**Title: Change in diagnosis on fit notes within an episode of certified sickness absence**

**Short title: Change in diagnosis on fit notes**

**Article category: Health Service Research**

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**Abstract**

*Background* Little consideration has previously been given to the implications of a change in diagnosis during a sickness certification episode.

*Objective* To report the extent and patterns of change in diagnosis and to identify factors associated with likelihood of change.

*Methods* Sixty-eight general practices in the UK recorded details of sickness certificates (fit notes) issued to patients in a 12 month data collection period. Diagnoses on fit notes were assigned to modified READ categories.

*Results* Over 23% (3,841/16,400) of episodes consisting of more than one sickness certificate had a change in diagnosis during the course of the episode. Over 4% (438/10,398) of initial physical health episodes had a later mental health diagnosis. Lowest rate of change was found within episodes with an initial mental health diagnosis, the highest when an unspecified physical symptom was entered on the first fit note in the episode. A change in diagnosis was more likely when the total duration of the episode was longer, the episode included more fit notes and the patient was living in a socially deprived neighbourhood. Episodes where the patient had been issued fit notes by more than one GP were more likely to have a change in diagnosis.

*Conclusion* Change in diagnosis on fit notes is much less common when the patient has a psychological health problem.

**Key words**: sickness absence, sickness certification, change in diagnosis, sick leave, sick-listing

**Introduction**

Absence from work through ill-healthhas serious consequences for the individual employee, their employer, and the wider economy (in terms of lost productivity and state spending on sickness benefits). It is estimated that around 131 million working days were lost in the UK in 2011 due to sickness absence, representing over 2% of all working time and 4.5 days per worker (1). The associated direct costs in benefit were £13 billion, plus £9 billion paid by employers in the form of sick pay. Similar rates of absence are found in other European countries, including France, Germany and the Netherlands (2). Reducing levels of sickness absence remains an important welfare policy objective for governments in the European Union (EU). In the UK, recommendations made in two key government-commissioned reports have led to important changes in the process of sickness certification itself and led to new measures aimed at preventing transition to long-term incapacity (2,3). One of these recommendations was for a change in sickness certificate from a ‘sick note’ to a ‘fit note’ (implemented in 2010).

The perception of work incapacity as a potential public health problem has led to increasing academic interest in various aspects of sickness absence and its certification. A majority of studies have attempted to identify employee, patient or diagnostic factors associated with the type and length of sick leave episodes (4). Other studies have focused more on the process of sickness certification itself (5) and attitudes of general practitioners (GPs) to their role in certifying sickness absence (6,7). In recent years there has been a renewed interest in factors leading to an increased risk of recurrence of medically-certified sickness absence after a return to work, for employees with any diagnosis (8), and for those with mental health or musculoskeletal problems (9,10).

However, one important aspect of sickness certification yet to be covered to any real extent concerns the lack of stability in a certified sickness episode due to a change of diagnosis during the course of the period of the episode (11). The extent and nature of such diagnostic change may raise other issues not directly related to sickness certification, such as GP ‘subjectivity’ in reaching a diagnosis and the pattern of comorbidities (particularly co-existence of physical and psychological health problems).

Identifying an episode including sickness certificates with different diagnoses has potential implications for all agencies in the sickness certification and benefits systems. Firstly, co-morbidities experienced by the patient/employee will impact upon treatment options, time needed to recover and the duration of sick leave. Secondly, any return-to-work advice provided by the GP (or occupational health physician) will need to take account of possibly different levels of functional impairment. Thirdly, the agency responsible for assessing a claim for sickness or incapacity-related benefit (for instance, Employment and Support Allowance in the UK) will need to consider the different diagnoses in their assessment procedures. In an academic sense, the need to appropriately code “mixed diagnosis” episodes will be a concern to researchers working in the field of sickness absence and its certification, particularly those who are seeking to identify a causal relationship between the diagnostic reason for incapacity and the outcomes of sickness certification (such as longer duration).

This study uses a large database of certified sickness episodes and individual sickness certificates (‘fit notes’) in the UK in order to examine three aspects of within-episode change of diagnosis.

(i) The number of “mixed diagnosis” episodes, by duration of episode and the diagnosis on the first fit note in the episode.

(ii) The specific diagnostic categories that were the ‘destination’ of any changes.

(iii) Episode-, patient-, GP- and general practice-based factors associated with likelihood of having a “mixed diagnosis” episode of certified sickness absence.

**Methods**

*Collection of sickness certification data*

Sickness certification (‘fit note’) data for the study was generated from two projects commissioned and funded by the UK Department for Work and Pensions (DWP): the national evaluation of the fit note (2011-2012) and the evaluation of Fit for Work Service (FFWS) pilots (2011-2013). The former recruited 49 general practices from five geographical areas of the UK (Scotland, Wales, Derbyshire, North West and South East England). The latter involved 19 practices sited in three FFWS pilot sites (Greater Manchester, Leicestershire and North Staffordshire). These practices varied in list size (small, medium and large), location (urban, suburban, rural) and level of deprivation of their patient population. Data were collected for a period of 12 months at each practice.

In addition to the details on the note (date of issue, diagnosis, period to abstain from work, whether the patient ‘may be fit’ to do some work, whether the patient needed to be re-assessed at the expiry of the note and the certifying GP) a number of additional items were collected from the patient practice record that have been shown to influence sickness absence risk. These included gender, year of birth and post code. The latter was transformed by practice staff into a neighbourhood deprivation score for the patient (on the basis of the score patients were then assigned to a quintile of lower-level Super Output Areas or Data Zones in their respective country). A more detailed description of the data collection process is provided elsewhere by the authors (12).Ethical approval for data collection was obtained from the (UK) National Research Ethics Service in June 2011.

*Episodes of certified sickness absence*

The individual fit notes issued to a patient during the period of data collection were collapsed into certified sickness ‘episodes’. An episode consisted of a period of *continuous* sickness absence certified by one or more fit notes. A new episode was deemed to have commenced if a fit note was issued more than 14 days after the expiry of a previous sickness certificate. This interval makes an allowance for the patient possibly returning to work and completing a 7-day period of self-certification.

*Diagnostic classification of fit notes*

In classifying the health (or related) problem recorded as the reason for the patient’s sickness absence and its certification, the broad READ coding categories were used as a starting point. However, the categories that were eventually utilised in the study were significantly adapted in order to reflect the types of problem that were commonly cited on fit notes issued by the GPs in the studies sourcing the data. For instance, a “post op recovery” category was used to classify the fit notes of those patients who were advised to abstain from their usual work in order to recover from a recent surgical operation. A ‘physical symptom’ category was used to assign those fit notes citing a symptom rather than a specific diagnosis (eg. “headaches”, “dizziness”, “pain in….”.).

*Statistical analysis*

Only fit notes where a single diagnosis had been entered as the reason for work incapacity were included in analysis. Episodes including one or more sickness certificates with multiple diagnoses were excluded.

Simple percentages are used in reporting the proportions of patient episodes that involved a change from a fit note in one diagnostic category to a note in another category, and for reporting proportions changing from one specific diagnostic category to another.

Independent effects on likelihood of having a “mixed diagnosis” episode were estimated in a logistic regression model. In order to account for the hierarchical nature of the data a mixed-effects (multilevel) model was run, with patient, GP and general practice included as random intercepts. For each independent covariate in the model the Odds Ratio (OR), 95% Confidence Interval and associated p-value are reported. A conventional criterion of statistical significance (P<0.05) was used.

Data were analysed using SPSS for Windows 22 and Stata IC 10.

**Results**

*General practices collecting fit note data for the study*

A quarter (n=17) of the 68 general practices in the study had large patient list sizes (>10,000 registered patients), while 22 (32%) had lists consisting of fewer than 5,000 patients (Table 1). Forty-five (66%) practices were located in urban or suburban areas, the remainder in rural parts of the UK. Seven hundred and forty-three different GPs (210 full-time, 244 part-time and 289 locums) issued at least one fit note for the study.

*Patients, fit notes and episodes*

The 68 general practices provided information on 79,502 fit notes issued to 33,695 patients in a 12-month data collection period. From the fit note data a total of 42,271 discrete episodes of continuous certified sickness absence, consisting of one or more fit notes, were identified. Nearly five percent of certified sickness episodes (n=2,046) contained complex fit notes with more than one listed diagnosis, and were excluded from subsequent analysis. Of the remaining 40,225 episodes that were included in analysis, 16,400 (40.8%) consisted of more than a single fit note. Fifty-six percent of the 40,225 episodes were experienced by female patients and 31% by those aged over 50. Nearly 28% of episodes were assigned to patients living in one of the 20% most deprived neighbourhoods in their country, 15% to those residing in the quintile of least deprived neighbourhoods.

Table 1

*Duration of episodes and diagnostic category of first fit note*

*All episodes:* Fifty-nine percent (n= 23,663) of all episodes were relatively short (< 30 days), but nearly 5% (n= 1,835) lasted over 6 months. Thirty-one percent (n=12,610) of episodes had a first fit note issued for a mental disorder and 13% (n=5,244) for a musculoskeletal problem. Nine percent (n=3,888) of first fit notes were issued to the patient for an unspecified physical symptom rather than a definitive diagnosis (Table 2).

*Multiple fit note (>1) episodes:* Of the 16,400 episodes consisting of more than one fit note (multiple fit note episodes), shorter episodes (<30 days) accounted for 29% (n=4,730) and long-term (> 6 month) episodes 10% (n=1,637) of the total. Mental disorders accounted for nearly 37% (n=6,002) of diagnoses on the first fit notes. Nearly 61% (n=9,969) of episodes included sickness certificates issued by more than one GP.

Table 2

*“Mixed diagnosis” episodes*

A total of 3,841 episodes included a fit note within a diagnostic category that differed from the category of the first fit note in the episode (nearly 10% of all episodes and over 23% of those episodes containing more than one fit note). Prevalence of “mixed diagnosis” episodes varied according to total duration of the episode and the diagnosis on the first fit note (Table 3).

Less than 4% of all episodes (nearly 19% of multiple fit note episodes) completed within 30 days were “mixed diagnosis” episodes. However, when the episode lasted longer than six months, the proportion of episodes where there was a change in diagnostic category of fit note rose to nearly 29% (32% of long-term episodes consisting of more than one fit note).

Episodes where the first fit note was issued for a mental disorder had the lowest proportion of “mixed diagnosis” episodes (only 3% of total episodes and 6% of multiple fit note episodes). When a physical symptom rather than a diagnosis was cited as the reason for initially certifying sickness absence, there was a high prevalence of “mixed diagnosis” episodes. Over a fifth of all episodes, and half of multiple fit note episodes, where a physical symptom was on the first sickness certificate had a change to another diagnostic category later in the episode. High rates of change were also found for multiple fit note episodes where the initial diagnosis related to a digestive problem or a viral/infectious illness (42% and 39% respectively).

Table 3

*“Destination” diagnostic categories*

Table 4 reports the distribution of change to specific diagnostic categories for a multiple fit note episode with a given diagnosis on the first fit note.

Nearly 11% of episodes where a physical symptom only was cited on the initial fit note included subsequent sickness certification for a musculoskeletal problem. The physical symptom category was also an important destination category for episodes with various initial diagnoses. Twelve percent of episodes with a first fit note for an injury had a later certificate issued for a physical symptom only. A relatively high rate (9%) of change to a physical symptom was also found when the initial diagnosis was in the Digestive or Infection/Viral categories. The Mental Disorder category was also a significant destination category for episodes with initial diagnoses within the Digestive (nearly 10%), Infection/Viral (9%), physical symptom (8%), Pregnancy (7%) and Musculoskeletal (6%) categories. In total, 438 (4.2%) of the 10,398 episodes with an initial physical health diagnosis included a later fit note for a mental health problem.

Table 4

*Factors independently associated with change in diagnosis*

The 16,400 multiple fit note episodes were entered into a multilevel random-intercept logistic regression model, in order to estimate independent effects of a range of episode-, patient-,GP- and general practice-based factors on the risk of having a “mixed diagnosis” episode. Random intercepts were included for patient (n=14,594), GP certifying the first fit note (n=681) and general practice (n=68). Results of the regression analysis are presented in Table 5.

The diagnostic category with the lowest rate of “mixed diagnosis” episodes, Mental Disorder, was used as a reference category. Compared to reference, the odds of having an episode with more than one diagnosis was considerably and significantly raised when the first fit note of an episode was a physical symptom (OR=14.4, 95% CI 12.3-16.9), within the Infection/Viral category (OR=12.3, 95% CI 9.71-15.6) or a digestive problem (OR=11.4, 95% CI 9.04-14.6). Longer duration of the episode and the number of constituent fit notes were associated with increased risk of a change in diagnosis. Compared to a <30 day episode, having an episode longer than six months significantly increased likelihood of the “mixed diagnosis” outcome (OR= 2.23, 95% CI 1.90-2.62). When the episode included five or more sickness certificates the odds of outcome were significantly raised (OR= 2.82, 95% CI 2.47-3.24), compared to episodes with two constituent fit notes.

One patient factor was independently and significantly associated with having a change in diagnosis within the episode. Patients living in the most socially deprived neighbourhoods (compared to living in one of the least deprived, OR=1.21 95% CI 1.04-1.40) were significantly more likely to have a “mixed diagnosis” episode.

When the fit notes included in an episode had been issued by different GPs there was significantly more likelihood that diagnoses would change within the episode (OR=1.41, 95% CI 1.29-1.54).

The gender and age of the patient and the two general practice-level covariates included in the model (patient list size, rural/urban location) were not significantly associated with increased risk of outcome.

Table 5

**Discussion**

*Summary of findings*

Nearly a quarter of episodes consisting of more than one sickness certificate had a change in diagnosis during the course of the episode. The diagnostic stability of the episode was most likely when the initial certificate had been issued for a mental disorder presented by the patient. The likelihood of having a “mixed diagnosis” episode increased when an unspecified physical symptom was the reason for the initial sickness certification, the total duration of the episode was longer, the episode included more fit notes and the patient was living in a socially deprived neighbourhood. Episodes where the patient had been issued fit notes by more than one GP were more likely to have a change in diagnosis.

*Strengths and limitations*

The major strength of the study lies in the opportunity to access information on fit notes issued throughout the episode, and to link the episode to a specific patient. This access to constituent sickness certificates in a single episode had not previously been available to sickness certification studies using episode data held in large national registers (such as MiDAS in Sweden and NAV in Norway) (11).

The data collection for the study relied on a manual method of collection, before the introduction of the electronic fit note in the UK. It was difficult to audit the data collection procedures at all 68 general practices, and we have to accept the possibility that some information on fit notes issued in the 12 months may have not been received by the research team. However, it is unlikely that the magnitude of any missing data would seriously challenge the findings of this ‘change in diagnosis’ study.

Because we were forced to rely on the general practice medical record as a source of patient information to support the fit note data, we were not able to collect other patient data that may have made a significant contribution to the explanatory models. For instance, information about the patient’s occupation is not routinely recorded in general practices in the UK (even when the patient is a long-term sickness absentee).

*Relation to previous research*

To the best of our knowledge there has only been one previous study with a similar primary focus on change in diagnosis. A register-based study in Sweden looked at differences in the diagnostic chapters of the first and last sickness certificates in episodes of sickness benefit (11). A number of their findings were similar to those found in our later study. Change in diagnosis was least prevalent in mental disorder and musculoskeletal episodes and more likely in episodes where the initial certificate was coded to the Symptoms and Signs diagnostic chapter. The study also found that change of diagnosis was more prevalent in the longer episodes. The previous study did not include any measure of patient deprivation or a record of the doctor issuing the medical certificates.

*Implications of findings*

As might be expected, the likelihood of the patient receiving different diagnoses in a single period of sick leave increased with the number of days of certified sickness absence and number of fit notes issued. A longer episode would allow more time for the patient to develop further (possibly related) problems or for previously undetected conditions to be diagnosed. It is interesting that while patients with an initial mental health diagnosis tended to receive later fit notes for a similar psychological health problem, significant numbers of episodes where a fit note was initially issued for a physical problem included a subsequent certificate for a mental health diagnosis. There is evidence that prolonged absence from the labour force (for any reason) has a detrimental effect on mental health and that, conversely, satisfactory employment is beneficial to psychological health (13,14). Over half of the episodes where a first fit note was issued for a physical symptom included a later definitive diagnosis. This may reflect the time required to diagnose a medical problem after initial presentation of physical symptoms (possibly following results of medical investigations). More difficult to interpret are those episodes where a fit note for a physical symptom followed an initial diagnosis. In these cases the physical symptom may be a consequence of the initial physical health problem (for instance, the pain following an injury). Comorbidity of health problems has obvious implications for the patient in terms of quality of life and treatment, but may also prolong the period of time required to recover and return to work. It is known that different diagnoses are associated with varying periods of work incapacity (12). There is evidence that many long-term sickness absentees have multifaceted medical problems, often including co-morbidity of psychiatric and somatic disease (15). Comorbidity (and multi-morbidity) is more common (16) and arrives earlier (17) in people living in the most socially deprived areas compared to those in more affluent areas. This may partly explain the higher risk of a mixed diagnosis episode experienced by the more deprived patients in our study.

We found that episodes where different GPs had issued fit notes were more likely to have more than one diagnosis. The low prevalence of sickness episodes certified by a single GP may be a product of relatively recent organisational and policy changes in the UK primary health care system that has led to an increase in larger group practices, GPs being more likely to be part-time, salaried and having shorter tenure, and a new GP contract marking the end of the patient’s ‘personal registration’ with a particular GP within a practice (18). Although “generalists” by training, different GPs working within a practice are likely to have their own diagnostic areas of interest. This may result in a different interpretation of the same symptoms reported by a patient, and influence the diagnosis cited on the sickness certificate. It is also known that attitudes to the process of sickness certification itself vary across GPs, particularly in relation to the perceived appropriate role of the GP and what constitutes a valid reason for issuing a sickness certificate (19). GP attitudes to issuing a further sickness certificate, after a prior diagnosis by another GP, may also differ (20). A change in diagnosis within a certified sickness absence episode presents a challenge to the GP in relation to the most appropriate return-to-work advice to be offered the patient. Since the 2010 introduction of the fit note in the UK, there is evidence that such advice is more likely to be included in fit notes for particular diagnoses rather than others (21).

The existence of different health problems within a longer period of sickness certification may also lead to difficulties in assessing eligibility for long-term incapacity and disability benefits. The assessment procedures used by the social insurance or other state agency responsible for making decisions on eligibility need to be flexible enough to deal with claimants with co-morbidities. If not, it may lead to a situation where those who are successful in their claims are healthier than those who did not meet the rigid eligibility criteria (11,22). Some social insurance systems have made special provision for claimants with multifaceted medical problems. For instance, Social Insurance Offices in Sweden routinely refer some long-term sickness absentees for a multi-disciplinary assessment that aims to provide a more accurate description of the patient’s functional capacity (23). Assessment can be particularly problematic when co-morbidity involves both physical and mental health conditions. In the UK, eligibility for the main incapacity-related benefit (Employment and Support Allowance) is largely based upon the outcome of a Work Capability Assessment (WCA). It has been argued that the WCA may involve an undue focus on a claimant’s physical conditions when mental health was the primary cause of incapacity (24).

Finally, the findings of this study have important implications for those researchers working within the substantive area of sickness certification, particularly those conducting studies focusing upon the effect of particular diagnostic categories of sickness absence on specified outcomes (such as duration of work incapacity). A method of dealing with “mixed diagnosis” episodes needs to be developed. Past approaches to coding these types of episode, such as those based upon first diagnosis or a majority of diagnoses in the episode (12), may not be the most efficient way of measuring their effect. While this paper has focused upon change in diagnostic categories of sickness certification, it may also be desirable to investigate changes *within* a diagnostic category. For instance within the Mental Disorder category, a change in diagnosis from ‘stress’ to ‘depression’ may have important clinical and incapacity-related implications. Further research in all relevant areas of diagnosis change is urgently needed.

**Declaration**

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Ethical approval: this investigation complied with Resolution 196/96, which regulates human subject research. All the ethical principles contained in the Declaration of Helsinki were observed and the research project was approved by the (UK) National Research Ethics Service in June 2011.

Conflict of interest: none.

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**Table 1. Patient list sizes for study general practices and number of GPs (full and part-time) issuing fit notes in a 12 month data collection period (2011-2013)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Patient list size** | **No of practices** | **No of registered patients** | **No of GPs (FT/PT)** | **Fit notes issued by GPs (inc. locums)** |
|  |  |  |  |  |
| 1,000-1,999 | 3 | 5,174 | 3 (3/0) | 1,021 |
| 2,000-2,999 | 4 | 9,514 | 4 (4/0) | 2,451 |
| 3,000-3,999 | 8 | 28,528 | 16 (9/7) | 4,714 |
| 4,000-4,999 | 7 | 31,103 | 30 (14/16) | 4,367 |
| 5,000-5,999 | 8 | 43,735 | 36 (16/20) | 8,208 |
| 6,000-6,999 | 5 | 32,436 | 30 (14/16) | 5,568 |
| 7,000-7,999 | 3 | 21,867 | 28 (11/17) | 2,204 |
| 8,000-8,999 | 7 | 59,347 | 57 (25/32) | 10,160 |
| 9,000-9,999 | 6 | 56,908 | 37 (17/20) | 10,256 |
| 10,000-10,999 | 3 | 20,600 | 27 (12/15) | 2,526 |
| 11,000-11,999 | 2 | 22,312 | 18 (12/6) | 2,120 |
| 12,000-12,999 | 4 | 49,613 | 38 (16/22) | 7,982 |
| 13,000-14,999 | 3 | 41,579 | 38 (15/23) | 5,205 |
| ≥ 15,000 | 5 | 98,492 | 92 (42/50) | 12,720 |
|  |  |  |  |  |
| **All** | **68** | **521,208** | **454 (210/244)** | **79,502** |
|  |  |  |  |  |

Table 2. Duration of episodes and diagnostic category of first fit note

|  |  |  |
| --- | --- | --- |
|  | **All episodes** | **Multiple fit note episodes** |
|  | **N (Column %)**  | **N (Column %)**  |
|  |  |  |
| **Days duration of episode**≤ 30 | 23,663 (58.9) | 4,730 (29.0) |
| 31-60 | 6,692 (16.7) | 4,111 (25.2) |
| 61-90 | 3,685 (9.2) | 2,345 (14.4) |
| 91-180 | 4,279 (10.6) | 3,506 (21.4) |
| >180 | 1,835 (4.6) | 1,637 (10.0) |
|  |  |  |
| ALL | 40,154 (100)a | 16,329 (100)a |
|  |  |  |
| **Diagnostic category of first fit note in episode** |  |  |
| Mental disorders  | 12,610 (31.3) | 6,002 (36.6) |
| Musculoskeletal  | 5,244 (13.0) | 2,289 (14.0) |
| Physical symptom  | 3,888 (9.5) | 1,572 (9.6) |
| Post-op recovery  | 3,801 (9.5) | 1,461 (8.9) |
| Injury  | 3,509 (8.7) | 1,359 (8.3) |
| Respiratory  | 3,230 (8.0) | 828 (5.0) |
| Infection or viral  | 1,401 (3.5) | 402 (2.5) |
| Digestive | 1,201 (3.0) | 396 (2.4) |
| Circulatory | 957 (2.4) | 452 (2.8) |
| Pregnancy | 727 (1.8) | 241 (1.5) |
| Neoplasm | 550 (1.4) | 268 (1.6) |
| Other categoriesb | 3,107 (7.7) | 1,130 (6.8) |
| ALL | 40,225 (100) | 16,400 (100) |

a. 71 episodes with missing duration data

b. Other categories: Genitourinary, Skin Disorders, Endocrine, Haematological, Nervous System, Congenital and Procedures/Investigations.

Table 3. Duration of episode, diagnostic category of first fit note and change in diagnosis

|  |  |
| --- | --- |
|  | **Episodes with change in diagnosis** |
|  |  | **All episodes** | **Multiple fit note episodes** |
|  | **N** | **Row %** | **Row %** |
|  |  |  |  |
| **Days duration of episode**≤ 30 | 883 | 3.7 | 18.7 |
| 31-60 | 903 | 13.5 | 22.0 |
| 61-90 | 561 | 15.2 | 23.9 |
| 91-180 | 948 | 22.2 | 27.0 |
| >180 | 527 | 28.7 | 32.2 |
|  |  |  |  |
|  |  |  |  |
| **Diagnostic category of first fit note** |  |  |  |
| Mental disorder | 386 | 3.1 | 6.4 |
| Musculoskeletal | 520 | 9.9 | 22.7 |
| Post-op recovery | 365 | 9.6 | 25.0 |
| Pregnancy | 69 | 9.5 | 28.6 |
| Circulatory | 136 | 14.2 | 30.1 |
| Respiratory | 255 | 7.9 | 30.8 |
| Neoplasm | 84 | 15.3 | 31.3 |
| Injury | 429 | 12.2 | 31.6 |
| Infection or viral | 156 | 11.1 | 38.8 |
| Digestive | 166 | 13.8 | 41.9 |
| Physical symptom | 790 | 20.3 | 50.3 |
| Other categories | 485 | 15.6 | 42.9 |
| ALL | 3,841 | 9.5 | 23.4 |

Table 4. Proportion of episodes with first fit note in one diagnostic category changing to another specific category (multiple fit note episodes only)

|  |  |  |
| --- | --- | --- |
|  |  | **Change to another diagnostic category**  |
|  |  | *Row %* |
| **Diagnostic category of first** **fit note** | **No****change** | **MD** | **M** | **S** | **PO** | **I** | **R** | **IV** | **D** | **C** | **P** | **N** | **O** |
| Mental disorders **(MD)** | 93.9 | - | 0.9 | 1.6 | 0.3 | 0.5 | 0.6 | 0.3 | 0.4 | 0.2 | 0.3 | 0.1 | 0.9 |
| Musculoskeletal **(M)** | 77.3 | 5.8 | - | 7.3 | 1.3 | 3.5 | 0.8 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | 2.5 |
| Physical symptom **(S)** | 49.7 | 8.0 | 10.8 | - | 5.5 | 6.7 | 2.4 | 2.2 | 2.6 | 2.9 | 1.5 | 1.0 | 6.7 |
| Post-op recovery **(PO)** | 75.0 | 1.7 | 3.7 | 4.9 | - | 3.1 | 0.7 | 1.0 | 2.1 | 1.4 | 0.1 | 2.7 | 3.6 |
| Injury **(I)** | 68.4 | 3.4 | 6.6 | 12.0 | 5.2 | - | 1.0 | 0.6 | 0.4 | 0.6 | 0.1 | 0.1 | 1.5 |
| Respiratory **(R)** | 69.2 | 6.5 | 1.9 | 8.0 | 1.2 | 1.6 | - | 4.6 | 1.6 | 1.2 | 0.5 | 0.4 | 3.4 |
| Infection/viral **(IV)** | 61.2 | 8.5 | 1.5 | 8.5 | 2.0 | 1.2 | 7.0 | - | 1.5 | 0.7 | 0 | 0 | 8.0 |
| Digestive **(D)** | 58.1 | 9.6 | 1.8 | 9.3 | 4.8 | 1.0 | 3.3 | 3.0 | - | 1.0 | 0.8 | 0.3 | 7.1 |
| Circulatory **(C)** | 69.9 | 2.7 | 2.9 | 7.3 | 5.8 | 0.9 | 1.8 | 0.9 | 1.1 | - | 0.7 | 0 | 6.2 |
| Pregnancy **(P)** | 71.4 | 6.6 | 5.8 | 5.4 | 0 | 0 | 0.8 | 1.7 | 0.4 | 0.4 | - | 0 | 7.5 |
| Neoplasm **(N)** | 68.7 | 2.2 | 1.1 | 1.9 | 12.7 | 0 | 1.5 | 0.7 | 0.7 | 0.7 | 0 | - | 9.7 |
| Other category **(O)** | 57.1 | 4.7 | 4.0 | 9.9 | 6.5 | 2.4 | 1.6 | 1.9 | 1.7 | 1.7 | 1.0 | 2.7 | - |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 5. Episode, patient, GP and general practice factors associated with likelihood of a “mixed diagnosis” episode (multiple fit note episodes only)

|  |  | **Odds Ratio** | **95% CI** | **P** |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| **Episode** |  |  |  |  |
| *Diagnostic category of 1st fit note* |  |  |  |  |
| Mental disorders  |  | 1.0 |  |  |
| Musculoskeletal  |  | 3.64 | 3.19-4.17 | <0.001 |
| Physical symptom  |  | 14.4 | 12.3-16.9 | <0.001 |
| Post-op recovery  |  | 4.76 | 4.06-5.60 | <0.001 |
| Injury  |  | 6.53 | 5.55-7.67 | <0.001 |
| Respiratory  |  | 7.53 | 6.24-9.10 | <0.001 |
| Infection or viral  |  | 12.3 | 9.71-15.6 | <0.001 |
| Digestive |  | 11.4 | 9.04-14.6 | <0.001 |
| Circulatory |  | 5.69 | 4.56-7.11 | <0.001 |
| Pregnancy |  | 6.42 | 4.68-8.82 | <0.001 |
| Neoplasm |  | 4.67 | 3.48-6.26 | <0.001 |
| *Days duration of episode* |  |  |  |  |
| <30 |  | 1.00 |  |  |
| 31-60 |  | 1.35 | 1.20-1.52 | <0.001 |
| 61-90 |  | 1.55 | 1.36-1.79 | <0.001 |
| 91-180 |  | 1.94 | 1.71-2.22 | <0.001 |
| >180 |  | 2.23 | 1.90-2.62 | <0.001 |
| *Number of fit notes in episode* |  |  |  |  |
| Two |  | 1.00 |  |  |
| 3-4 |  | 1.81 | 1.65-1.99 | <0.001 |
| 5 or more |  | 2.82 | 2.47-3.24 | <0.001 |
| **Patient** |  |  |  |  |
| *Gender* |  |  |  |  |
| Male |  | 1.00 |  |  |
| Female |  | 1.08 | 0.99-1.17 | 0.06 |
| *Age* |  |  |  |  |
| Under 30 |  | 1.00 |  |  |
| 30-50 |  | 1.03 | 0.92-1.16 | 0.60 |
| Over 50 |  | 1.08 | 0.96-1.23 | 0.20 |
| *Social deprivation of neighbourhood of residence(quintiles)* |  |  |  |  |
| Q1. One of 20% least deprived neighbourhoods in country |  | 1.00 |  |  |
| Q2 |  | 0.99 | 0.85-1.15 | 0.96 |
| Q3 |  | 0.99 | 0.85-1.14 | 0.85 |
| Q4 |  | 1.08 | 0.94-1.25 | 0.29 |
| Q5. One of 20% most deprived neighbourhoods in country |  | 1.21 | 1.04-1.40 | 0.01 |
|  |  |  |  |  |
| **General Practitioner** |  |  |  |  |
| *More than one GP issuing fit notes within episode* |  |  |  |  |
| No |  | 1.00 |  |  |
| Yes |  | 1.41 | 1.29-1.54 | <0.001 |
| **General Practice** |  |  |  |  |
| *Size* |  |  |  |  |
| Under 5000 patients |  | 1.00 |  |  |
| 5-10,000 patients |  | 1.09 | 0.92-1.30 | 0.33 |
| Over 10,000 patients |  | 1.16 | 0.96-1.39 | 0.13 |
| *Location* |  |  |  |  |
| Urban/suburban  |  | 1.00 |  |  |
| Rural |  | 0.95 | 0.82-1.10 | 0.48 |