

Effective Interventions Unit

EVALUATION OF THE
GREATER GLASGOW
PHARMACY NEEDLE EXCHANGE
SCHEME
1997-2002

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December 2002

**“ But facts are chiels that winna ding
An’ downa be disputed”**

A Dream
Robert Burns (1759-96)

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Acknowledgements

The research team acknowledges the tremendous support given by the following: - John Richardson of Mandate Technology, Temporary Data Entry Clerks, Catherine Richardson, Margaret Stephenson, the Mackie Family, Brian Hardnum, Christine Davis and Greater Glasgow Primary Care Trust's Research and Development Directorate.

Chapter 1 Background

In 1996 the Greater Glasgow Health Board published a joint planning strategy for HIV and AIDS in the board area (GGHB, 1996). The strategy was formulated in recognition that an essential principle of the National Health Service and Community Care Act (1990) was that Local Authorities, Health Boards, Housing Associations and the Non-statutory Sector should work together to identify the health and social care needs of people in their area and plan an effective and co-ordinated service response aimed at meeting those needs. This strategy recognised that community pharmacists in the Board area were developing an increasingly important role as a source of health advice to drug misusers. In addition the strategy recognised that the prevention of HIV infection among drug injectors was an integral part of the overall strategy for tackling drug misuse. Key aims of the strategy were to reduce the incidence of sharing of drug injecting equipment and to reduce the overall prevalence of drug injecting in Glasgow. It was recognised that the pharmacy needle exchange service was one of the main services with these objectives (GGHB, 1996)

Estimates of the number of problem drug users by Health Board area

The first study undertaken to estimate the prevalence of problematic drug misusers at both a national and local level within Scotland was published in November 2001 (Hay et al 2001). In terms of drug injecting the report's authors estimated that 22,805 people were injecting opiates and benzodiazepines in 2000. The highest prevalence rate of drug injecting was in the Grampian and Greater Glasgow Health Board areas (1.4% of the 15-54 population). Whilst a range of data sources were used to determine the prevalence of injecting drug use returns from pharmacy needle exchanges were not used. The data sources used identified 1,946 known drug injectors leading to an estimate of 7,187 (95% CIs 6,085-8,615) in Greater Glasgow NHS Board area (GGNHSB). The total of approximately 18,000 clients attending the Glasgow pharmacy exchanges in 2000/01 would indicate that the prevalence figure for the GGNHSB could be an underestimate.

The role of needle exchange

Syringe exchange represents a key investment in primary prevention of HIV and other blood-borne infections targeted towards injecting drug users (IVDUs) (Noman, Vlahov, Moses 1995). Since its introduction in the United Kingdom in 1986, syringe exchange, along with other harm reduction activities, has been instrumental in averting an HIV epidemic among injecting drug users in Great Britain (Stimson 1995). The percentage of pharmacies in England and Wales providing a needle exchange service to injecting drug misusers rose from 3% (Glanz et al 1988) to 19% in 1995 (Sheridan et al 1996). However, in 1995 a survey undertaken by Matheson et al. found that only 9% of Scottish community pharmacies provided a needle exchange service (Anon 1996). One reason for this difference could be that pharmacy needle exchange was introduced into Scotland in 1992 (Scottish Office, 1992) whereas in England such services had been in existence since 1988 (Department of Health and Social Security, 1988). In 1997 at 5% (11/212) the level of participation of Glasgow's community pharmacies in needle exchange was below the average for Scotland, as well as that for England and Wales (Roberts et al 1998).

Glasgow pharmacists participation in needle exchange – pre 1997

The percentage of Glasgow pharmacies providing this service was in fact less than 5%. Data supplied to the HIV and Addictions Team (GGHB) by the "contracted" pharmacies indicated that only 8 of the 11 pharmacies were actively supplying injecting equipment to drug misusers. No data were received from three pharmacies. The Pharmacy Needle Exchange Annual Report for 1996/97 showed that there were 11,589 visits to the eight

pharmacies by 1599 clients, an average of 7.2 visits per client and 6.9 sets per visits (HIV & Addictions Resource Centre 1997).

The supply of needles and syringes to those who inject controlled drugs is not per se a criminal offence under statute. However, the existence of common law crimes in Scotland – and in particular the crime of reckless conduct – make it impossible to say that such supply could never amount to the commission of a criminal offence. In 1988 the Lord Advocate issued guidance which allowed pharmacists in Scotland to sell needles and syringes to injecting drug users (SHHD 1988). In this scheme the Lord Advocate did not give immunity from prosecution, but he did agree not to authorise prosecution of pharmacists who sold under conditions laid down in his guidelines.

In 1992 funding was made available in Scotland for the provision of needle exchange through pharmacies (Scottish Office 1992). In Glasgow, pharmacy contractors had to apply to the Health Board. Contracts to undertake the service were authorised by the Chief Administrative Pharmaceutical Officer. Thirteen pharmacies contracted with the Board for the free service and two carried on selling. Between 1992 and 1995 the number of contracted pharmacies declined to 10. Then in 1996 an eleventh pharmacy received contract. A major disincentive to pharmacy participation at that time was the payment structure applicable to contractors taking part in the scheme. No matter how many exchanges were undertaken in any quarter the fee paid was always the same. Those pharmacies that were undertaking a high number of exchanges felt that they were being unfairly treated in comparison to colleagues who were undertaking a small number or even nil exchanges.

The 1996 remuneration settlement between the Scottish Office and the Scottish Pharmaceutical General Council (SPGC) laid down five conditions, one of which was that progress should be made on local negotiations for needle exchange schemes. In an internal memorandum to the Health Board the then Chief Administrative Pharmaceutical Officer reported that, at a meeting of 13 August, Glasgow contractors had expressed a high level of dissatisfaction with the current payment system. Several pharmacists intimated that they would pull out of the scheme unless the matter was resolved to their satisfaction. One pharmacist reported that she was dealing with 70 methadone and needle exchange clients daily and was “dise to breaking point”. For some time the needle exchanges run by the Glasgow Drug Problem Service were experiencing a reduction in the number of clients, whereas numbers at the pharmacies were showing an increase.

Glasgow pharmacists involvement in needle exchange – 1997 onwards

Fortunately, the matter was speedily resolved and a new payment structure was introduced in January 1997. One condition of the improved payment structure was that the pharmacists would only be paid on receipt of monthly returns detailing their activity. Until this time returns from the pharmacists had been sporadic and thus far from accurate. Following the introduction of the new payment structure all the contracted pharmacists submit their monthly returns within four weeks of the previous month's end.

Since 1997 there has been a steady increase in the number of participants in the Glasgow pharmacy needle exchange scheme. The three inactive pharmacies were replaced by pharmacies in areas of need and additional four contractors have joined the scheme. Annual meetings are held in August and on site training is provided to pharmacists and staff. However, pharmacists remain reluctant to join the scheme, often citing objections from customers as the main reason why they do not participate (Roberts et al 2002). What is interesting about this view is that research undertaken on behalf of the Scottish Pharmaceutical General Council found that customers have a more positive view needle exchange than they do of supervised consumption of methadone (Lawrie et al 2003).

Review of Needle Exchange Provision in Glasgow 2001

In 2001 a review of needle exchange in Glasgow noted that drug injectors are at high risk of infection with HIV, hepatitis B and C viruses and other micro-organisms through sharing and other unhygienic uses of injection equipment. The review showed that, whilst the spread of HIV has been largely controlled in Glasgow for over a decade, hepatitis C continued to spread rapidly and the incidence of hepatitis B infection was on the increase. The review suggested that there was an urgent need to increase efforts to prevent the spread of these infections (Gruer 2001). A Scottish report, 'Preventing HCV in Scotland: Options for Action' recommends that research to explore how needle exchanges vary in their clientele and how different groups of drug users access these schemes be conducted, and that a reporting scheme for clients attending needle exchanges should be developed (HEBS 2002)

One of the key points of the Needle Exchange Review was that needle exchange at community pharmacies has shown a rapid growth in recent years and now accounts for about half of all needles and syringes used (Gruer 2001). As only 15 of the 215 community pharmacies in Greater Glasgow currently participated in the scheme, the report concluded that there is considerable scope for growth. Indeed, one of the recommendations of the review was that more community pharmacies should participate in the needle exchange scheme. A target of doubling both the number of pharmacy exchanges and sets of equipment issued by 2003 has been estimated to cost £250k per annum (Gruer 2001).

By contrast, the number of visits and the number of new attendees to the Glasgow Drug Problem Service (GDPS) needle exchanges had declined and accounted for less than 20% of the total number of sets of needles and syringes issued. The reviewers compared the staff costs for all four types of needle exchange. They found that the average staff cost per visit at the GDPS exchanges was £9.18 (range £4.40 - £16.50). By contrast the staff costs at the pharmacies were £2.17 per visit and were virtually identical across all the pharmacies. The estimated staff costs at GDCC were £2.28 per attendance. As needle exchange represents only a small part of the service provided at Base 75 the staff costs of running the exchange are marginal (GGHB 2001). Staff at the GDPS exchanges are paid per session. This means that whether they see a small or high number of clients the staff costs remain the same. The pharmacists are paid a set fee per exchange. They are only paid when an exchange has taken place. When the costs of needles and syringes is added to the staff costs, the Review found that the cost **per set** was twice as much at the GDPS exchange compared to the pharmacies. This was so even though the GDPS exchanges gave out more sets per exchange than the pharmacies (12 versus 7) (Gruer 2001).

However, there were major limitations in the data relating to the pharmacy needle exchanges that were available to inform the review. From 1995-1997, data from the pharmacy exchanges had been collected and entered onto computer and analysed by the HIV and Addictions Resource Centre (called Addictions Team from 1997 onwards). At that time the level of pharmacy involvement in needle exchange was much less than at present. Although the pharmacy exchanges continued to submit monthly returns of daily log sheets (see Appendix 2) to Greater Glasgow Primary Care NHS Trust (GGPCT) there had been no input of data since early 1997. At that time, due to the lack of resources, a conscious decision was made to suspend data entry. Thereafter, only the basic data required to inform the six monthly reports to the Scottish Office/Executive Health Department were calculated i.e. total number of client contacts, number of syringes/needles supplied and returned costs of equipment and costs of fees paid to pharmacists. However, pharmacists continued to submit completed log sheets to the GGPCT on a monthly basis. Data from these were checked against the pharmacists' claim

forms before these were forwarded for payment. The log sheets continued to be stored securely in locked cabinets.

Potential use of pharmacy needle exchange data

Data used to inform the review demonstrated that there had been a 36% reduction in sets issued by GDPS exchanges between 1997/98 and 2000/01 compared to a 490% increase in sets issued by community pharmacies between 1996/97 and 2000/01 (Gruer 2001). However, whilst the data relating to the GDPS exchanges were known to be fairly robust, the same could not be said of those for the pharmacy exchanges. If the proposed increase in pharmacy exchanges is to take place, it would be essential to have an accurate system to record and analyse data. Such a system would provide an accurate comparison of the costs of the individual needle exchanges in Glasgow. GGNHSB, GGPCT and the Greater Glasgow Drug Action Team could then use the data to inform future planning and commissioning decisions.

The need for a profile of pharmacy needle exchange clients

Analysing the data from 1997-2002 allowed the profile of clients attending pharmacy needle exchanges to be ascertained (i.e. the number, status (i.e. new or continuing), sex and age of clients, number of visits per client, and the equipment issued and returned). The data recorded on the pharmacy log sheets is comparable to those collected by the other Glasgow needle exchanges (GDPS, Base 75 and Glasgow Drug Crisis Centre (GDCC)). An analysis of the pharmacy data enabled the profile of clients attending the pharmacy exchanges to be compared with those attending the other exchanges in Greater Glasgow. In addition, an examination could be made of the impact of the expansion that pharmacy needle exchange scheme has made on the other needle exchanges in the Greater Glasgow area.

An understanding of the profile of clients attending the pharmacy and other needle exchanges, is essential in order to identify gaps in provision to allow purchasers and providers to develop responses that better meet the needs of all injecting drug users. However, without investment in a new database, analysis of the data and a commitment to continuing data entry and analysis and information relating to the pharmacy exchanges would be inexact and misleading.

In response to an invitation from the Effective Intervention Unit of the Scottish Executive the research team submitted a proposal for funding from the Scottish Executive's Drug Misuse Research Programmes Competition for Small Projects. The project bid was successful and the EIU funding has made it possible to develop a new database and to undertake a comprehensive analyses of five years (six years including data from paper report in 1996/97) of the data relating to client profiles and activity at the pharmacy needle exchanges in Greater Glasgow.

Chapter 2 Methods

Aim and Objectives

- To input and analyse six years worth of data submitted by the pharmacies participating in the Greater Glasgow Needle Exchange Scheme.
- To provide a client profile of attendees of the Greater Glasgow Pharmacy Needle Exchange Scheme
- To compare this client profile to that of clients attending community needle exchanges throughout Greater Glasgow
- To develop a database for the Greater Glasgow Pharmacy Needle Exchange Scheme

Methods

Pharmacy needle exchange log sheets are completed for each client contact. Date of attendance, patients' first name and initial of surname, date of birth, sex, whether the client is new and/ or injecting steroids and the equipment issued and returned is recorded by the pharmacist at each visit (Appendix 1).

Data entry

It was estimated that the total number of client contacts projected to March 31 2002 would be 227,144. An administrative assistant within the Addictions Unit at Greater Glasgow Health Board was able to enter 292 client details per hour. This information was used as the basis for the calculation of hours required for data entry and checking as well as in the calculation for cost of data entry and checking.

Database development

Mandate Technology were commissioned to develop an ACCESS database and queries/report facility in collaboration with the research team. The later facility means that prospectively reports will be produced quarterly and annually by pharmacy and for all pharmacies. Data entry personnel were recruited from an agency to enter data into the ACCESS database. Ten percent of the data entered were to be checked for accuracy. The data were entered on site at the GGPCT.

The research team met with Mandate Technology in January 2002 to progress development of the database. The database design and the required queries for reports were agreed. Mandate Technologies agreed to provide the first version of the database and reports by end of January 2002. This version was then tested and once the research team was satisfied that it met their requirements it was installed on specially purchased computers within the pharmacy department at Leverndale Hospital. The intention was that these computers would be linked to the GGPCT IT network. However, this proved to be impossible because the site at which the data entry took place is not yet linked to the network. In addition the database was far too large to transfer via an email attachment. Data have been backed up onto CD and copies are stored with GGPCT and GGNHSB.

Training for the data entry clerks and their manager was provided in advance of the start of data entry (Appendix 2). This was provided by Mandate Technology, the company that developed the database. Each staff member received half a day's training. Additional training was provided for replacement data entry personnel as and when required. The intensity of data entry meant that there was quite a rapid turnover of data entry staff. This was not unexpected. However, each time a new member of staff was recruited the rate of data entry fell until they reached the same level of competency as their predecessor.

Analysis

Client identification numbers (client ID) were created based on first name, first initial of surname and date of birth. However due to issues of consistency, clarity and accuracy with the recording of these data by pharmacists (illegible handwriting, differences in spelling of names, using surnames, nicknames, abbreviations etc.) and in accuracy and consistency in data entry, it is inevitable that with a database of this size (over 200,000) more than one unique client identification numbers may have been created for the same individual as a result of these reporting errors. Therefore the total number of clients may include a number of duplicates and therefore may be an overestimate. Similarly, new clients and stimulant/ steroid using clients may have been recorded as such at contact to any pharmacy needle exchange (n=15) and therefore these figures may include duplicates.

The data relies on clients using the same name and date of birth each time they use the pharmacy needle exchange, which may in itself be problematic. However one of the strengths of the pharmacy needle exchange and the attraction to the client group is the limited data requested by the pharmacist and the confidentiality of the service.

Data has been cleaned for mis-spellings and also for gender. However assumptions would have to have been made based on first name, first initial of surname and date of birth to determine whether duplicates existed. This should be considered for future analyses.

Client ID was the primary key linking the data on both the clients and client contacts ACCESS databases. From the client contacts database, databases were created for each of the years of operation of the pharmacy needle exchanges. These were then merged with data on date of birth and gender from the client ID database. Dates of birth and date of last client contact in each year were used to calculate age.

However, following the identification of a number of entry errors in the date of birth field (e.g. entered date of contact or date in advance of contact date), age was not calculated for over 700 clients, of whom 88 were between the ages of 14-15 or aged between 60-70. Discussions with the pharmacists confirmed that a) none of the pharmacies provide injecting equipment to under sixteen's and b) none of the pharmacy exchanges could remember serving clients in the higher age bands. Therefore, only ages calculated between 16-60 were included in the final analysis.

All analyses were conducted using the Statistical Package for Social Scientists (SPSS) by the Research Manager and Research Officer (Addictions) at the Greater Glasgow NHS Board (GGNHSB).

For pharmacy needle exchange data, t-tests were used to ascertain any gender differences in age and number of client contacts. Simple descriptive statistics with 95% confidence intervals (95% CIs) were calculated for age, client contacts, the proportion of female clients and the proportion of needles and syringes returned from the pharmacy needle exchange data and compared to averages and proportions from community needle exchange facilities.

Chapter 3 Results

Opening hours of Glasgow Exchanges

Throughout the reporting period pharmacy needle exchanges were open 8 1/2 to 9 hours per day, five days a week. Throughout the reporting period pharmacy needle exchanges were open 8 1/2 to 9 hours per day, six days a week. In addition, they were open for either a half-day (4 hours) or whole day (8 1/2 to 9 hours) on Saturdays. None of the pharmacy exchanges open on Sundays.

The needle exchange at Base 75 is a female only needle exchange for female street sex workers operating in the red light district 6 evenings per week (7.30-11.30), it is closed on a Saturday night.

The Glasgow Drug Crisis Centre (GDCC) is open 24 hours a day on 365 days a year, and provides a 24 hour needle exchange as well as an assessment and treatment service. However, from time to time during staff shortages, the hours may be reduced at short notice.

In 1996/7 there were 7 Glasgow Drug Problem Service (GDPS) exchanges based in Castlemilk, Easterhouse, Gorbals, Milton, Parkhead, Pollock, and Ruthill. Six of these were open 3 1/2 hours a night, two nights per week. The seventh was open for 2 1/2 hours two days per week and for five hours on Sunday afternoon. In 2001/02 there were 7 GDPS exchanges (based in Easterhouse, Castlemilk, Possilpark, Gorbals, Parkhead, Pollock and Clydebank). Six of these are open 3 1/2 hours two nights per week and the exchange in Clydebank is open for 2 hours on Friday afternoon.

Data entry

At the start of the project it was estimated that the number of client contacts from the beginning of April 1997 to the end of March 2002 would be 227,144. In practice a total of 236,822 client contacts details were entered on to the database. It was not possible to enter approximately 100 contact details because the date of birth was missing from the log sheets. The database would only allow data entry to continue after a date of birth was recorded. The time taken by the data entry clerks to enter the information into the new database proved to be much longer than anticipated. Instead of 292 contact entries per hour the data entry clerks were only able to achieve an average of 105 contact entries per hour (840 per day), depending on their expertise. Several adjustments were made to the database during the period of data entry in an attempt to increase this rate. One drawback to this was that increased speed in data entry led to a decrease in both specificity and accuracy. Extra time was required at the end of the data entry period for data cleaning and resolution of anomalies. Despite this, it was impossible to undertake the planned 10% checking of data entered against records from the paper log sheets. This omission resulted in a greater than anticipated number of missing, incomplete or inaccurate data.

Total number of exchange facilities in Glasgow 1996/97 compared to 2001/02

In 1996/7 there was a total of 16 exchanges (8 active pharmacy needle exchanges, 7 GDPS exchanges together with an exchange for women street workers at the Base 75 Drop in Centre). By 2001/02 total had increased to 24 (15 pharmacy exchanges, 7 GDPS exchanges, Base 75 and the Glasgow Drug Crisis Centre (GDCC) exchange, which opened in April 1997). There was an 87% increase in the number of pharmacies in the pharmacy Needle Exchange Scheme from 8 in 1996/97 to 15 in 2001/02. The percentage

of Glasgow pharmacies offering this service rose from 4% (8/212) in 1996/97 to 7% (15/215) in 2001/02 (Table 1).

Table 1: Profile of clients and activity from community pharmacy needle exchanges in Greater Glasgow 1996/97-2001/02

<i>Year</i>	<i>1996/97*</i>	<i>1997/98</i>	<i>1998/99</i>	<i>1999/00</i>	<i>2000/01</i>	<i>2001/02</i>
Pharmacies	8	9	12	14	15	15
Returning data						
New clients**	220	346	1389	2210	1796	1262
Number of stimulant users**	Not asked in 1996/97	Not asked in 1997/98	Not asked in 1998/99	Not asked in 1999/00	Not asked in 2000/01	517
Number of steroid users**	99	81	111	103	72	53
Number of clients***	1599	5202	10010	16706	17945	19916
Number of males (%)	1320 (83%)	4089 (79%)	7844 (78%)	12635 (76%)	13403 (75%)	14870 (75%)
Number of females (%)	279 (17%)	1099 (21%)	2140 (22%)	4053 (24%)	4529 (25%)	5039 (25%)
Average age (min-max)	29	29 (16-56)	29 (16-58)	30 (16-59)	30 (16-60)	31 (16-60)
Male average age (min-max)	Data not available	29 (16-56)	30 (16-58)	30 (16-59)	31 (16-60)	31 (16-60)
Female average age (min-max)	Data not available	28 (16-53)	29 (16-55)	29 (16-58)	29 (16-56)	30 (16-59)
Number of client contacts	11589	13373	28765	50925	64266	79493
Average contacts per client (min-max)	7	2.6 (1-97)	2.9 (1-137)	3.0 (1-242)	3.6 (1-247)	4.0 (1-218)

* data presented are from published report from 1996/97

** note these may be underestimates as these boxes are often unchecked by pharmacies

*** numbers of male and female clients do not always equal the total number of clients due to missing gender on some clients

Profile of clients and activity from community pharmacy needle exchanges in Greater Glasgow 1996/97-2001/02 (Table 1)

The number of new clients attending the pharmacy exchanges during the period increased from 220 in 1996/97 to 1262 in 2001/02 (474% increase). Over the same period the number of new clients attending the GDPS exchanges fell from 157 in 1996/97 to 102 for 2001/02. For the pharmacies the total number of clients increased by over 1100% from 1599 clients in 1996/7 to 19916 clients in 2001/02. The number of attendances at the pharmacy exchanges in 1996/97 was 11589 compared to 79493 in 2001/02, an increase of 686%.

The number of steroid injectors attending the pharmacy exchanges fell from 99 in 1996/97 to 53 in 2001/02. However, it should be noted that this apparent fall may be due to data relating to this question not being entered by pharmacy staff. From 2001/02 a question on the use of injected stimulants was added to the daily log sheet. A total of 517 stimulant injecting clients were recorded for that year. However, as with the data on steroid users, this finding should be interpreted with caution. It is possible that the data

are incomplete because of a failure by pharmacy staff to ask the question or tick the relevant box.

The average age of female clients has been consistently younger than male clients from 1996/7 to 2001/02 (Table 1). The average age of females attending the pharmacy needle exchanges was significantly younger in 2001/02 (30, range 16-59) than males (31, range 16-60; $t(19739)=-14.34$; $p=0.000$). In 2001/02, there were no differences in the proportion of males (6.4%) and females (6.1%) that were new clients ($X^2(1)=0.690$; $p=0.406$). Significantly greater contacts per client on average were made by male clients (4.2, range 1-218) than female clients (3.4, range 1-109; $z=-2.8$; $p=0.005$).

Sets of equipment supplied by and returned to exchanges

There has been a 686% increase in the numbers of sets of equipment issued by the pharmacies from 8014 in 1996/97 to 558176 in 2001/02. The percentage of used equipment returned to the pharmacies for disposal rose from 70% in 1996/97 to 86% in 2001/02.

Table 2: Breakdown by injecting equipment issued and returned by Greater Glasgow Pharmacy Needle Exchanges 1996/97-2001/02

Year	1996/97*	1997/98	1998/99	1999/00	2000/01	2001/02
Fixed orange	Data not available	82656	161103	265952	340337	416770
Blue short	Data not available	9094	18192	36970	50962	67671
Blue Long	Data not available	5460	7964	23334	33517	42065
Orange	Data not available	2879	8046	11327	10191	14040
Green	Data not available	2590	6293	14413	13786	17630
Barrels	Data not available	6543	32563	77912	101794	142735
Total supp Need's & Syringes	80014	102679	201598	351996	448793	558176
Total syringes returned (%)	56365 (70%)	60816 (59%)	152574 (76%)	296394 (84%)	380102 (85%)	477545 (86%)
Needles only supp	Data not available	20023	40495	86044	108456	141406
Needles per barrel	Data not available	3.1	1.2	1.1	1.1	1.0 (.99)
Cinbins	629	25155	50369	81147	98283	123249
Sterets	6671	17204	35128	59168	73914	92938

* data presented are from published report of 1996/97

** barrels are excluded from addition in order to avoid double counting

Types of injecting equipment issued by pharmacy needle exchanges

There were no data available for the years 1996/97 that provided information on the different types of needles and syringes supplied to clients attending the eight pharmacy

exchanges. Whilst the data were recorded, the database in which they were stored was no longer accessible for interrogation.

The most popular type of injecting equipment throughout the study period was the fixed orange 1ml diabetic syringe. The second most popular type of equipment was 2ml syringe barrels with either long or short blue needles. The least popular set was 2ml barrels with green needles. The data confirm that in the majority of instances for the years 1998/99, 1999/00, 2000/01 and 2001/02 the ratio of loose needles to barrels was 1 (range 0.99-1.2). However, the ratio for 1997/98 stands out at a ratio of 3.1 needles per barrel.

Return rates of used injecting equipment for pharmacy exchanges 1996/97 to 2001/02

The percentage of used injecting equipment returned to the pharmacy needle exchanges rose from 70% in 1996/97 to 86% in 2001/02. The only year when the rate declined was in 1997/98 when it fell to 59%.

Supply of Cinbins and sterile swabs

Whilst there was a continuing increase in the number of alcohol swabs supplied by the pharmacies over the study period, the increase was modest when compared to that for personal cinbins, which increased from a total of 629 in 1996/97 to 92938 in 2001/02. A great deal of effort was expended by the pharmacists to encourage clients to use the personal cinbins to store their used equipment. Ideally one cin bin should have been supplied on the occasion of each exchange transaction (client contact). If this had been the case then the total number of cinbins issued in 1996/97 should have been 11589 rising to 79493 in 2001/02.

Comparison of GGNHSB Pharmacy Needle Exchanges with other community needle exchanges in Greater Glasgow for 2001/02

Comparable data is collected at each client contact to all needle exchanges throughout Greater Glasgow (Appendices 3 and 4), and annual reports on their profiles are produced. Table 3 compares the activity and client profiles of needle exchanges throughout Greater Glasgow for 2001/02.

It is important to note that the figures presented in Table 3 are not mutually exclusive, clients may have attended at more than one needle exchange and therefore the total number of clients will contain duplicates.

Mean age of clients attending Greater Glasgow needle exchanges in 2001/02

During 2001/02, the average age of attenders at the pharmacy exchanges was 31 years (95% CIs 31.0-31.2). Clients attending the pharmacy needle exchange were on average significantly older than those attending needle exchanges at both Base 75 (average age = 25 years) and GDCC (average age = 28 years). On average clients attending the GDPS needle exchange were significantly older (average age 32 years).

Average number of contacts per client to Greater Glasgow needle exchanges in 2001/02

During 2001/02 the average number of contacts per client at the pharmacy needle exchange was 4 (95% CIs 3.9-4.2), which was significantly lower than the average number of contacts at Base 75 (average=5 contacts), GDCC exchange (average=7 contacts) and GDPS exchanges (average=11 contacts).

Male/Female Ratio attending Greater Glasgow needle exchanges in 2001/02

With the exception of Base 75 which is a female only service, the majority of clients at all needle exchanges were male (71% overall). A significantly greater proportion of women clients attended GDCC (30%) and GDPS (29%) than pharmacy needle exchanges (25%, 95% CIs 24-26%).

Table 3: Comparison of GGNHSB Pharmacy Needle Exchanges with other community needle exchanges in Greater Glasgow for 2001/02

	<i>Pharmacy exchanges</i>	<i>GDPS*</i> <i>exchanges</i>	<i>Base 75*</i> <i>exchange</i>	<i>GDCC*</i> <i>exchange</i>	<i>TOTAL***</i>
New Clients	1262	102	450	393	2207
Total number of clients (% male)	19916 (75%)	1143 (71%)	957 (0% all female)	4000** (70%**)	26016** (71%)
Mean age of clients	31 (16-60)	32 (16 -60)	25 (16-49)	28(16-55)	
Total number of client contacts	79493	12878	5445	29151	126967
Average number of attendances per client	4	11	5	7*	
Needles and syringes issued	558176	162431	59348	294500	1074455
Needles and syringes returned (%)	477545 (86%)	152488 (94%)	15081 (25%)	206150 (70%)	851264 (79%)

* based on data provided by GDPS, Base 75 and GDCC

** estimate based on previous year's figures

*** estimate, due to use of estimated data provided by GDCC

Rates for needles and syringes returned to Greater Glasgow needle exchanges in 2001/02

Over half of the needles and syringes issued during 2001/02 were issued from pharmacy needle exchanges (52%), compared to 15% from GDPS needle exchanges, 5% from the Base 75 needle exchange and 27% from the GDCC needle exchange.

The 2001/02 return rate of needles and syringes issued at pharmacy needle exchanges was 86% (95% CIs 85.9-86.1%). The return rate of needles and syringes issued at pharmacy needle exchanges was significantly higher than return rates at both GDCC (70%) and Base 75 (25%). A significantly greater proportion of needles and syringes were returned at GDPS (94%) than at pharmacy needle exchanges (86%, 95% CIs 85.9-86.1%).

Chapter 4 Discussion

Impact of increased submission of data

The increased submission of returns by the pharmacists following the improved payment structure resulted in a need for increased data entry time and personnel. Unfortunately, because of the increased volume of data a decision was made to cease data entry in 1997. The last report on activity at the pharmacy exchanges was published in 1997 and covered the period 1996/97. In spite of the decision not to enter data into a database the pharmacies continued to return their log sheets monthly to the GGPCT. These were kept securely in locked filing cabinets. Minimal data from the accompanying monthly payment claim forms were used to produce six monthly reports for the Scottish Office and subsequently the Scottish Executive, as well as for the GGNHSB and latterly the GGPCT. However, it was not possible to use the claim forms to extract data on the number of clients attending the pharmacies, the percentage of males or the types of equipment used. Only the number of client contacts and the total number of sets of equipment issued and returned for destruction could be calculated.

Impact of 2001 review of needle exchange in Glasgow

The 2001 review of Needle Exchange in Glasgow found that the community pharmacy exchanges had shown rapid growth, whereas the GDPS exchanges had experienced a drop in visits and attendees and now accounted for less than 20% of sets issued. The overall cost per visit was 2.5 times higher at the GDPS exchanges than at community pharmacies. The Review's report recommended that more community pharmacies should be encouraged to participate in the needle exchange scheme. A target of doubling both the number of pharmacies and sets issued was proposed (Gruer 2001)

Comparisons between pharmacy and other exchange services

Evidence indicates that pharmacy needle exchanges have contributed to the reduction of sharing of used injecting equipment, and in lowering injecting risk behaviour among the injecting drug population (Clarke et al 1998; Stimson, 1995). Pharmacy exchange schemes attract a wide range of intravenous drug users, many from hard-to-reach populations, including new injectors (Clarke et al 1998). Comparison of activity levels at the four types of exchange in Glasgow shown in Table 3 demonstrate that the pharmacies attracted a greater number of new clients than the other three. However, the greatest proportion of new clients from the total number of clients seen were from Base 75 (47%), followed by GDCC (10%), GDPS (9%) and 9% at the pharmacies.

One reason for the higher number of clients attending the pharmacy needle exchanges could be that clients living within the vicinity of the pharmacy access them. This finding would confirm the view expressed in the 2001 report of a Scottish HIV Strategy review Group. This review found that there was good evidence to show that injectors who live nearer to and receive more needles and syringes from official exchanges inject with used needles and syringes less frequently than those who live further away and receive less needles and syringes from such facilities (Scottish Executive 2001; Hutchinson et al., 2000).

Rates of return of used equipment to exchanges

Table 3 highlights a wide variation in the percentage return rate of used injecting equipment to the four types of needle exchange. Of particular note is the low return rate to the Base 75 exchange. However, this apparent low rate should be treated with caution. Base 75 is a joint social work and health funded project that opened in 1988 in a bid to prevent the spread of HIV. The Base 75 needle exchange opened in 1992.

However, in contrast to other Glasgow exchanges women were not obliged to return used equipment in exchange for clean as it was felt that this requirement might make it difficult for the women who “work” before attending the Centre. An attempt was made in 1997/98 to determine the reasons for the lower rate of return of used equipment to Base 75. The women participating in the survey reported that they disposed of used equipment in a variety of ways including: - returns taken to other Glasgow exchanges, disposal in bins provided by hostel and in domestic waste. (Mackie & Roberts, 1999). Attempts have since been made to increase awareness of both Base 75 staff and clients of the importance of the safe disposal of used equipment. Since 1998 the return rate has risen from 19.5% to 25% recorded for 2001/2

Number of sets supplied per exchange visit

The 2001 Review of Glasgow Needle Exchanges found that the number of sets of equipment given out at the GDPS exchanges was much higher than at pharmacies: 12 versus 7. During 2002 a pilot project to introduce pre-packs rather than pick and mix has been evaluated in two pharmacies, one new and one existing (Roberts et al 2002). The use of prepacks has increased the number of sets per exchange to 9. There are potential economic and public health advantages if the number of sets per exchange is increased. Firstly as the pharmacists are paid a fee per exchange visit a reduction in the number of visits could reduce the number of fees paid. Secondly, if the number of sets per exchange is increased up to the Lord Advocate’s limit of 15, there may be a reduction in the number of exchange visits per pharmacy, thus reducing the number of fees payable.

Data entry and analyses

It is essential that the entry of data onto a database is easy to undertake, efficient and cost effective. The 1997/8 decision to cease the entry of data relating to the Glasgow Pharmacy Needle Exchange Scheme was not taken lightly. Even though there was already an increase in activity at the pharmacy exchanges compared to that at the GDPS exchanges, there was no indication that within a short time there would be such a dramatic increase in the activity levels at the pharmacy exchanges. Now that the pharmacy exchanges represent such an important part of the overall needle exchange service provision it is essential that robust data on the activity levels at the pharmacy needle exchanges are collected, analysed and used to inform strategic decision making procedures.

The design of the database and completion of the data entry both proved to be more difficult than anticipated. The size of the database and the sheer number of client contacts resulted in major difficulties for the data entry personnel. The time taken to enter the data was almost twice that anticipated and budgeted for both financially and in time required. The resulting delays caused unscheduled knock on effects on the completion of the data analyses and on the delivery of the final report to the Effective Interventions Unit. We are grateful to the Effective Interventions Unit, Mandate Technology and the GGPC’s Research and Development Directorate for their patience, support and understanding throughout the project.

Study Limitations

1. Daily log entries where date of birth was missing prevented an entry being made into the database, therefore it is estimated that 100 clients and their activity were not entered onto the database.
2. Client identification numbers (client ID) were created based on first name, first initial of surname and date of birth. However due to issues of consistency, clarity and accuracy with the recording of these data by pharmacists (illegible handwriting, differences in spelling of names, using surnames, nicknames, abbreviations etc.) and

in accuracy and consistency in data entry, it is inevitable that with a database of this size (over 200,000) more than one unique client identification numbers may have been created for the same individual as a result of these reporting errors. Therefore the total number of clients may include a number of duplicates and therefore may be an overestimate. Similarly, new clients and stimulant/ steroid using clients may have been recorded as such at contact to any pharmacy needle exchange (n=15) and therefore these figures may include duplicates.

3. Data was cleaned for mis-spellings and also for gender. However assumptions would have to have been made based on first name, first initial of surname and date of birth to determine whether duplicates existed. This should be considered for future analyses.
4. There was a high turnover in data entry personnel, which may have resulted in inconsistency of data entry
5. It took much longer than expected to enter data entry. The delay meant that the planned 10% checks of the data entered were not completed.
6. Although it was theoretically possible to compare the pharmacy data with that from the other Greater Glasgow needle exchanges, it was more difficult than expected in practice. All the exchanges reported that they had experienced problems with data entry and the continuity of data processing.
7. Some of the entries on the daily log sheets very extremely difficult for the entry clerks to interpret.

Chapter 5 Conclusions and Recommendations

Growth in service activity and number of clients at the Greater Glasgow pharmacy needle exchanges

This report demonstrates the growth in activity and clients attending the pharmacy needle exchanges in Glasgow and compares them to community needle exchanges in the city. Despite the small increase in the percentage of total GGNHSB pharmacies participating in the needle exchange scheme (from 4% in 1996/97 to 7% in 2001/02) there has been over a 1100% increase in the number of clients (1599 to 19916) and almost a 700% increase in the number of client contacts (11589 to 79493) during the same period.

Drug injecting clients in Glasgow are increasingly obtaining supplies of clean equipment from pharmacies rather than from the GDPS exchanges. Attendances at the fixed GDPS exchanges have fallen dramatically over the period. The increase in activity at the pharmacy exchanges is even greater than the decrease in activity at the GDPS exchanges. In 2001/02, 52% of the needles and syringes issued were issued from pharmacy needle exchanges, compared to 15% from GDPS needle exchanges, 5% from the Base 75 needle exchange and 27% from the GDCC needle exchange.

With the exception of Base 75, the proportion of used needles and syringes returned to both pharmacy and community needle exchanges was high. The pick and mix system used at the Pharmacy needle exchanges during the period under investigation resulted in far fewer personal cinbins being supplied than the number of exchange attendances warranted. ***The proposed move to pre-packs should reduce this imbalance and increase the supply and use of Cinbins.*** A structured transfer from pick and mix to pre-packs for supply from pharmacy exchanges has the potential to provide public health and economic benefits.

Moreover the recent review of needle exchanges in Greater Glasgow found that the average costs per client contact were substantially lower at both pharmacy (£2.17) and GDCC (£2.28) exchanges compared to GDPS exchanges (£9.18). When the costs of needles and syringes were included to the staff costs, the Review found that the cost **per set** was twice as much at the GDPS exchange compared to the pharmacies. This was so even though the GDPS exchanges gave out more sets per exchange than the pharmacies (12 versus 7) (Gruer 2001). The Review set a target to double the number of pharmacy needle exchanges. ***The provision of pharmacy needle exchanges in the city should be further increased, given the success of the pharmacy needle exchanges in operation and the identified unmet need of clean needles/syringe provision for current injectors.***

Comparison of activity and client profile with other community needle exchanges in Greater Glasgow

The average number of contacts per client to the pharmacy needle exchanges was significantly lower than the other needle exchanges in the city. This suggests that pharmacy needle exchanges may attract occasional injectors, while regular users attend the other exchanges.

The number of sets of equipment supplied per exchange at the pharmacies is lower than for the other exchanges. The use of pre-packs with a minimum of 5 sets per exchange could increase the number of sets per exchange transaction. ***Such an increase has the potential to reduce the overall cost of each transaction at the pharmacy as more sets per visit should reduce the number of visits per client further thus reducing the number of fees payable.***

The estimated prevalence of problematic drug users in GGNHSB was approximately 16,000 in 2000, a third of whom were estimated to be female (Hay et al., 2001). Although the data from the pharmacy returns suggests that the prevalence of injecting drug users in GGNHS of approximately 7,000 (Hay et al., 2001) is an underestimate, the proportion of women accessing the pharmacy needle exchanges in Greater Glasgow (29% overall in 2001/02) is less than the estimated proportion of problematic female drug users within GGNHSB (33%).

Comparison of data from the pharmacy needle exchange with data from the other needle exchanges in the city, found that uptake of the service by female injectors at pharmacy needle exchanges was significantly lower than at other needle exchanges in the city. One reason for the low uptake of pharmacy needle exchange by women could be a reluctance to access the pharmacy for needle exchange in their community due to the stigma attached to injecting drug use. Other reasons could include not wishing to access the same pharmacy these use for other non drug misuse related services, or that they have small children with them. ***Innovative ways of encouraging female injectors to use pharmacy needle exchanges should be sought. The trend in the female injectors use of the pharmacy exchange should be monitored following the introduction of the planned pre-packs system. Further qualitative research into female injecting drug users attitudes to and experiences of using pharmacy needle exchanges should be undertaken.***

Pharmacy needle exchanges and GDPS needle exchanges appear to be used mainly by the older age group (average age >30 years), while younger injectors use Base 75 (average age 25 years) and GDCC exchanges (average age 28 years). This could be a result of the evening opening hours of both GDCC and Base 75, attracting a younger client group in crisis or engaged in street sex work. ***The legal situation is unclear around the issuing of needles and syringes to injectors aged younger than 16 years, and requires to be clarified by the Lord advocate's office.***

The Base 75 and GDCC exchanges offer a valuable alternative services for women street-workers and drug users in crisis. The GDCC exchange is the only service to offer a 24 hour/365 days per year. In order to meet the needs of different groups of injecting drug users a variety of needle exchange facilities must continue to be available.

Estimated prevalence of injecting drug users in GGNHSB

There were approximately 18,000 clients attending pharmacy needle exchanges during 2000/01. The problem with duplicates has been described in the methodology section, resulting in this figure being slightly inflated. However, it is worth noting that this figure is considerably higher than the estimated prevalence of approximately 7,000 injecting drug users in GGNHSB area at this time (Hay et al., 2001). It should be noted that only opiate and benzodiazepine injectors were included in this sample. Furthermore whilst a range of data sources were used to determine the prevalence of injecting drug use, returns from pharmacy needle exchanges were not included. ***It is recommended that data from all needle exchanges should be included in future studies or needs assessments estimating the local and national prevalence of injecting drug use.***

Database

Having developed a database of 5 years activity at the pharmacy needle exchanges it is vital to ensure that this database continues to be used and resources identified to ensure that returns are entered regularly by a named individual. ***It is important to use this data to generate monthly reports and calculate payment of the pharmacists for the needle exchange service.***

The new database should continue to be used to allow comparisons to be made between the Greater Glasgow Pharmacy Needle Exchanges and the three other types of needle exchange in Glasgow needle exchanges. ***Such comparisons should be used to inform future planning and commissioning of needle exchange services across Greater Glasgow.***

The problem with duplicates resulting in an overestimate of client numbers has been described in the methodology. These duplicates arise from issues in consistency, clarity and accuracy with the recording of these data by pharmacists (illegible handwriting, differences in spelling of names, using surnames, nicknames, abbreviations etc.) and in accuracy and consistency in data entry. It was envisaged that 10% of data entry would be checked, however due to the timescale involved and the turnover of data entry personnel throughout the project this was not possible. ***It is recommended for future analyses that 10% of data is checked and realistic timescales allowed for this to be achieved.***

A copy of this report should be sent to all needle exchange providers to ensure that they are aware of the important contributions they make towards reducing harm to current drug injectors within the city.

Furthermore, pharmacists should be alerted to the importance of consistency, clarity and accuracy in their recording and should ensure that answers to all questions on the clinic log are asked at each client contact (especially data on whether the client injects steroids or stimulants). This issue has been addressed in light of the report, all pharmacy exchange personnel have been reminded of the need to be careful and precise when recording data on the log sheets.

Conclusion

More pharmacies should be encouraged to participate in needle exchange scheme in Greater Glasgow. The pharmacy needle exchanges are successful in attracting a vast number of injectors in comparison to other exchanges and have a good return rate of needles and syringes issued. ***However it is important that out of pharmacy hours needle exchanges are available and exchanges for women, especially those in crisis or engaged in street sex work.***

This report demonstrates that computerising the pharmacy needle exchange activity enables comparisons to be made with the other needle exchanges in the city. This will be particularly useful for future reviews and prevalence studies of injectors. Furthermore this data can also be used to ensure that pharmacy needle exchanges are targeting drug injectors appropriately.

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Chapter 7 Appendices

Appendix 1: Greater Glasgow Pharmacy Needle Exchange log sheet

Appendix 2: Mandate Technology Database Guidance

Appendix 3: GDPS Needle Exchange log sheet

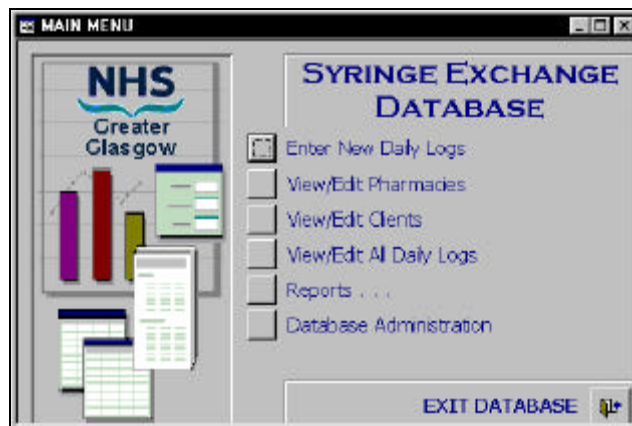
Appendix 4: GDCC log sheet

Please consult form guidelines for advice on completion of forms

ALL PHARMACIES SHOULD USE A SEPARATE FORM FOR EACH DAY

1. **Today's Date** as the day of contact
2. **First Name/Last Initial** forename and last initial (e.g. James B)
3. **Date of Birth** date of birth of client (e.g. 12.10.68)
4. **Sex** gender of client (1=male, 2=female)
5. **New client** please tick if yes
6. **Steroid Injector** please tick if yes
7. **Stimulant Injector** please tick if yes
8. **Needles Returned** please estimate quantity
9. **Needles Issued**
 - a) FO = fixed orange
 - b) B(s) = blue short
 - c) B(L) = blue long
 - d) O = orange
 - e) G = green
11. **Barrel** No of separate barrels issued (exclude fixed orange)
12. **Items received**
 - 1 = Sterets
 - 2 = Personal Cinbins
 - 3 = Other e.g. advice, HE literature
 - 4 = Citric acid
 - 5 = Stericups

Syringe Exchange Database OPENING MENU



ENTER NEW DAILY LOGS

Find Pharmacy

- Click the *drop-down button* and choose the required Pharmacy.

Enter Date

- Enter required Date.
You can type it as d/m/yy (e.g. 1/12/01) and it will format it as 1-Dec-2001.
If it is the current year (2002) you can just type d/m (e.g. 21/3) and it will format it as 21-Mar-2002.

Enter Client

- If it is an existing Client, you can click the button under the *Red down arrow* and choose the Client from the list. It will insert the Client's First Name, Initials, Date of Birth and Sex automatically
- If it is a new Client, you must enter the Client's First Name, Initials, Date of Birth and Sex yourself. It will then be added to the list the next time you need to enter that Client.

Enter other information

- You can move through the other fields with the *Tab* or *Enter* key.
If it is a *tick box*, you can enter the tick by clicking the mouse in the box or by pressing the *Space Bar*
In the other fields, type the number required.

When you have finished click the *Close* button

VIEW/EDIT PHARMACIES

If you need to look up or edit Pharmacy details, you can click the Find Pharmacy *drop-down button* and choose the required Pharmacy. You can then edit any required details.

VIEW/EDIT CLIENTS

Client ID:	First Name:	Initial:	Date of Birth:	Sex:
00019	Alan	w	05-Jul-1966	M
00027	Angela	G	21-Jun-1985	F
00023	billy	g	12-Apr-1967	M
00004	billy	h	04-Jun-1977	M
00017	brian	t	01-Jan-1973	M
00003	fred	d	02-Feb-1978	M
00020	fred	h	01-Jan-1970	M
00021	genny	m	01-Jan-1959	M
00008	gordon	m	05-Jun-1969	M
00009	gordon	r	12-Jul-1967	M
00005	harry	j	23-Jun-1970	M
00010	Harry	R	03-Mar-1967	M
00007	jackie	o	12-Jun-1969	F
00001	John	R	16-Jun-1940	M
00012	john	t	12-Jun-1965	M
00011	mary	h	23-Aug-1967	F
00010	mary	t	23-Aug-1967	F
00002	mary	t	12-Jan-1978	F
00015	May	T	01-Jan-1976	F
00026	Micky	H	12-Apr-1980	M

This list will allow you the edit any Client's details.
They are sorted alphabetically by First Name and Initials

VIEW/EDIT ALL DAILY LOGS

Client ID	First Name	Init	Date of Birth	Sex	Steroid Injector	Stimulant Injector	New Client	Returns	NEEDLES ISSUED	Barrels	Items Received
									FO B(S) B(L) O G		1 2 3 4 5
00008	Gordon	m	05/06/60	M	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	1 0 0 0 0	0	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
00010	Mary	f	23/08/67	F	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0 0 0 0 4	1	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
00020	Fred	h	01/01/70	M	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	0 0 3 0 0	2	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

If you need to Review or Edit any previous Daily Logs, you can find them by using the *drop-down buttons* at the top and searching by Pharmacy or Supply Date for the required records. They can then be edited accordingly.

REPORTS MENU

SIX MONTHLY REPORTS

When you have entered sufficient historical and current information, you will be able to produce Summary and individual Pharmacy Reports for the required periods.

