Skipping the doctor: Evidence from a case with extended self-certification of sickness absence.*

Gaute Torsvik† and Kjell Vaage‡

Abstract

We examine the impact of a policy reform that gave workers in one municipality extended rights to self-certify sickness absence. Without any behavioral responses, that is, for a given demand of absence, removing the physician as a gate-keeper to health related work absence benefits will increase sickness absence. We argue that extended self-certification of absence may, however, for several reasons reduce demand for absence. To identify the effect of bypassing the physician as an absence certifier we contrast the development of sickness absence in the reform municipality, with sickness absence in all other municipalities in Norway. The difference in difference estimate show that the reform reduced sickness absence by more than 20%. The fall in sickness absence was largest for women. The reform took away shorter, marginal absence spells and increased the length of the spells that remained.

**JEL Code:** H55, I13, C23, J24.

**Keywords:** Welfare transfers, Sickness Absence, Moral Hazard, Gate-keeping.

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1 Introduction

Sickness benefits is a form of temporary disability insurance that enable workers to smooth consumption over transitory negative health shocks. Such programs can, as any other insurance scheme, be misused: Employees who are fit for work may call in sick, or may request benefits for longer periods than their true health status calls for (Henrekson and Persson, 2004; Hesselius et al., 2013; Dionne and St-Michel, 1991). To restrain moral hazard, both welfare states and private insurance companies commonly require a medical certificate from a physician to verify that workers claiming benefits have real health issues preventing them from working (OECD (2010)).

In this paper we estimate the effect of eliminating the physician as a gatekeeper. All workers in Norway can self-declare absence spells shorter than 3 days, or 8 days if the employer has chosen extended self certification. We consider a radical reform where one municipality in Norway gave workers the right to self-declare absence for a whole year (the maximum entitlement period). The reform basically removed the physician as an absence certifier. In addition to certify health problems, the physician normally also plays a role in dialog meetings (counseling) between the employer and the worker on sick leave. The reform naturally also relegated the physician from this scene. Instead the employer took a more direct and active role in counseling of sick-listed workers.

Prescribing sickness certificates takes a toll on the time and energy of the physicians, resources that can, with more self-certification, be used on clinical work. A back-of-the-envelope calculations indicate that Norwegian primary physicians spend as much as 15 to 20% of their working time on preparing sick absence certificates.¹ Self-certification also save time and resources for patients who no longer have to visit their doctor’s office to obtain a sick-leave certificate. Hence, for a fixed level of absence substantial resources can be saved by letting workers self-certify the health problems that keep them away from work. But will absence

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¹In 2015 Norwegian doctors issued 3.8 million sickness absence certificates. There are around 2500 primary physicians in Norway, and they issue the bulk of these certificates. A conservative estimate is that it takes 15 minutes to do the dialogs and paperwork associated with issuing an absence certificate. This means that on average primary physician use 360 hours per year on the administrative work associated with sickness certificates, that is more than 20% of a normal work year.
stay fixed?

For a given demand for sickness absence, removing the physician as an absence certifier will increase absenteeism. By how much depend on how strict the physicians are as gate keepers. There are, however, good reasons to expect a lower demand for sickness absence after the reform. Demand for absence depends on the replacement rate and on the difference in intrinsic utility of staying home versus attending work. Allowing self-certification of absence bestow a lot of trust and responsibility on workers. Recent behavioral research has shown that many individuals want to return (reciprocate) the kind of treatment they receive from others. An employer who imposes control and distrust, may induce misbehavior (Ellingsen and Johannesson, 2008; Falk and Kosfeld, 2006). According to the logic of reciprocal motivation allowing for self-certification of absence may lower the demand for sickness absence. In addition frequent meetings with the employer (the absent worker’s line leader) while sick, without having the physician as a counselor, may also reduce the intrinsic utility (increase the hassle) of having a sick leave.

Our data contains registered sick absence for all workers in Norway in the period from 2001 until 2015. To assess the impact of the reform on sickness absence, we compare absences among municipality workers in the reform municipality (Mandal) before and after the reform with the change in absence among municipality employees working in all other Norwegian municipalities. We use a difference-in-difference (DD) estimator with Mandal as the treated unit and the other municipalities as controls. To rule out the presence of a Mandal shock in absence at the year of the reform - in addition to the reform we are interested in - we do the same calculations for workers that are not employed in the municipality sector (all other workers).

We estimate a considerable decline in absence in Mandal in the post-reform period. The decline in absence is especially high for female workers. One of the stylized facts in sick absence in almost every country is that women tend to have a higher absence level than men (Mastekaasa and Melsom, 2014). We also know that women visits the physician more frequently than men; in Norway in 2016 the average woman visits the doctor 3.1 times a year, the average man 2.4 times. Our finding that the gender difference in absence rates shrinks after the introduction
of self-reported absence suggest that it is important to explore possibility that a visit to a physician may actually in itself cause sickness absence.

Moral hazard is a key concern in all types of health related social insurance. To constrain the problem insurers, whether it is private firms or the central government, require medical doctors to certify eligibility. It is therefore both interesting and policy relevant that replacing medical certificates (gate-keeping) with self-certification and a tighter employer-driven counseling of the sick workers can reduce workplace absenteeism. Note that even a zero effect on absence is interesting from a policy point of view, as the reform will save resources by mitigating doctor visits motivated by obtaining a sickness absence certificate.

The next section provides a brief introduction to the sickness insurance system in Norway and a description of the reform. Thereafter we describe our data and the estimation method. Section 4 presents the results.

2 Institutional setting and the policy reform

2.1 Sickness benefits and sickness absence in Norway

Sickness insurance is mandatory in Norway and covers all workers employed for more than four weeks. The compensation ratio is 100 % from day one for a maximum period of one year. The employer pays sickness benefits for the first 16 days, thereafter the benefits are financed by the National Insurance Administration (NIS) for a maximum of 50 weeks. No medical certification is required for sickness spells lasting from one to three days, and self-reporting can be applied up to four times per year. As of 2001, firms are encouraged to join a publicly organized scheme, where one out of several components consists of allowing self-reported absence spells up to eight days, three times per year. Mandal municipality as an employer joined the program in 2002. Spells lasting more than eight days require a medical certificate, usually from a general practitioner. For spells lasting more than eight weeks an expanded certificate is required.

For some groups of employees there is an earning ceiling of approximately NOK 555,000/EUR 60,000 per year, but most workers (all in the public sector and the greater part in the private sector) obtain 100 % replacement of their salaries.
The level of sickness absence is high in Norway, around 7% of contracted work hours are lost because of sickness absence (certified by a medical doctor). Around 80% of the absence comes from long-term sickness spells (spells that last more than 16 days). The public expenditures associated with sickness absence are in the order of 2.5% of GDP. Individuals who obtain long-term absence certificates have a high risk of never returning to ordinary work but will be transferred to permanent benefits (Markussen et al., 2012).

The short-term absence in Norway is remarkably stable over time and across individual characteristics. The long-term absence, on the other hand, varies substantially over the business cycle (Askildsen et al., 2005) and across gender, age, education, and occupation (Mastekaasa, 2015). The majority of sick-leave certificates from doctors classify the health issues as diffuse and subjective health problems; the most important examples being mental disorders and muscle-skeleton symptoms that account for about 60% of the cases in 2012. As the term “diffuse diagnoses” suggests, these are cases that cannot be objectively verified by the physician and it is difficult to prescribe evidence based treatment. Diffuse diagnoses dominate in the long-term spells. Diagnoses that are easily verifiable, e.g., cancer and cardiovascular diseases, play only a limited role. Cardiovascular diseases, for example, accounts for only 5% of the absence days. Short-term absence also contains diagnoses that are hard to verify (chronic pain etc.). But for shorter spells uncomplicated and observable diagnosis (airways infections etc.) makes up a larger share than for the long-term spells.

The difference between short- and long-term absence suggests that it is long-term sickness absence that will be most influenced by the sick-listed’s own judgements; in particular when it comes to length of spells (Mastekaasa 2015). Hence, moral hazard is likely to be a serious issue for long-term absence.

2.2 The reform: extended self-certification of sickness absence in Mandal.

There are 428 municipalities in Norway. They are all responsible for producing the same services; compulsory education (until the 10th grade), outpatient health services, senior citizen services and maintaining the road infrastructure within a
municipality. In 2012, 23% of the total workforce were employed by municipalities. Although they all serve the same functions, municipalities vary a lot in size. The smallest has fewer than 300 inhabitants and the largest more than 600000. In 2012 Mandal – the reform municipality – had 15 000 inhabitants and 1200 employees (around 900 workers in full time positions), this is a bit above the average municipality size in Norway.

Historically, the level of sickness absence for municipality employees in Mandal has been around the average for the sector in Norway. During the last decade, several municipalities — and firms more generally — have experimented with various local reforms to reduce sickness absence. This is also the case for the municipality of Mandal; at the end of 2003, it launched the so called a “presence project” to reduce sickness absence among municipality workers. From this project grew an initiative directed to the Ministry of Labour, requesting permission to “bypass” the physician as a sickness absence certifier. The suggestion was to allow municipality employees to self-certify their sickness absence for the entire benefit period (one year).

The municipality administration predicted that the employees would respond positively to extended trust and counseling in relation to sickness absence. The administrative leadership in Mandal worked out a detailed plan for how lower level leaders should follow up workers who self-certified sickness absence. The idea was that a stronger involvement from the employees’ line managers would substitute for the physician’s involvement and advice. For shorter spells, leaders were instructed to call the absentees (after three days and after eight days). For longer spells, the leaders were instructed to initiate a number of different meetings for individual counseling and follow-up plans, and to also regularly contact the absentee, and send cards and flowers etc. All the actions popped up as reminders on the email system of the leaders, and if they did not follow up on the plan, a message would be sent to the next person in the hierarchy who should then take actions. This hierarchical system of email-based action reminders guaranteed that the follow-up plan was implemented.

The application of the system with extended self-certification of sickness absence was approved by the Ministry in June 2007. The “Trust Project” (with a handshake as the official logo) was officially launched the first of July 2007.
With this Mandal became the only municipality — and firm — in Norway with a permission to operate with a sickness insurance scheme that made the medical certificate from physician optional for the full length of the sickness spell. After some months of piloting a web-based system of self reported absence was in place in May 2008. At the end of 2008, almost 90% of all sickness absence was self-reported. The project is still running (2016).

3 Gate-keeping and absence.

This section provides a conceptual framework for discussing how medical health certificates and gate-keeping influence the demand for absence and the overall absence level. Let $h_{it}$ be an index for the health for person $i$ at time $t$. Higher $h$ indicates better health. There are individual differences in permanent health, and everyone experience transitory negative shocks to health and work capacity. Most western workers are covered by an insurance scheme that partly insure them against the risk of income losses caused by temporary negative health shocks.

According to the (implicit) insurance agreement, workers with health above $h^*$ should attend work. The workers’ decision to attend work or not, depend both on the pecuniary and non-pecuniary consequences of that decision. Suppose the income at work is $w$ and the benefits she receives if she stays home is $T$. Let $v_i(h_{it})$ be the non-pecuniary utility difference between staying home and being at work. This term captures the difference between the intrinsic value of the activities one can undertake at home and the intrinsic value of working. It also captures the guilt and remorse workers may feel when they are absent from work. It is reasonable to assume that $v(h)$ decreases in $h$: bad health makes it strenuous to attend work and very much so when you are really sick, furthermore the guilt and remorse workers feel when they are absent from work will probably also increase in $h$.\footnote{Lindbeck et al. (1999) study work incentives in a welfare state when the stigma of living out of benefits vary with the fraction of the population that are on benefits, we abstract from such peer effects here.}

Assuming additive utility, a worker $i$ attends work at day $t$ if $u(w) > u(T) + v_i(h_{it})$. For simplicity, all workers have the same utility of income but they differ with respect to the non-pecuniary utility of working. If we fix $w$ and $T$, there
will be a separating health level $h^0_i$ defined by $u(w) = u(t) + v_i(h_{it})$. Workers with $h_{it} < h^0_i$ prefer to be home. In a population of workers there will be a distribution of $h^0$. Workers with low intrinsic value of work, who are relatively insensitive to the social pressure of attending work, and who can easily justify for themselves that they are entitled to stay home, have a $h^0 > h^*$. If worker $i$ wakes up one morning with $h^* < h_{it} < h^0_i$ she prefers to be home, but the implicit insurance contract expects her to work. This captures the moral hazard problem in sickness absence insurance, it is illustrated in Figure 1.

Figure 1. Health and the decision to stay home from work

Medical certificate required

Let us first consider a regime where the insurer requires a medical certificate in order to pay the benefits $T$ to an absent worker. A worker with $h_{it} < h^0_i$ will demand absence, and – in this regime – must go to a physician to obtain an absence certificate. The notion that doctors are gate-keepers to welfare benefits is based on the assumptions that; (i) a medical examination reveals whether the worker is fit for work or not, that is, if her health is above or below $h^*$, and (ii) the doctor will not underwrite a certificate if the worker is fit for work. Both assumptions are questionable.

First it is often very difficult to diagnose a patient (many have diffuse symptoms) and the health value that separates legitimate sickness absence from illegitimate absence, $h^*$, is not clear-cut but up for interpretation. Hence, for many
cases it will be difficult for a physician to determine whether a person has health issues that make it legitimate to stay away from work. Their role as gate-keepers has also been questioned. Some physicians consider themselves as the patients’ advocate, requests for sick-leave certificates might then be difficult to deny (Svårdssudd, 2000; Carlsen and Nyborg, 2009; ?). Their role as gatekeepers may also be weakened by their own economic interests as they may lose patients if they decline requests for a sickness absence certificate (Markussen and Røed, 2016). Hence, in reality only a fraction $\theta > 0$ of workers with $h^0 > h^*$ will be denied a sickness absence certificate. Some doctors may also err on the other side, denying some (a fraction $\gamma > 0$) with a health below $h^*$ a certificate.

Allowing workers to self-declare sickness absence

It seems reasonable to assume that the health of workers do not change as a result of allowing them to self-declare sickness absence (workers can still go to the doctor for medical treatment if they have health issues, the point is that a medical certificate is not required to obtain work absence benefits ). The most immediate and obvious effect of a reform that allows workers to self-certify absence is that both $\theta$ and $\gamma$ drop to zero. Hence, if we only look at the mechanical effect of skipping the doctor as sickness certifier the effect will be more absence. The behavioral effect of self-certification may, however, draw in the other direction. Self-certification may for a given health and coverage rate reduce the demand for absence; the reform may shift the $\nu(\cdot)$ curve to the left and lower the critical level of health that generates demand for absence benefits (the reform may lower $h^0_i$).

One reason why the reform may lower (for a given $h$) the value of staying home builds on the idea of gift exchange and strong reciprocity (Akerlof, 1982). An employer initiated reform that grants workers the responsibility to self-declare whether or not they are fit for work, signifies both generosity and trust. In fact the reform was branded as “The Trust Project.” Workers may feel more guilt if they call in sick, or they may have a higher intrinsic utility of attending work, after having been granted the permission to self-declare sickness absence.  

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4There is now an extensive theoretical and experimental literature on reciprocal motivation and how generosity and trust affect behavior, some prominent examples are Ellingsen and Johannesson (2008); Bénabou and Tirole (2006); Falk and Kosfeld (2006)
Another reason why $v$ shifts to the left is that in the new regime sickness absence imply more frequent and direct consultations with the employer. The physician is no longer the mediator between the employer and the employee in dialogue meetings where the absentee, the absence certifier and the employer discuss adjustment that could be done at the workplace that make full or partial work resumption possible. With no certifier there is a direct dialogue between the absentee and the employer. Direct counseling and activation, not having the medical doctor as the patients advocate, may also reduce the intrinsic utility of having sick leave.

Legitimacy is another reason why the reform may make workers, for a given $h$ less inclined to demand sickness absence. Many workers with a health status in the vicinity of $h^*$, workers with diffuse symptoms who do not feel entirely fit for work, but who are not clearly ill either, will probably feel that a medical certificate relieves them from some of the guilt and remorse that comes with calling in sick. In a regime with self-certification of absence, the legitimacy of the medical certificate disappears and $v$ shifts to the left.

From a theoretical point of view it is therefore ambiguous how a reform granting workers the right to self-certify sickness absence will affect the absence level. For a given demand for sickness absence, skipping the physician as a sickness-certifier will increase absence, but, as we have argued, the demand for sick leave may fall because of extended self-certification and employer involvement. There is not much empirical research evidence on the effects of medical certificates. One exception is the assessment of a Swedish experiment with extended self-certification of work absence, Hesselius et al. (2013) and Hesselius et al. (2009). A random sample of workers in two different municipalities could self declare one extra week - two instead of one - of self-declared absence. In comparison with workers who did not obtain the extra week, the treatment group increased their absence; on average, absenteeism increased by 0.8 days per year, from 11.8 to 12.6 days. In the Swedish case the gate-keeper effect dominated the demand effect. We cannot extrapolate from the Swedish experiment to the self certification reform we study. First, the Mandal reform differs in the level of generosity and trust it grants the employees. In Sweden they got one extra week, here they can self-certify for the whole entitlement period (a year). Furthermore, the Mandal reform was
branded as the “Trust Project” and appealed openly to workers’ responsibility and reciprocity. In addition the reform in Mandal also implied a stronger employer involvement in the counseling of the sick workers, which was not the case in Sweden.

4 Data

Our unit of observation is quarterly sickness absence at the municipality level, broken down on sector (municipality employees and others (private and central government), on gender and on four age intervals, $[16 – 39]$, $[40 – 49]$, $[50 – 59]$, and $[60 – 69]$. We have data from 2001 until 2015 which means we have seven years of observations before and seven years of observations after the reform.

Our outcome variable measures days of sickness absence, as a percentage of contracted work days. Our analysis is based on absence spells that are longer than 16 days. We use long spells because of data reliability. The data are obtained from the National Insurance Administration (NAV). Employers (municipalities in our case) are paying for absence spells that are shorter than 16 days. The state takes over the financial responsibility after 16 days. In order to be reimbursed for absence benefits that extend 16 days, employers must report all the absence spells that last longer than 16 days to NAV. Hence, it is in the economic self interest of the employer to report long-term sickness absence to NAV. Data on long spells of absence are therefore accurate. For short-term spells only absence certified by a medical doctor is reported to NAV. Hence, if we were to use data on short-term spells that are reported to NAV, absence in Mandal would drop mechanically, simply because only physician certified absence is recorded in the NAV data.

As explained above, and contrary to the conventional wisdom, moral hazard problems are especially relevant for long-term absence. In addition if we are concerned with working days that are lost because of illness, long-term spells dominate. Among municipality employees, around 80 % of the contracted work-days that are lost because of sickness absence spells, comes from spells that extend beyond 16 days. Note also that for spells below 8 days the municipality workers in Mandal were entitled to self-certification even before the reform.

Table 1 shows some relevant numbers from Mandal (averaging over the time
frame of our data [2001, 2014]) and the average of all other municipalities.

Table 1. Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>Mandal</th>
<th>Other Municipalities (N = 427)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>(St Dev)</td>
</tr>
<tr>
<td>Population</td>
<td>14347</td>
<td>11015 (32800)</td>
</tr>
<tr>
<td>Unemployment level (prst)</td>
<td>2.1</td>
<td>2.1 (0.01)</td>
</tr>
<tr>
<td>Employees in other sectors</td>
<td>3602</td>
<td>3770 (17834)</td>
</tr>
<tr>
<td>Sick absence among workers in other sectors (prst)</td>
<td>6.64</td>
<td>6.41 (1.08)</td>
</tr>
<tr>
<td>Municipality employees</td>
<td>1196</td>
<td>909 (2255)</td>
</tr>
<tr>
<td>Absence among municipality employees (prst)</td>
<td>6.57</td>
<td>7.55 (1.21)</td>
</tr>
<tr>
<td>Female municipality employees (prst)</td>
<td>80.11</td>
<td>79.67 (2.99)</td>
</tr>
<tr>
<td>Absence among female municipality employees (prst)</td>
<td>7.25</td>
<td>8.35 (1.33)</td>
</tr>
<tr>
<td>Average length of spell (days)</td>
<td>57</td>
<td>52 (5.6)</td>
</tr>
<tr>
<td>Graded spells (prst)</td>
<td>25</td>
<td>27 (3.9)</td>
</tr>
</tbody>
</table>

Note: The numbers are averaged over the time interval of our analysis [2001, 2014]. Employees in “other sectors” include all workers in the private sector and those working for the central government.

5 Empirical setup

The reform – skipping the physician as a sickness certifier and as a mediator in dialogue meetings – is not randomly assigned to workers. To estimate the effect of the reform we use a difference in difference estimator, with the identification assumption that the average absence in all other municipality workers in Norway captures the counterfactual development for the reform municipality (Mandal). We present graphical evidence to build confidence in the critical common trend assumption. Our main outcome variable is the percentage of working days lost because of health related absence, but we will also consider the effect of the reform on the length of absence spells and the use of graded sickness absence (where the workers are partly at work). Our estimate of the reform effect is therefore based on the following linear regression equation

\[ sick_{it} = \alpha_i + \beta_t + \gamma ref_{it} + \delta ref Man_{it} + \varepsilon_{it}, \]  

where \( \alpha_i \) are municipality fixed effect and \( \beta_t \) are year fixed effects. The vari-
able \( ref \) is an indicator, equal to 1 in the post-reform period \([2008, 2015]\) and 0 for all other years and the variable \( refMan \) is an indicator equal to 1 for the treated municipality Mandal in the post reform period, 0 otherwise. To check for contemporaneous Mandal shocks in absence, we estimate the same model for employees who work in the private sector or for the central government.

### 6 Results

#### 6.1 Difference–in–difference analysis

As a first take on the impact of the reform, Table 2 tabulates before and after mean values for some key variables.

**Table 2.** Mean values of sickness absence before and after the reform

<table>
<thead>
<tr>
<th></th>
<th>Mandal</th>
<th>Control (438)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>Population</td>
<td>13866</td>
<td>14904</td>
</tr>
<tr>
<td>Unemployment (prst)</td>
<td>2.24</td>
<td>1.91</td>
</tr>
<tr>
<td>Employees other sectors</td>
<td>3427</td>
<td>3777</td>
</tr>
<tr>
<td>Sick absence other sectors (prst)</td>
<td>7.01</td>
<td>6.32</td>
</tr>
<tr>
<td>Municipality empl.</td>
<td>1110</td>
<td>1282</td>
</tr>
<tr>
<td>Absence fem mun empl (prst)</td>
<td>8.30</td>
<td>6.21</td>
</tr>
<tr>
<td>Fem. mun. empl. (prst)</td>
<td>78.8</td>
<td>81.4</td>
</tr>
<tr>
<td>Absence mun. empl. (prst)</td>
<td>7.43</td>
<td>5.71</td>
</tr>
<tr>
<td>Spell length (days)</td>
<td>53</td>
<td>60</td>
</tr>
<tr>
<td>Fraction graded</td>
<td>25.5</td>
<td>30.0</td>
</tr>
</tbody>
</table>

*Note:* The average length of sickness spells is found by dividing the number of absence days divided by sick spells during a year. The percentage of graded spells is the fraction of all spells where the worker is partly at work and partly on sick-leave.

Comparing levels before and after the reform, Table 2 shows that Mandal moves roughly in tandem with the average of all other municipalities with one important exception; sickness absence. There is a large drop in absence in Mandal, especially for women, while there is only a moderate drop in the average long term absence for all other municipalities. We can also see that the length of the spells increases by more than 10 percent in Mandal while there is a small drop in other
municipalities.

**Graphical evidence** To attribute the decline in absence to the self-certification reform with more confidence, requires a closer look at sickness absence in Mandal and in the control municipalities around the reform period. Figure 2 plots long-term sickness absence in Mandal and in the control municipalities, using yearly data. Since absence levels are in general higher for women than for men, and since 80 percent of the workers in the municipality sector are women we provide a separate plot for female workers. Panel a and b depicts yearly averages and the vertical line indicates the time of the reform.

![Figure 2. Long-term absence before and after the reform](image)

There is a sizable drop in absence in Mandal around the period of the reform, and absence stays well below the average absence in the years after the reform. Both the immediate drop and the lower post reform absence is particularly pronounced for female workers. There is also a substantial drop in absence between 2003 and 2004, both in Mandal and in average absence. This drop came in the wake of a major nation wide reform in the absence certification regulation that was implemented in July 2004. The 2004 reform and its effect on absence is discussed in Markussen et al. (2012).

In order to zoom in on events around the announcement and implementation of the reform Figure 3 plots quarterly absence rates. We indicate both when the “trust project” was approved by the government and when the extended self
certification was implemented in full scale. Absence in Mandal drops immediately after the announcement of the reform (in July 2007) and drops further when the extended self certification is fully implemented in May 2008.

![Figure 3. Long-term absence before and after the reform, quarterly data.](image)

**Regression results** To quantify the effects depicted in the Figures 2 and 3 we estimate the difference in difference model (equation (1)). To minimize the problem with biased standard errors caused by time serial correlation we use yearly data (with 2008 as the first reform year). In order to check for contemporaneous municipality effects in Mandal we run the same regression for workers in other sectors. The results are reported in Table 3.
Table 3. DD Regression results for municipality and other sectors

<table>
<thead>
<tr>
<th></th>
<th>Municipality Sector</th>
<th>Other sectors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Baseline</td>
<td>8.32***</td>
<td>5.89***</td>
<td>9.15***</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.09)</td>
<td>(0.08)</td>
</tr>
<tr>
<td>Reform</td>
<td>-0.42***</td>
<td>-0.44***</td>
<td>-0.62***</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.07)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Mandal</td>
<td>-0.64***</td>
<td>-0.49***</td>
<td>-0.60***</td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
<td>(0.12)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Mandal*reform</td>
<td>-1.27***</td>
<td>-0.33*</td>
<td>-1.71***</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.18)</td>
<td>(0.15)</td>
</tr>
<tr>
<td>Observations</td>
<td>48142</td>
<td>24046</td>
<td>24096</td>
</tr>
</tbody>
</table>

Note: The outcome variable is long term absence (the fraction of workdays lost in percentage of contracted workdays, counting only spells of absence that last longer than 16 days). The results are from a weighted regression, with weights proportional to the number employees in the municipality. Standard errors are clustered on municipality level. The baseline estimate is absence in the control municipalities in the pre-reform period. *** p < 0.01, ** p < 0.05, * p < 0.1

There is a substantial drop in absence in the post-reform period in Mandal for municipality workers. The effect is relatively small for men but large for female workers, where there is a 20 percent drop in absence. When we estimate a placebo reform on workers who live in Mandal but are employed in other sectors there is no “reform” effect.

It is well known that assuming independence across time periods can underestimate the uncertainty associated with DD estimates (Bertrand et al., 2004). To restrain the problem of serial correlation in sickness absence we use yearly data in our regression analysis. Notwithstanding, to address this concern we perform a more robust — distribution free — permutation test of the uncertainty associated with the change in absence we observe in Mandal. We calculate the relative change in absence (absence after minus absence before divided by the level before) for all municipalities in Norway and consider where in the distribution of relative changes we find Mandal. The results are in Figure 4.
Figure 4. The distribution of relative changes in mean absence rates between pre- and the post-reform period

Panel a contains the distribution for all municipalities. The change in Mandal is in the negative tail of the distribution, but there are other municipalities with a larger relative drop in absence. Many municipalities are very small, and with relatively few employees there is much more variability in absence. Panel b adjusts for this, it depicts the distribution for all municipalities with more than 500 employees. This lower bound of 500 employees lies considerable below Mandal (1200 employees). Within this subsample Mandal is extreme, no other municipality is even close to having an equivalent drop (or change) in absence if we use data from these time periods.

6.1.1 Length and grading

To better understand why extended self-certification and enhanced employer involvement lead to a drop in absence, we analyze the length of absence spells and the percentage of spells that are graded (partial sickness absence). A worker with a graded absence certificate has moderate health problems and some work capacity left and should, accordingly, spend some time at work. Markussen et al. (2012) study a nationwide Norwegian reform in 2004 that, among other things, encouraged the substitution of graded for nongraded sick leave certificates. They argue that the reform led to shorter spells of sickness absence which in turn reduced absence levels; with graded sickness insurance workers utilize their remaining work
capacity and this leads to a faster recovery and to a reduction in sick benefits claims.

Normally the physician, together with the employer and the worker, decide the grading of absence spells. After the reform in Mandal, the physician did not take part in this decision and the employer (the line-leader) and worker decided the grading of the absence. Could it be that the Mandal reform increased the use of grading, which then reduced the length of the sickness spells and overall absence, as found in Markussen et al. (2012)?

Figure 5 plots both the fraction of graded spells and the length of spells. Comparing with control municipalities there is no evidence that graded sickness absence is more frequently used in Mandal. There is a general trend toward more grading of absence, but Mandal basically follows the trend. There is, however, an increase in the length of long spells in the period after the reform.

When we use length of the spell as the outcome variable and estimate equation 1 on yearly data, we obtain a DD estimate of 9.1 days with a standard error of 3.4 days. Measured against a pre-reform base average length of 53 days (both in Mandal and in the average of all other municipalities) this amounts to almost a 17% increase in the length of the spells in Mandal in the reform period. When we use data from private and central government sector (workers who are not affected by the Mandal reform) the (placebo) DD estimate is very close to zero (0.5 days).
Hence, it appears that the reduction in absence we find in Mandal basically took away the shorter, marginal spells of those that lasts more than 16 days.

7 Discussion and conclusion

We find that allowing workers to self-declare absence – allowing them to skip the doctor certificate – lead to a 20 percent reduction absence. We believe the difference in difference estimator we use captures the effect of the reform: The pre-reform trend in the treated municipality is parallel to the trend in the average of all other municipalities. There is a sharp drop just around the reform. We rule out a contemporaneous Mandal shock to absence as there is no similar drop in absence for workers in Mandal who are not affected by the reform.

We explain the effect as a decline in the demand for sick absence. For a given demand for absence, skipping the doctor as an absence certifier, as a gate-keeper, will increase the level of absence. How much depend on the magnitude of moral hazard, that is, how many workers who are healthy enough to work claim absence benefits, and how rigorous physicians are as gate-keepers. But as we explain in detail in a separate section of the paper there are several features with this reform that may induce workers to lower the demand for absence. Our results show that the decline in demand dominates the direct effect of removing the physician as a gate keeper.

For policy this is an interesting result. Using medical personnel to certify absence is costly for the doctors, for the patients and for the insurer (which reimburses the medical doctors). Our analysis indicates that sickness certification can be taken off the hands of the physicians without a subsequent rise in sickness absence. In fact, extended self-certification of sickness absence in Mandal appears to be a win–win reform: less absence and fewer resources used on certification. Note however, that extended self–certification of absence implied extended employer involvement, which probably uses administrative resources in the municipality.

A natural question is to what extent our findings have external validity. Even if we identify a clear reform effect in Mandal there could be specific attributes with Mandal that made the reform effective. It is reassuring that Mandal appears to be very much an “average” municipality if we look at the pre-reform data (on sickness
absence or other variables such as, age, gender composition, unemployment, etc.). Another objection is that maybe the key persons that initiated the trust project in Mandal are just as important as the reform in itself. Again it is consoling that the team of leaders of the “Trust Project” were present also in the years before the extended self-certification was introduced. Another relevant point is that physicians in other countries may be stricter gate-keepers than the physicians in Norway, and hence if the same reform was introduced in another country the direct effect of skipping the doctor as an absence certifier – drawing towards more absence – may dominate the decline in demand for absence. We cannot know this. But our findings should encourage more sick absence insurers to experiment with extended self-certification of sickness absence.

References


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