

## Caseworkers' attitudes: Do they matter?

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**Abstract** The caseworkers in public insurance systems possess considerable discretion in terms of making decisions. This creates scope for preferences and attitudes to reflect on initiatives taken during sick leave and on individuals' return to work. This paper utilizes a unique caseworker–individual data set in the public sickness insurance (SI) in Sweden to analyze the impact of caseworkers' attitudes towards SI rules and rehabilitation programs promoting individuals' return to work. We find that a positive attitude towards SI rules increased return to work by 3 %, or 3.5 days, after comparing the 25 % most positive caseworkers with the 25 % least positive. Also, a positive attitude towards existing rehabilitation methods reduced return to work by about 2.5 %, or 3 days.

**Keywords** Public sickness insurance · Treatment effects · Caseworker attitudes · Sick-leave duration

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## 1 Introduction

In Sweden, much of the caseworker's job in the public sickness insurance is regulated by law and process documents. Still, the caseworkers have considerable discretion in terms of making decisions. For example, as in many countries, the caseworker's role is a dual one, involving both a help component and a monitoring component. The help component is represented by the obligation to assess the need for rehabilitation and to coordinate any rehabilitation measures needed, and the monitoring component by legally regulated eligibility checks. With the discretion allowed them, caseworkers can weigh these two potentially conflicting roles differently, which in turn may affect the individual's chances of returning to work.

In this paper, we analyze the effect of caseworkers' attitudes towards the current SI rules and existing rehabilitation programs on the individual's return to work. A unique data set is utilized, combining the answers from almost 800 caseworkers who participated in a nationwide survey of the sick-leave process, with administrative register data from 65,000 individuals on sick leave. Taking advantage of the discretion of the caseworker and the fact that caseworker–individual matching is not systematically related to caseworker attitude, we analyze the probability of returning to work after 3, 6 and 9 months. We also analyze the impact of caseworkers' attitudes on performing assessments of the need for rehabilitation and eligibility checks, respectively. In this way we can learn more about the mechanisms behind the impact on return to work.

While the impact of different policies regulating the generosity of public insurance, as well as the effect of various support programs, has received much attention in the empirical literature, the role of the caseworker is a field that has seen very little research. The few studies that exist are restricted to unemployment insurance (UI). [Behncke et al. \(2010a\)](#) studied the effect of the relationship between caseworkers and unemployed individuals on unemployment duration. Using Swiss data, they concluded that a more demanding and less cooperative relationship with the individual increased return to work. With the same data, [Behncke et al. \(2010b\)](#) found that similarities between caseworkers and individuals regarding gender, age, education and nationality increased return to work. Using Swedish data, [Lagerström \(2011\)](#) found that the probability of being employed one year after becoming unemployed was 13% higher for an individual assigned a caseworker among the 30% most successful caseworkers than it was for one assigned a caseworker among the 30% least successful.

With the scarce empirical literature on the impact of the individual–caseworker relationship, especially in the sickness insurance system, this study is a potentially important contribution to the topic of caseworker attitudes and the importance of caseworker discretion. The paper is organized as follows. Section 2 presents the essentials of the Swedish public sickness insurance and the sick-leave process and also provides some idea of the discretion available to caseworkers. Section 3 describes the survey and the individual register data, as well as the caseworkers and the individuals in the study. Section 4 presents the analytical strategy, the statistical model used, and also the results. Section 5 summarizes the most important findings.

## 2 The sick-leave process in Sweden

All workers (employed and unemployed) are covered by public sickness and disability insurance schemes. Sickness insurance covers the loss of income owing to absence from work because of illness. For the employed, the employer compensates absence during the first 14 days (the first day is not compensated). After 2 weeks, the Sickness Insurance Agency (SIA) is responsible for benefit payments. The benefit level is 80% of foregone earnings. In 2010, the benefit cap was set at SEK 26,500 ( $\approx$ € 2,790) per month, and the maximum benefit period was 2.5 years.

During the first seven days of sick leave, it is in practice up to the individual to decide how ill (she)he is and the extent to which this warrants absence from work. The individual merely has to inform the employer that he or she is ill. From the eighth day, a medical certificate from the individual's doctor is required. The SIA organization is divided into two parts: *Early assessment* and *Continuous assessment*. The caseworker at *Early assessment* is responsible for handling the individual's first medical certificate and assessing whether or not the illness has reduced the applicant's capacity for work. If so, the caseworker also makes the first payment. At the same time, if the case is not expected to be finished within the next few weeks, it is handed over to *Continuous assessment* and a personal caseworker (from here: caseworker) who takes charge of the case from that point until the case is finished. This usually involves further investigations of the working capacity, contacts with the employer and also performing eligibility checks as described further below. The sample in this study contains individuals assigned to a caseworker.<sup>1</sup>

The routine used to assign individuals to different caseworkers is central in this paper. As it turns out, different assignment routines are used at different SIA local offices. To find out more about these routines, a survey among representatives at all local offices was performed in 2010 (ISF 2014). In general, three criteria were applied in the allocation of individuals to caseworkers: employment status (employed/not employed), employer (sector) and caseload. Also, more than half of the local offices allocated individuals according to which day of the month they were born, at least among subgroups. None of the offices reported allocation based on previous allocations or on the individual's health status and expected sick-leave length.

### 2.1 Initiatives in the sick-leave process

The employer is responsible for any rehabilitation of the worker. This could, for instance, involve work testing, work training, or vocational training. There are, however, no sanctions involved in not taking this responsibility, probably due to the difficulties in establishing what type of rehabilitation measures the employer, in fact, can provide. Any rehabilitation measures are foregone by an assessment of the need for rehabilitation by the SIA. The SIA is obliged to assess the need for rehabilitation and to coordinate all resources to assist the person reported as sick in getting back to

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<sup>1</sup> Data lack information on when the personal caseworker takes charge of the case. The SIA (2010b) concludes that the majority of cases ongoing at 8 weeks had been handed over to a caseworker.

work as soon as possible. The two most common instruments for assessing the need for rehabilitation are Sassam and assessment meetings.<sup>2</sup> Both have the main purpose of making possible a rapid and sustainable return to work. Sassam is a face-to-face meeting where the individual reported as sick and the caseworker have a structured discussion about questions dealing with benefit eligibility, i.e., medical diagnoses, ability to work and working tasks. The result of the assessment determines how the sick leave will progress.

An assessment meeting is a formalized meeting between the individual, the caseworker and at least one additional party, usually the individual's doctor or the employer. At the meeting, the person's working capacity and the possibility of returning to the current or another temporary position at the workplace are discussed. Appropriate vocational rehabilitation programs are also discussed.<sup>3</sup>

The sick-leave process in Sweden contains by law legislated time-set assessments, or eligibility checks, of the individual's working ability and entitlement to benefits. During the first 90 days of the sick spell, the working capacity is assessed against the ability to perform the current working tasks, or other temporary working tasks, at work. Between days 91 and 180, workers are entitled to benefits if they cannot perform any tasks at their current workplace (the 90-day eligibility check). From the 181st day, the working capacity is finally evaluated against all the jobs on the regular labor market (the 180-day eligibility check).<sup>4</sup> The eligibility checks are supposed to be performed on the 90th and the 180th day at the latest, but can be performed at any time beforehand. Although the eligibility checks are regulated by law and therefore less optional than the assessments of the need for rehabilitation, they are not performed in 100 % of cases, and even less so within the specified time limits. ISF (2014) showed that only about 60–70 % of the eligibility checks were performed on time in 2010.

## 2.2 Caseworker discretion

Besides the law, the caseworker's initiatives are also regulated by internal process documents and operative goals at the SIA. The internal process documents are continuously updated and consist of detailed descriptions of the most common initiatives of the sick-leave process. Also, operative production goals are set for the caseworkers. The goals at the time varied between the local offices but could typically be specified as percentages of the number of cases in which the entitlement to benefits, or the need for rehabilitation, had been investigated within a certain sick-spell length (ISF 2011).

In sum, although much of the caseworker's opportunities to take initiatives in a case are regulated by laws, internal documents and operative goals, these can never fully cover all possible circumstances of a case. The caseworker's discretion is there-

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<sup>2</sup> Sassam is a Swedish abbreviation for "A formalized method for sick-leave investigation and rehabilitation."

<sup>3</sup> In contrast to Sassam, the assessment meeting is stipulated by law (see government bill 2002/03:89). Both Sassam and the assessment meeting are mandatory and failure to participate can lead to the withdrawal of benefits.

<sup>4</sup> See the Social Insurance Code. Exceptions to this rule could be made if, for instance, the individual were likely to return to work for the existing employer by day 365 at the latest.

fore considerable: for instance, regarding if and when assessments of the need for rehabilitation are warranted, and also when eligibility checks should be performed.

### 3 Sampling and description

#### 3.1 The survey

In the spring of 2012, a nationwide survey among caseworkers was conducted.<sup>5</sup> The caseworkers were anonymously asked about their attitudes towards various aspects of the SI system and the sick-leave process. Information about each caseworker's age, education and tenure was also collected. In total, 1,048 out of almost 1,900 caseworkers ( $\approx 56\%$ ) answered all or some of the questions. In the paper, only those 776 caseworkers answering all of the questions are included. ISF (2013a) reports that the responders and nonresponders were very similar as regards gender, age and educational level. The responders had somewhat more tenure compared to the nonresponders: 83 compared with 66% had worked at least 6 years within the SIA. Also, as discussed further below, analyzing the answers among those partially responding to the survey, their responses correspond well with the responders' answers. We hence believe that partial nonresponses should not be a major concern in generalizing the results.

In this study, we focus on the impact of caseworkers' attitudes towards existing rehabilitation programs and current SI rules. The caseworkers' attitudes towards rehabilitation programs were captured through questions about the effectiveness of five different vocational rehabilitation programs. The question was: "How efficient do you think the following rehabilitation method is in getting the individual back to work?" The rehabilitation methods were: work testing, work training, assisted devices, rehabilitation compensation for vocational training, and reassignment at the workplace. The seven-point response scale ranged from "very low efficient" to "very high efficient." From the responses, a standardized index was created in which a high value indicates a positive attitude towards these methods.<sup>6</sup> In the same way, the caseworkers' attitudes towards the rules of the SI system were measured through three questions about the legitimacy and efficiency of the system. The questions were: "To what extent do you think the SI rules are legitimate?" "To what extent do you think the SI rules are efficient in getting the individual back to work?" "To what extent do you think the SI rules are legally fixed?" The ten-point response scale ranged from "To a very little extent" to "To a very large extent." A high index value signals a positive attitude towards the SI system (see footnote 6).

Tables 1 and 2 report caseworker characteristics and the distributions of the standardized index values, respectively. The vast majority (86%) of the caseworkers are women and three out of four are at least 40 years of age (Table 1). Sixty percent of the caseworkers have worked at the SIA for more than 10 years, and their average time in the current position is 2.7 years. Almost 80% of the caseworkers have a university degree and the most common subjects are social science and social work.

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<sup>5</sup> The survey is described in detail in ISF (2013b).

<sup>6</sup> ISF (2013b) describes how the index was created.

**Table 1** Caseworker characteristics

	Mean
Man	0.16
<i>Age</i>	
25–39	0.25
40–54	0.38
55–69	0.37
<i>Tenure at the SIA</i>	
<5	0.08
5–10	0.30
>10	0.61
Time at current position	2.7 (1.4)
University level	0.80
<i>Education</i>	
Law	0.05
Social science	0.48
Social work	0.34
Health	0.06
Other	0.08

SD within parentheses. 776 observations/caseworkers

The caseworkers are relatively positive about both the rehabilitation programs and the SI rules (Table 2). The most positive attitude is that of caseworkers towards the rehabilitation programs, where the average index value is 0.72 (median: 0.73). The index value of the attitude towards the SI rules is 0.61 on average (median: 0.63).

Analyzing the potential importance of survey attrition, we compare the index values among those partially responding to the survey. Among those responding to questions about the rehabilitation measures, but not the SI rules (71 caseworkers), the average (median) index value for rehabilitation was 0.78 (0.80). The corresponding index values for SI rules among those answering the questions about the SI rules but not the rehabilitation measures (117 caseworkers) are 0.61 (average) and 0.63 (median). One conclusion is thus that the survey answers among the responders seem very representative of the answers among the nonresponders.

The caseworkers' attitudes could be driven by many factors. For instance, they could be correlated with the caseworker's age, gender or experience as a caseworker. They could also to some extent be due to the local labor market, with variations in the types of workers, sectors and employees represented, and colleagues' attitudes. In the same way, the attitudes could be shaped by the assigned workers' work motivation and health. Attitudes are also likely to be correlated with each other. ISF (2013b) found that a positive attitude towards the rehabilitation programs was correlated with a positive attitude towards the assessment instruments, Sassam and assessment meeting. Also, attitude towards the SI rules was correlated with attitude towards fulfilling the operational goals of the SIA, and also with greater confidence about the definition of some key concepts of the sick-leave process. The correlation between attitudes

**Table 2** Distribution of caseworkers' attitudes towards rehabilitation and sickness insurance rules

	Rehabilitation	SI rules
Average	0.71	0.61
(SD)	(0.18)	(0.21)
<i>Percentile</i>		
100 %	1.00	1.00
95 %	1.00	0.93
90 %	0.93	0.87
75 %	0.83	0.77
50 % (median)	0.72	0.63
25 %	0.61	0.47
10 %	0.47	0.33
5 %	0.37	0.23

776 observations/caseworkers. The caseworker's attitude towards rehabilitation is captured by a standardized index value created from the responses to 5 questions about the effectiveness of different rehabilitation methods. The caseworker's attitude towards the SI rules is captured by a standardized index value created from the responses to 3 questions about the efficiency and legitimacy of the SI rules

towards the rehabilitation programs and the SI rules was relatively low. This may be because of the dual and perhaps contradictory roles of the caseworkers, who are responsible for both investigating the need for and coordinating any rehabilitation, and also monitoring working ability and benefit entitlement. With the autonomy given, the caseworkers could emphasize these two roles differently. A positive attitude towards rehabilitation programs suggests that the caseworkers put more emphasis on their role as a counselor with the aim of establishing a cooperative relationship with the employee and the employer. On the other hand, a positive attitude towards the SI rules signals that the caseworker emphasizes a more demanding and less cooperative relationship with the employee and the employer, and is more focused on maintaining the integrity of the sickness insurance.

The empirical literature suggests that the attitude of the caseworker could have implications for the expected return to work. Studies on the impact of various rehabilitation programs offer no strong support for them increasing return to work (Johansson et al. 2010; Hägglund et al. 2012). Also, Engström et al. (2015) showed that placing the assessment of the need for rehabilitation by Sassam and an assessment meeting earlier in the sick-leave process extended sickness absence duration and the uptake of disability benefits. Furthermore, research has shown that control and eligibility checks reduce sickness absence (Hesselius et al. 2013; Johansson and Lindahl 2013). Hägglund (2012) concluded that eligibility checks at 90 and 180 days increase return to work.

Hence, being pro-rehabilitation suggests a reduced rate of return to work because of more frequent rehabilitation and assessment initiatives. Also, being positive towards the SI rules suggests a higher rate of return to work because of more frequent eligibility checks and/or perhaps a more strict interpretation of the SI regulations. To better understand the mechanisms behind the impact on return to work, we study the impact

on initiatives taken during sick leave in terms of assessment initiatives and eligibility checks.

### 3.2 Administrative data

Data from the survey are merged with information about the individuals who started a full-time sick-leave episode between January 1, 2010 and March 31, 2011. The SIA register database contains information about all individuals' episodes as sickness benefit recipients from 2000 and onwards. Besides information on diagnosis and percentage of sick leave (full-time/part-time), data also contain rich data on individual characteristics such as gender, age, educational level, country of origin, marital status, historical unemployment, sector, and local registration office. Data do not include information on working status at the end of a sick-leave period. However, since we restrict the analysis to those employed at the start of the sick leave, not returning to work is probably a very uncommon event.<sup>7</sup> In the rest of the paper, we use the term "return to work" to refer to ending the sickness absence episode. It should be noted that the survey was conducted after the sample period. This should, however, not be a major concern in the study since most caseworkers are very experienced. The majority have been working within the SIA for more than 10 years, and more than 90% for at least 5 years. It is reasonable to assume that their attitudes are quite constant over time.

The sample presented in Table 3 contains employees starting a sick-leave period between January 1 2010 and March 31 2011, and who were assigned a caseworker. This means that the sick-leave period was not expected to finish within the next few weeks. The majority, 61%, were women and the most common diagnoses were mental illness and musculoskeletal disorder. Together they accounted for more than half of the individuals on sick leave. Almost 50% worked in the private sector. The majority, 51%, of the individuals resided in a big city area, i.e., close to Stockholm, Gothenburg or Malmö. All 21 counties of Sweden are, however, represented in the study. The average number of SI benefit days since 2000 was 336.

Some significant differences are found when comparing men and women in the sample. Women are overrepresented among those with post-secondary education (36 compared to 21%), mental illness (28 compared to 18%), and also in the municipality (36 compared to 9%) and county council sector (12 compared to 2%).

## 4 Analysis

To analyze the relationship between the caseworkers' attitudes and whether or not the individuals returned to work after different durations, we estimate a linear probability model:

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<sup>7</sup> [SOU \(2010\)](#) analyzes various exits from sickness absence for workers and concludes that the vast majority return to work. For instance, the monthly hazard to unemployment and disability insurance respectively is well below 1% up to nine months.



**Table 3** Individual sample characteristics

	Mean
Male	0.39
Age	46.9 (11.8)
Foreign-born	0.14
Post-secondary education	0.30
<i>Diagnosis</i>	
Mental illness	0.24
Musculoskeletal disorder	0.28
Injuries, poisoning	0.15
Other	0.33
<i>Sector (of work)</i>	
Municipality	0.26
County council	0.08
Private sector	0.46
Other	0.20
<i>Area of residence</i>	
Big city area	0.51
Other	0.49
<i>Absence since 2000</i>	
SI benefit days	336 (509)
Unemployment days	457 (813)
Number of observations	65,162

The sample consists of employees starting a sick-leave period between January 1, 2010 and March 31, 2011, and who were assigned a caseworker. Standard deviation within parentheses

$$Y_{ijt} = \alpha_t + \text{Index}'_j \gamma + \text{LO}'_{ij} \delta + \text{Ind}'_i \beta + \text{CW}'_j \lambda + \varepsilon_t, \quad (1)$$

where  $Y_{ijt}$  is the binary outcome for individual  $i$  assigned caseworker  $j$  of having returned to work at time  $t$ , represented by 3, 6, and 9 months, respectively.  $\text{Index}_j$  corresponds to the standardized index values of the caseworker's attitudes towards rehabilitation programs and SI rules.  $\text{LO}_{ij}$  is the SIA local office at which the individual and the caseworker are registered, and  $\text{Ind}_i$  and  $\text{CW}_j$  are vectors of individual and caseworker characteristics.  $\gamma$ ,  $\delta$ ,  $\beta$  and  $\lambda$  are coefficients capturing the relationship between the variables and the expected probability of having returned to work after different durations.

For  $\gamma$  to capture the causal relationship between the caseworker's attitudes and the individual's return to work, the assignment of individuals with different expected sick-leave duration must be independent of the caseworker's attitudes given the observed attributes in  $\text{Ind}$ . This is not a strong assumption. With the caseworkers' attitudes not being observed, there is no obvious reason to believe that individuals with long or short expected sickness absence durations should be matched with caseworkers with particular sets of attitudes. If, however, caseworkers' attitudes were affected by being systematically exposed to different types of workers, i.e., with different working motivation and health, this could constitute a problem if the allocation mechanism were not captured in data. The survey among the SIA local offices, referred to in Sect. 2, sug-

gested that individual–caseworker matching was based on observable characteristics, typically the individual’s employment status or working sector, and not on characteristics difficult to observe, for instance health or expected sick-leave duration. This suggests that any systematic allocation between caseworkers with particular sets of attitudes and individuals with certain characteristics should not be a problem in the analyses.

Table 8 presents individuals assigned a caseworker above and below the median caseworker regarding attitude towards rehabilitation programs and SI rules, respectively. The comparisons show that the individual–caseworker sorting on caseworkers’ attitudes is not far from being random. About half of the parameters presented are statistically significant, but the differences are very small throughout. For instance, the difference in previous sickness absence among those assigned a positive and negative caseworker towards rehabilitation is 8 days, 342 and 334 days, respectively. There is no statistically significant difference in the previous sickness absence of individuals assigned to caseworkers with different attitudes towards the SI rules.

In the analysis, the control variables are introduced in steps. The first model (Model 1) analyzes the relationship between caseworker attitudes and return to work without any controls. The second model (Model 2) introduces local office (LO) fixed effects, taking into account any heterogeneity due to the local labor market or the local office. In Model 3 we add rich information on each individual regarding sick leave. As argued above, matching between caseworker and individual seems nonsystematic overall, which means that adding this information should have little impact on the attitude estimates. Model 4 includes caseworker characteristics.

Altonji et al. (2005) argue that the selection of observables is informative in terms of the importance of the selection of unobservables if the unobservables are correlated with the observables. Small differences in outcomes adding further background controls suggest that bias due to unobserved heterogeneity should not be a problem in the analyses.

#### 4.1 Impact on return to work

Table 4 reports the results from estimations of caseworker attitudes on the return to work at 3, 6 and 9 months. The 9-month estimation is performed on a subsample of individuals starting a sick-leave episode between January 1 and December 31, 2010 (49,676 individuals). The chosen follow-up months correspond to some key durations in the sick-leave process, i.e., the time-set eligibility checks of the working capacity at 90 and 180 days. The results are, however, not sensitive to the particular months chosen.

Return to work covers either full- or part-time work and the estimates refer to the impact of a maximum difference in attitude between zero and one.

Overall, the results are stable for different specifications. This suggests that the impacts of the attitudes are not sensitive to the SIA local office or the local labor market or to the caseworkers’ characteristics. It also implies that unobserved heterogeneity in the matching between individual and caseworker is probably not a problem.

**Table 4** Estimates of marginal impact (linear probability model) of caseworkers' attitudes on return to work for different durations

Months	Attitude	(1)	(2)	(3)	(4)
3	Rehab.	-0.000 (0.010)	0.004 (0.011)	-0.001 (0.011)	-0.000 (0.011)
	SI rules	0.031*** (0.010)	0.030*** (0.010)	0.030*** (0.010)	0.030*** (0.010)
6	Rehab.	-0.022** (0.009)	-0.022** (0.009)	-0.020** (0.009)	-0.019** (0.009)
	SI rules	0.029*** (0.008)	0.026*** (0.008)	0.026*** (0.008)	0.027*** (0.008)
9 <sup>a</sup>	Rehab.	-0.035** (0.008)	-0.036** (0.009)	-0.033*** (0.009)	-0.033*** (0.009)
	SI rules	0.024*** (0.007)	0.022*** (0.008)	0.023*** (0.008)	0.022*** (0.008)
Controls	Local office (LO)	-	X	X	X
	Individual characteristics (IND)	-	-	X	X
	Caseworker characteristics (CW)	-	-	-	X

Results from estimations of linear probability models with return to work as the dependent variable and the caseworker's attitudes towards rehabilitation and the SI rules as independent variables. *Model 1* is estimated without any controls. *Model 2* includes local office fixed effects, and *Model 3* adds information about the individual regarding gender, age, educational level, foreign birth, working sector, diagnosis, children under 18 (yes/no), quarter of sick-leave start, SI benefit, previous days of sickness absence, unemployment and disability benefit since 2000. Finally, *Model 4* adds information about the caseworker regarding gender, age, tenure at the SIA, time in the current position, education and educational level. We used 65,162 observations

<sup>a</sup> The sample only includes sick spells started in 2010 and 49,676 observations

Standard errors are in parentheses

\*, \*\*, \*\*\* Statistical significance at 10/5/1-% level, respectively

The results show that a positive attitude towards rehabilitation programs has no impact on return to work up to 3 months. However, up to 6 and 9 months respectively, the impact is negative, corresponding to a 2–3 % lower probability of having returned to work. To the extent that a positive attitude towards rehabilitation is associated with the caseworker taking more rehabilitation initiatives, these negative effects are expected from previous research showing no or negative effects of rehabilitation programs on return to work.<sup>8</sup> Also, given the probability that participating in a rehabilitation program increases with sickness absence duration, an increasing negative effect is also expected.

Furthermore, a positive attitude towards the SI rules increases return to work for all durations. The size of the impact decreases somewhat with sickness absence duration but corresponds to more than 2 % at 9 months. If a positive attitude towards the SI rules increases monitoring and eligibility checks, previous research suggests a positive effect on return to work. Also, if the degree of moral hazard is higher among those

<sup>8</sup> See for instance Johansson et al. (2010), or Hägglund et al. (2012).

**Table 5** Share (percent) of individuals being subject to assessment initiatives and eligibility checks and duration until occurrence

Attitude	Sassam	Assessment meeting	Check—90 days	Check—180 days
Mean (%)	8	9	41	19
Day (median)	84	114	75	149

*Note:* 65,162 observations

on short-term sick leave than those on long-term sick leave, the scope of monitoring initiatives should be higher earlier in the sick-leave episode, explaining the diminishing trend of the impact.

Analyzing different subpopulations, Table 9 (in the Appendix) shows that the effects are more pronounced for women. The effects for men are not significant. Since women are overrepresented among workers in the municipality and county council sector, and also among those with a mental illness diagnosis, the effects are more pronounced in that sector and among those diagnoses. Finally, only considering full-time return to work does not alter the results.

Testing alternative model specifications, a Cox proportional hazard model produces impacts qualitatively the same as those generated by the linear probability model. This also holds allowing for unobserved heterogeneity in a proportional hazard model with random effects.<sup>9</sup>

Using survival analyses, the effects can be translated into sickness days. Comparing the 25% most positive caseworkers with the 25% most negative, a positive attitude towards rehabilitation corresponds to 3 more sickness absence days on average.<sup>10</sup> With an average sick-spell length of approximately 120 days, this translates into an impact of 2.5%. A positive attitude towards the SI rules corresponds to about 3.5 fewer sickness absence days on average, or a 3% reduction of the sick-spell length.

## 4.2 Impact on performance of assessments and eligibility checks

To understand how the caseworkers' attitudes affect the individuals' sickness absence, we need to study the initiatives taken by the caseworkers during the sick leave. While registers contain information about eligibility checks among individuals, they do not capture participation in rehabilitation programs. Registers do, however, contain information about assessment initiatives in terms of Sassam and assessment meetings. Any rehabilitation measure should be foregone by an assessment and the SIA (2010a) shows that participation in Sassam and an assessment meeting increases the probability of entering a rehabilitation program.

Table 5 shows how frequent these initiatives were in the sick-leave spells. Most common was the eligibility checks at 90 and 180 days, which were performed in 41

<sup>9</sup> See Vaida and Xu (2000) for details of the random effects model.

<sup>10</sup> The estimation was performed with the Kaplan–Meier method. We calculate the effects by summing up the area between the survival curves corresponding to the individuals assigned the 25% most positive and the 25% most negative caseworkers with regard to attitude towards rehabilitation and the SI rules, respectively.

and 19% of all the spells, respectively. Note that the eligibility checks, if performed at all, are only performed in cases approaching these time limits. As mentioned in Sect. 2.1, however, the caseworkers often omit to perform these checks. Among those passing 90 (180) days in the sample, the caseworkers had only performed the eligibility checks in 67 (67)% of the cases.

Both Sassam and an assessment meeting are performed in almost 10% of the cases. If Sassam is performed, an assessment meeting is also performed in 35% of the cases. If an assessment meeting is performed, Sassam is performed in 33% of the cases. Sassam is usually performed earlier during the sick-leave spell, on the 84th day, compared to the 114th day for the assessment meeting.<sup>11</sup>

Since the initiatives taken in a sick spell are a function of duration, a linear probability model would be less appropriate analyzing the probability of performing assessments and eligibility checks during a sick spell. Instead, we estimate a Cox proportional hazards model where the individual  $i$ 's probability of being subject to an assessment or an eligibility check at  $t$ , given that the sickness episode is still ongoing, is given by  $\theta_{ijt}$ .<sup>12</sup> Note that  $t$  is a continuous time variable here. The following model is estimated:

$$\log \theta_{ijt} = \alpha_t + \text{Index}'_j \gamma + \text{LO}'_{ij} \delta + \text{Ind}'_i \beta + \text{CW}'_j \lambda \quad (2)$$

where  $\log \theta_{ijt}$  is a function of the baseline hazard  $\alpha(t)$  and the parameters in Eq. 1. The effect of being subject to Sassam, an assessment meeting, and the 90- and 180-day eligibility check is estimated separately, right-censoring the other events. For the estimations to be unbiased, we must assume that each process leading to a particular event proceeds independently of every other one.<sup>13</sup>

Table 6 presents hazard ratio impact estimates of the caseworkers' attitudes on time until performing different initiatives during the sick spell. A value over (below) 1 signals the percentage increase (decrease) in the hazard rate of a positive attitude towards rehabilitation and the SI rules, respectively.

The results suggest that if the caseworker is positive towards the rehabilitation programs, the hazard rate for performing an assessment meeting is increased by almost 20%. In addition, the hazard rate for performing the 90-day eligibility check is decreased by 8.4%. Furthermore, a positive attitude towards the SI rules increases the hazard rate for performing both Sassam and the 90-day eligibility check. The results correspond well with what we would expect in terms of a cooperative and a noncooperative role of the caseworker, with the former being relatively more active when it comes to assessments of the need for rehabilitation and the latter being more active when it comes to eligibility checks.

To gain further useful information about the relative importance of performing these initiatives in the sick-leave process, Table 7 presents the impact of the attitudes towards

<sup>11</sup> It is possible for a person to participate in multiple Sassam and assessment meetings; this is, however, unusual.

<sup>12</sup> If a person has participated in multiple Sassam or assessment meetings, the analysis refers to the first one.

<sup>13</sup> Lancaster (1990).

**Table 6** Estimates of hazard ratio impact of caseworkers' attitudes on performing assessments and eligibility checks in the sick-leave process

Attitude	Sassam	Assessment meeting	Check—90 days	Check—180 days
Rehabilitation	0.997 (0.078)	1.198** (0.079)	0.916** (0.036)	1.038 (0.053)
SI rules	1.179** (0.078)	1.080 (0.073)	1.129*** (0.034)	1.004 (0.050)

Results from estimations of a Cox proportional hazards model of the impact of caseworkers' attitudes on performing Sassam, an assessment meeting and eligibility checks, respectively. The model controls for information about the individual regarding gender, age, educational level, foreign birth, working sector, diagnosis, children under 18 (yes/no), quarter of sick-leave start, SI benefit, previous days of sickness absence, unemployment, disability benefit since 2000 and local office (LO). The model also controls for information about the caseworker regarding gender, age, tenure at the SIA, time in the current position, and education and educational level. We used 65,162 observations. Standard errors are in parentheses. Hazard ratios are calculated as exp (parameter estimate), and the Chi-square test as parameter estimate/standard error

\*, \*\*, \*\*\* Statistical significance at the 10/5/1-% level, respectively

**Table 7** Estimates of hazard ratio impact of caseworkers' attitudes on sick-leave duration

Attitude	Model 1	Model 2	Model 3
Rehabilitation	0.940** (0.028)	0.947* (0.030)	0.996 (0.037)
SI rules	1.080*** (0.026)	1.063** (0.028)	1.021 (0.034)
<i>Censoring</i>			
9 months	X	X	X
Sassam and assessment meeting		X	X
Eligibility checks			X

Results from estimations of a Cox proportional hazards model of the impact of caseworkers' attitudes on return to work, with different censoring strategies. In *Model 1*, sickness spells are only censored if they reach at least 9 months. In *Model 2*, spells are also censored if the caseworker performs Sassam or an assessment meeting. In *Model 3*, both assessments and eligibility checks are censored, as well as reaching 9 months of sickness absence. All estimations control for information about the individual regarding gender, age, educational level, foreign birth, working sector, diagnosis, children under 18 (yes/no), quarter of sick-leave start, SI benefit, previous days of sickness absence, unemployment, disability benefit since 2000 and local office (LO). The model also controls for information about the caseworker regarding gender, age, tenure at the SIA, time in the current position, education, and educational level. We used 65,162 observations. Standard errors are in parentheses. Hazard ratios are calculated as exp(parameter estimate), and the Chi-square test as parameter estimate/standard error

\*, \*\*, \*\*\* Statistical significance at the 10/5/1-% level, respectively

the rehabilitation measures and the SI rules on sick-leave duration on the hazard ratio by stepwise censoring of the assessment initiatives and the eligibility checks. In the first column (Model 1), the impact estimates of the attitudes towards rehabilitation and the SI rules are presented without any censoring except for durations exceeding 9 months. The results correspond to the main results of Table 5 using a linear probability

model, showing a decreased hazard due to a positive attitude towards the rehabilitation measures and an increased hazard due to a positive attitude towards the SI rules.

To analyze the importance of using the assessment instruments, Model 2 presents the results censoring the spells when participating in either Sassam or an assessment meeting. As shown in column 2, the effects are only slightly affected, indicating that performing assessment meetings, which is relatively more common among those positive towards rehabilitation, has a somewhat negative effect on the return to work rate. Also, performing Sassam, which is relatively more common among those positive towards the SI rules, has a small positive effect.

Model 3 presents the results censoring for both the assessment initiatives and the eligibility checks. Interestingly, none of the impact estimates are statistically significant anymore. This, together with the results from Table 6, indicates that the eligibility checks have a substantial positive impact on return to work. One conclusion is thus that a considerable proportion of the effects of caseworker attitudes on sickness absence duration can be attributed to performing checks on benefit entitlement. This corresponds well with previous research showing positive effects from increased control and eligibility checks in the sickness insurance system.

## 5 Conclusion

No matter how efficient the design of public insurance and the corresponding administrative process, they will have little effect unless the frontline actors follow the regulations and the internal administrative guidelines. Caseworker discretion is necessary because it is not possible to legislate for all possible circumstances of a case. With the public sickness insurance system in Sweden amounting to about 10% of total government spending, the caseworkers' attitudes towards central aspects of the SI system could be of great economic importance.

On the basis of a nationwide survey among caseworkers in the sick-leave process, we analyze the impact of caseworkers' attitudes towards current SI rules and existing rehabilitation programs on initiatives taken during sick leave and on the individuals' length of sick leave. The attitudes are to some extent expected to capture the twofold role of the caseworker, both assisting the individuals to get back to work and monitoring benefit entitlement. We find that the more positive the caseworkers are towards rehabilitation programs, the lower the return to work is. The size of the effects, when we compare the 25% most positive caseworkers with the 25% least positive, corresponds to three days' longer sickness absence spells (2.5%) on average. Also, a more positive attitude towards current SI rules shortens sickness absence duration and increases return to work. The effect corresponds to 3.5 fewer sickness absence days (3%) when we compare the top and bottom 25% of the caseworkers.

Analyzing the caseworkers' initiatives during their clients' sick leave shows that caseworkers who are relatively positive towards the rehabilitation programs more often assess the need for rehabilitation and less often check benefit entitlement. Caseworkers positive towards the SI rules more often perform eligibility checks and assessment in terms of Sassam. The analyses show that while the usage of assessment instruments can only explain a minor part of the differences in sickness duration due to case-

worker attitudes, performing eligibility checks can explain most of the differences. The results correspond well with studies within sickness insurance, finding positive effects from control and checks of benefit eligibility (Hesselius et al. 2013; Hägglund 2012; Johansson and Lindahl 2013).

The most important conclusion of the paper is that caseworker attitudes towards important aspects of the sickness insurance system could have a considerable impact both on actions taken during sick leave and on sickness absence. The results show that sickness absence can be reduced by increasing the legitimacy of the SI rules and by strengthening the caseworkers' incentives to perform the eligibility checks. The results also put focus on the potentially negative impact of rehabilitation assessments and rehabilitation programs during sickness absence. This stresses the importance of caseworkers being well informed about the potential risks associated with these initiatives.

## 6 Appendix

See Tables 8 and 9.

**Table 8** Characteristics of individuals' assigned caseworkers positive and negative to rehabilitation measures and sickness insurance rules, respectively

	Rehabilitation			SI rules		
	Neg.	Pos.	Sign.	Neg.	Pos.	Sign.
Man	0.40	0.38	***	0.40	0.38	***
Married	0.47	0.46		0.46	0.47	
Children under 18	0.39	0.39		0.39	0.39	
Age	46.9 (11.8)	47.0 (11.9)		46.7 (11.9)	47.1 (11.8)	***
Foreign-born	0.14	0.15		0.14	0.14	
<i>Educational level</i>						
Pre-high school	0.16	0.16		0.16	0.16	**
High school	0.54	0.53		0.54	0.54	
Post-secondary school	0.30	0.31	**	0.30	0.31	***
Maximum benefits	0.17	0.16	**	0.17	0.17	
<i>Sector</i>						
Municipality	0.25	0.26		0.25	0.27	***
County council	0.08	0.09	***	0.08	0.09	***
Private	0.46	0.45	***	0.47	0.44	***
Other	0.21	0.20	***	0.21	0.20	***
<i>Diagnosis</i>						
Mental illness	0.24	0.24		0.24	0.24	**
Musculoskeletal disorder	0.28	0.27		0.27	0.28	



**Table 8** continued

	Rehabilitation			SI rules		
	Neg.	Pos.	Sign.	Neg.	Pos.	Sign.
Injuries, poisoning	0.15	0.15	**	0.15	0.15	
Other	0.33	0.34		0.33	0.34	
Sickness benefit days since 2000	334 (504)	342 (517)	**	335 (508)	337 (510)	
Disability benefit days since 2000	8 (130)	6 (114)		8 (135)	6 (110)	**
Unemployment days since 2000	457 (813)	457 (812)		467 (820)	446 (805)	***
No. obs.	37,731	27,431		33,828	31,334	

\*\*, \*\*\* Statistical significance at the 5/1 %age level, respectively

**Table 9** Estimates of marginal impact (linear probability model) of caseworkers' attitudes on return to work at 6 months

Months	Rehab.	SI rules
Man	-0.006 (0.015)	0.017 (0.014)
Woman	-0.028** (0.012)	0.030*** (0.011)
<i>Diagnosis</i>		
Mental illness	-0.048** (0.020)	0.027 (0.018)
Musculoskeletal disease	-0.011 (0.017)	0.019 (0.016)
Other	-0.013 (0.013)	0.027** (0.012)
<i>Sector</i>		
Municipality or county council	-0.034** (0.017)	0.059*** (0.015)
Private	-0.006 (0.014)	0.003 (0.013)
Other	-0.031 (0.021)	0.009 (0.020)
Full return to work	-0.023* (0.014)	0.033*** (0.013)

Results from estimations of linear probability models with return to work as the dependent variable and the caseworker's attitudes towards rehabilitation and the SI rules as independent variables. The analyses control for SIA local office, individual's gender, age, educational level, foreign birth, working sector, diagnosis, children under 18 (yes/no), quarter of sick-leave start, SI benefit, previous days of sickness absence, unemployment and disability benefit since 2000. The analyses also control for the caseworker's gender, age, tenure at the SIA, time in the current position, education and educational level. Standard errors are in parentheses

\*, \*\*, \*\*\* Statistical significance at the 10/5/1-% level, respectively

## References

- Altonji JG, Elder TE, Elder CR (2005) Selection on observed and unobserved variables: assessing the effectiveness of Catholic schools. *J Polit Econ* 113(1):151–184
- Behncke S, Fröhlich M, Lechner M (2010a) Unemployed and their caseworkers: Should they be friends or foes? *J R Stat Soc Ser A* 173(1):67–92
- Behncke S, Fröhlich M, Lechner M (2010b) A caseworker like me: Does the similarity between the unemployed and their caseworkers increase job placements? *Econ J* 120(549):1430–1459

- Engström P, Hägglund P, Johansson P (2015) Early interventions and disability insurance: experience from a field experiment. *Econ J*. doi:[10.1111/ecoj.12310/pdf](https://doi.org/10.1111/ecoj.12310/pdf)
- Government Bill 2002/03:89. Changes in sickness insurance for increased health (Swedish title: Förändringar inom sjukförsäkringen för ökad hälsa i arbetslivet)
- Hägglund P (2012) Do time limits in the sickness insurance system increase return to work. *Empir Econ* 45(1):567–582
- Hägglund P, Johansson P, Laun L (2012) The rehabilitation guarantee. IFAU Rapp 2012:26
- Hesselius P, Johansson P, Larsson L (2013) Monitoring sickness insurance claimants: evidence from a social experiment. *Labour Econ* 20:48–56
- ISF (2011) Governance of the Social Insurance Agency (Swedish title: Styrning i Försäkringskassan - Lokala Försäkringscentra och införandet av de nya sjukskrivningsreglerna). ISF 2011:2
- ISF (2013a) Administering Public Sickness Insurance—method report (Swedish title: Att handlägga sjukförsäkringen - metodrapport och tabellbilagor). 2013:3
- ISF (2013b) Administering Public Sickness Insurance (Swedish title: Att handlägga sjukförsäkringen - Uppfattningar om roller och regelverk). 2013:9
- ISF (2014) Do assessments of individuals reported as sick increase return to work? (Swedish title: Leder utredning av sjukskrivna till ökad återgång i arbete) ISF Rapp 2014:21
- Johansson, P., Aydin, E., Bergendorff, S., Granqvist, N., Josephsson, M. & Sohlberg, I. (2010) Vocational rehabilitation, Swedish title: Arbetslivsinriktad rehabilitering (Swedish title: Arbetslivsinriktad rehabilitering. Underlagsrapport till den parlamentariska socialförsäkringsutredningen). SOU: S 2010:4
- Johansson P, Lindahl E (2013) Can sickness absence be affected by information meetings? Evidence from a social experiment. *Empir Econ* 44(3):1673–1695
- Lagerström J (2011) Does the caseworker matter? (Swedish title: Vilken betydelse har arbetsförmedlare för arbetslösas framtida sysselsättning och arbetsinkomst?) IFAU 2011:10
- Lancaster T (1990) The econometric analysis of transition data. *Econometric Society Monographs*, Cambridge University Press, Cambridge
- SIA (2010a) Tidiga insatser i sjukfallen - vad leder de till? Social insurance report 2010:8
- SIA (2010b) Tidig bedömning - En analys av faktorer som påverkar tidpunkten för överlämnande av ärenden till LFC. Social insurance report 2010:1
- SOU (2010) Den låga rörligheten mellan sjukförsäkringen och arbetslöshetsförsäkringen. Underlagsrapport till den parlamentariska socialförsäkringsutredningen, S2010:04
- Vaida F, Xu R (2000) Proportional hazards model with random effects. *Stat Med* 19:3309–3324