

Insurance medicine in clinical epidemiological terms:

A concept paper for discussion

Wout de Boer, Sören Brage, Regina Kunz

Under the flag of insurance medicine, many physicians seem to do comparable work in different European countries. For a large part, their work has to do with sick leave and work disability, fields with major societal impact and implications. Unlike most clinical disciplines, insurance medicine does not have any distinct property that is valid in all countries. This hampers scientific development in insurance medicine (IM). An important difference between the judgments of treating physicians and insurance physicians and medical experts is the amount of robust evidence available to each group, their ability to access and their skills to use it.

Many consider insurance medicine as an area that is strongly embedded in social legislations and private insurances and therefore has limited applicability across different countries and across legislations within countries. Proponents of this attitude overlook, however, that the medical issues in insurance medicine address very similar questions, even if the legal implications of the medical situations may differ across countries. The perspective ‘Same medical questions, different legal implications’ is analogous to the request known in clinical medicine ‘Globalize the evidence, localize the decision’¹ and allows international cooperation in insurance medicine to develop a robust scientific base for the recommendations and decisions made in insurance medicine. In order to move forward, we need definitions of what constitutes the typical work performed by physicians in insurance medicine and how to make that work amenable to research.

Insurance medicine is what insurance physicians do

In an EUMASS (European Union of Medicine in Assurance and Social Security) project De Boer, Wiholm, and Brage (2014) set out to clarify empirically the understanding of *insurance medicine* in different countries, the type of professionals who do the work and the settings where the work gets done.² In a second step, we (De Boer, Brage, and Kunz) linked these tasks to the methodology of clinical epidemiology in an attempt to make them amenable to clinical research. We intend to start a discussion with an international audience, because we think the challenges we observe exist in all countries providing wage compensation benefits for work incapacity caused by disease and accidents.

Identifying the tasks in insurance medicine

Following a face-to-face workshop with EUMASS council members (EUMASS council members are in their countries leading experts of insurance medicine such as chief medical advisers), we drafted a preliminary description of insurance medicine and listed typical tasks that constitute insurance medicine, with the request to survey respondents to add any missing tasks. The survey was circulated to the EUMASS council representatives from 21 countries and asked about the type and number of professionals who perform those tasks in their country, and the organisational setting where that work is done. We did not strive for an exhaustive overview. Respondents used free text to describe per task the various schemes, organisations, and type of physicians that covered the majority of cases.

We categorised insurance organisations as *public insurers* where government bodies provide insurance coverage or private agencies operate under governmental supervision; *private insurers* where individuals purchase coverage directly from the insurer without any group or employer-backed policy; and *accident insurers* which ensure compensation for accidental injury or death provided by both public and private bodies and which tend to stand apart in many countries. We categorised health professionals as *specialists in insurance medicine*, i.e. physicians who perform insurance medicine activities as their main occupation (with or without formal training), and *external physicians in insurance medicine*, i.e.

W. de Boer, MD, PhD, member of EUMASS scientific committee, Insurance Physician at Lechnerconsult, Rotterdam, the Netherlands.

S. Brage, MD, PhD, member of EUMASS scientific committee, retired chief medical adviser of NAV, Oslo, Norway.

R. Kunz, MD, MSc, Professor of Insurance Medicine, Academic Unit EbIM, Evidence-based Insurance Medicine, Department of Clinical Research, University of Basel, University Hospital of Basel, Switzerland.

Correspondence:
Regina Kunz, ebim.research@usb.ch

Disclaimer:

R. Kunz has a part-time employment with the Swiss National Accident Insurance Fund.

Table 1 Core tasks performed in the context of insurance medicine and approximated number of involved insurance physicians in 16 European countries.

Core task	Answering questions	Specialists in insurance medicine
Risk assessment for private insurers	... about the risk of an individual to make claims because of pre-existing health conditions	< 2000
Sick leave certification	... if and to what extent individuals are unable to do their work because of health impairments	10000 - 20000
Disability evaluation	... to what extent this person is able to do any kind of suitable work in spite of health problems (exclude: physicians who provide patient information but no answer about work ability by the insurer)	10000 - 20000
Assessment of functioning in non-work life domains	... if this person, because of health problems, needs support for functioning in life tasks and if so, what kind of support	5000 - 10000
Intervention to promote participation	... the effectiveness of specific intervention in promoting return to work or other participation in society	Many professionals from various disciplines
Monitoring of health care*	... about the consumption of health care and possible explanation for this consumption	5000 - 10000
Assessment of impairments and causality**	... about the presence of health impairments in a particular patient and about the cause of these impairments	5000 - 10000

*Monitoring health care consumption was reported from Belgium, Croatia, France, Germany, Hungary, Poland, Sweden, and Switzerland. Other countries did not report this activity as a major IM task.

**Replies from Czech Republic, Finland, France, Germany, Italy, the Netherlands, Poland, and Switzerland. Other countries did not report causality assessment as an IM task.

mostly treating physicians who perform insurance medicine tasks as a side job to their work in patient care.

Respondents from sixteen countries (Belgium, Croatia, Czech Republic, Finland, France, Germany, Hungary, Italy, Netherlands, Norway, Poland, Romania, Slovakia, Sweden, Switzerland, and United Kingdom, covering 55% of Europe's population) participated in the survey (2013). In a follow-up workshop, the participants reached a common understanding of terms, organisational structures and core tasks. We classified the descriptions of insurance medicine tasks into assessment tasks (e.g. sick leave certification, disability evaluation for work and non-work activities) and intervention tasks (e.g. return to work promotion). Table 1 shows the final set of core tasks and estimates by the respondents on the approximate numbers of insurance medicine specialists engaged in these tasks. Lack of reliable data precluded reporting on external physicians involved in these tasks, but general practitioners certifying sick leave emerged as the largest group of external physicians, by far outnumbering the specialists.

Linking the core tasks of insurance medicine to medical core activities

In a next step, we designed a framework on how to link the core tasks of insurance physicians to the methodology of clinical epidemiology. We chose clinical epidemiology as a reference methodology because clinical epidemiology provides methodological tools to research core activities that doctors perform when caring for individual patients. Insurance physicians, who deal with the assessment of individual claimants, need similar skills. Research on other

aspects of insurance medicine such as sociology or law will require different methodologies.

We broke the tasks down into activities that are typically carried out when performing each task and linked them to the research methodology of clinical epidemiology: determining abnormality; 'diagnosing' health conditions (like back pain, traumatic brain injury, fibromyalgia) and social conditions (like work ability); verifying causality; determining risk; establishing a prognosis; identifying suitable treatments; preventing health conditions (e.g. chronifications) and social conditions (like work inability) from arising and changing their course.³ Monitoring health care consumption does not fit in this methodology and was left out.

We then operationalised the tasks into two and more medical core activities. Insurance physicians, experts and treating physicians performing IM tasks such as sick leave certification need to undertake the medical core activities in order to collect the relevant information on which to base their judgement that will provide a credible answer to the insurer (table 2). For each medical core activity, clinical epidemiology provides a well tested methodological toolkit that allows to perform the relevant research. We verified the face validity of our operationalisation of tasks in numerous informal discussions with experts from insurance medicine and clinical epidemiology.

General reflections

Our survey among 16 European countries identified seven common core tasks in insurance medicine: risk assessment for private insurers, sick leave certification, disability evalu-

Table 2 Framework on the core tasks of insurance medicine and their link to the methodological toolbox of clinical epidemiology

Core tasks of insurance physicians	Translation in the methodological framework of clinical epidemiology
1. Assessing the health risks of individuals applying for insurance coverage (e.g. life, work capacity, health care)	<ul style="list-style-type: none"> • Screening for characteristics associated with an increased risk of becoming diseased. • Establishing a prognosis about the course of a disease following its onset
2. Certifying sick leave	<ul style="list-style-type: none"> • Diagnosing 'short-term (in)ability to work' using professional consensus as reference • Establishing a prognosis about the duration of health / functional impairment with impact on work ability • Applying treatments that impact on the outcome of a disease
3. Evaluating long-term disability for work and for social participation	<ul style="list-style-type: none"> • Diagnosing a claimant's (in)ability to work and to earn their own living • Establishing a prognosis about a claimant's future health and functional status • Applying interventions that may improve functioning and health status • Preventing health / social conditions from arising by changing their course
4. Promoting the participation of disabled individuals in society	<ul style="list-style-type: none"> • Applying interventions that may facilitate social participation in disabled individuals • Preventing health / social conditions from arising by changing their course
5. Promoting return to work	<ul style="list-style-type: none"> • Applying interventions that help sick individuals to get back to work • Predicting what kind of individuals may or may not benefit from such interventions • Preventing health / social conditions from arising by changing their course
6. Assessing the causality of impairments in health status (e.g. accident)	<ul style="list-style-type: none"> • Determining abnormality and diagnosing a health condition • Verifying a causal link between a past event ('accident') and impaired health

ation, assessment of functioning in non-work life domains, intervention to promote participation, monitoring health care consumption and assessing impairments and causality. These tasks form the bulk of the work carried out under the umbrella term 'insurance medicine'. More specialists in insurance medicine engage in sick leave certification and disability evaluation than in other tasks. Risk assessment for private insurers was reported to engage the fewest. Our description of insurance medicine by tasks opens doors to research, professional development and quality control, since it focusses on specific activities rather than on organisational structures. The scientific perspective points from the tasks and the underlying questions to the evidence needed for answering these questions.

Table 2 illustrates the various medical issues that need to be considered using best available evidence before arriving at the global judgment that has been set out by the core task. By breaking down the core tasks of insurance medicine (except monitoring health care consumption) into medical core activities and linking them to the toolkit of clinical epidemiology, we can point to a well tested methodology suited to do the required research. This fragmentation into specific activities offers the opportunity to use a focussed research question in order to generate reliable evidence for each activity and to provide robust answers to the insurers and the claimants.

Our concept needs discussion with the community of insurance physicians and treating physicians performing these tasks. Furthermore, it requires empirical testing. As a first step, Regina Kunz started a project with insurance physicians and medical experts across Europe to identify the medical questions they encounter when responding to the questions by the insurers (ongoing). What are their specific information needs that arise from specific cases?

In case the insurer provides medical guidance for their questions, how much of the information is based on explicit scientific evidence? If not, why not? And if yes, would it be possible to share these evidence-based scientific "facts" with others? Insurance physicians and medical experts from across Europe are invited to participate in this project. This helps understanding what kind of evidence insurance physicians and medical experts need in order to make the required medical judgments on the functional impairments caused by medical conditions.

The judgments of experts and insurance physicians determine the claimants' chances for disability benefits.⁴ Empirical evidence demonstrates the perceived needs of insurance physicians and experts for better founded evidence. Insurers and society need to provide the means for relevant research to better equip insurance physicians, medical experts, and treating physicians for their IM tasks. Other approaches on how to generate an evidence base for insurance medicine are possible; we invite you to send your comments to ebim.research@usb.ch.

References

1. Eisenberg JM. Globalize the evidence, localize the decision: evidence-based medicine and international diversity. *Health Aff (Millwood)*. 2002;21(3):166-8.
2. Boer WEL de, Wiholm W, Brage S. Insurance Medicine in Europe. EUMASS Congress 2014; Stockholm 2014. p. 76.
3. Fletcher RW, Fletcher SW, Fletcher GS. *Clinical Epidemiology. The Essentials*. 5th edition ed: Lippincott, Williams & Wilkins; 2012.
4. Barth J, Boer WE de, Busse JW, Hoving JL, Kedzia S, Couban R, et al. Inter-rater agreement in evaluation of disability: systematic review of reproducibility studies. *Bmj*. 2017;356:j14.