

Chapter Five: Prescribing of opiate drugs

Introduction

Many of the concerns about deaths at Gosport War Memorial Hospital relate to the use of opiates. The misuse of Drugs Act 1971 and the Misuse of Drugs Regulations 1985 stipulate that registers are kept of the administration of opiate drugs such as diamorphine, morphine and fentanyl. Registers must be bound, and entries must be in chronological order. This Chapter describes an investigation of the information contained in the controlled drug registers retained at Gosport Hospital.

Method

The surviving controlled drugs registers used at the hospital were obtained and reviewed. The relevant registers that were still available are shown in Table 5.1. No data were available from the male ward. Comparisons between wards were possible for some years, although the data were not always complete.

The controlled drug registers contained a record of every dose of opiate drug administered to each patient. It was possible to identify the first and last doses of each drug administered, and the quantity of drug in each dose.

Table 5.1. The periods for which controlled drug registers from different wards were available.

Ward	Dryad	Daedalus	Sultan	Redclyffe	Female ward	Male ward
<i>Period covered by registers</i>	25.6.95 – 5.3.02	6.10.96 – 14.8.02	13.7.94 – 31.10.01	27.2.93 – 28.10.95	30.8.87 – 8.9.94	No register available

Results

1. Numbers of patients who died who received opiates

Information was available from both the MCCD counterfoils (see Chapter Three) and the controlled drug registers, and it was possible to identify those who had received opiates during their final illness by matching counterfoils and register entries. The years 1997-2000 were selected, since the controlled drug register data from Dryad, Daedalus and Sultan were complete for this period. Table 5.2 shows the numbers and proportions of cases given an opiate before death, according to whether the MCCD was signed by Dr Barton or another doctor. A greater proportion of patients of Dr Barton received an opiate (Chi Square = 30.1; df 1, $p < 0.001$).

Table 5.2. Numbers (%) of patients dying 1997-2000 who were prescribed at least one dose of an opiate before death.

Doctor signing MCCD	Opiate prescribed		Total
	yes	no	
Dr Barton	211 (74.0%)	74 (26.0%)	285
Another doctor	146 (51.8%)	136 (48.2%)	282
Total	357 (63.0%)	210 (37.0%)	567

Dr Barton was more likely to prescribe an opiate to patients who were certified as dying from bronchopneumonia with other conditions, bronchopneumonia alone, or other conditions (Table 5.3). In the Table, all the certified causes of death have been grouped into the six categories employed in Chapters Two and Three.

Table 5.3. The numbers (%) of patients dying 1997-2000 from groups of conditions who had been prescribed an opiate by Dr Barton or other doctors.

Cause of death	doctor	opiate		total	Sig (df 1)
		yes	no		
Cancer	Barton	15 (68.2%)	7 (31.8%)	22	0.2
	Another	78 (80.4%)	19 (19.6%)	97	
Heart	Barton	26 (59.1%)	18 (40.9%)	44	0.58
	Another	11 (36.7%)	19 (63.3%)	30	
Stroke	Barton	37 (69.8%)	16 (30.2%)	53	0.19
	Another	16 (55.2%)	13 (44.8%)	29	
bronchopneumonia with other conditions	Barton	64 (76.2%)	20 (23.8%)	84	0.001
	Another	27 (37.5%)	45 (62.5%)	72	
bronchopneumonia only	Barton	57 (83.8%)	11 (16.2%)	68	0.01
	Another	3 (42.9%)	4 (57.1%)	7	
other conditions	Barton	12 (85.7%)	2 (14.3%)	14	0.001
	Another	10 (21.7%)	36 (78.3%)	46	

The analysis in Table 5.3 was repeated for all deaths that occurred in Redclyffe Annexe up to and including 1994. Patients in the Annexe were generally the elderly mentally infirm, and Dr Barton was the responsible doctor at the Annexe until approximately 1994 (see Table 3.9). The findings do not indicate differences in use of opiates between Dr Barton and the other doctors, although none of the other doctors gave bronchopneumonia alone as the cause of death in this period. However, a comparison involving deaths in Redclyffe from 1995 indicates leads to different findings. None of the patients whose deaths were certified by other doctors had received an opiate, although all three of those certified by Dr Barton had (Table 5.5). A test of statistical significance has not been performed since the numbers of cases involved was small. However, there does appear to have been a change in the use of opiates at the end of life at about the time Dr Barton ceased to have principal

Table 5.4. The numbers (%) of patients dying 1993-1994 in Redclyffe Annexe from different causes who were prescribed an opiate by Dr Barton or other doctors.

Cause of death	doctor	opiate		total	sig
		Yes	no		
Cancer	Barton	1 (50.0)	1 (50.0)	2	0.17
	Another		3 (100.0)	3	
Heart	Barton	5 (41.7)	7 (58.3)	12	0.24
	Another	1 (16.7)	5 (83.3)	6	
Stroke	Barton	6 (27.3)	16 (72.7)	22	0.93
	Another	1 (25.0)	3 (75.0)	4	
Bronchopneumonia with other conditions	Barton	41 (33.1)	83 (66.9)	124	0.39
	Another	3 (50.0)	3 (50.0)	6	
Bronchopneumonia Only	Barton	23 (65.7)	12 (34.3)	35	-
	Another	-	-	0	
Other conditions	Barton		10 (100.0)	10	-
	Another		3 (100.0)	3	

Table 5.5. Numbers (%) of patients dying from different causes in Redclyffe Annexe, 1995 or later.

Cause of death		opiate		total
		yes	no	
Heart	other		1 (100.0)	1
	Dr Barton		1 (100.0)	1
Stroke	other		4 (100.0)	4
	Dr Barton	1 (100.0)		1
bronchopneumonia plus another	other		17 (100.0)	17
	Dr Barton	1 (100.0)		1
bronchopneumonia only	other			
	Dr Barton	1 (100.0)		1
Other	other		5 (100.0)	5
	Dr Barton			

responsibility for patients in Redclyffe Annexe. One explanation for this finding is that the type of patients being cared for in the Annexe changed at the same time, but an alternative is that the practice of almost routine use of opiates before death was discontinued.

2. Deaths on Dryad ward

Since information was available about admissions to Dryad ward, including some indication of the reason for admission, and whether the patient was discharged alive or had died on the ward, it has been possible to estimate the proportions of patients admitted with different types of illnesses who received opiates, and whether they died. Those patients who received at least one dose of opiate were included in this analysis.

The findings are summarized in Table 5.6. The illness groups are stroke, general medical problems, medical and mental problems, heart problems, cancer, post-operative cases such as fractured neck of femur, and respite care. Thus, of the 17 patients admitted with strokes between March 1995 and August 1998, 10 died, of whom 8 received an opiate. None of those discharged alive had received an opiate. Some patients in all illness groups received an opiate except for those in the respite care group. Of those who were admitted with strokes, 47% received an opiate, the proportion for general medical problems was 71.7%, medical and mental problems 73.2%, heart problems 71.4%, cancer 66.7 %, and post-operative cases 60.9%.

Some qualifications must be made about these data. First, 10 patients had been recorded as receiving an opiate although the admissions book did not record them as having been admitted. These patients were omitted from the analysis. The most

likely explanation is that these patients were on a different ward, the drugs been transferred between wards. Second, no account has been made of the dose, numbers of doses, type of opiate received or administration route. The data will

Table 5.6. Patients on Dryad ward who received an opiate, March 1995 – August 1998, according to illness group and outcome (died or discharged).

N=209.

illness group	had an opiate	Outcome		Total
		<i>died</i>	<i>discharged</i>	
stroke	No	2 (22.2)	7 (77.8)	9
	yes	8 (100.0)		8
	total	10 (58.8)	7 (41.2)	17
general medical problems	No	7 (26.9)	19 (73.1)	26
	yes	55 (83.3)	11 (16.7)	66
	total	62 (67.4)	30 (32.6)	92
medical/mental problems	No	3 (27.3)	8 (72.7)	11
	yes	29 (96.7)	1 (3.3)	30
	total	32 (78.0)	9 (22.0)	41
heart problems	No		2 (100.0)	2
	yes	5 (100.0)		5
	Total	5 (71.4)	2 (28.6)	7
cancer	No	5 (62.5)	3 (37.5)	8
	yes	16 (100.0)		16
	Total	21(87.5)	3 (12.5)	24
post op	No	3 (33.3)	6 (66.7)	9
	yes	12 (85.7)	2 (14.3)	14
	Total	15	8	23
respite care/ social admission	No		5 (100.0)	5
	Total		5 (100.0)	5

therefore include a number of patients who received only one or two doses, although this would be unlikely to change the general conclusion from the table. Third, it is difficult to judge whether individual patients did have a level of pain that justified the use of opiate medication. Without a case by case review, the appropriateness of opiate medication for each patient cannot be determined.

3. Quantities of opiates prescribed per patient

An analysis was undertaken to compare the total amount of opiate prescribed per patient by Dr Barton and other doctors at Gosport. A random sample of patients who had died, and who had been prescribed an opiate, was identified, from those who had died on Dryad, Daedalus or Sultan wards, and for whom complete data from controlled drug registers were available. A total of 46 patients were included, 21 being patients whose deaths had been certified by Dr Barton, and 25 whose deaths had been certified by other doctors. Seventeen patients had died on Dryad ward, nine on Daedalus ward, and 20 on Sultan ward. The amount of opiate prescribed for a patient was calculated by identifying the number of doses, and quantity of drug in each dose, for each drug administered to each patient. Thus, if a patient had been administered subcutaneous diamorphine 20 mgm per day for three days, the total amount would be 60 mgm.

There was no significant difference in the total amount in mgms of diamorphine recorded as administered during the terminal illness, the mean for Dr Barton's patients being 113 mgms (SD 211 mgms) in comparison with 1300 mgms (SD 3354 mgms) for the other doctors (t-test p 0.13). The mean quantity of oramorph for Dr Barton's patients was 276 mgms (SD 276 mgms) and for the other doctors 169

mgms (SD 168 mgms) (t-test p 0.6). None of Dr Barton's patients in the sample had received morphine sulphate tablets, although seven in the comparison group had. One patient of Dr Barton had received fentanyl, and one patient of the other doctors had received methadone.

Some caution is needed in drawing definitive conclusions from this analysis since it did not involve review of the clinical records, and the sample was small.

Nevertheless, the findings do not suggest that Dr Barton's patients had received opiates for prolonged periods.

Discussion

The findings of the review of prescribing of controlled drugs indicate that patients in Gosport Hospital whose deaths were certified by Dr Barton were more likely to have been prescribed an opiate (most commonly diamorphine or oramorph). The excess was most evident among patients who were certified as dying from bronchopneumonia with or without other conditions, or from some other condition that was not cancer or cerebro- or cardio-vascular disease. This finding is a cause for concern, since the use of opiates for pain relief in terminal care is more common in conditions in which pain would be expected, in particular cancer. Furthermore, a high proportion of the initial cases referred to the police by concerned relatives had been certified as dying due to bronchopneumonia. It does appear that the practice of almost routine use of opiates before death in Redclyffe Annexe changed when Dr Barton ceased principal responsibility for patients in the Annexe. This may have been a consequence of a change in the practice followed by the doctors who took over from Dr Barton, or a change in the mix of patients who were admitted to the Annexe.

The finding that the quantities of opiate prescribed, in the analysis of a random subsample, did not indicate that Dr Barton had prescribed opiates over prolonged periods is reassuring. However, this finding does not eliminate the possibility that some patients were given opiates unnecessarily. Therefore, the findings of the analyses reported here are consistent with a practice of prescribing opiates to an inappropriately wide group of older patients.

Chapter Six: Analysis of medical certificates of cause of death (MCCDs)

Introduction

This Chapter presents the findings of an analysis of numbers of deaths in general practice certified by Dr Barton. The aim was to determine whether there were greater numbers of deaths than would have been expected, and therefore reasons for concern about the care of patients in general practice. Although most of the review is concerned with deaths in Gosport hospital, it was necessary to be certain that there were no reasons for concern about deaths in the community.

Methods

The data relate to the deaths certified by Dr Barton and a sample of general practitioners chosen because they were caring for similar groups of patients in Gosport at the same time as Dr Barton. There were nine general practices in Gosport, one of which was the practice of Dr Barton and her partners (referred to as the index practice). Levels of deprivation were classified into four levels. In the index practice 6.9% of registered patients were classified in one of the four levels (0.4% in the highest level of deprivation), but in the first control practice 8.4% (2.5% in the highest level) and in the second control practice 7.9% (0.5% in the highest level) were classified in one the deprivation levels. Thus, the comparison practices had a marginally higher proportion of deprived patients. In the index practice, 15.6% of patients were aged 65 years or over; in the first control practice 11.3% and in the second control practice 18.3% of patients were aged 65 years or over.

Consequently, the analysis took account of the differences in the age of patients

between practices, but did not account for deprivation since the differences were small.

The MCCDs were identified by National Statistics (see Chapter Two). Deaths from 1993 onwards certified by any of the general practitioners of the three practices were identified using the computer database maintained by National Statistics. Deaths prior to 1993 have not been stored on computer, and therefore a hand search was required of the notifications in the death register of files completed in the registration districts serving the Gosport area (Gosport, Fareham 1, and Havant). The data from these sources had been provided by registrars from the death certificates completed by the general practitioners and additional information provided by the person reporting the death to the registrar (the informant). In this review, information from each death notification was entered into a database for analysis.

The deaths certified by the general practitioners included those that had occurred at home, in nursing homes, or in hospitals, in particular Gosport War Memorial Hospital.

Results

Table 6.1 presents information about the numbers of deaths certified by the sample of GPs who were partners in one of the three practices included in this analysis. The figures for Dr Barton are similar to those identified from certificate counterfoils held at the hospital (see Table 3.2).

Table 6.1. Annual number of deaths, 1987-2002.

year	certifying doctor																					total	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		Dr B
1987	8	20	7					6	10	11	13			2	15	12	3	9	11		17	2	146
1988	4	8	4					10	12	10	11				5	8	5	5	6	1	15	28	132
1989	4	11	10					20	9	13	14				6	9	8	8	5	2	9	39	167
1990	20	11	7	5				8	17	13	17				10	13	1	4	4			41	171
1991	16	20	13	9				7	5	12	11				11	10	7	5				37	163
1992	5	10	8	18				9	10	8	13				9	10	3	5				36	144
1993	8	10	13	7	3			8	9	7	11	1			5							97	179
1994	4	8	5	9	4			12	4	5	12				9							106	178
1995	7	12	8	9	2			8	10	18	9	13	9		6							81	192
1996	15	9	11	11	7			10	5	9	5	11	9									86	188
1997	7	6	3	10	5	1		19	13	5	9	6	8									92	184
1998	5	9	7	10	5	8		2	13	9	15	12	14									108	217
1999	7	9	4	10	4	12	8	2	9	13	9	1	7									94	189
2000	3	5	5	7	5	11	4		7	6	13	7										35	108
2001	7	17	9	1	1	13	2	1	5	4	6	8	1									5	80
2002	9	8	4	9	5	8	5	7	5	5	5	10											80
	129	173	118	115	41	53	19	129	143	148	173	69	48	2	76	62	27	36	26	3	41	887	2518

Deaths in Gosport hospital

Dr Barton's partners provided cover at Gosport hospital during her absences (due to vacations and other reasons). Figures 3.1 to 3.15 reveal periods of one or more weeks in which Dr Barton did not issue a certificate for a patient who had died in Gosport hospital, and one explanation for these weeks is that she was on vacation. A comparison of death certification rates by her partners, relating to patients on Daedalus and Dryad wards during those periods of absence, with certification rates by Dr Barton on the same wards when she was present would be of particular interest. A high death rate when Dr Barton was present and a lower rate when she was on leave would raise questions about the impact of her clinical practice on mortality rates.

However, some difficulties of interpretation might remain since mortality during her absences could in part reflect effects of her practice when present, possibly leading to attenuation of observable differences. Also, the delay of the admission of

seriously ill patients until Dr Barton's return may serve as an explanation for differences in deaths rates between normal and holiday periods. Unfortunately, it has proved impossible to obtain information about the doctors' rota for Daedalus and Dryad wards and the analysis reported below differs from a straightforward comparison in two respects:

- a) Since individual wards cannot be consistently identified from the place of death details on the certificates, the analysis relates to deaths from all wards at Gosport certified by Dr Barton or her partners. These include deaths of patients in Sultan ward who would have been under the care of their general practitioner as well as deaths in Dryad and Daedalus wards, under the care of the Department of Medicine for Elderly People.
- b) Since records of Dr Barton's rota are no longer available, an indirect method of inferring (some of) these periods of absence has been used, as described below, but the validity of this method cannot be verified directly.

Absence of Dr Barton has been inferred from prolonged periods between consecutive deaths certified by her. Such periods could of course occur by chance even when Dr Barton is present. A variety of period lengths has been investigated. The principal results below are based on periods of at least 14 consecutive days, since use of shorter periods are more prone to error, such as uncertainty over the exact start and end dates.

Rates of certification by Dr Barton, except during those periods in which there was at least 14 days between successive certifications by her, were compared with rates of certification by the seven other practice partners in those same 14+ day periods.

Incidence ratios (and 95% confidence intervals) were: 1.67 (0.88-3.59) in 1998, 3.78 (1.91-8.52) in 1999, and 1.25 (0.49-4.11) in 2000. If the three 1998-2000 years were considered together, the incidence ratio was 2.24 (1.47-3.55).

In interpreting these ratios, it is helpful to consider the magnitude and direction of possible biases. End-estimate bias in the 14-day intervals is unlikely to exceed 15% (two end days in 14 days); they could operate in either direction (that is increasing or decreasing the true estimate). If Dr Barton had been absent for periods shorter than 14 days, this will lead to under estimation of her rates. If the 14+ day periods are chance occurrences not corresponding to her absence, her rates will be overestimated, by up to 30%. If, as noted earlier, Dr Barton's practice while present impacted on her partners' certification rates during her absence, the incidence ratio might be reduced.

Taking these factors into account, it is difficult to draw secure conclusions. The incidence ratio in 1999 was markedly raised, and this finding may point to a method for exploring further any potential impact of Dr Barton's clinical practice on mortality rates. It has not been possible to obtain reliable information about holiday periods in this review, but this may be possible in the continuing police investigation, in which case the pilot analysis included here should be repeated using valid holiday data.

Deaths at home or in nursing or residential homes

Table 6.2 presents information relating to deaths at home, or in residential or nursing homes, certified by the same group of GPs. Since Dr Barton was required to care for patients in Gosport War Memorial Hospital, she may be expected to have undertaken a reduced workload in the general practice. The findings indicate that Dr Barton issued fewer certificates than most of the other GPs, although some (probably part-timers, or doctors leaving general practice between 1993-5) issued fewer. This finding is reassuring, since it reduces concern about care given to patients in the community. It is notable that Dr Barton issued no certificates in 2002.

Table 6.2. Annual number of deaths at home or in residential/nursing homes certified by GPs, 1987-2002.

year	certifying doctor																					total	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		Dr B
1987	4	13	7					4	6	7	10			2	10	9	3	5	4		10	2	96
1988	1	6	2					9	10	6	8				3	5	4	5	6	1	10	9	85
1989	3	7	7					20	6	5	11				5	6	8	6	3	2	9	9	107
1990	12	6	5	3				7	15	9	11				7	7	1	4	3			3	93
1991	15	15	10	7				7	4	9	9				10	5	7	4				5	107
1992	2	6	6	10				7	8	5	11				6	6	2	4				4	77
1993	5	7	10	5	1			6	7	5	8	1			5							3	63
1994	1	5	4	7	4			9	3	3	10				5							2	53
1995	4	9	6	7	2			8	6	8	7	10	2		3							1	73
1996	10	5	6	8	5			7	3	3	4	6	1									2	60
1997	5	1	1	10	1			15	9	2	6	3	3									6	62
1998	5	7	6	9	1	6		1	8	4	6	9	4									1	67
1999	6	6	3	7	4	10	7		5	4	6	1	5									2	66
2000	2	3	4	4	4	11	2		5	5	7	6										1	54
2001	6	13	8	1	1	11	2	1	2	3	5	7	1									3	64
2002	9	7	3	7	1	7	5	3	4	4	4	7											61
	90	116	88	85	24	45	16	104	101	82	123	50	16	2	54	38	25	28	16	3	29	53	1188

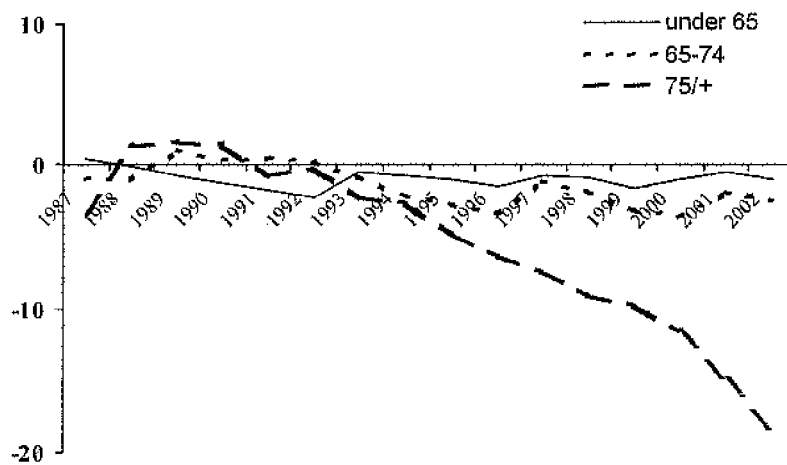
Although Table 6.2 provides some reassurance, a more detailed analysis is required that takes into account the numbers of patients registered with the included general practices. This additional information would enable calculation of the rate of deaths in the three practices, and provide a more meaningful comparison between Dr Barton and other doctors. Information about the numbers of patients registered with each general practitioner was obtained from the Hampshire and Isle of Wight Practitioners and Patient Services. Although the Agency was able to supply information from 1987 onwards about the numbers of patients in three age bands (0-64 years, 65-74 year, and 75 years and over), details on the numbers who were male and female were available only from 1996.

The number of patients registered with a general practitioner is not necessarily an accurate reflection of the number of patients the doctor directly cares for. Within a general practice, some doctors may undertake work outside the practice (as did Dr Barton) and therefore not care for so many patients in the practice. A doctor may

choose to work part-time for other reasons. Therefore, the numbers of patients registered with the doctor were not used in estimating mortality rates. Since detailed information about the work patterns of the general practitioners in the comparison practices was not available, the numbers of patients cared for by each general practitioner was taken to be an equal share of the total practice list size. For example, using this method, in a practice of five doctors and with a total of 10,000 registered patients, the numbers cared for by a single doctor would be assumed to be 2000.

Deaths among males and females combined up to 1995 are shown in Table 6.3 to 6.5, and deaths among males and females separately from 1996 to 2002 are shown in Tables 6.6 to 6.10. Each Table displays the numbers of deaths certified by doctors in the comparison practice, the numbers certified in Dr Barton's practice (the index practice), and the numbers certified by Dr Barton. The Tables also show the numbers of patients registered with the comparison and index practices, and the estimated number under the care of Dr Barton. These data are used to calculate the number of certificates that would have been expected to have been certified by Dr Barton based on the comparison practices, and the difference between the expected number and the number she did in fact certify. In all but two of the Tables, the total of the difference between the numbers expected and observed is less than zero. The cumulative difference between the expected and observed numbers of deaths in the three age bands is displayed in Figure 6.1.

Figure 6.1. The cumulative difference between the observed and expected numbers of MCCDs issued by Dr Barton, 1987-2002. (Deaths occurring at home, or in residential or nursing homes).



By 2002, the total difference between the observed and expected certificates issued by Dr Barton was -0.99 for patients aged 0-64, -2.54 for those aged 65 to 74, and -18.53 for those aged 75 and over. These figures provide further reassurance about the care given to patients in general practice.

Table 6.3. Deaths and death rates/1000 patients under the age of 65 1987-1995 (males and females).

year	Patients in control practices	Deaths in control practice	Patients in index practice	Deaths in index practice	Rate /1000 in control practices	Rate /1000 in index practice	Dr Barton's list (estimate)	Certified by Dr Barton	Expected deaths	Observed - expected, Dr Barton
1987	15376	5	8644	10	.33	1.16	1729	1	.57	.43
1988	15457	5	8569	7	.32	.82	1714	0	.55	-.55
1989	15673	5	8665	3	.32	.35	1733	0	.55	-.55
1990	15490	5	8634	7	.32	.81	1727	0	.55	-.55
1991	13192	4	8644	5	.30	.58	1729	0	.52	-.52
1992	13009	4	8578	2	.31	.23	1716	0	.53	-.53
1993	12933	2	8535	4	.15	.47	1707	2	.26	1.74
1994	13055	1	10819	2	.08	.18	1803	0	.14	-.14
1995	13244	2	10745	4	.15	.37	1791	0	.27	-.27
Total observed - expected										-.94

Table 6.4. Deaths and death rates/1000 patients age 65 - 74 1987-1995 (males and females).

year	Patients in control practices	Deaths in control practice	Patients in index practice	Deaths in index practice	Rate /1000 in control practices	Rate /1000 in index practice	Dr Barton's list (estimate)	Certified by Dr Barton	Expected, Dr Barton	Observed – expected, Dr Barton
1987	1271	8	783	6	6.29	7.66	157	0	.98	-.98
1988	1315	8	788	9	6.08	11.42	158	1	.96	0.04
1989	1326	8	788	8	6.03	10.15	158	3	.95	2.05
1990	1331	7	785	7	5.25	8.92	157	0	.82	-.82
1991	1176	14	800	6	11.90	7.50	160	2	1.90	0.10
1992	1144	9	805	6	7.87	7.45	161	1	1.27	-.27
1993	1145	7	779	6	6.11	7.70	156	0	.95	-.95
1994	1157	9	986	2	7.78	2.03	164	0	1.28	-1.28
1995	1147	5	993	8	4.36	8.06	166	0	.72	-.72
Total observed - expected										-2.83

Table 6.5. Deaths and death rates/1000 patients age 75 and above 1987 – 1995 (males and females).

year	Patients in control practices	Deaths in control practices	Patients in index practice	Deaths in index practice	Rate /1000 in control practices	Rate /1000 in index practice	Dr Barton's list (estimate)	Certified by Dr Barton	Expected, Dr Barton	Observed – expected, Dr Barton
1987	1231	38	688	28	30.86	40.70	138	1	4.26	-3.26
1988	1231	31	687	25	25.18	36.39	137	8	3.45	4.55
1989	1234	52	677	31	42.14	45.79	135	6	5.69	0.31
1990	1227	29	667	38	23.63	56.97	133	3	3.14	-.14
1991	1138	46	640	31	40.42	48.44	128	3	5.17	-2.17
1992	1125	23	616	32	20.44	51.95	123	3	2.51	.49
1993	1087	27	622	19	24.84	30.55	124	1	3.08	-2.08
1994	1091	20	753	19	18.33	25.23	126	2	2.31	-.31
1995	1120	28	771	25	25.00	32.43	129	1	3.23	-2.23
Total observed - expected										-4.84

Table 6.6. Deaths and death rates/1000 patients age below 65 1996-2002 (females).

year	Patients in control practices	Deaths in control practices	Patients in index practice	Deaths in index practice	Rate /1000 in control practices	Rate /1000 in index practice	Dr Barton's list (estimate)	Certified by Dr Barton	Expected, Dr Barton	Observed – expected, Dr Barton
1996	6978	2	5307	0	.29	0	885	0	.26	-.26
1997	6983	0	5259	2	0	.38	877	0	0	0
1998	7078	1	5094	3	.14	.59	849	0	.12	-.12
1999	7233	2	4981	0	.28	0	830	0	.23	-.23
2000	7311	1	4964	2	.14	.40	827	1	.12	.88
2001	7379	3	4903	1	.41	.20	817	0	.33	-.33
2002	7407	2	4935	2	.27	.41	823	0	.22	-.22
Total observed - expected										-.28

Table 6.7. Deaths and death rates/1000 patients age below 65, 1996 - 2002 (males).

year	Patients in control practices	Deaths in control practices	Patients in index practice	Deaths in index practice	Rate /1000 in control practices	Rate /1000 in index practice	Dr Barton's list (estimate)	Certified by Dr Barton	Expected, Dr Barton	Observed – expected, Dr Barton
1996	6426	2	5244	1	.31	.19	874	0	.27	-.27
1997	6475	2	5238	2	.31	.38	873	1	.27	.73
1998	6509	0	5127	1	0	.20	855	0	0	0
1999	6665	4	5058	2	.60	.40	843	0	.51	-.51
2000	6839	2	5048	3	.29	.59	841	0	0.24	-.24
2001	7040	1	5005	2	.14	.40	834	1	.12	0.88
2002	7011	3	5003	0	.43	0	834	0	.36	-.36
Total observed - expected										0.23

Table 6.8. Deaths and death rates/1000 patients age 65 to 74, 1996-2002 (females).

year	Patients in control practices	Deaths in control practices	Patients in index practice	Deaths in index practice	Rate /1000 in control practices	Rate /1000 in index practice	Dr Barton's list (estimate)	Certified by Dr Barton	Expected, Dr Barton	Observed – expected, Dr Barton
1996	626	0	521	1	0	1.92	87	0	0	0
1997	620	2	508	0	3.23	0	85	0	.27	-.27
1998	618	3	498	0	4.85	0	83	0	.40	-.40
1999	634	3	508	1	4.73	1.97	85	0	.40	-.40
2000	668	1	533	3	1.50	5.63	89	0	.13	-.13
2001	685	0	535	2	0	3.74	89	2	0	2
2002	699	3	543	0	4.29	0	91	0	.39	-.39
Total observed - expected										.41

Table 6.9. Deaths and death rates/1000 patients age 65 – 74, 1996-2002 (males).

year	Patients in control practices	Deaths in control practices	Patients in index practice	Deaths in index practice	Rate /1000 in control practices	Rate /1000 in index practice	Dr Barton's list (estimate)	Certified by Dr Barton	Expected, Dr Barton	Observed – expected, Dr Barton
1996	529	4	461	4	7.56	8.68	77	0	.58	-.58
1997	526	3	472	5	5.70	10.59	79	3	.45	2.55
1998	543	3	457	2	5.52	4.38	76	0	.42	-.42
1999	538	6	450	0	11.15	0	75	0	.84	-.84
2000	552	3	469	2	5.43	4.26	78	0	.42	-.42
2001	577	1	474	0	1.73	0	79	0	.14	-.14
2002	593	2	478	2	3.37	4.18	80	0	.27	-.27
Total observed - expected										-.12

Table 6.10. Deaths and death rates/1000 patients age 75 and above, 1996-2002 (females).

year	Patients in control practices	Deaths in index practice	Patients in index practice	Deaths in index practice	Rate /1000 in control practices	Rate /1000 in index practice	Dr Barton's list (estimate)	Certified by Dr Barton	Expected, Dr Barton	Observed – expected, Dr Barton
1996	752	25	471	9	33.24	19.11	79	2	2.63	-.63
1997	731	17	494	15	23.26	30.36	82	2	1.91	.09
1998	730	15	511	13	20.55	25.44	85	0	1.75	-1.75
1999	742	14	491	11	18.87	22.40	82	2	1.55	.45
2000	736	9	492	8	12.23	16.26	82	0	1.00	-1.00
2001	779	22	505	9	28.24	17.82	84	0	2.37	-2.37
2002	770	24	508	7	31.17	13.78	85	0	2.65	-2.65
Total observed - expected										-7.86

Table 6.11. Deaths and death rates/1000 patients age 75 and above, 1996 - 2002 (males).

year	Patients in control practices	Deaths in control practices	Patients in index practice	Deaths in index practice	Rate /1000 in control practices	Rate /1000 in index practice	Dr Barton's list (estimate)	Certified by Dr Barton	Expected, Dr Barton	Observed – expected, Dr Barton
1996	371	8	279	3	21.56	10.75	47	0	1.01	-1.01
1997	389	9	273	4	23.14	14.65	46	0	1.06	-1.06
1998	387	7	283	14	18.09	49.47	47	1	.85	.15
1999	408	9	281	8	22.06	28.47	47	0	1.04	-1.04
2000	415	8	280	10	19.28	35.71	47	0	.91	-.91
2001	448	9	293	5	20.09	17.06	49	0	.98	-.98
2002	461	8	308	8	17.35	25.97	51	0	.88	-.88
Total observed - expected										-5.88

Table 6.12. Numbers (%) of patients certified by Dr Barton or other general practitioners dying at home or in residential or nursing homes.

place of death	doctor		total
	Dr Barton	other GPs	
own home	28 (52.8)	533 (47.0)	561 (47.2)
residential or nursing home	25 (47.2)	602 (53.0)	627 (52.8)
	53	1135	1188

There was no significant difference in the proportion of patients who died at home or in residential or nursing homes between Dr Barton and the other general practitioners (Table 6.12). Of the 53 patients of Dr Barton who died at home or in residential or nursing homes, 41 (77.4%) were females in comparison with 648 (57.1%) of the 1135 certified by the other general practitioners (Chi Sq 8.5, $p < 0.003$).

Table 6.13. Numbers (%) of patients certified as dying from different conditions (Chi 17.6, df 5, $p < 0.004$).

cause of death	doctor		total
	Dr Barton	other GPs	
cancer	7 (13.2)	248 (21.9)	255 (21.5)
heart	23 (43.4)	336 (29.6)	359 (30.2)
stroke	2 (3.8)	115 (10.1)	117 (9.8)
bronchopneumonia plus	15 (28.3)	219 (19.3)	234 (19.7)
bronchopneumonia alone	5 (9.4)	51 (4.5)	56 (4.7)
other	1 (1.9)	166 (14.6)	167 (14.1)
	53	1135	1188

The mean age of the patients whose deaths were certified by Dr Barton was 76.4 years, and among the patients of the other general practitioners the mean age was 79.6 (not significantly different). Dr Barton certified a greater proportion of cases as due to heart conditions (Table 6.13), although it should be noted that the numbers of cases involved were small.

Discussion

The analyses reported in this Chapter were based on death notifications identified by National Statistics. The number of deaths certified by Dr Barton in Gosport hospital as indicated by these notifications was similar to that identified by the counterfoils of books of MCCDs, and it is reasonable to conclude that information about almost all deaths has been identified.

The findings indicate that the numbers of deaths certified by Dr Barton for patients who died at home or in residential or nursing homes was less than would have been expected if she had cared for the same number of patients as her partners. Since she undertook sessions in Gosport hospital, it is unlikely that she did in fact care for the same numbers of patients as her partners, but the proportion is difficult to estimate without the provision of information from the practice. Since a police investigation is underway, direct contact with the practice was judged to be inappropriate. Therefore, it has been assumed that each partner in the practice was responsible for more or less the same number of patients.

The analysis indicated that the numbers of deaths certified by Dr Barton was less than would have been expected in comparison with the other general practitioners. If Dr Barton had cared for fewer patients than her colleagues, a lower number of certificates would have been expected, and the finding almost certainly reflects the

fact the Dr Barton was indeed responsible for fewer patients than the other general practitioners. Nevertheless, the finding does provide reassurance about care of patients in general practice.

In an additional analysis, an estimate of any effect of holidays and other absences on mortality rates in Daedalus and Dryad wards was attempted. However, the assumptions required in this analysis make the findings of little direct value. Since no information about actual vacations and other periods of absence was available, it is impossible to be confident that the periods in which no certificates were issued occurred because Dr Barton was absent, or whether there were in fact, no deaths to be certified in those weeks. However, if more information about periods of absence can be obtained in the police investigation, this analysis should be repeated.

Chapter Seven: Conclusions

In this audit or review, information has been obtained from a variety of sources about the care delivered to patients of the Department of Medicine for Elderly People at Gosport War Memorial Hospital, including death notifications stored by National Statistics, the counterfoils of medical certificates of cause of death, clinical records, controlled drug registers, and ward admissions books. Whilst there are inevitable reservations about the completeness of these sources, when viewed together they enable conclusions to be reached. In this Chapter, the reservations about the data used in the review are summarised, the findings are outlined, and conclusions are presented. Relevant recommendations are also made.

The sources of information

It has not been possible to undertake a comparison of mortality rates between Gosport and other community hospitals because centrally held Hospital Episode Statistics data do not have sufficiently detailed provider codes to identify groups of patients similar to those admitted to Gosport. However, whilst such an analysis would be desirable, I would not expect that the findings would significantly alter the conclusions of this review.

The notifications of deaths provided by National Statistics were a reliable source of information about the numbers of deaths certified by Dr Barton and the comparison general practitioners. Therefore, conclusions based on this information can be regarded as safe. It should be noted, however, that notifications would not have included information about cases certified by coroners. The data provided by National Statistics corroborate the numbers of deaths identified from the counterfoils of MCCDS that had been stored at Gosport hospital. Consequently, the findings from

the analysis of the counterfoils can also be regarded as reliable, although the lack of information about cases investigated by the coroner must be noted again.

The data contained in the controlled drugs registers are likely to have been reasonably accurate and complete, although it is not possible to verify this through comparison with another source. The administration of controlled drug registers must be recorded in registers, and the registers at Gosport did appear to have been maintained correctly. Ward admission books are not required to be maintained to such a standard, and the policy on admission books varied in different wards. Only Dryad ward's book was found to be a satisfactory source of information. The admission books are therefore the source of information about which there should be most caution. Nevertheless, significant weaknesses in the information in the books were not detected during the review, and they probably do represent a reasonable record of the admissions of patients to the ward.

Summary of findings

The investigation of a random sample of records indicated that:

- Patients admitted to Gosport hospital were elderly, had severe clinical problems, and had commonly been transferred from acute hospitals after prolonged in-patient stays. Although some were admitted for rehabilitation, most were believed to be unlikely to improve sufficiently to permit discharge to a nursing home.
- Of the 81 patients in the sample, 76 (94%) had received an opiate before death, of whom 72 (89%) had received diamorphine.
- When administered by syringe driver, diamorphine was invariably accompanied by other medication, most commonly hyoscine and midazolam.

- The mean starting dose of diamorphine was greater than would have been expected if the rule of thumb of giving one third of the total daily dose of morphine had been followed.
- Opiates were used for patients with all types of conditions, including strokes, heart conditions, and end stage dementia.
- There was little evidence of the three analgesia steps recommended in palliative care (non-opiate, then weak opiate, then strong opiate).
- Opiates were commonly prescribed on admission, although not administered until some days or even weeks later.
- Some records failed to indicate that an acute deterioration in a patient's condition had been followed by a careful assessment to determine the cause. Opiates may have been administered prematurely in such cases.
- The records commonly did not report detailed assessments of the cause of the patient's pain.
- The pattern of early use of opiate medication was evident from 1988.
- The records did not contain full details of care. Only 48 (59.3%) contained sufficient information to enable a judgement to be made about the appropriateness of care. In 16 of these, I had some concerns about the indications for starting opiates, the investigation of pain, or in the choice of analgesic.
- Dr Barton did not report recent fractures, including fractured hips, on MCCDs. These cases were commonly reported as having died from bronchopneumonia.

The counterfoils of MCCDs stored at Gosport hospital indicated that:

- Dr Barton had issued 854 certificates from 1987.

- The number of certificates was between 30 and 40 per year between 1988 and 1992, when Dr Barton was responsible for patients in Redclyffe Annexe and some in the male and female wards. The numbers increased to between 80 and 107 per year between 1993 and 1999 when Dr Barton became responsible for patients in Daedalus and Dryad wards.
- Dr Barton issued between nil and six MCCDs per week. There were no clear clusters of deaths.
- Dr Barton was more likely than other doctors to give bronchopneumonia with other conditions or bronchopneumonia only as the cause of death.

The investigation of Dryad ward's admissions books indicated that:

- Of the 684 patients admitted between 1993 and 2001, 405 (59.2%) died in the ward.
- The mean age of the people admitted was 82.7, and around three quarters had been transferred from an acute hospital.
- There was a change in the patients admitted to the ward from around 1997. After that year, there was an increase in the proportion of patients who had been admitted for respite care, and by 1999, the proportion of patients who died had decreased.
- The proportions of patients who died in each hour of the day were as would normally be expected.

The investigation of controlled drugs registers indicated that:

- Patients in whom the MCCDs had been issued by Dr Barton were more likely to have received an opiate before death.

- The greater use of opiates was found in relation to all causes of death except cancer, although when this analysis was confined to patients in Redclyffe Annexe, there were no significant differences between Dr Barton and other doctors.
- Dr Barton did not prescribe opiates to individual patients for longer periods of time than other doctors.

The investigation of MCCDs indicated that:

- The counterfoils stored at Gosport hospital were an accurate record of the deaths in the hospital.
 - There was no evidence that more than the expected number of deaths had been certified by Dr Barton. In fact, the number was less than expected if Dr Barton had undertaken an equal share of the workload in general practice.
 - A greater proportion of MCCDs issued by Dr Barton were for female patients, and were more likely to have been certified as dying from heart conditions.
- These findings are probably incidental and are not reason for concern.

Conclusions

Patients admitted to Gosport were elderly and with severe clinical problems. Most had been transferred from acute hospital settings after a period of intensive management, at the end of which it had been concluded that further intensive management would have little or no benefit. Patients were transferred to Gosport either for rehabilitation or for continuing care (defined by CHI as 'a long period of treatment for patients whose recovery will be limited').

In this group of very ill and dependent patients, a practice of liberal use of opiate medication can be discerned from the findings of the review. Patients who

experienced pain, and in whom death was judged to be a likely outcome in the short term, were given opiates. Alternative management with other analgesics or detailed assessment of the cause of pain or distress was generally ruled out. This practice may be described as the almost routine use of opiates before death. The practice was followed irrespective of the principal clinical condition. Patients whose main problems were dementia, strokes, bronchopneumonia or neurological problems all received opiates. A potential explanation is that care was as in advance of care elsewhere in the NHS at the time. General concerns have been raised about the end stage care of people with dementia and other problems, in particular the finding that many such patients have not received adequate analgesia, although they have received antibiotics or other treatments intended to be curative.

However, the proportion of patients at Gosport who did receive opiates before death is remarkably high, and it is difficult to accept that the practice of almost routine use of opiates before death, dating from 1988 or earlier, merely represents clinical practice in advance of practice elsewhere. The practice may be summed up in the words found in many clinical records – 'please make comfortable'. This phrase also points to a prevailing attitude or culture of limited hope and expectations towards the potential recovery of patients in Gosport. But in some patients, a different attitude that might be phrased 'determined rehabilitation' could well have led to a different outcome.

The review of records has raised concerns about the degree of assessment of patients whose condition deteriorated, and the level of consideration given to decisions to commence opiates. Consequently, it is difficult not to conclude that some patients were given opiates should have received other treatment. Only a detailed investigation of individual cases, in which the accounts of witnesses as well

as documentary evidence are considered, can conclude whether lives were shortened by the almost routine use of opiates before death, but I would expect such case by case investigations to conclude that in some cases, the early resort to opiates will be found to have shortened life. I would also expect that in a smaller number of cases, the practice will be found to have shortened the lives of people who would have had a good chance of surviving to be discharged from hospital.

From the evidence considered in this review, it is not possible to determine how the practice of almost routine use of opiates at Gosport originated. Whilst much of the review has focused on the work of Dr Barton, this is because she issued the MCCDs and made most of the entries in the clinical records. However, this should not be taken as meaning that she was the origin of the practice, she may merely have been implementing it. Indeed, the practice may have been introduced before Dr Barton began work in Gosport as a clinical assistant in 1988.

Recommendations

1. Investigations should continue into the deaths of individual patients. The findings of this review reinforce concerns about what may have occurred in these cases.
2. In the continuing investigation into deaths in Gosport hospital, information about the rota followed by Dr Barton and her partners should be obtained and used to explore patterns of deaths.
3. Hospital teams who care for patients at the end of life should have explicit policies on the use of opiate medication. These policies should include guidance on the assessment of patients who deteriorate, and the indications for commencing opiates. The development of national guidelines would assist the development of local policies.

4. The findings reported in this review should not be used to restrict the use of opiate medication to those patients who need it. Indeed, there are reasons to suspect that some patients at the end of life do not receive adequate analgesia.
5. In this review, evidence has been retrospectively pieced together from a variety of sources. Continued monitoring of outcomes at a local level might have prompted questions about care at Gosport hospital before they were raised by relatives, but continued monitoring is difficult with current data systems. Hospital episode statistics are an important resource, but continued prospective monitoring of the outcomes achieved by clinical teams requires a more detailed set of codes.

