

**Continuous Mortality Investigation
Income Protection Sub-Committee**

Working Paper 6

**Date-Related Features of Individual Income Protection Claims
1975-98**

May 2004

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DATE-RELATED FEATURES OF INDIVIDUAL INCOME PROTECTION CLAIMS 1975-98

1. INTRODUCTION

1.1 In the course of investigating the Income Protection (IP) data for the graduation of recovery and mortality rates, some investigations were carried out into the exact timing (in days) of IP claims, in respect of the recorded date of (start of) sickness, date of commencement of claim, and date of cessation of claim. Although the investigations did not show up any startling results, it seems worth recording what was found.

1.2 The data set considered was the set of claims records for individual UK business, corresponding to what is described as “Standard*”, for the whole 24 years from 1975 to 1998, excluding apparent duplicate claims. This data set includes both males and females, all deferred periods, and all occupational classes. It is a major subset of the total (Aggregate) data and excludes non-UK policies, those policies with special benefit types (e.g. lump sums) and those with identifiable underwriting exclusions. Although duplicate claim records are excluded, one period of sickness may have resulted in more than one claim record if it extended over more than one calendar year, and if the experiences for both years were included in the investigation.

1.3 The number of valid claim records in this data set was 180,805. Of these, 88,837, or 49.1%, were continuations from a previous year, and 94,709, or 52.4%, continued into a subsequent year. Indeed 65,629, or 36.3% of the total, did both, so lasted longer than one calendar year. In these cases, the dates of commencement or cessation of claim, or both, are not recorded. However, a date of sickness is recorded for every case.

1.4 In order to avoid duplication of claim records across years, the analyses of dates of sickness and dates of commencement of claim discussed below include only those 88,573 cases coded as new claims, or inceptions. The analysis of months of birth includes only those 80,137 cases among the inceptions where the month of birth is given. The analysis of dates of cessation of claims considers recoveries (74,504 cases), deaths (3,107 cases) and expiries (5,719 cases) separately. Besides the large number of continuation records thus omitted, a small number of commencements (3,395 cases) and cessations (2,766 cases) that took place for other reasons are also excluded.

1.5 Cases where the three relevant dates are given in the wrong order (correct has to be: sickness \leq commencement \leq cessation) are treated as errors and were excluded at an earlier stage. In compliance with the graduation data, what are identified as “false one-day claims” are also excluded. These are cases where the recorded date of

cessation is equal to the recorded date of commencement, resulting in a claim that lasted apparently for just one day. Consultation with practitioners suggested that this was the way that some offices might record a claim where the sickness had been notified to them during the deferred period, but the sickness had ceased by recovery or death before the end of that deferred period. The observed recovery rates seemed quite out of line with claims that had lasted for two or more days, so these claims have been excluded from the experience, and will continue to be excluded in future.

2. WEEKDAYS

2.1 We start with the shortest time interval, the week, and show the distribution of dates across the days of the week. Table 2.1 shows numbers and percentages, for dates of sickness (for inceptions), dates of commencement of claim (for inceptions), and dates of cessation of claim (for recoveries, deaths and expiries). Figure 2.1 shows a bar chart of the percentages.

Table 2.1. Distribution of dates by weekday.

Day of week	Sicknesses		Inceptions		Recoveries		Deaths		Expiries	
	Number	%	Number	%	Number	%	Number	%	Number	%
Sun	8,515	9.6	8,784	9.9	38,044	51.1	431	13.9	853	14.9
Mon	16,945	19.1	16,523	18.7	13,376	18.0	512	16.5	830	14.5
Tues	11,554	13.0	11,615	13.1	8,234	11.1	447	14.4	824	14.4
Wed	11,686	13.2	11,737	13.3	6,108	8.2	423	13.6	795	13.9
Thur	12,015	13.6	12,071	13.6	3,891	5.2	445	14.3	816	14.3
Fri	13,815	15.6	13,645	15.4	2,653	3.6	400	12.9	828	14.5
Sat	14,043	15.9	14,198	16.0	2,198	3.0	449	14.5	773	13.5
Total	88,573	100.0	88,573	100.0	74,504	100.0	3,107	100.0	5,719	100.0

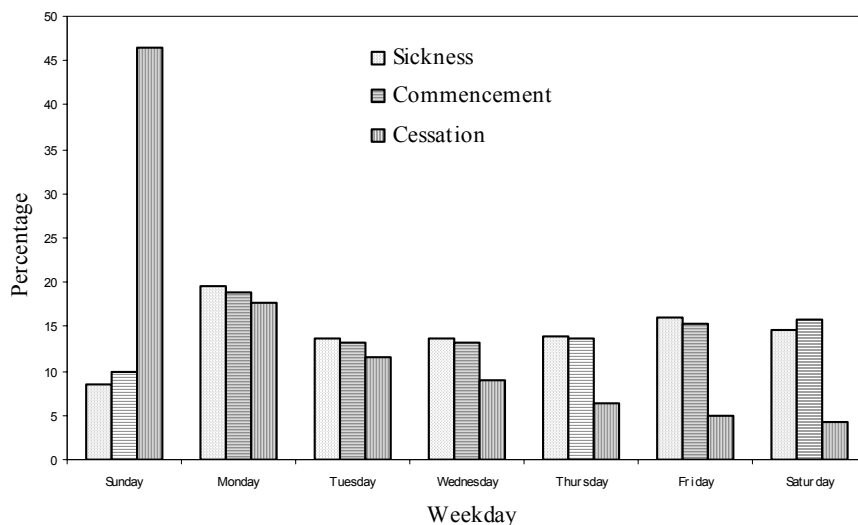


Figure 2.1 Individual IP Claims 1975-98. Distribution of dates by weekday.

2.2 It is easily seen that the distributions of dates of sickness and of commencement of inceptions are quite similar, with the distribution of cessations of different types very different. Both sicknesses and inceptions are fairly evenly distributed across the seven days, with about one seventh of the total on each day, except for Sunday and Monday. Monday has about 1.31-1.34 times a normal share and Sunday about 0.67-0.69 times. This evenness is perhaps greater than might have been expected. Although it is reasonable to assume that real sicknesses start on any day of the week, a plausible rationale for actions could be that sicknesses that really start over the weekend are not recorded until the sick person sees a doctor or fails to go to work on the following Monday. But it seems that this tendency is rather weak. Although clearly some Sunday starts move to Monday, there is no evidence that Saturday is short of either sicknesses or commencements.

2.3 Cessations are quite different. Over half the total recoveries cease on a Sunday, implying that the claimant returns to work on the immediately following Monday. The proportion of recoveries reduces steadily throughout the week, with only 3% ceasing on a Saturday, implying a return to work on the Sunday. Deaths and expiries, on the other hand, are quite evenly distributed across the days of the week; this is not surprising.

2.4 Although this pattern of recoveries implies that “true” recovery rates fluctuate with the day of the week, this has been ignored in the graduation of recovery rates. Indeed, it is difficult to see how the “true” pattern could conveniently be used in any practical calculations by insurers.

3. MONTHS

3.1 We now consider the month of the year. Tables 3.1a and 3.1b show numbers and percentages. Figures 3.1 and 3.2 shows a bar chart of the percentages in two different arrangements.

Table 3.1a. Distribution of dates by month, Part 1.

Month	Births		Sicknesses		Inceptions	
	Number	%	Number	%	Number	%
January	7,046	8.8	8,910	10.1	8,493	9.6
February	6,374	8.0	8,142	9.2	8,297	9.4
March	7,236	9.0	8,464	9.6	8,684	9.8
April	6,969	8.7	7,351	8.3	7,634	8.6
May	7,345	9.2	6,870	7.8	7,183	8.1
June	6,721	8.4	6,730	7.6	6,635	7.5
July	6,645	8.3	6,914	7.8	7,219	8.2
August	6,630	8.3	6,659	7.5	6,818	7.7
September	6,378	8.0	6,901	7.8	6,791	7.7
October	6,230	7.8	7,481	8.4	7,230	8.2
November	6,079	7.6	7,111	8.0	6,827	7.7
December	6,484	8.1	7,040	7.9	6,762	7.6
Total	80,137	100.0	88,573	100.0	88,573	100.0

Table 3.1b. Distribution of dates by month, Part 2.

Month	Recoveries		Deaths		Expiries	
	Number	%	Number	%	Number	%
January	8,411	11.3	297	9.6	460	8.0
February	7,028	9.4	251	8.1	414	7.2
March	7,424	10.0	252	8.1	499	8.7
April	6,882	9.2	263	8.5	519	9.1
May	5,962	8.0	253	8.1	521	9.1
June	5,607	7.5	269	8.7	517	9.0
July	5,517	7.4	290	9.3	492	8.6
August	5,691	7.6	270	8.7	479	8.4
September	5,891	7.9	244	7.9	478	8.4
October	6,008	8.1	262	8.4	460	8.0
November	5,687	7.6	220	7.1	436	7.6
December	4,396	5.9	236	7.6	444	7.8
Total	159,449	100.0	3,107	100.0	5,719	100.0

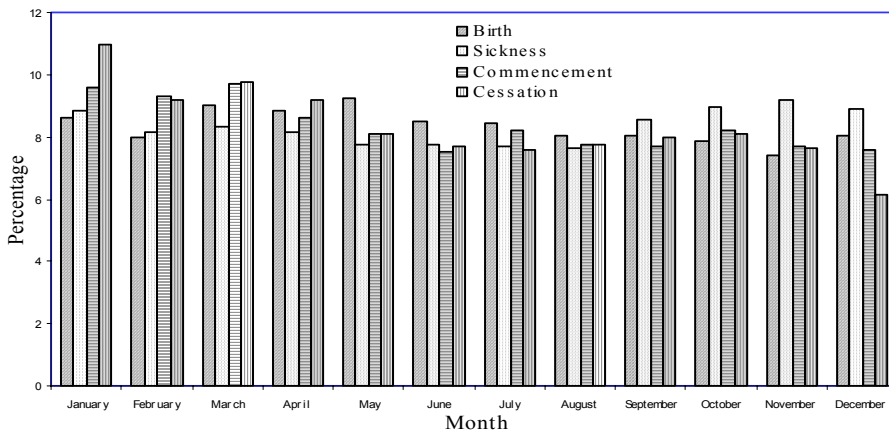


Figure 3.1 Individual IP Claims 1975-98. Distribution of dates by month. Date type within month.

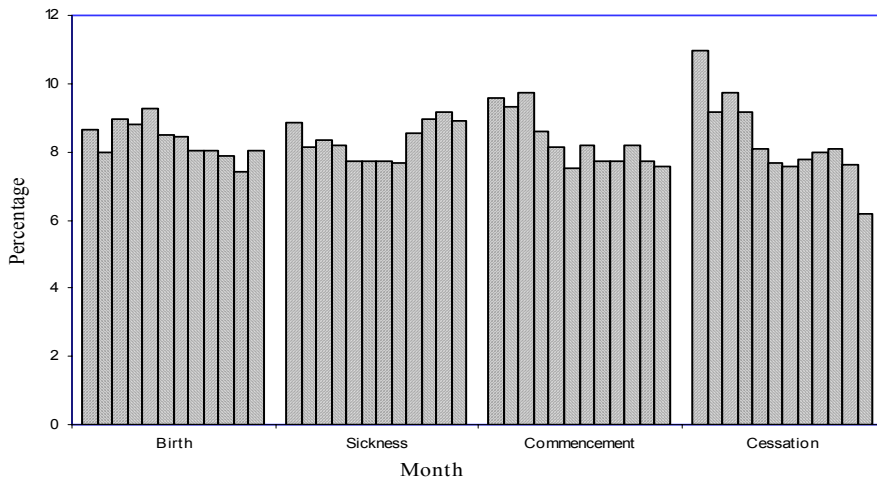


Figure 3.2 Individual IP Claims 1975-98. Distribution of dates by month. Month within date type. Months read left to right starting with January.

3.2 One can see that the numbers are roughly equal each month. There are no enormous spikes. However, births are rather more frequent in the spring (March to May) and a little lower in the late autumn (October to December). This accords with population figures.

3.3 Sickneses more often start in the early months of the year (January to March) with rather fewer in the summer months. Claims commence in the same months. Although many claims are subject to a deferred period, the majority of claims in this experience are for deferred period 1 week, so almost immediate.

3.4 Recoveries occur more commonly also in January to April, with December distinctly low. Deaths happen throughout the year. Expiries show a small peak in April to June. It is not clear why this might be.

4. DAYS OF THE MONTH

4.1 We now consider day of the month. Table 4.1 shows numbers and percentages.

4.2 There is a clear preference for the 1st of each month for all events, including the start of sickness. The 31st of the month has a low proportion for start of sickness and inception of claim, but there are only seven 31sts in any year, so it is of interest to count the number of events that fall on the last day of the month, the 28th, 29th, 30th or 31st as appropriate. This is shown in the last line of the table. However, a distinctly high proportion of claims cease on the last day of the month. This is discussed further in Section 6.6.

Table 4.1. Distribution of dates by day of the month.

Day of month	Sicknesses		Inceptions		Recoveries		Deaths		Expiries	
	Number	%	Number	%	Number	%	Number	%	Number	%
1	4,423	5.0	3,726	4.2	4,195	5.6	158	5.1	332	5.8
2	2,966	3.3	3,068	3.5	2,924	3.9	97	3.1	172	3.0
3	3,065	3.5	3,040	3.4	2,749	3.7	96	3.1	197	3.4
4	2,981	3.4	3,077	3.5	2,741	3.7	97	3.1	172	3.0
5	3,005	3.4	2,960	3.3	2,604	3.5	80	2.6	177	3.1
6	2,955	3.3	2,953	3.3	2,500	3.4	108	3.5	168	2.9
7	2,928	3.3	2,916	3.3	2,364	3.2	112	3.6	141	2.5
8	2,782	3.1	2,780	3.1	2,368	3.2	111	3.6	178	3.1
9	2,884	3.3	2,914	3.3	2,381	3.2	114	3.7	166	2.9
10	2,946	3.3	2,893	3.3	2,354	3.2	115	3.7	182	3.2
11	2,759	3.1	2,789	3.1	2,215	3.0	93	3.0	171	3.0
12	2,901	3.3	2,901	3.3	2,348	3.2	84	2.7	180	3.1
13	2,873	3.2	2,876	3.2	2,340	3.1	91	2.9	164	2.9
14	2,811	3.2	2,780	3.1	2,456	3.3	95	3.1	179	3.1
15	2,935	3.3	2,867	3.2	2,198	3.0	103	3.3	206	3.6
16	2,866	3.2	2,901	3.3	2,328	3.1	115	3.7	196	3.4
17	2,876	3.2	2,907	3.3	2,308	3.1	100	3.2	155	2.7
18	2,900	3.3	2,822	3.2	2,171	2.9	93	3.0	185	3.2
19	2,822	3.2	2,853	3.2	2,189	2.9	112	3.6	149	2.6
20	3,006	3.4	2,848	3.2	2,291	3.1	92	3.0	205	3.6
21	2,818	3.2	2,811	3.2	2,120	2.8	98	3.2	186	3.3
22	2,734	3.1	2,676	3.0	2,087	2.8	91	2.9	211	3.7
23	2,846	3.2	2,890	3.3	2,027	2.7	107	3.4	168	2.9
24	2,855	3.2	2,778	3.1	1,836	2.5	98	3.2	191	3.3
25	2,655	3.0	2,664	3.0	2,037	2.7	84	2.7	169	3.0
26	2,578	2.9	2,659	3.0	2,081	2.8	86	2.8	181	3.2
27	2,736	3.1	2,775	3.1	2,217	3.0	99	3.2	187	3.3
28	2,807	3.2	2,852	3.2	2,306	3.1	115	3.7	190	3.3
29	2,646	3.0	2,920	3.3	2,154	2.9	89	2.9	192	3.4
30	2,532	2.9	2,858	3.2	2,643	3.5	90	2.9	179	3.1
31	1,682	1.9	1,819	2.1	2,972	4.0	84	2.7	190	3.3
Total	88,573	100.0	88,573	100.0	74,504	100.0	3,107	100.0	5,719	100.0
Last day of month	3,001	3.9	3,226	3.6	4,935	6.6	133	4.3	312	5.5

5. DAYS OF THE YEAR

5.1 We can also combine month and day and consider day of the year. A tabulation by day of the year is voluminous and the additional information provided does not really justify its reproduction in this paper. However, some of the features of this analysis are described below. This confirms the preference for the 1st of each month for all events, especially the start of sickness. It also shows that a higher proportion of claims cease on the last day of the month.

5.2 Naturally 29 February is poorly represented for all events, but not when the frequency of this date is allowed for, and like other last days of the month is a popular day for the cessation of claim. 25 and 26 December are not popular days for starting sickness, nor for commencing a claim, and 23 to 25 December not popular for recovery or expiry. Other unpopular days for recoveries are 26 March, 24 May, 25 June, 11 July, and 24 August. This is not because there is a shortage of Sundays on those days in the 24 years considered; we noted in Section 2 that cessations favour Sundays. Every day of the year, except 29 February, fell on a Sunday either three or four times in the years from 1975 to 1998.

6. ANALYSIS BY DEFERRED PERIOD

6.1 It is worth seeing whether the features we have noted above vary according to any of the subsidiary ways in which the data can be classified. We start with a subdivision by deferred period, denoting the various periods as DP1, DP4, DP13, DP26 and DP52.

6.2 We start by showing the distribution of inceptions, recoveries, deaths and expiries by deferred period in Table 6.1.

6.3 Almost half the inceptions are from DP1, as are almost 60% of recoveries. But deaths and expiries are less well represented in DP1. Thereafter the inceptions and recoveries reduce with increasing deferred periods, but deaths peak for DP13 and expiries for DP26.

Table 6.2.1. Distribution of deferred periods.

Deferred period	Inceptions		Recoveries		Deaths		Expiries	
	Number	%	Number	%	Number	%	Number	%
DP1	43,277	48.9	42,595	57.2	460	14.8	854	14.9
DP4	25,848	29.2	22,318	30.0	815	26.2	1,336	23.4
DP13	11,165	12.6	6,974	9.4	913	29.4	1,477	25.8
DP26	6,137	6.9	2,223	3.0	715	23.0	1,501	26.2
DP52	2,146	2.4	394	0.5	204	6.6	551	9.6
Total	88,573	100.0	74,504	100.0	3,107	100.0	5,719	100.0

6.4 Days of the week

6.4.1 We start by considering days of the week. In Table 6.4.1 we show the distribution of dates of sickness on each weekday by deferred period, showing only percentages.

Table 6.4.1. Distribution of sicknesses by weekday by deferred period.

Day of week	DP1 %	DP4 %	DP13 %	DP26 %	DP52 %	Total %
Sunday	10.8	9.0	8.1	7.1	7.0	9.6
Monday	18.1	20.0	20.5	20.3	19.6	19.1
Tuesday	11.3	14.4	14.8	15.6	14.4	13.0
Wednesday	12.1	14.1	14.5	14.3	14.6	13.2
Thursday	13.0	13.8	14.3	14.6	15.9	13.6
Friday	15.3	15.3	16.7	16.3	17.2	15.6
Saturday	19.4	13.4	11.1	11.8	11.4	15.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Numbers	43,277	25,848	11,165	6,137	2,146	88,573

6.4.2 We had seen that, overall, for date of sickness, the distribution was reasonably even, with some movement from Sunday into Monday. For DP4 to DP52 this remains true, but for DP1 Saturdays become the most popular day (19.4%), ahead of Monday (18.1%), and Sunday is higher than before (10.8%).

6.4.3 In Table 6.4.2 we show the distribution of dates of commencement of claim on each weekday by deferred period, again showing only percentages.

Table 6.4.2. Distribution of inceptions by weekday by deferred period.

Day of week	DP1 %	DP4 %	DP13 %	DP26 %	DP52 %	Total %
Sunday	10.8	9.3	8.8	8.5	8.6	9.9
Monday	18.1	19.6	19.1	18.3	16.6	18.7
Tuesday	11.3	14.5	15.3	15.4	14.4	13.1
Wednesday	12.1	14.2	14.7	15.0	14.2	13.3
Thursday	13.0	13.9	14.2	15.0	15.9	13.6
Friday	15.3	15.1	16.2	15.4	17.4	15.4
Saturday	19.4	13.4	11.7	12.4	12.8	16.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Numbers	43,277	25,848	11,165	6,137	2,146	88,573

6.4.4 We had also seen that, overall, date of inception showed a similar pattern to date of sickness. This is now strikingly true for DP1, where the percentages are identical, though the numbers are not quite the same. We show in Section 6.8 that, for the vast majority of DP1 claims, the date of commencement of claim is identical with the date of sickness. Thus the fact that they are on the same day of the week is no coincidence. For DP4 to DP52 the distribution is similar to that for date of sickness, from which they are divided by a deferred period.

6.4.5 In Table 6.4.3 we show the distribution of dates of recovery on each weekday by deferred period, again showing only percentages.

Table 6.4.3. Distribution of recoveries by weekday by deferred period.

Day of week	DP1 %	DP4 %	DP13 %	DP26 %	DP52 %	Total %
Sunday	58.9	43.8	35.0	28.5	20.3	51.1
Monday	15.5	21.1	22.8	18.4	17.5	18.0
Tuesday	10.3	11.8	12.5	12.6	15.7	11.1
Wednesday	7.6	8.5	9.5	12.0	8.1	8.2
Thursday	4.0	6.0	7.9	10.7	13.5	5.2
Friday	2.0	4.8	6.7	9.4	12.9	3.6
Saturday	1.6	4.0	5.6	8.4	11.9	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Numbers	42,595	22,318	6,974	2,223	394	74,504

6.4.6 Date of recovery, however, shows a quite different pattern for different deferred periods. The feature, noted in Section 2, that Sunday is a popular day for the cessation of claim, is especially true for DP1, but progressively less true as the deferred period lengthens, so that by DP52 Sunday is not very far ahead of Monday or Tuesday as a day for recovery from claim.

6.4.7 Dates of death and expiry are distributed fairly evenly across the days of the week for each deferred period, as we found overall, and there is no significant difference between the deferred periods. We do not show the detailed figures.

6.5 Months

6.5.1 We now consider the distribution by month. Dates of birth are distributed in much the same way for different deferred periods across the months, i.e. fairly evenly, with a small increase in the spring.

6.5.2 For DP1 month of sickness is rather higher in the first three months of the year than later on (10.3%, 10.2% and 10.4%). This peak is much less for the other deferred periods. Indeed DP26 and DP52 show local peaks in September (9.9% and 9.7% respectively), and DP52 has a shortfall in December (6.2%). This variation might be attributable to different causes of sickness appearing in the different deferred

periods. Any short-term winter ailments would appear in DP1, perhaps in DP4, but not in the longer deferred periods.

6.5.3 For DP1 month of inception follows the month of sickness almost exactly. For the other deferred periods the date of inception is spread more equally through the year.

6.5.4 Date of recovery has a peak overall in the early months of the year. Again this is most conspicuous for DP1, where each of the first three months has more than 10% of the recoveries, with January having 11.5%. For DP4, DP13 and DP26 January is also high (11.4%, 10.4% and 9.4%). For DP1, DP4, and DP13 December is distinctly low (6.2%, 5.3% and 5.1%). DP52, however, is high in April (10.7%), and low in November (6.9%). It is not obvious what the rationale of all these variations might be.

6.5.5 For deaths and expiries the numbers are smaller and the percentages vary more, but with no apparent significant differences

6.6 Days of the month

6.6.1 It is convenient to restrict an analysis of the days of the month as first (1st), intermediate (2nd to 27th, 28th, 29th or 30th as appropriate), and last (28th, 29th, 30th or 31st). Table 6.6.1 shows the distribution of sicknesses according to this classification by deferred period.

Table 6.6.1. Distribution of sicknesses by day of the month by deferred period.

Deferred period	DP1 %	DP4 %	DP13 %	DP26 %	DP52 %	Total %
First	3.9	4.6	6.3	10.2	9.6	3.9
Intermediate	92.9	92.2	90.3	84.8	84.3	92.9
Last	3.1	3.2	3.4	5.0	6.1	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Numbers	43,277	25,848	11,165	6,137	2,146	88,573

6.6.2 One can see that for DP1 there is rather little preference for first or last days of the month, though 3.9% on the first day is more than the expected proportion of 3.3% if all days were equally represented. However, as the deferred period increases the preference for the first increases, and for DP26 and DP52 there is preference also for the last day of the month.

6.6.3 Table 6.6.2 shows the distribution of inceptions according to the same classification by deferred period.

Table 6.6.2. Distribution of inceptions by day of the month by deferred period.

Deferred period	DP1 %	DP4 %	DP13 %	DP26 %	DP52 %	Total %
First	3.9	3.6	5.0	6.5	6.6	4.2
Intermediate	92.9	92.9	90.3	88.8	86.0	92.1
Last	3.2	3.5	4.6	4.7	7.5	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Numbers	43,277	25,848	11,165	6,137	2,146	88,573

6.6.4 For DP1 the pattern for inceptions is almost the same as for sicknesses. But for the longer deferred periods the preference for the first day is rather less pronounced than for sicknesses. One can speculate here that, when there is a long deferred period, the exact date at which a claimant went sick may be indefinite, or may have been forgotten, and all that is correctly recorded is the month of sickness, with a day (the first or the last) assigned rather arbitrarily. For a short deferred period exact dates are more important, and may be better defined.

6.6.5 Table 6.6.3 shows the distribution of recoveries according to the same classification by deferred period.

Table 6.6.3. Distribution of recoveries by day of the month by deferred period.

Deferred period	DP1 %	DP4 %	DP13 %	DP26 %	DP52 %	Total %
First	4.5	6.3	8.1	10.7	12.9	5.6
Intermediate	90.9	87.2	77.1	68.9	63.7	87.7
Last	4.5	6.4	14.8	20.3	23.4	6.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Numbers	43,277	25,848	11,165	6,137	2,146	88,573

6.6.6 For longer deferred periods a strong preference for recoveries to be recorded as if they had occurred on the last day of the month is evident, with 23.4% of DP52 recoveries taking place then. The first day is also popular. This tendency is less conspicuous for DP1, but is still there to some extent. One has to wonder whether offices record as recoveries long-term claims which have really ceased for some other reason.

6.6.7 Even for deaths and expiries there is some preference for events to occur on the first or last days of the month. This may reflect payment of benefit at monthly

intervals, with the date of the last payment being recorded as if it were the date of the event (which for expiries it may well be). We do not show the detailed figures.

6.7 *Days of the year*

6.7.1 The days of the year show the same features as already noted. There are peaks on the first and last days of each month. The days around Christmas are still rather unpopular for most events, even for deaths, though the numbers are very low and one cannot read much significance into this feature.

6.8 *Duration between sickness and inception*

6.8.1 Since we have available the exact dates of commencement of sickness and of claim, it is possible to calculate the difference between them, which we define as the delay period. One might expect this to be the same as the deferred period of the policy, and indeed it often is, but not always. There is a strong peaking at the expected number of days, or near that, with a small scatter of cases at intermediate days. In Table 6.8 we show the distribution of the delay period, by deferred period, for inceptions.

6.8.2 For DP1 almost all claims started on the date of sickness, so the delay was nil. This accounts for the near coincidence of statistics for dates of sickness and inception for DP1. A few more (24 cases) had a 1-day delay. A handful (77 cases) arrived after 7 days, and a smaller handful (14) after 14 days. Otherwise they occur in single figures, except for 11 after 365 and 5 after 366 days. One wonders whether these have been correctly coded.

6.8.3 For DP4 the great majority (91.91%) had a delay of 28 days, but a number (4.73% in all) had delays of 27, 29, 30 or 31 days. Some DP4 policies may be written with a deferred period of one month, which would account for these. Some had delays of 14 days (possibly 2-week deferred periods), others 56 to 59 days (possibly 8-week deferred periods). Another 59 had delays of 393 days; since this equals 365 plus 28, again one wonders about possible miscoding.

6.8.4 For DP13 the popular delay is 91 days, exactly 13 weeks, with 78.50% of cases. But 90 and 92 days are also popular (11.14%). These might represent policies with deferred periods of 3 months rather than 13 weeks. Another well represented delay is 56 days, which is exactly 8 weeks, with 3.34%. Otherwise there are handfuls at days 0, 7, 28, 84 (12 weeks), 118-122 (these could be 4-month policies), and also at 456 days (=365+91).

6.8.5 For DP26 the obvious popular delay is 182 days (76.19%), but delays of 181, 183 and 184 days are not uncommon (15.49%). These might represent a six-month deferred period. Other handfuls occur at 0, 7, 28 and 547 days (=365+182).

6.8.6 For DP52 delays of 364 days (66.45%) and 365 (15.56%) days are the commonest. The former represents exactly 52 weeks, the latter one calendar year. Also represented is 366 days (a leap year, with 5.69%). Another handful arrive after 729 days, possible representing a 2-year deferred period. But one might wonder whether the cases reported in DP52 with 0, 7, 28 or 182 days delays have the wrong DP coded.

6.8.7 A few cases have delays of much more than one year. There are many of these in the file (over 1,000), not shown in the table, but recorded as revivals, or benefit alterations. These are to be expected. But there are a few that are coded as inceptions, and one must wonder how a valid DP1 claim can show sickness commencing on 27 November 1989 with the claim starting on 18 March 1995 and recovering on 28 May 1995.

Table 6.8. Distribution of delay period by deferred period.

Delay period	DP1 %	DP4 %	DP13 %	DP26 %	DP52 %
0 days	99.55	1.08	1.18	1.27	1.03
1-6	0.10	0.07	0.09	0.11	0.19
7 days	0.18	0.09	0.39	0.46	0.70
8-13	0.02	0.08	0.10	0.07	0.09
14 days	0.01	0.62	0.01	0.02	0.05
15-26	0.02	0.30	0.11	0.05	0.09
27 days	0.00	0.81	0.01	0.02	0.00
28 days	0.03	91.91	0.35	0.42	0.56
29 days	0.00	1.80	0.04	0.03	0.09
30 days	0.01	0.80	0.06	0.03	0.19
31 days	0.00	1.32	0.04	0.05	0.05
32-55	0.00	0.40	0.32	0.13	0.09
56 days	0.00	0.09	3.34	0.00	0.05
57-89	0.00	0.30	1.91	0.33	0.09
90 days	0.01	0.00	2.62	0.00	0.00
91 days	0.00	0.01	78.50	0.13	0.00
92 days	0.00	0.01	7.52	0.08	0.05
93-180	0.00	0.02	1.88	1.21	0.28
181 days	0.00	0.00	0.02	5.00	0.05
182 days	0.00	0.00	0.01	76.19	1.58
183 days	0.00	0.00	0.03	5.70	0.05
184 days	0.00	0.00	0.01	4.79	0.00
185-363	0.00	0.01	0.10	2.30	3.08
364 days	0.00	0.00	0.00	0.02	66.45
365 days	0.03	0.01	0.00	0.05	15.56
366 days	0.01	0.00	0.00	0.00	5.69
367-455	0.00	0.28	0.18	0.07	2.19
456 days	0.00	0.00	0.97	0.00	0.00
457-546	0.00	0.00	0.13	0.18	0.00
547 days	0.00	0.00	0.00	1.03	0.00
548-728	0.00	0.00	0.04	0.20	0.23
729 days	0.00	0.00	0.00	0.00	1.30
730-998	0.00	0.00	0.04	0.05	0.19
999 and over	0.00	0.00	0.02	0.03	0.05
Total	100.0	100.0	100.0	100.0	100.0
Numbers	43,277	25,848	11,165	6,137	2,146

7. SUMMARY

7.1 It seems clear from this investigation that, while very many IP claims fall evenly across the calendar, there is a tendency for some claims to fall into two classes. If policies have short deferred periods, claims are made immediately, exact days of falling sick and recovering are known, payment is for the days sick, and the days fall uniformly across the week and year, except for a strong tendency for claimants to return to work on a Monday, so that Recoveries occur on a Sunday. If policies have longer deferred periods, claims are made after the insured has been sick for some time, the exact date of the start of sickness is not carefully recorded, and the sickness is attributed to the first day of an appropriate month; claims are paid monthly, and often cease at the end of a month. This is all presumably well known to practitioners, but our numerical investigations show the extent of these tendencies, which are there, but are not exceptionally strong, with the one exception of claims in short DPs recovering on Sundays.

8. ANALYSIS BY OTHER FACTORS

8.1 We have analysed the dates by factors other than deferred period, including year (of record), sex and age group. However, each of these factors varies also by deferred period. For example, in 1975 DP1 contributed nearly 60% of claim records and DP52 less than 1%. By 1998 these percentages were about 16% and 12% respectively. Thus the characteristics of DP1 would be expected to have decreased over the years and the characteristics of higher DPs increased. Females have increased their representation over the years too. A full generalised linear model analysis would be possible, but it is not felt that the data is of sufficient importance to warrant this. Nevertheless the analysis that has been done has thrown up some points that may be of general interest.