Working Well – statistical review of risk factors for long term sickness absence between 2014-2017 for NHS Dumfries and Galloway employees in 2017.

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1. Objective

To consider the research question:
Amongst NHS Dumfries and Galloway employees, which risk factors are more prevalent amongst those who have experienced a period of long term sickness compared to those who have not experienced a period of long term sickness?

2. Background

NHS Dumfries & Galloway employs over 4,000 people across the region. Scottish Government has set a national target for staff sickness absence for NHS Scotland of 4% or lower. There are policies and procedures within NHS Dumfries and Galloway to monitor staff absences and to support people at risk of experiencing, or going through, a period of sickness.

In 2019 a national survey showed, on average, public sector employees had 8.4 days of absence during the previous year. This was small reduction from earlier surveys in 2018 and 2016. The 2019 report showed absence rates remain higher in the public sector than in the private sector (which was 4.4 days per employee) and in the non-profit sector (6.3 days per employee). [1]

Following a paper to the Management Team which went to staff governance in Sept 2017, the Working Well group was set up. The Working Well group has raised the issue of supporting people who may be at increased risk of an episode of long term sickness absence, before an episode of long term sickness develops. This can include people at work who may be unwell. This is called Presenteeism. 86% of organisations in the UK have observed Presenteeism in 2018[1]. Presenteeism may be a precursor to an episode long term sickness. The purpose of this study was established to review the internal data available to the NHS board to enable informed discussion, recommendations and policies designed to support people at risk of experiencing a period of long term sickness.

3. Method

3.1   Design

5 years data of long term sickness absence was used (1/1/2013 to 31/12/2017). This data came from Scottish Workforce Information Standard Service (SWISS). Links were made to employees' data on the Scottish Standard Time System (SSTS) to provide employee information such as directorate.

Long term sickness absence is defined as a single period of absence which last 28 consecutive days or more, which finished in the calendar years 2014 to 2017. These absences were classified in the SWISS IT system as either as Sick Leave, Absence During A Period Of Notice or as Unauthorised Absence.

A retrospective cohort study methodology was used. A case-control approach was used where data relating to people who have experienced a period of long term sickness absence (cases) was directly compared to data for people who have not (controls).

3.2   Participants

A list of employees was generated by aggregating 6 weekly snapshots of data during 2017 from the internal data system, SSTS. This aggregated to just over 4,400 people employed by NHS Dumfries and Galloway during 2017. It was noted that while some people had more than one employment with NHS Dumfries and Galloway, often due to fixed term contracts or changing roles, they were only counted once.

As base data, there were approximately 760 episodes of long term sickness (as identified in SWISS as sick leave, absence during a period of notice or unauthorised absence) for the period 2014 to 2017. By comparison, there were approximately 5,100 episodes of short term sickness in the same 3 classifications for the period 2014 to 2017. Appendix 2 contains a breakdown of all sickness absences in this period to provide context.

Any employee with a period of long term sickness in the first calendar year of data collection (2013) was excluded as a control, in order to remove people whose health condition may have already started to develop. The case and control inclusion criteria were designed to identify employees who had been working for NHS Dumfries and Galloway in the calendar year 2017 and who would have been:

Table 1: The case-control criteria

	Case	Control
Inclusion	age 16 years old or older at the 31/12/2013	age 16 years old or older at the 31/12/2013
	age 70 or under at the 31/12/2017	age 70 or under at the 31/12/2017
	employed by NHS Dumfries and Galloway during 2017	employed by NHS Dumfries and Galloway during 2017
	had experienced a period of long term sickness during 2014 and 2017	
Exclusion	absent long term sick at the start of the data collection period 1/1/2013	absent long term sick at the start of the data collection period 1/1/2013
	experienced a period of long term sickness in the first year of data collection (1/1/2013 to 31/12/2013)	experienced a period of long term sickness during the 5 year of data collection

Any long term sickness by staff identified as bank staff was not included.

3.3 Assumptions and definitions

A number of assumptions were made during the analysis. These need to be taken into account when analysing the results. The assumptions included:

- Any previous period of long term sickness occurring before the 5 year data range is not directly related to a period of long term sickness, falling within our 5 year date range.
- No provision is made for alteration to available medical services which could impact length of a sickness period.
- No provision is made for alteration to either staff sickness policy or its' implementation by NHS Dumfries and Galloway over the 5 year period being considered (from 1/1/2013 to 31/12/2017).
- If a period of long term sickness absence includes a weekend then 2 days for the weekend is included in the calculation of the total period of absence.
- Long term sickness absences are period of 28 days or more including weekends.
- Where data showed sequential weeks of absence they have been added together to form one period of absence.

3.4 Data cleansing

Data cleansing was required. A cumulative absence period was calculated adding all period of sequential absences together. If the sickness absence extended over a weekend then an additional 2 days was added to the total absence period to reflect these weekend days. This provided start and finish dates for the sickness absence and the length of the absence period was calculated as the number of days between the start and end days of the cumulative absence period.

There were 4,400 employees aggregated from 6 weekly snapshots of staff taken throughout 2017, see Appendix 3. From which:
- 12 employees were removed because they were under age 16 at 1/1/2014
- 15 employees were removed because they were over age 70 at 31/12/2017
- 15 employees were removed because they had a long term sickness at 31/12/2013.

This resulted in 4,358 employees. Around 4,100 were designated controls and 278 employees were designated cases.

When looking at absences, data cleansing ensured:
- Long term absences classified infection control absences, maternity leave, paternity leave and authorised absences were excluded
- Short term absences included all types of absence. These included absences classified as sick leave, absence during notice period, unauthorised absence, maternity/paternity or parental leave, unpaid parental leave, infection control, industrial injury and authorised absences. Short term absences were considered as possible contributory factors to an episode of long term sickness.

The demography of the people within the cases or controls groups can influence results, so a brief comparison is provided below:

Table 2: Outline demography for cases and controls

		Case	Control
Gender	Male	12%	15%
	Female	88%	85%
Age	20 - 29	5%	12%
	30 - 39	21%	20%
	40 - 49	14%	24%
	50 - 59	31%	34%
	60+	28%	10%
Pay band	1	0%	0.1%
	2	28%	25%
	3	13%	12%
	4	5%	7%
	5	28%	22%
	6	10%	16%
	7	7%	8%
	8A	2%	0.0%
	8B	2%	2%
	8C	0.4%	1%
	8D	0.4%	0.2%
	9	0%	0.4%
	Not assimilated	5%	5%
Directorate	Acute & Diagnostic Services	38%	38%
	Corporate Services (Finance)	1%	0%
	Corporate Services (Medical)	2%	0%
	Corporate Services (Nursing)	0%	0%
	Corporate Services (Public Health	0%	0%
	Corporate Services (Workforce	0%	0%
	Diagnostics (Health Services)	2%	0%
	Directors (Dir)	0%	0%
	Facilities and Clinical Support	3%	2%
	Finance (Dir)	0%	1%
	Health Services Team (Dir)	1%	0%
	Medical (Dir)	1%	5%
	Mental Health (Dir)	13%	10%
	Nursing (Dir)	8%	9%
	Operational Services (Health Services)	3%	0%
	PCCD East (Dir)	10%	9%
	PCCD West (Dir)	9%	10%
	Public Health (Dir)	0%	2%
	Strategic Planning (Dir)	0%	0%
	Women & Children (Dir)	8%	10%
	Workforce Directorate (Dir)	2%	1%

3.5   Risk Factors

The risk factors to be considered are:

   a) Age
   b) Gender
   c) Full time or part time employment
   d) Directorate
   e) Pay banding
   f) Frequency / length of previous absences
   g) Time of year / day of the week
   h) School holidays.

There were some risk factors identified but there was only partial data available. There was insufficient data for robust analysis to be carried out. These risk factors include:

   i) Concurrent employment (identified for 1% of the final list of employees)
   j) Residential postcode (identified for 5% of the final list of employees)
   k) Night workers (identified for 1% of the final list of employees).

Concurrent employment might be a factor if the employee is already working full time, because tiredness might be a factor. Residential postcode would enable consideration of deprivation by using SIMD local quintiles. Working at night long term can have health related issues and this might impact the frequency of long term sickness absences.

3.6   Statistical calculations

Odds ratios were calculated for a number of risk factors. This shows the likelihood of one group of people having an event when compared to another group. An odds ratio equal to 1.0 means there is no difference in the likelihood of something compared to something else. If an odds ratio is greater than 1, then there is an increased likelihood and if the result is less than 1 then it is less likely to occur. Odds ratios do not show the probability of an event occurring.

When considering continuous data, such as age, a threshold was needed to separate the data into 2 group: those with the risk factor and those without. When looking at the ages of employees, we divided the staff into 2 groups by their age using the upper quarterile as the threshold. The threshold was set at the upper quartile, so 72% of the staff fell into a group called Younger and 28% of the staff into a group called Older. This point was age 59 for the 2017 workforce.

When considering the impact of salary banding on long term sickness, the 2017/18 National Living Wage (£8.75 per hour) [2] was used which produced an annual salary of £17,062 which equates to between the second and third pay points of an employee in Band 2. For the 2019/20 year the National Living Wage is £9.00 per hour, and all pay bands pay at least this rate per hour.

STATA was used for linear regression providing confidence intervals. Medcalc's website was also used for calculating odds ratios.

A statistical significance level of 95% ($p<=0.05$) was used throughout the analysis.

Results

Whilst the review considered that last long term absence, it was felt an overview of all the long term and short term sickness periods might give helpful context. This is shown in Table 3 below and there is more information in Appendix 2.

Table 3: Count of all episodes of long term and short term sickness absences by year absence finished

Year sickness ended	Number of short term absences	Number of long term absence	Number of employees with short term absences	Number of employees with long term absences	Ratio of short term sickness episodes per employee	Ratio of long term sickness episodes per employee	% of staff with short term sickness in the year + long term sickness during 2014-2017
2013	1,097	150	644	134	1.70	1.12	31%
2014	915	170	529	152	1.73	1.12	30%
2015	1,349	211	789	197	1.71	1.07	38%
2016	1,292	242	653	201	1.98	1.20	34%
2017	818	196	412	160	1.99	1.23	30%
Total	**5,471**	**969**					

When reviewing the cohort of employees from the calendar year 2017(4,358 employees), 6.4% of employees (278 employees) had a period of long term sickness during the 4 year data period.

Below is some general information found by this review on the **last** long term sickness episode during 2014 – 2017 for employees in the 2017 calendar year:

Table 4: General information on the last long term sickness episode during 2014 – 2017 for 2017 employees

Day the last long term sickness started	the most frequent day for the last long term sickness to start was a Monday with 35% of the last long term sickness absences.
Day the last long term sickness ended	the most frequent day for the last long term sickness to end was on a Sunday with 56% of the last long term sickness absences.
Sickness starting around the weekend	47% started on either a Monday or a Friday. 42% started mid week and 12% started on a weekend.
Sickness ending around the weekend	49% of long term sickness absences ended over the weekend. 26% ended on a Monday or a Friday and 25% ended mid week.
Month the last long term sickness started	the most frequent month for a long term sickness to start was September with 12% of the last long term sickness absences.
Month the last long term sickness ended	the most frequent month for a long term sickness ended was December with 17% of the last long term sickness absences.
Quarter with the most last long term sickness started	the quarter with the most frequent long term absences starting was the third quarter (1 July to 30 September) with 30% of the last long term absences starting in this quarter.

Quarter with the most last long term sickness ended	the quarter with the most frequent long term absences ended was the fourth quarter (1 October to 31 December) with 37% of the last long term absences starting in this quarter.
Absences starting or finishing during schools holidays	55% of the last long term sickness absences either started or finished during the local Dumfries and Galloway school holidays.
Longest sickness absence period	was more than 500 days

Odds ratio analysis on the cohort showed the following key results:-

Table 5: Factors increasing the likelihood of a long term sickness for NHS Dumfries and Galloway employees during 2017

Factor	Sample size with a long term sickness (n=278)	Control size (n = 4,358)	Odds ratio	95% Confidence Intervals	Significant	
Being a female employee compared to male employee	245	3,702	1.34	0.92 – 1.94	No	
Being a part time employee compared with full time employee	179	2,491	1.38	1.07 – 1.78	**Yes**	↑
Employed on fixed term contracts compared to those on permanent contract	32	252	1.98	1.33 – 2.92	**Yes**	↑
Older employees (60+) compared to younger employees(18-59 yrs)	79	425	3.41	2.58 – 4.51	**Yes**	↑
Employees in pay band 5 compared to employees in all other pay bands	79	906	1.40	1.07 - 1.84	**Yes**	↑
Employees in Health Services Team directorate	23	422	2.46	0.72 – 8.41	No	
Employees in Mental Health directorate	41	454	1.38	0.98 - 1.95	No	
Employees in job sub- family: * District Nursing, * Health Visitor Nursing, * Learning Disability Nursing * Public Health Nursing (totalling 13.67% of the long term sickness episodes)	 20 6 9 Less than 5 *	 164 68 18 8	 1.85 4.26 7.55 5.55	 1.14 – 2.99 1.71 – 10.65 3.36 – 16.97 1.47 – 21.05	 **Yes** **Yes** **Yes** **Yes**	 ↑ ↑ ↑ ↑
People having a short term sickness in the year before their long term absence	118	139	10.97	8.38 – 14.36	**Yes**	↑

* data could be disclosive and therefore rounded up to 5.

Table 6: Factors reducing the likelihood of a long term sickness for NHS Dumfries and Galloway employees during 2017

Factor	Sample size with a long term sickness (n=278)	Control size (n = 4,358)	Odds ratio	95% Confidence Intervals	Significant
Employees in Women's and Children's directorate	23	422	0.78	0.50 to 1.21	No
Marital status: Single employees	67	1,255	0.72	0.54 – 0.95	**Yes** ↓
Employees in pay band 6	28	668	0.57	0.38 – 0.85	**Yes** ↓
Employees in Medical directorate	Less than 5 *		0.25	0.092 to 0.67	**Yes** ↓
Employees in Public Health directorate	Less than 5 *	67	0.22	0.03 to 1.56	No

* data could be disclosive and therefore rounded up to 5.

When considering the impact of the age of employees, employees were grouped into 6 age bands. The long term sickness rate for each age group is shown in Figure 1. When interpreting this graph it is helpful to consider the percentage of employees falling into each age group. Although the long term sickness rate for employees aged 65 and over is higher than other age groups, this age group only consists of 2% of the employees.

Figure 1: Rate of long term sickness absence 2014 to 2017 and the percentage of employees by age group 2017
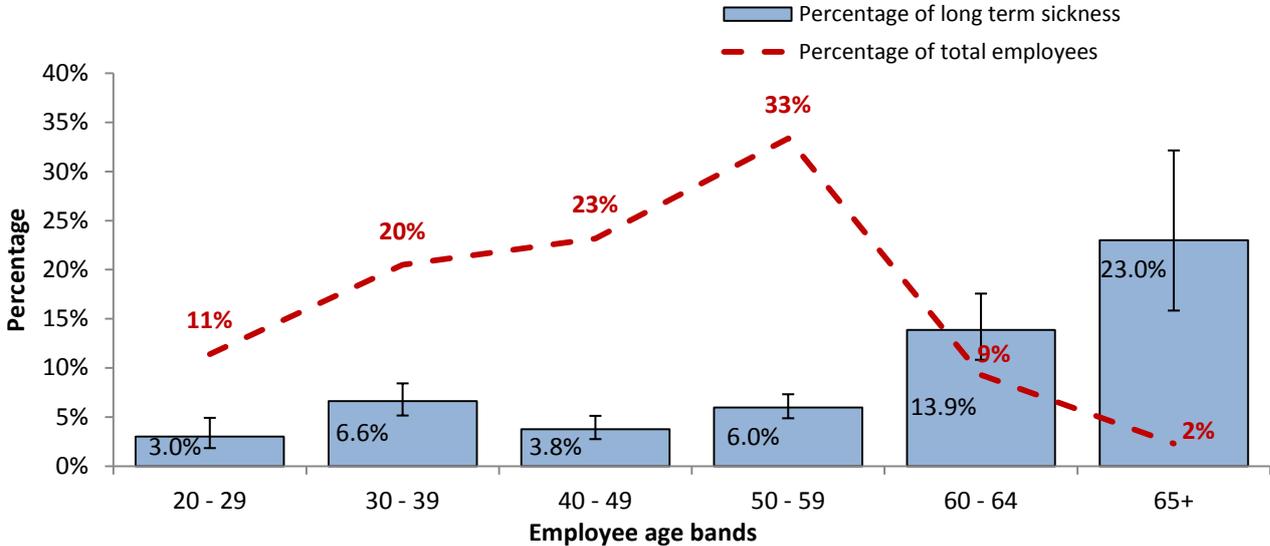
Age was considered by dividing all the employees in the cohort into quarters based on increasing age. The upper quartile threshold (72%) fell at age 59 and this group for employees aged 60 and over was called Older. Quartiles 1, 2 and 3 were aggregated into a group called Younger and covered employees aged 18-59. Quartile 4 was the group called Older and contained employees aged 60 and over and totalled 28% of employees. This Older group was 3.4 times more likely than the group called Younger to have a period of long term sickness.

Odds ratios showed employees whose contracts were identified as either Fixed Term or Fixed Term Job Share were almost twice as likely to have a period of long term sickness compared to than

employees whose contracts were identified as either Permanent or Permanent Secondment (odds ratio 1.97).

NHS pay bands were considered. Pay band 5 employees were more likely to have a long term sickness absence compared to employees in all other pay bands (odds ratio 1.4). This was a statistically significant result. Pay band 6 employees have 25% less likely to have a long term sickness when compared to other employees in all other pay bands. This was also a statistically significant result.

We have considered the rate of staff who have experienced a period of long term sickness absence in each directorate. The directorate name used in this cohort have been updated recently and list of the new directorate names are shown in Appendix 1. Domestic staff moved from the Facilities directorate into the directorate where they worked from 1st April 2017.

4 directorates in the sample which had 5 employees or fewer were excluded because the information could possibly identify individual employees. It is easier to compare directorates using the rate of sickness rather than focusing on the numbers of long term sickness absences. An example of this can be seen when considering the Acute directorate. Acute had the highest number of long term sickness absences (116 episodes which was 42% of the total long term sickness absences in the cohort). Acute also had the highest proportion of employees (41%). This means only 6% of their employees in this cohort had a long term sickness absence episode. Odds ratio showed people working in the Acute directorate were no more likely to have a long term sickness when compared to all the other directorates.

By comparison, the Mental Health directorate had 15% of all long term sickness absences, 11% of the staff headcount which resulted in the proportion staff who had a long term sickness episode of 8%. The odds ratio (1.38) comparing mental health to all other directorates indicated that mental health staff 1.38 times more likely to have a long term sickness when compared to the other directorates combined, although this result was not statistically significant.

Below are the percentage of staff in each directorate who have had a long term sickness, excluding 7 directorates where there were 5 or less people with a long term sickness and therefore potentially disclosive.

Figure 2: The percentage of staff who have had at least one long term sickness absence by directorate (excluding 7 directorates removed as potentially disclosive); NHS Dumfries and Galloway; 2014 to 2017
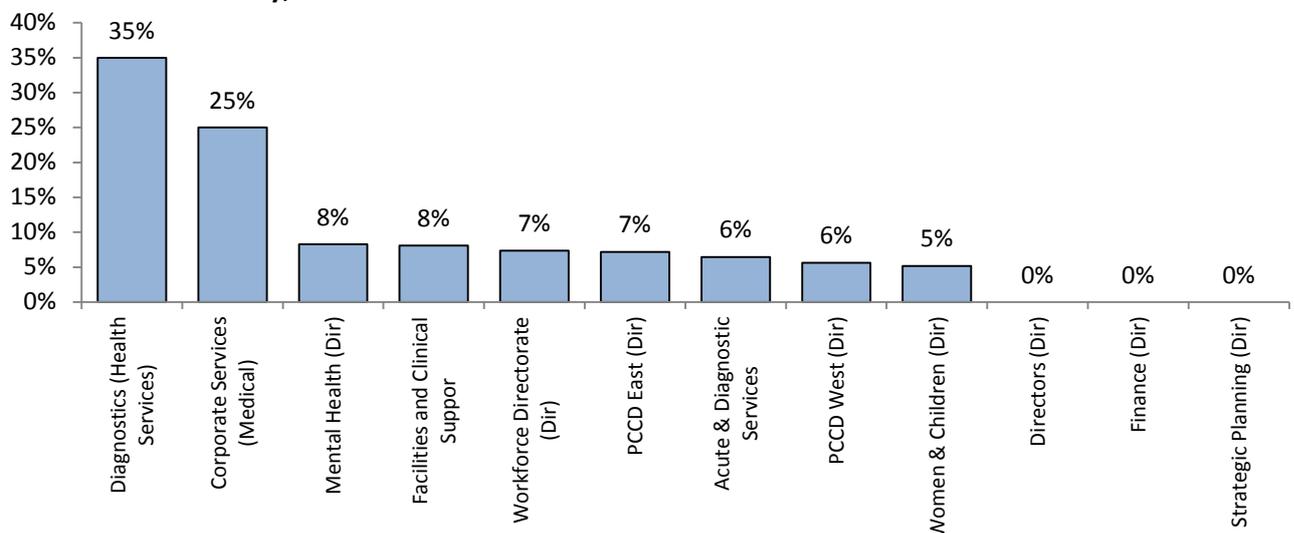
Below, in Table 7, are the odd ratios for the directorates, however the results for the 7 directorates which were potentially disclosive have been changed to prevent identification.

There were 3 directorates with high odds ratios and whose values were statistically significant. These were Diagnostics (Health Services), Corporate Services (Finance) and Corporate Services (Medical). Although these initially appear interesting, the 95% confidence intervals show the results might be subject to large variation and therefore these have been assessed as less reliable.

There was 1 directorate which had a statistically significant low odds ratio. This was the Medical (Dir). Here employees at in the Medical directorate were 75% less likely to have a long term sickness when compared to the other directorates.

Table 7: Odds ratios and confidence intervals for staff experience an episode of long term sickness absence by directorate (excluding 7 directorates); 2014-2017

Directorate	Staff had a long term sickness	Staff (count)	% of staff who had a long term sickness	Odds ratio ** (verses all other director ates)	Odds ratio meaning		95% Confidence Limits (Lower)	95% Confidence Limits (Higher)
Diagnostics (Health Services)	7	20	35%	8.08 S	More likely	↑	3.20	20.42
Corporate Services (Finance)	Less than 5*	Less than 10*	29%	5.91 S	More likely	↑	1.14	30.58
Corporate Services (Medical)	5	20	25%	4.96 S	More likely	↑	1.79	13.76
Health Services Team (Dir)	Less than 5*	21	Less than 25% *	2.46	More likely	↑	0.72	8.41
Mental Health (Dir)	41	495	8%	1.38	More likely	↑	0.98	1.95
Facilities and Clinical Support	8	99	8%	1.30	More likely	↑	0.64	2.76
Workforce Directorate (Dir)	5	68	7%	1.17	More likely	↑	0.57	1.29
PCCD East (Dir)	31	433	7%	1.15	More likely	↑	0.78	1.69
Acute & Diagnostic Services	116	1,798	6%	1.02	Neutral	↔	0.80	1.31
PCCD West (Dir)	27	482	6%	0.86	Less Likely	↓	0.57	1.29
Women & Children (Dir)	23	445	5%	0.78	Less Likely	↓	0.50	1.21
Nursing (Dir)	Less than 5*	78	Less than 5% *	0.58	Less Likely	↓	0.18	1.86
Medical (Dir)	Less than 5*	230	Less than 5% *	0.25 S	Less Likely	↓	0.09	0.67
Public Health (Dir)	Less than 5*	68	Less than 5% *	0.22	Less Likely	↓	0.03	1.56
Directors (Dir)	0	15	0%	0.00	No result		0.03	7.89
Finance (Dir)	0	60	0%	0.00	No result		0.01	1.93
Strategic Planning (Dir)	0	11	0%	0.00	No result		0.04	10.81
Corporate Services (Public Hea)	Less than 5*	Less than 10*	Less than 5% *		Sample is too small			
Corporate Services (Workforce)	Less than 5*	Less than 10*	Less than 5% *		Sample is too small			

S means statistically significant
* data could be disclosive and therefore rounded up to 5 or 10.
** Odd Ratios: specific directorate is compared to all other directorates combined

Marital status showed the employees recorded as Single were 28% less likely to have an episode of long term sickness (odds ratio of 0.72) compared to other employees not identified as single. Employees recorded as Married had a nearly neutral odds ratio of 0.99. There were too few records

to use statistical techniques to consider staff whose status was widowed or in civil partnerships. Caution is need when interpreting this data, because the frequency marital status is updated in staff records has not been established.

When considering job family, Nursing and Midwifery staff showed as being 24% more likely than other job family staff to have a period of long term absence. Odds ratios showed sub job family classified as District Nursing (1.85 times more likely), Health Visitor Nursing (4.26 times more likely), Learning Disability Nursing (7.55 time more likely) and Public Health Nursing (5.55 times more likely) and that all of these results were statistically significant.

Location of work may influence long term sickness and Thornhill Hospital had 14% of the employees in the sample having had a period of long term illness and at Thomas Hope hospital 12% of the employees in the sample had a period of long term illness. By comparison the percentage for DGRI (old and new) was 11%.

Summary and discussion

When looking at long term sickness episodes, the factors identified as important were:-

- o Age. The oldest staff quartile (ages 59 to 70) were more likely to have a period of long term sickness when compared to the youngest, second and third quartiles in age
- o Being female
- o Working under a fixed term contract, rather than a permanent contract
- o Working part time rather than full time
- o Having a period of short term sickness the year before
- o Worker with job sub family codes of District Nursing, Health Visitor Nursing, Learning Disability Nursing or Public Health Nursing
- o Pay band 5 staff members

It is possible to hypothesis possible reasons for these factors. As we age the chances of developing a long term condition or chronic illness increase meaning a larger proportion of the older population are living with one or more illnesses. These illnesses can include heart disease, type 2 diabetes, cancers, arthritis, osteoporosis and high blood pressure. Employees may seek additional support from their employer in order to manage their conditions as they age. Occupational Health may be able to assist employees with chronic or long term conditions, however there will be some illness, such as cancer where this support may not influence the length of a sickness absence.

Being female may not cause increased risk, but the external societal responsibilities which females more frequently shoulder may be factors. These can include child care responsibilities both as a parent and as a grand-parent and care for elderly relatives or neighbours.

Employees may feel less valued and less secure in their position if employed under a fixed term contract and this may influence a persons' approach to returning to work following an illness. They may have a lower motivation to return or feel less able to request a phased return to work.

Part time staff may feel under pressure to perform more effectively when in work, trying to fit into fewer hours a higher proportion of the work completed by a full time employee. This could increase stress levels, tiredness and reduce work satisfaction. Equally the factors influencing the health of part time employees may come from outside work, being their caring responsibilities, their existing state of health or their socio-economic power. It may be that people accept part time work when

they would rather have full time work, but for socio-economic reasons feel full time work is not available to them.

Nursing is known to increase risk of sickness absence from some causes, notably musculoskeletal problems. There were 38 episodes of long term sickness (13.67% of the total number) for District Nursing, Health Visitor Nursing, Learning Disability Nursing and Public Health Nursing. There may be additional work exposures here which could include the impact of driving distances around Dumfries and Galloway which has a sizable rural population. When looking at the causes recorded for the long term sickness absences in 2017 for this group of nursing staff, 50% were recorded as Unknown Causes and 23% as Anxiety and Stress.

Having a period of short term sickness may indicate living with a long term condition, or awareness of being less well. There may be opportunities for interventions to allow concerns about either of these 2 states of health to be discussed and support provided to the employee to assist in maintaining and improving their health.

There may be confounding factors at work here, with female workers in part time work in nursing specialities whose marital status is not shown as Single on the IT scheme. Equally there may be older female workers seeking to reduce their working hours choosing part time employment.

Dumfries and Galloway has a more rural population. This impacts staff travelling to their place of work or visiting people in the community. It also impacts how people using services feel about their travel time for medical appointments, and any frustrations may then be expressed to employees. Dumfries and Galloway also has an aging population from which to draw our employees. However, it may be reasonable to assume similar results would be found if a similar analysis was carried out at another health board within Scotland.

The Office for National Statistics (ONS) has published a report[3] reviewing sickness absence in the UK which included similar risk factors to those found in this review. This and other reports reflect findings showing that increased age, being female, having a long term or chronic condition, being a part time employees are all factors increasing sickness absence. This is reflected in this review.

This ONS report highlighted smokers as having increased sickness risk. Our review into long term sickness at NHS Dumfries and Galloway was not able to comment on smoking status for our employees because there was insufficient data for statistical analysis.

The study was aware of bias and confounding factors. The main bias factors identified are:
1. Data recording bias
2. Data reporting bias
3. Analysis bias

The way sickness absence is entered onto the IT systems may cause bias. Selecting a medical reason for absence at the start of end of a drop down list might be easier and quicker for the person inputting the data, rather than searching for the most accurate reason.

When extracting the data from the 2 IT systems used (SWISS and SSTS) the data fields selected may be influence by the easy of selection of fields or the ease in comprehension of contents of data fields.

Bias can also occur within data analysis. The analysis used the latest long term sickness episode and this may cause bias because not all long term sickness episodes have been used. The period of data

capture may be in a low or high part of a cyclical movement in the number of long term sickness absences. Equally using 2017 employee data may not reflect the current 2019 employee data. Data cleansing may also unwittingly introduce bias.

Future work

There are some data recommendations which would facilitate future analysis going forward and improve accuracy. These include:

- A common approach to recording long term sickness absences, into one data entry replacing the current multiple entries for consecutive weeks
- Reviewing and compiling a complete list of reasons for sickness absence, with an aim to reduce the number of episodes recorded with a cause of Unknown
- Annual updates for the data in residential postcode, concurrent employment, marital status, night worker, immigration status and disability status
- Considering capturing some personal health data, for example smoking status, if an employee is willing to share this information.

There are additional factors which may be considered in a further piece of work. These include:

- Employee postcode and links to areas of deprivation (using Scottish Index of Multiple Deprivation, also known as SIMD). The current data obtained only contained postcodes for 5% of the employees.
- There may be other sub factors to pursue. For example although this piece of work showed that people employed with a fixed term contact were more at risk of a period of long term sickness we have not considered if this is during the first fixed term contract of if the employee had had a series of fixed term contracts.
- Demand and capacity within teams, as this may result in increased stress for employees.

References

[1] Health and Well-being at Work Survey report April 2019
[2] www.livingwage.org.uk/calculation
[3] Sickness absence in the UK labour market: 2016. Office for National Statistics.

Appendix 1 – Directorates

The directorates in this data analysis were as follows:-

Directorates – used in this review
Corporate Services (Public Hea
Corporate Services (Workforce
Diagnostics (Health Services)
Corporate Services (Finance)
Corporate Services (Medical)
Health Services Team (Dir)
Mental Health (Dir)
Facilities and Clinical Suppor
Workforce Directorate (Dir)
PCCD East (Dir)
Acute & Diagnostic Services
PCCD West (Dir)
Women & Children (Dir)
Nursing (Dir)
Medical (Dir)
Public Health (Dir)
Corporate Services (Nursing) (
Directors (Dir)
Finance (Dir)
Operational Services (Health S
Strategic Planning (Dir)

There has been a data cleansing exercise undertaken prior to the transfer to the SSTS services for NHS Dumfries & Galloway (NHS D&G) to the NHS Greater Glasgow and Clyde (NHS GGC) SSTS team. This has resulted in a change to the directorate names. Below are the new the directorate as at the end of March 2019.

Revised Directorate names (31 March 2019)
Acute & Diagnostic Services (D
Corporate Nursing & AHP (Dir)
Directors (Dir)
Facilities and Clinical Suppor
Finance (Dir)
Health Services Team (Dir)
Medical (Dir)
Mental Health (Dir)
None
PCCD West (Dir)
PCCD East (Dir)
Public Health (Dir)
Strategic Planning (Dir)
Women & Children (Dir)
Workforce Directorate (Dir)

Appendix 2 – Summary of ALL long term and short term absences

Whilst the review considered that last long term absence, it was felt an overview of all the long term and short term sickness periods might give helpful context.

Year sickness ended	Number of short term absences	Number of long term absence	Number of employees with short term absences	Number of employees with long term absences	Average number of short term sickness episodes per employee with a sickness episode	Average number of short term sickness episodes per employee with a sickness episode
2013	1,097	150	644	134	1.70	1.12
2014	915	170	529	152	1.73	1.12
2015	1,349	211	789	197	1.71	1.07
2016	1,292	242	653	201	1.98	1.20
2017	818	196	412	160	1.99	1.23
Total	**5,471**	**969**				

Figure 4: Ratio of long term sickness episodes against short term sickness episodes, by year that the sickness finished
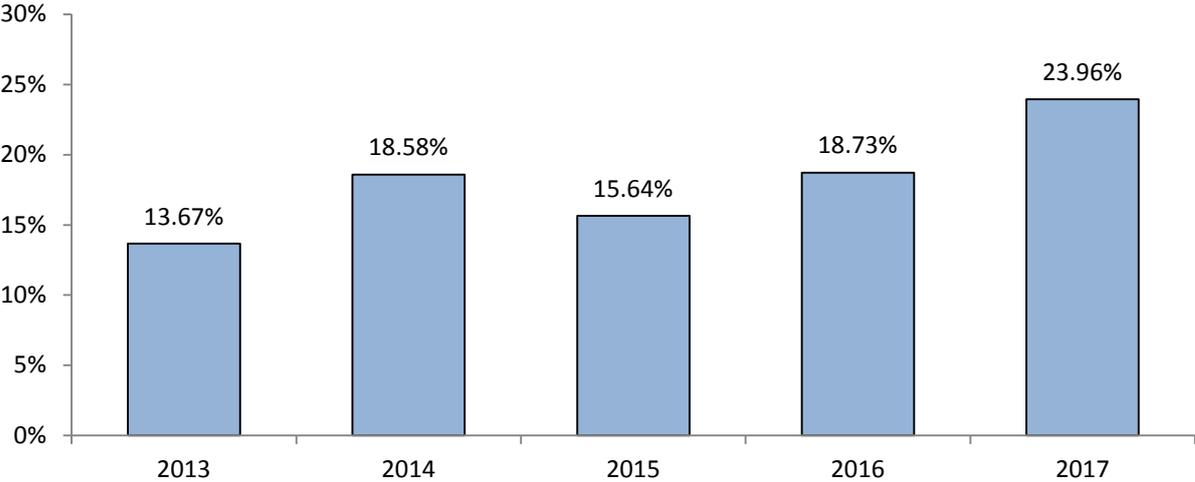
The ratio of short sickness absence episodes per employee can be an indicator of whether employees are increasing the number of sickness absence episodes per year. As the ratio increases there may be issues within the staff involved to consider. Increase in regular sickness absence could reflect many issues which might include:

- Specific problems at work or conflict in the workplace
- Lack of motivation at work or reaction to change in the workplace
- An unusually high, but genuine, vulnerability to some illnesses, for example colds, allergy or an auto immune disease
- Excessive tiredness. This could be resulting from shift patterns at work, additional work or increased work pressure, a second job, family or personal issues outside the workplace, not taking holiday allowances
- Personal or family problems

The ratio of short sickness absence episodes per employee has increased by 14% between 2013 and 2018. The rate of long term sickness has increased by 9% over the same period.

The Tables below show summaries of the number of both long and short term sickness absences episodes by year.

Table 4: Count of all long term sickness by year absence finished

Days lost	Weeks lost	2017	2016	2015	2014
28 - 56	5 to 8 weeks	63	80	72	57
57 - 84	9 to 12 weeks	31	49	45	28
85 – 112	13 to 16 weeks	24	23	22	17
113 - 140	17 to 20 weeks	15	21	16	9
141 - 168	21 to 24 weeks	14	14	9	7
169+	25 weeks and over	49	55	47	52
	TOTAL	196	242	211	170
Number single period of absence of 450 days and over		6	Less than 5	7	Less than 5

Table 3: Count of all short term sickness by year absence finished

Days lost	Weeks lost	2017	2016	2015	2014
1 - 2	n/a	421	684	720	505
1 - 7	Up to 1 week	675	1,120	1,150	778
8 – 14	1 to 2 weeks	78	94	111	69
15 – 21	2 to 3 weeks	44	49	60	42
22 - 28	3 to 4 weeks	21	29	28	26
	TOTALS	818	1,292	1,349	915

All the long term sickness absences in 2017 were reviewed and the most frequent causes were identified as:

- 26% Unknown causes
- 21% Anxiety/stress/depression etc
- 11% Injury, fracture
- 9% Other musculoskeletal issues
- 7% Other known causes
- 5% Chest and respiratory issues
- 5% Back problems.

All the short term sickness absences in 2017 were reviewed and the most frequent causes were identified as:

- 22% Unknown causes
- 18% Gastro-intestinal problems
- 16% Cold, cough, flu - influenza
- 6%   Chest and respiratory problems
- 6%   Back problems
- 5%   Anxiety, stress, depression or other psychiatric illnesses
- 5%   Headache/migraine.

Appendix 3 – Summary of the employees in 2017

Below is a summary of the total employees within NHS Dumfries and Galloway in 2017. This was the starting point for our sample.

Pay band	Part time employees	Full time employees	Total employees
Band 1	3		3
Band 2	920	220	1,140
Band 3	339	185	524
Band 4	166	141	307
Band 5	573	417	990
Band 6	321	378	699
Band 7	103	245	348
Band 8A	29	62	91
Band 8B	11	34	45
Band 8C	1	7	8
Band 8D	3	12	15
Band 9		1	1
Not assimilated	56	173	229
Total	**2,525**	**1,875**	**4,400**