This variable describes impairment of access due to problems with insurance, the distance to care facilities, and language and cultural barriers.

Relation to other variables: This variable is strongly related to social class and stability (“Job and Leisure Problems”, “Social Dysfunction” and “Residential Instability”) and the existence of more serious psychiatric disorders and substance abuse (“Psychiatric Dysfunction” and “Barriers to Coping”). It is an important predictor of the outcome of care, since no access to care or only ad hoc treatment in emergency facilities hamper an adequate management of the disease.

“Treatment Experience”

This variable describes the experienced quality of the relationships with health care personnel. Simply put, past experience is a good predictor for the quality of the future relationships with health care personnel. Bad experiences with health care personnel might have a negative impact on the outcome of care. This could be related to patient’s own experiences but could also be related to experiences of his next of kin or good friends. It might be related to misdiagnoses or the feeling of not having been treated respectfully or with lack of understanding.

Relation to other variables: Such disturbances might increase requests for second opinions, changing contacts with health care providers or the use of the emergency rooms as primary care facilities. From a psychiatric perspective patients can have such serious disturbances of their psychic equilibrium that a threat for patient’s self or other exists and an involuntary admission becomes necessary, which often has a negative impact on patient’s treatment experience. In such patients there are also increased risks on other variables of the psychological system, such as “Psychiatric Dysfunction”, “Barriers to Coping”, “Psychiatric Symptoms” and “Resistance to Treatment”.

Current state

Here the availability of health care facilities and the level of coordination between health care providers are described.

“Organization of Care”

The variable describes the risks related to the number and types of health care professional involved and the care system they belong to (general health care, mental health care and substance use care). The more persons and services involved in the treatment of the patient, the more important the mutual adjustment amongst providers becomes. Patients often report lack of such a mutual adjustment of care. In addition the fragmentation of health care in a general health care and separate mental health care and substance use facilities increases this problem. This is specifically true when patients with both physical- as well as mental and substance use providers are admitted. Whether it is the US system¹² or health care systems in other countries, in most governmental reports reviewing the care, the separation of general health care, mental health care and substance use care is regarded as a major problem for the development of well organized patient oriented care. This is not only the case for the described division between general health care and mental health care, but for the division between medical specialties.

Relation to other variables: The relation with the other variables, specifically from the biological and psychological domain, is almost linear: the more risks and needs in these areas the more complex the organization of care should or will be as well as the need for coordinated care (“Coordination of Care”).

“Coordination of Care”

This variable reports the risk of lacking mutual adjustment between health care providers, which might include lack of access to each other documentation including psychiatric information or lack of or inadequate coordination of care, including the need for case-management.

Relation to other variables: The relation with other variables is comparable with those described under “Organization of Care”. The higher the risk of a complex treatment system (“Organization of Care”) the higher the need of well-coordinated care being crucial for trust in healthcare providers (“Treatment Experience”), appropriate compliance with care (“Resistance to Treatment”) and subsequent optimal outcomes of care.

Vulnerability/Prognosis

“Health System Impediments”

This variable compiles the risks as described in the domain history and current state that interfere with good coordinated care and the related needs. This variable should be scored in the perspective of the future need of coordinated care.

¹² Institute of medicine (2001) Crossing the quality chasm: a new health system for the 21st century. Committee on Quality of Health Care in America. National Academy Press, Washington DC

The Scoring of the variables and its interpretation

The scoring

For each variable, specific clinical anchor points were defined to facilitate reliable scoring. The scores on the variables can be summed up to a total score ranging from 0 to 60 and reflecting the level of complexity of the case.

There are 2 basic rules for the scoring:

1. For each variable the clinical information collected should be matched with the information described in the clinical anchor points of the specific variable. An optimal match should be found, and
2. In case of obscurity due to for instance pertinent information, which cannot be matched, the expected level of complexity resulting from this clinical fact should guide the scoring.

The interpretation of the scores

The following considerations are important whilst interpreting the scores. Central to the process is to get both the patient and a multidisciplinary team activated to provide the optimal intensity of care needed to improve outcomes.

The individual scores

The linkage of clinical information collected during the interview with a scoring leads to an action level. Scores of 2 and 3 deserve action; scores of 1 evaluation. However, though reaction to the individual risks are necessary. Core to integrated care is the synthesis of these actions into a coherent treatment plan. The following provides you with consideration to be taken into account when developing a coherent treatment plan.

The total score

The total score is the (first/main) indicator of the level of complexity of a patient. Research with the IM-method has reported a positive correlation between the score and negative outcomes of care. In all population the IM-score predicted negative outcomes, for instance a high HbA-1C in diabetes patients, a long length of stay in internal medicine inpatients, or death in dialysis patients. Based on the analyses of clinical data collected in a sample of admitted internal medicine patients, a threshold for complexity was formulated: beyond 20 being complex meaning that there is a need for integrated care¹³. In a latent class analysis of data collected in several studies in a variety of settings (internal medicine, neurology, diabetes, rheumatology, nephrology, psychiatric consult services; n=1050), three populations with different levels of complexity could be discerned: non-complex (<21), borderline complex (21 and 30) and complex (>30)¹⁴. The complex group is the group of patients who

¹³ de Jonge P, Bauer I, Huyse FJ, Latour CH. Medical inpatients at risk of extended hospital stay and poor discharge health status: detection with COMPRI and INTERMED. *Psychosom Med.* 2003;65(4):534-41.

¹⁴ Huyse FJ.. Farewell to C-L? Time for a change? *J Psychosom Res.* 2009 Jun;66(6):541-4.

deserve/need case-management, implying multidisciplinary coordinated long-term care. The patients and their providers in the borderline group will benefit of the assessment itself, the structure for collaboration that is a result of the assessment as well as additional consults when needed. The process of integrated care will benefit when in its initiation it is supported by a case-manager. In the populations assessed, the group of C-L patients had the largest proportion of complex patients (70%), patients with diabetes follow (50%) and dialyses patients had 30% complex patients. In some populations there are rather large proportions of patients with borderline complexity, such as in nephrology and rheumatology patients. From a general systems perspective, populations with many patients with borderline complexity are of interest as the assessment and interpretation of their complexity will reduce their complexity and improve the capacity of health professionals to arrange appropriate treatment. Fritz Stiefels' group from Lausanne Switzerland published the results of a RCT in diabetes and rheumatoid arthritis patients¹⁵. Patients who scored beyond a defined level of complexity (IM score > 20) were included and randomized. In this group more than 50% of the patients qualified for the formal psychiatric diagnosis of depression. An individualized multifaceted (complex) intervention was designed and carried into effect on the basis of their risk-profile. Amongst others the intervention resulted in a significant reduction of depression to below 25% and a reduction of the readmission rate in the rheumatoid arthritis group.

Clusters of risks¹⁶

Elevated risks can cluster and can be seen as broader patterns of risks, which are interrelated. When recognized it structures the approach more effectively as it takes the interrelations of the risk into account. In clinical practice the recognition of such patterns structure the management approach into an integrated strategy. In a cluster analysis of the data collected in the same population described above, the following 6 dimensions were discerned. One can see these as main patterns of risks to be approached in various chronic populations:

Physical vulnerability: Patients with chronic diseases [Chronicity scores 2 and 3] are physically more vulnerable [Complications and Life Threat scores 2 and 3]. In those patients it is important that appropriate physical care is arranged and/or effectuated. Rehabilitation and (maintenance) physiotherapy should be considered as well as life-style recommendations. In case of multiple physical disorders, mutual adjustment between providers is essential. Finally, patients might become so vulnerable that palliative or terminal; care should be initiated.

Physical dependency: Patients with physical restrictions [Symptom Severity/Impairment] might become dependent, specifically those who are socially vulnerable (Residential Instability scores 1, 2 and 3; and Poor social support scores 2 and 3). These patients either require additional care to be able to stay at home or might be in need of placement to prevent more serious deterioration at home (Social vulnerability scores). It is evident that patients with this kind of vulnerability are more

¹⁵ Stiefel FC, Zdrojewski C, Bel Hadj F ea (2008). Effects of a multifaceted psychiatric intervention targeted for the complex medically ill; a randomized controlled trial. *Psychother Psychosom* 77:247-256.

¹⁶ Clusters of patients and clusters of risks. Internal publication IMF Huysse and de Jonge 2002.

in need of coordinated care as several mutual adjustments between providers and institutes might be necessary to keep a patient as independent as possible or provide the best institutional facility.

Psychological vulnerability: The core of this factor is the current psychological state of the patients (Psychiatric symptoms scores 1, 2 and 3) and the risk of further psychological deterioration. Past psychological functioning both on a level of coping, including substance abuse (Barriers to coping scores 2 and 3), as well as the existence of earlier periods of psychiatric symptoms (Psychiatric dysfunction scores 1, 2 and 3) contribute to the factor. They all contribute to patients' "Mental Health Threat" and the related need of treatment (scores 2 and 3) or prevention (score 1) as well as need for coordinated care (Health System Impediments scores 2 and 3).

Social functioning: This factor reflects patients capacity to function in an integrated way in the society (Job and leisure problems scores 2 and 3) and how isolated they are (Poor social support scores 2 and 3) or how many conflicts they have (Social Dysfunction scores 2 and 3). This factor does not have a strong relation with "Social Vulnerability", the need for additional help and institutionalisation. The lower contribution of this variable to the factor can be explained in the following way: not every patient, who social dysfunction socially is in need of or willing to accept an intervention.

Diagnostic complexity: This factor reflects the increasing complexity of diagnosis and treatment in patients with a combination of physical and psychological symptoms (Diagnostic Dilemma and Diagnostic/Therapeutic Challenge scores 2 and 3). The severity of the symptoms, both on a physical level and a psychological level (Symptom Severity/Impairment and Psychiatric Symptoms) do contribute though less outspoken. Although it is needed to have symptoms to have a diagnostic problem, the intensity of dysfunction is not necessarily related to the complexity of diagnosis. To consider a psychiatric disorder, psychological symptoms are needed. Yet in somatisation though there is illness behaviour, psychological symptoms are more often on "Barriers to Coping" than on the level of manifest symptoms such as anxiety, depressive symptoms or confusion.

Compliance/Adherence: In the compliance literature the contribution of the psychological make-up of the patient ("Barriers to Coping" and "Psychiatric Dysfunction"), the organisation of care and characteristics of the health care providers ("Organization of Care" and "Treatment Experiences") are mentioned as important aspects of compliance. These variables all contribute to this factor.

Review of the Literature¹⁷

In 2005 an English literature review appeared summarizing the scientific evidence for effective components of interventions for patients with chronic illnesses. In a systematic review of the literature 560 articles were found meeting their criteria. Positive effects of interventions on outcomes were differentiated on the following levels: a. clinical outcomes, b. utilization, c. patients' satisfaction and d. quality of life.

¹⁷ Singh D (2006). Transforming chronic care. NHS Surrey and Suffolk UK.

There is evidence to support the following components of interventions in chronic care to be effective:

- Broad chronic care management models
- Integrated community and hospital care
- Greater reliance on primary care
- Identifying people at greatest risk of complications and hospitalisations
- Involving people with long-term conditions in decision making
- Providing accessible structured information for people with long-term conditions and their families
- Self-management education
- Self-monitoring and referral systems
- Electronic monitoring and tele-monitoring
- Using nurse-led strategies, where appropriate

There is less evidence to support the following initiatives

- Case-management
- Evidence based care pathways
- Shared learning among health professionals

There is limited information about

- New models of commissioning services
- Appropriate data collection and monitoring
- Linking health services with voluntary and community services

In a follow-up rapport¹⁸ analyzing the internationally promoted models for chronic care, it appeared that models based of the model for chronic care as formulated by Wagner¹⁹ -such as the "Kaiser-Permanente model"- were the predominant models researched and that most evidence. The primary conclusion is that highly qualified research for any model is almost lacking. Though components of the chronic care model were extensively researched, it is unclear whether this model is more effective than other models, mainly due to the fact that other models were less conceptualized or operationalized. The findings of the effectiveness of components as described by Singh et al 2005 were confirmed. In addition when a chronic care model is implemented and maintained, a tendency is confirmed that there are lasting/remaining effects on the quality and utilization of care. Finally, most existing evidence is coming from the USA.

¹⁸ Improving care for people with long-term conditions: A review of UK and international frameworks Edited by Debbie Singh and Chris Ham. University of Birmingham Health Services management Centre/NHS Institute for Innovation and Improvement. ISBN 07044 2584X.

¹⁹ Wagner EH, Austin BT, Von Korff M. Organizing care for patients with chronic illness. *Milbank Q* 1996;74:511-544.

The collection of the required information through the interview

Goal and structure

The primary goal of the interview is to establish a relationship and foster mutual understanding of the problems to be encountered. In the interview the patient is guided through the different risk domains in a coherent and emotionally acceptable and supportive way. Seventeen leading questions facilitate that the patient provides the relevant information about their health risks and health needs. The sequence of the 17 questions is not an absolute rule, adjustments can be made which are specific to the setting in which the interview is done. Though once familiar with the INTERMED interview, interviewers are included to use their own style or adjust to the specific information provided by the patient. However, it is recommended to stick to the presented structure. It will prevent biases and optimize the results of assessments. Basic to the “coherent and emotionally acceptable and supportive way” is to ask how the patient feels physically, review the reason for assessment/referral, explore the biological axis (what do you have), followed by the exploration of the health care system (who and how has been cared for you), the social system (personal circumstances) and the psychological system (who you are).

The setting

Data collection with the INTERMED depends on the goal of the data collection (clinical versus research), the profession of the assigned user (medical versus non-medical) and the treatment setting (outpatient, inpatient, primary care). For example, concerning the profession: a trained physician is able to conduct the full interview and obtain scoring, while a trained nurse will be able to assess almost all variables with the exception of the variables “Diagnostic challenge” and the “Complications and Life Threat”, for which the treating physician needs to be consulted. However, no physician can start an integrated plan without support/collaboration of other healthcare professionals. Consequently the setting –the organisation of the multidisciplinary team- in which the assessment is used and positioned is crucial.

Preparation

Review available information

Before the interview, the interviewer should evaluate existing information by reviewing the patient's medical history, the reason for referral or admission and relevant psycho-social information.

Introduction

When starting the interview, the interviewer may use a short introduction, such as: “Now that we know about your medical situation, I would like to get a better idea what kind of person you are and how are you dealing with your medical problems; this information will help to organize medical care, tailored to your specific individual needs. As we have to discuss several issues, I might interrupt you sometimes when I know enough for a comprehensive overview of your problems”.

Psychological impairment

In case of a referral, based on the information provided and on patients' reaction on this introduction the interviewer has to decide if the patient has the capacity to provide the information; is able to communicate (not too ill) in the language mastered by the interviewer (language barrier) and is not confused, demented or too tense or low (cognitive barrier) to be interviewed. In elderly patients or in patients with indications of cognitive disturbances, a series of questions are asked to evaluate cognitive impairment. Such questions derived from cognitive screening tests could be: "Can you tell me why you are here?" If not: "Can you tell me what kind of person I am?" "Can you tell me where you are?" or "Can you tell me what date it is?" In case of incorrect answers, one might decide to interview a partner or someone else close to the patient, including professionals who care or cared for the patient.

Ending of the interview

At the end of the interview the interviewer underlines the importance of the information provided by the patient, and summarizes and verifies the most relevant information. Then the interviewer asks whether pertinent issues have been missed and the patient is invited to express how he felt about the interview. Finally the patient will be informed how his information will be handled and the next steps he can expect. Our clinical experience is that the overwhelming majority of medical patients are satisfied with the interview, with the occasional exception of patients with severe somatization, feeling threatened by questions concerning their psychological state. We often hear patient saying: "You are the first who is not only interested in my illness, but also in me as a person who has to deal with the illness". With regard to the question whether pertinent issues have been missed, most patients do not think so. The experience of users of the method is that patients generally are very satisfied.

Copyright by and Intellectual Property of the University of Groningen Foundation 2009

The leading questions [1-17] of the INTERMED - interview

Introduction

As agreed, we will have this interview in order to better understand what your current complaints or illness mean for you and what is needed to better control your situation. Now that we know about your medical situation, I would like to get a better idea what kind of person you are and how are you dealing with your medical problems; this information will help to organize medical care, tailored to your specific individual needs. During the interview several topics will pass. It could well be that there are certain issues, which you really would like to elaborate on. In order to be able to formulate an appropriate treatment plan, it is necessary in our first conversation to have/create an overview of the problems. When needed, we can focus on such issues in the next phase. Do you understand and agree or do you have questions?

Consider whether the patient is capable of being interviewed

Good.

1. I will tell you what I know about the reason for your referral/admission and your current physical state. You should correct me when I am wrong. [Symptom severity/Impairment; Diagnostic challenge; Chronicity]
2. Now I would like to know how you feel physically? Does your physical condition have an impact on your physical functioning? [Symptom severity]
3. Now you have informed me how you physically feel, I would like to have some more information concerning physical illnesses and treatments in the past five years. [Chronicity]
4. Did doctors have any difficulties to find a diagnosis with the complaints/illnesses you had in the past 5 years? Have certain complaints not been resolved. Are currently diagnostic investigations in process for these complaints? [Diagnostic dilemma]
5. Who have been the caretaker -doctors, psychologists, nurses or social workers- who are taking care for you? Do they all work in the same institution and are appointments coordinated? [Organization of Care]
6. Is there mutual communication between your caretakers to discuss and adjust your treatment? [Coordination of care]
7. Had there been conflicts with doctors during the past five years, which gave you a bad feeling, which might interfere with your trust in doctors? [Treatment experience]
8. Now, I would like to know if you are well insured? Have you ever had problems with your insurance? Is the distance to the institutions where you are treated appropriate or did you miss appointments due to the distance?

As far as I can see you might have a different cultural background. Do your providers take this into account? (Are there communicational problems due to impeded understanding of your language?) [Access]

9. Now I would like to change the subject and ask about the way you live. Do you have a job currently? What level of education did you achieve and did you get a diploma? [Job and leisure problems]
10. Are you a person who is able to leisure? What do you do to find some distraction? Do you have hobbies? [Job and leisure problems]
11. Can you tell me how you currently live? And in case of illness or handicap, is there anyone you can count on? [Residential stability; Poor social support]
12. Now I would like to know what kind of person you are. Generally speaking, are you an easygoing and stable person? Are you someone who can get along well with other persons or are there sometimes conflicts? [Social dysfunction; Barriers to coping]
13. I would like to ask you about your smoking and drinking habits and their relation to the current problems? Do you use painkiller? Are you sometimes concerned that you might over-use these? [Barriers to coping]
14. How do you handle difficult situations? Is that a reason to use alcohol, tobacco or drugs? Are you inclined to postpone decisions? Would it lead to become talkative or silent? [Barriers to coping]
15. Now I would like to know how you felt emotionally during the last week? I mean tense, anxious, low or forgetful? [Psychiatric symptoms]
16. Have you ever seen a psychiatrist in your life or have there been periods that you have been anxious, depressed or confused? [Psychiatric dysfunction]
17. Finally, I would like to know how you follow your doctor's recommendations. Are you a person who is generally speaking inclined to do what doctors say? [Resistance to treatment]

Now, coming to the end of the interview, I would like to emphasize that you have provided most useful information. I will elaborate it and discuss it with the team. We can discuss it during our next appointment.

I finally want to know how you have experienced this interview? Do you think that this will be helpful information to treat you well or is there important information we miss? Did you think it was inappropriate to ask you this?

Thanks for your patients and your willingness to provide information. If you want to I will summarize the main points raised.

Literature

Burrus C, Ballabeni P, Deriaz O, Gobelet C, Luthi F.
Predictors of nonresponse in a questionnaire-based outcome study of vocational rehabilitation patients.

Arch Phys Med Rehabil. 2009 Sep;90(9):1499-505.

PubMed PMID: 19735777.

Huyse FJ..

Farewell to C-L? Time for a change?

J Psychosom Res. 2009 Jun;66(6):541-4.

Lobo E, de Jonge P, Huyse FJ, Rabanaque MJ, Suárez J, Lobo A.

[Early prediction of psychosocial intervention needs in pneumology patients after nurses' evaluation]. Med Clin (Barc). 2008 Nov 29;131(19):731-6. Spanish.

PubMed PMID: 19091200.

Stiefel F, Zdrojewski C, Bel Hadj F, Boffa D, Dorogi Y, So A, Ruiz J, de Jonge P.
Effects of a multifaceted psychiatric intervention targeted for the complex medically ill: a randomized controlled trial.

Psychother Psychosom. 2008;77(4):247-56. Epub 2008 Apr 28.

PubMed PMID: 18443391.

Latour CH, Huyse FJ, de Vos R, Stalman WA.

A method to provide integrated care for complex medically ill patients: the INTERMED.

Nurs Health Sci. 2007 Jun;9(2):150-7. Review.

PubMed PMID: 17470190.

Lobo E, De Jonge P, Huyse FJ, Slaets JP, Rabanaque MJ, Lobo A.

Early detection of pneumology inpatients at risk of extended hospital stay and need for psychosocial treatment.

Psychosom Med. 2007 Jan;69(1):99-105.

PubMed PMID: 17244852.

Scerri M, de Goumourens P, Fritsch C, Van Melle G, Stiefel F, So A.

The INTERMED questionnaire for predicting return to work after a multidisciplinary rehabilitation program for chronic low back pain.

Joint Bone Spine. 2006 Dec;73(6):736-41. Epub 2006 Jul 7.

PubMed PMID: 16904926.

Stiefel FC, Huyse FJ, Svallner W, Slaets JP, Lyons JS, Latour CH, van der Wal N, de Jonge P.

Operationalizing integrated care on a clinical level: the INTERMED project.

Med Clin North Am. 2006 Jul;90(4):713-58. Review.

PubMed PMID: 16843771.

de Jonge P, Huyse FJ, Stiefel FC.

Case and care complexity in the medically ill.

Med Clin North Am. 2006 Jul;90(4):679-92. Review.

PubMed PMID: 16843768.

Huyse FJ, Stiefel FC, de Jonge P.
Identifiers, or "red flags," of complexity and need for integrated care.
Med Clin North Am. 2006 Jul;90(4):703-12.

de Jonge P, Huyse FJ, Slaets JP, Svalner W, Stiefel FC.
Operationalization of biopsychosocial case complexity in general health care: the INTERMED project.
Aust N Z J Psychiatry. 2005 Sep;39(9):795-9.
PubMed PMID: 16168037.

Kishi Y, Meller WH, Kathol RG, Swigart SE.
Factors affecting the relationship between the timing of psychiatric consultation and general hospital length of stay.
Psychosomatics. 2004 Nov-Dec;45(6):470-6.
PubMed PMID: 15546823.

de Jonge P, Hoogervorst EL, Huyse FJ, Polman CH.
INTERMED: a measure of biopsychosocial case complexity: one year stability in Multiple Sclerosis patients.
Gen Hosp Psychiatry. 2004 Mar-Apr;26(2):147-52.
PubMed PMID: 15038933.

de Jonge P, Latour CH, Huyse FJ.
Implementing psychiatric interventions on a medical ward: effects on patients' quality of life and length of hospital stay.
Psychosom Med. 2003 Nov-Dec;65(6):997-1002.
PubMed PMID: 14645778.

de Jonge P, Ruinemans GM, Huyse FJ, ter Wee PM.
A simple risk score predicts poor quality of life and non-survival at 1 year follow-up in dialysis patients.
Nephrol Dial Transplant. 2003 Dec;18(12):2622-8.
PubMed PMID: 14605287.

de Jonge P, Bauer I, Huyse FJ, Latour CH.
Medical inpatients at risk of extended hospital stay and poor discharge health status: detection with COMPRI and INTERMED.
Psychosom Med. 2003 Jul-Aug;65(4):534-41.
PubMed PMID: 12883102.

de Jonge P, Stiefel F.
Internal consistency of the INTERMED in patients with somatic diseases.
J Psychosom Res. 2003 May;54(5):497-9.
PubMed PMID: 12726908.

Di Gangi Herms AM, Pinggera GM, De Jonge P, Strasser H, Svalner W.
Assessing health care needs and clinical outcome with urological case complexity: a study using INTERMED.

Psychosomatics. 2003 May-Jun;44(3):196-203.
PubMed PMID: 12724500.

Hoogervorst EL, de Jonge P, Jelles B, Huyse FJ, Heeres I, van der Ploeg HM, Uitdehaag BM, Polman CH.
The INTERMED: a screening instrument to identify multiple sclerosis patients in need of multidisciplinary treatment.
J Neurol Neurosurg Psychiatry. 2003 Jan;74(1):20-4.
PubMed PMID: 12486260; PubMed Central PMCID: PMC1738178.

de Jonge P, Latour C, Huyse FJ.
Interrater reliability of the INTERMED in a heterogeneous somatic population.
J Psychosom Res. 2002 Jan;52(1):25-7.
PubMed PMID: 11801261.

Koch N, Stiefel F, de Jonge P, Fransen J, Chamot AM, Gerster JC, Huyse F, So AK.
Identification of case complexity and increased health care utilization in patients with rheumatoid arthritis.
Arthritis Rheum. 2001 Jun;45(3):216-21.
PubMed PMID: 11409660.

de Jonge P, Huyse FJ, Stiefel FC.
Measuring care needs and case-mix by means of the INTERMED.
Gen Hosp Psychiatry. 2001 Jan-Feb;23(1):43-4.
PubMed PMID: 11291639.

de Jonge P, Huyse FJ, Stiefel FC, Slaets JP, Gans RO.
INTERMED--a clinical instrument for biopsychosocial assessment.
Psychosomatics. 2001 Mar-Apr;42(2):106-9.
PubMed PMID: 11239122.

Huyse FJ, Lyons JS, Stiefel F, Slaets J, de Jonge P, Latour C.
Operationalizing the biopsychosocial model: the INTERMED.
Psychosomatics. 2001 Jan-Feb;42(1):5-13.
PubMed PMID: 11161115.

de Jonge P, Huyse FJ, Ruinemans GM, Stiefel FC, Lyons JS, Slaets JP.
Timing of psychiatric consultations: the impact of social vulnerability and level of psychiatric dysfunction.
Psychosomatics. 2000 Nov-Dec;41(6):505-11.
PubMed PMID: 11110114.

Fischer CJ, Stiefel FC, De Jonge P, Guex P, Troendle A, Bulliard C, Huyse FJ, Gaillard R, Ruiz J.
Case complexity and clinical outcome in diabetes mellitus. A prospective study using the INTERMED. Diabetes Metab. 2000 Sep;26(4):295-302.
PubMed PMID: 11011222.

Mazzocato C, Stiefel F, de Jonge P, Levorato A, Ducret S, Huyse FJ.

Comprehensive assessment of patients in palliative care: a descriptive study utilizing the INTERMED. *J Pain Symptom Manage.* 2000 Feb;19(2):83-90. PubMed PMID: 10699535.

Huyse FJ, de Jonge P, Lyons JS, Stiefel FC, Slaets JP. INTERMED: a tool for controlling for confounding variables and designing multimodal treatment. *J Psychosom Res.* 1999 Apr;46(4):401-2. PubMed PMID: 10340241.

Stiefel FC, de Jonge P, Huyse FJ, Guex P, Slaets JP, Lyons JS, Spagnoli J, Vannotti M. "INTERMED": a method to assess health service needs. II. Results on its validity and clinical use. *Gen Hosp Psychiatry.* 1999 Jan-Feb;21(1):49-56. PubMed PMID: 10068920.

Huyse FJ, Lyons JS, Stiefel FC, Slaets JP, de Jonge P, Fink P, Gans RO, Guex P, Herzog T, Lobo A, Smith GC, van Schijndel RS. "INTERMED": a method to assess health service needs. I. Development and reliability. *Gen Hosp Psychiatry.* 1999 Jan-Feb;21(1):39-48. PubMed PMID: 10068919.

Stiefel FC, de Jonge P, Huyse FJ, Slaets JP, Guex P, Lyons JS, Vannotti M, Fritsch C, Moeri R, Leyvraz PF, So A, Spagnoli J. INTERMED--an assessment and classification system for case complexity. Results in patients with low back pain. *Spine (Phila Pa 1976).* 1999 Feb 15;24(4):378-84; discussion 385. PubMed PMID: 10065523.

Copyright by and Intellectual Property of INTERMED Foundation 2009