Disability management through positive intervention in stakeholders’ information asymmetry. A pilot study

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**Background**
One increasingly attractive hypothesis to account for prolonged sickness absence from work is the presence of ‘information asymmetry’ among stakeholders. Information asymmetry refers to a situation in which critical information is not (appropriately) exchanged, in this case among those involved in disability management.

**Aim**
The purpose of this study was to intervene positively in the information asymmetry that currently exists between social insurance physicians and occupational physicians in Belgium.

**Methods**
We developed a novel model aimed at improving information exchange, and a pilot study protocol based on the model. Our first objective was to investigate feasibility of implementing the study protocol. Our second and main objective was to obtain preliminary results on whether improving information exchange between physicians would facilitate work resumption of employees out on sickness absence.

**Results**
Of 126 patients recruited, 91 were eligible and assigned to one of two groups: a control group, whose physicians used the standard Belgian evaluation protocol, and an intervention group, whose physicians used our new protocol. Outcome parameters from the 15 patients assigned to the intervention group revealed that enhanced inter-physician information exchange produced favourable work resumption rates (73%), suggesting that both the model and study protocol show promise.

**Conclusions**
The issue of sharing information among all stakeholders involved in disability management is an important one. Moreover, professional reintegration of employees after a sickness absence is universally important to occupational health practitioners. Our preliminary results suggest that reducing information asymmetry among physicians should be investigated further in larger intervention trials.

**Key words**
Disability; occupational health services; rehabilitation; sick leave; work.

**Introduction**
Factors outside the medical realm importantly affect a sick employee’s decision to stay away from work, even for medically certified sickness absences. Non-medical factors influencing sickness absence include the patient’s demographic, psychosocial and financial characteristics; work site characteristics and economic variables [1–4].

Recently, another issue has been gaining interest as a possible factor that might impact on an employee’s decision to prolong a sickness absence: stakeholders’ information asymmetry, a situation in which critical information is not exchanged or is not appropriately exchanged between stakeholders involved in a sickness absence [5]. Potential stakeholders are the sick employee, the employer, the human resource managers, the safety engineers, the insurers, rehabilitation service providers, occupational health providers, general practitioners, medical specialists, etc. Several authors have emphasized the need for efficient information exchange between stakeholder groups, which is a key component of disability management [6–11]. Conversely, a lack of information exchange among stakeholders may contribute to extended sickness absences and low work resumption rates. Although optimal information exchange among all stakeholders should exist, due to the nature of the
information—being mainly of medical origin—physicians tend to have a greater interest in exchanging information effectively. Importantly, information exchange between physicians may influence a patient’s decision to return to work [12–15].

In Belgium, three physicians are mainly involved in the patient’s sickness absence and work resumption process. The attending physician best knows the patient’s medical and socio-familial situation and is responsible for diagnosis and treatment and for certification of sickness absence. The social insurance physician from the National Sickness and Invalidity Insurance primarily assesses patients’ inability to work and their eligibility for benefits. Usually, every 4–6 weeks while on sickness absence, patients are assessed as to whether they are able to return to work. The social insurance physician has an important tool for professional reintegration: gradual work resumption by which working hours are tailored to the patient’s actual working potential and which are gradually increased until resumption of regular or full duty. The occupational physician best knows the patient’s professional situation and examines employees at work, with the primary aim of preventing occupational accidents and diseases. The main role in helping sick employees return to work is to ensure that appropriate work modifications (e.g. accommodation of job content or ergonomic redesign of work stations) are instituted.

Although these three classes of physicians have complementary tasks, their current collaboration practices have been reported to be inadequate [16–19]. Lack of collaboration results in information asymmetry, especially among social insurance physicians and occupational physicians. The social insurance physician often lacks information about the patients’ workplace that is crucial for determining whether they can resume work. Even though patients often provide this information during their inability-to-work assessment sessions, occupational physicians must confirm the patient’s job description and work modification possibilities. This is because large discrepancies may exist between actual requirements and possible options and those reported by patients. On the other hand, the occupational physician often lacks information about the patient’s sickness absence and treatment and is even more vulnerable to experiencing the effects of information asymmetry. This is because the legal framework of the job precludes direct contact with employees absent from work, which in turn, prohibits receipt of pertinent information directly from the patients themselves.

Taken together, these findings clearly indicate that information asymmetry can prolong sickness absence and impede work resumption. Thus, the aim of this article is to describe a model we developed to overcome information asymmetry and to present and discuss results obtained from the implementation of this model in a pilot study.

Methods

In 2000, a workgroup of experts in the fields of family medicine, occupational medicine, insurance medicine and disability management developed an information exchange model that primarily focuses on interactions between social insurance physicians and occupational physicians. This model calls for (i) enhancement of collaboration by implementing general information exchange and (ii) development of a protocol to improve individualized information exchange (Figure 1). The aim of initiative (i) is to optimize mutual perception of physicians, one of the main collaboration barriers observed. To achieve this aim, local inter-disciplinary meetings were organized to discuss experiences of collaboration problems, to clarify the legal framework and to mutually exchange names, addresses and telephone numbers. The aim of initiative (ii) is to optimize collaboration practices by using a standardized communication form.

In this pilot study, we examined individualized information exchange on a small scale among two social insurance physicians and 17 occupational physicians. The aim of the study was two-fold: (i) to determine whether implementing the model would be feasible and (ii) to obtain preliminary data reflecting how improved information exchange between physicians affects work resumption of sick employees. Our study protocol consisted of the three successive steps described below (Figure 2). An ethical committee approved the protocol.

Step 1: recruitment and informed consent

The use of a communication form was reserved for patients with the following inclusion criteria: patients must be (i) currently employed, (ii) aged 18–50 years and (iii) absent from work due to sub-acute (1–12 months)

![Figure 1. The information exchange model.](https://academic.oup.com/occmed/article-abstract/56/2/129/1396500)
sickness. To intervene as early as possible during the sub-acute phase and to overcome practical organizational problems, we replaced inclusion criterion (iii) with one that accepted patients that were on their second work inability assessment consultation with the social insurance physician since the onset of the sickness absence (usually after 2–4 months of sickness absence). Patients with pregnancy-related sickness absences were excluded. Patients were asked to give written informed consent and to complete the questionnaire to obtain their background data.

**Step 2: group assignment and intervention**

For patients meeting the criteria, the social insurance physician noted information regarding the patient’s sickness absence and work resumption course on the communication form. The form was then sent to an administrative research co-worker responsible for group allocation of patients, assigning them either to an intervention group or to a control group. Group assignment was not random but based on the Occupational Health Service provider at the patient’s workplace. Only when the occupational physician worked for the Occupational Health Service IDEWE was the patient assigned to the intervention group (Figure 2). This procedure was a logical outcome of the practical organization of social insurance medicine and occupational medicine in Belgium, and the decision to limit the trial to the social insurance physicians of one Sickness Fund and the occupational physicians of one Occupational Health Service.

For patients assigned to the intervention group, their occupational physician read and completed the communication form, then forwarded it to the social insurance physician. During the patients’ third inability-to-work assessment, the social insurance physician updated the information and returned the form to the occupational physician. This cycle of information exchange was repeated monthly until one of the physicians lost contact with the patient. The social insurance physician lost contact when inability-to-work assessment ended due to cessation of sickness absence benefits, return to work or transfer of the patient to another Sickness Fund. The occupational physician lost contact when the patient became unemployed or when the employer changed to another Occupational Health Service provider.

Patients assigned to the control group received the standard kind of assessment currently practised in Belgium. The information asymmetry between their physicians was not manipulated.

**Step 3: assessment and analyses**

The outcome assessment of the intervention was scheduled 1 year after the start of the employees’ sickness absence. We assessed eight outcome parameters: (i) the category of sickness absence benefits (dependent versus non-dependent), (ii) the actual work status of individuals not dependent on benefits, (iii) the number of benefit periods in the study year, (iv) the cumulative duration of all benefits (for benefit periods extending beyond the study year, the end of the period was adjusted to the date of the 1-year outcome assessment), (v) the benefit outflow or the per cent reduction of these on benefits, (vi) the frequency at which social insurance physicians permitted individuals to gradually resume work, (vii) the duration

Figure 2. Implementation of the communication form in a pilot study.
of gradual work resumption permitted by social insurance physicians and (viii) the duration of benefits prior to receiving permission to gradually resume work.

Pertinent data were collected, then analysed with the statistical analysis software SPSS 10. \( P < 0.05 \) was considered to be statistically significant.

The pilot study began on 1 April 2001, and patient enrolment ended on 30 June 2001. The follow-up phase, during which information exchange for the intervention group occurred, was limited to 3 months and ended on 30 September 2001.

To determine whether it is feasible for physicians to implement the study protocol, we examined the practicality of recruiting patients, of performing the informed consent procedure and of completing the communication form. We also assessed the patient questionnaire and the rate at which patients participated. Finally, we tested the hypothesis that performing a second inability-to-work assessment by social insurance physicians was a favourable inclusion criterion. To obtain preliminary data on the effect of improved information exchange between physicians on employee work resumption rate, we also evaluated the eight outcome parameters for patients assigned to the intervention group.

Results

During the enrolment phase, we recruited 126 patients who were eligible for participation in our study. Data from 35 patients were excluded from analyses due to minor flaws in the recruitment process and informed consent procedure (Figure 3). For example, the social insurance physicians reported that the informed consent procedure was overly time-consuming and that discussing informed consent during a mandatory medical assessment might confuse the patient. To overcome this flaw, for future patients, we decided that nurses, rather than physicians, should carry out the informed consent procedures. These nurses are trained to double-check all inclusion criteria, to perform the informed consent procedure and to note reasons for non-participation.

Another flaw we corrected was the way information was presented and gathered in the communication form. Occupational physicians voiced most of the objections to this original form. To address their concerns, we redesigned the form, making it more user-friendly and intuitive. Another feature of the redesigned form was that it could be completed with the Ertomis Job Evaluation Scale, which facilitates identification of the patient’s job description. We also included clear-cut instructions on what specific information must be provided by each physician. For instance, social insurance physicians must note the diagnosis; the presumed relationship between the aetiology of the disorder and work conditions; any relevant information received from the attending physician and, if possible, an estimated duration of the sickness absence. For the occupational physician, the most frequent questions listed on the form to be asked are indicated in block capital letters. These include (i) the

![Figure 3. Results of the pilot study.](https://academic.oup.com/occmed/article-abstract/56/2/129/1396500/1396500)
social insurance physician’s need for information about the patient’s job description; (ii) whether intervention by the occupational physician to concretize gradual or modified work resumption is required and (iii) whether additional information or intervention is requested. The occupational physician gathers this standard information when possible and answers pertinent specific questions.

The pilot study revealed that the patient questionnaire needed to be revised. To make the questionnaire easier to complete, we rewrote its instructions using more straightforward language. Table 1 lists the final set of questionnaire items and Figure 3 presents results on the rate of patient participation and the assignment of patients into either control or intervention group. The mean duration of sickness absences before patients enrolled in our study was 85 days (SD: 30.6; median: 82; range: 31–220). The range of this parameter confirmed our choice of replacing our third inclusion criterion (i.e., work absence due to sub-acute sickness) with the patients’ second inability-to-work assessment. No patients with an acute sickness absence (<4 weeks) were included in our study. We included only patients who were in the early stages of the sub-acute phase. Hence, upon enrolment in our study, up to 80% of the patients had not worked for ≤4 months due to sickness.

Outcome data for the non-participants (n = 21) were not compared to those of the participants.

Outcome parameters evaluated from the 15 patients assigned to the intervention group are summarized in Figure 3 and Tables 2 and 3. The benefit outflow curve

### Table 1. Content of patient questionnaire

<table>
<thead>
<tr>
<th>Demographic and socio-economic variables</th>
<th>Health-related variables</th>
<th>Work-related variables</th>
<th>Sickness absence-related variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>age; gender; marital status; education level; social support; financially dependent persons; current and previous financial problems; supplementary financial compensation, e.g. by private insurance; presence of close relatives on Sickness and Invalidity Insurance benefit; intention to involve an attorney</td>
<td>smoking, drinking and exercise habits; height and weight to calculate body mass index; pregnancy; mental well-being (General Health Questionnaire of Goldberg); pain (Chronic Pain Questionnaire of Von Korff)</td>
<td>employment status; blue collar or white collar; number of work hours; experience in the profession and with the current employer; trade union member and representative; job characteristics (Job Content Questionnaire of Karasek)</td>
<td>medical disorder leading to sickness absence; work relatedness of the medical disorder; attitude towards work inability; prognosis for duration of sickness absence; attitude towards accommodated or gradual return to work; attitude towards the social insurance physician and the occupational physician</td>
</tr>
</tbody>
</table>

*The patient questionnaire was used to obtain information on personal variables that might systematically account for some of the unexplained variability of our observations.*

### Table 2. Characteristics and main outcome result of the 15 patients assigned to the intervention group

<table>
<thead>
<tr>
<th>Type of work</th>
<th>Gender</th>
<th>Age (years)</th>
<th>Duration of absence at enrolment (days)</th>
<th>Diagnosis</th>
<th>Assessment 12 months after onset of sickness absence period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home help</td>
<td>f</td>
<td>49</td>
<td>68</td>
<td>Psychic decompensation</td>
<td>SII benefit + gradual work resumption</td>
</tr>
<tr>
<td>Nurse</td>
<td>f</td>
<td>48</td>
<td>92</td>
<td>Mental breakdown</td>
<td>Return to work</td>
</tr>
<tr>
<td>Cleaning</td>
<td>f</td>
<td>46</td>
<td>53</td>
<td>Low back pain</td>
<td>Unemployment benefit</td>
</tr>
<tr>
<td>Geriatric help</td>
<td>f</td>
<td>45</td>
<td>191</td>
<td>Surgery cervical disc</td>
<td>SII benefit</td>
</tr>
<tr>
<td>Plasterer</td>
<td>m</td>
<td>42</td>
<td>86</td>
<td>Lumbar and wrist arthritis</td>
<td>SII benefit</td>
</tr>
<tr>
<td>Nurse</td>
<td>f</td>
<td>42</td>
<td>220</td>
<td>Breast cancer</td>
<td>SII benefit</td>
</tr>
<tr>
<td>Welder</td>
<td>m</td>
<td>40</td>
<td>94</td>
<td>Cervical fusion surgery</td>
<td>Return to work</td>
</tr>
<tr>
<td>Administrative worker</td>
<td>f</td>
<td>40</td>
<td>132</td>
<td>Depression</td>
<td>Unemployment benefit</td>
</tr>
<tr>
<td>Roof constructor</td>
<td>m</td>
<td>37</td>
<td>73</td>
<td>Knee bursitis</td>
<td>Unemployment benefit</td>
</tr>
<tr>
<td>Home help</td>
<td>f</td>
<td>36</td>
<td>50</td>
<td>Fibromyalgia</td>
<td>Return to work</td>
</tr>
<tr>
<td>Home nurse</td>
<td>f</td>
<td>33</td>
<td>85</td>
<td>Asthma</td>
<td>Return to work</td>
</tr>
<tr>
<td>Iron worker</td>
<td>m</td>
<td>33</td>
<td>104</td>
<td>Calcaneus’ fracture</td>
<td>Return to work after period of gradual work resumption</td>
</tr>
<tr>
<td>Powder production worker</td>
<td>m</td>
<td>32</td>
<td>83</td>
<td>Surgery lumbar disc</td>
<td>Return to work after period of gradual work resumption</td>
</tr>
<tr>
<td>Operator</td>
<td>m</td>
<td>27</td>
<td>84</td>
<td>Surgery lumbar disc</td>
<td>Return to work</td>
</tr>
<tr>
<td>Upholstery worker</td>
<td>m</td>
<td>24</td>
<td>78</td>
<td>Knee trauma</td>
<td>Return to work</td>
</tr>
</tbody>
</table>

Abbreviations: m = male; f = female; SII = Sickness and Invalidity Insurance. Seventy patients participated. Only patients whose occupational physician worked for the Occupational Health Service IDEWE were included in the intervention group (n = 15). All other patients were assigned to the control group (n = 55). For the 15 patients in the intervention group, characteristics are presented.
Table 3. Outcome results of 15 patients assigned to the intervention group

<table>
<thead>
<tr>
<th>Outcome parameters</th>
<th>Intervention group (n = 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit status: rate of non-dependence on benefit in n (%)</td>
<td>11 (73)</td>
</tr>
<tr>
<td>Rate of dependence on benefit in n (%)</td>
<td>4 (27)</td>
</tr>
<tr>
<td>Actual work status: return to an employer rate in n (%)</td>
<td>8 (73)</td>
</tr>
<tr>
<td>Unemployment rate in n (%)</td>
<td>3 (27)</td>
</tr>
<tr>
<td>Number of benefit periods: one period in n (%)</td>
<td>13 (87)</td>
</tr>
<tr>
<td>Two periods in n (%)</td>
<td>2 (13)</td>
</tr>
<tr>
<td>Cumulative benefit duration in days: median (mean ± SD) (range)</td>
<td>144 (105 ± 104.4) (52–565)</td>
</tr>
<tr>
<td>Gradual work resumption permission rate in n (%)</td>
<td>3 (20)</td>
</tr>
<tr>
<td>Gradual work resumption duration in days: median (mean ± SD) (range)</td>
<td>37 (34.3 ± 6.4) (27–39)</td>
</tr>
<tr>
<td>Pre-gradual work resumption benefit duration in days: median (mean ± SD) (range)</td>
<td>110 (177 ± 129.5) (94–326)</td>
</tr>
</tbody>
</table>

Seventy patients participated. Only patients whose occupational physician worked for the Occupational Health Service IDEWE were included in the intervention group (n = 15). All other patients were assigned to the control group (n = 55). For the 15 patients in the intervention group, outcome results are presented.

revealed that most benefit periods covering sickness absences were short term: 50% of benefits ceased after 5 months. Of these 15 patients, three resumed work gradually. For two patients, gradual work resumption lasted 1 month, ultimately resulting in returning full time. For one patient, gradual work resumption was in progress at the time we evaluated the outcome parameters. In studies having a limited number of subjects, such as ours, any effects observed may be due to chance or to the experimental manipulation; one cannot confidently determine which one. Therefore, for this pilot study we decided against performing statistical analyses comparing the outcome parameters of the intervention and control groups.

Discussion

We were pleased with the results of this pilot study, and the study protocol seemed appropriate in our judgement. Both social insurance physicians and occupational physicians consistently and competently applied the second arm of the information exchange model throughout the course of the study. We confirmed that our inclusion criteria for patients were realistic. We also noted obstacles encountered by the social insurance physicians in recruiting patients, as well as difficulties in using the communication form, leading us to make minor revisions to our methodology. The high rate of patient participation in our study may be further increased once nurses take over the responsibility for carrying out the informed consent procedure. We improved the patient questionnaire. The data we obtained through this questionnaire will be used in future to control for confounding variables in comparisons of inter-group outcomes.

Our preliminary results revealed that improving information exchange between physicians helped those on sickness absence return to work sooner. Indeed, the chances of resuming work increased for patients under the care of physicians who employed our protocol to improve information exchange with other physicians. Interestingly, these patients also depended less on sickness benefits. We also found that the gradual work resumption option was used several times with success.

The strength of our pilot study lies in its innovative nature, which tested a novel, little-studied hypothesis to explain prolonged sickness absence: stakeholders’ information asymmetry. Using this novel hypothesis as our guide, we investigated whether reducing information asymmetry among Belgian social insurance physicians and occupational physicians would positively impact work resumption rates. One weakness of this pilot study is that a limited number of patients were available for study. Thus, because of our small sample, we could not confidently perform comparative analyses. To address these statistical issues and to bolster our preliminary results, we are currently testing our model on a larger scale in a controlled intervention study of information asymmetry. We expect that implementing the model will help physicians obtain information they need, which in turn will positively affect patient outcome, that is, confirm that sick employees will be able to return sooner from a prolonged sickness absence.

We base our high expectations on the overview by Frank et al. [20] describing three essential principles to help patients with back injuries successfully resume work. Although patients participating in our pilot study were not limited to those with back injuries, we included all three principles in our model and applied them during the sub-acute stage of sickness absence, as did Frank. The first principle pertains to the sub-acute stage, a period when the intervention is started. According to this principle, individuals who would do well without intervention should not be targeted. Moreover, patients in the acute phase of sickness absence should be excluded. Generally, other authors have defined the acute phase as the first 4–6 weeks of sickness absence, the sub-acute...
phase as the period after that extending to 3 months and the chronic phase as the period beyond 3 months [3,6,21,22]. In our pilot study, we defined the sub-acute stage as the first 1–12 months of sickness absence. We based these cut-off points on the shape of the benefit outflow curve. The rate at which sickness absence benefits cease drops steeply within the first month and then continues to decline, remaining nearly stable after 1 year. We also based the end-point of the sub-acute phase on the Belgian benefit system. When sickness absence exceeds 1 year, coverage of patients’ benefits transfer automatically from Sickness Insurance to Invalidity Insurance. During this switch-over, the patients’ circumstances are re-assessed, and benefits, as well as other evaluation procedures, are adjusted accordingly.

Frank’s second principle calls for the explicit involvement of the employer in the intervention. In this context, it is necessary to obtain a complete description of the patient’s job, and if appropriate, to negotiate work modifications. Krause et al. [23] demonstrated that disability programmes having modified work practices may double work resumption rates. In our pilot study, the intervention focussed on how physicians can impact work resumption. This was based on the hypothesis that improving information exchange among physicians significantly promotes the return to gradual and modified work.

Frank’s third principle focuses on communication between all parties involved in the work resumption process. Several authors have described intervention programmes that included both information exchange and collaboration between stakeholders as part of their protocol [12,24,25]. In our pilot study, improving information exchange between the two key physicians involved in the process represented the only intervention.

It is difficult to compare our pilot study results with those of other studies, since few published articles exist on the impact of positive intervention trials on work resumption in which the researchers concentrated primarily on physicians. Loisel et al. [26,27] examined how intervention affected collaboration between occupational physicians, curative physicians and ergonomic therapists. Haase et al. [28] focussed on occupational physicians and rehabilitation physicians. Both studies found that establishing effective communications between these parties resulted in positive work resumption rates.

More research on the topic of ameliorating information asymmetry in the context of disability management is needed. Inter-disciplinary research is especially needed to create a synthesis of factors involved in the stakeholders’ information exchange factors and the complex interactions in the sickness absence process. Implications for policy makers are obvious: if enhanced information exchange between physicians proves to facilitate work resumption of individuals on sickness absences, legal adaptations supporting physician collaboration should be instituted.

**Key points**

1. Information asymmetry—a situation in which critical information is not exchanged or not appropriately exchanged—among those involved in disability management may account for prolonged sickness absence from work.
2. We developed a model aiming at improving information exchange between social insurance physicians and occupational physicians that has the advantage of being easily implemented in the daily practice of the physicians without additional costs.
3. This pilot study revealed that improving information exchange between physicians can help those on sickness absence return to work sooner and that reducing information asymmetry among physicians should be investigated further in larger intervention trials.

**Conflicts of interest**

None declared.

**References**


