Repeat Prescription Report
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A personal vision of the future
Repeat prescriptions for the treatment of long-term conditions, such as diabetes and asthma, account for nearly 80 per cent of all prescribed medicines on the NHS. With 29 million people in England taking repeat prescriptions, the NHS is spending £8 billion a year to cover the cost. That figure is set to go up.

By 2039 there will be 231 million more repeat prescription items dispensed each year to people over the age of 60.

That is a growing cost to an already stretched NHS and the repeat prescribing system places a considerable burden on patients and NHS staff. One of the ways the NHS plans to combat this is by making better use of technology. As outlined in the five year forward view, one of those initiatives is the widespread rollout of an electronic repeat prescribing system.

Patients can now order their medicines from their doctor’s surgery online. The Electronic Prescription Service (EPS) is an NHS service that allows a GP to send a patient’s prescription directly to their chosen pharmacy.

The current prescription process: a patient traveling to a GP; a GP issuing a prescription and the patient then travelling to a pharmacy to deliver their prescription can now be processed online, saving money, time and valuable NHS resources. There is no need to visit your pharmacy or GP to collect your prescription, it is managed online and delivered to your chosen UK address for free.

The following report will explore how the prescription system currently operates. In particular, it will look at issues being faced by patients, general practitioners and community pharmacists.

It will also highlight how the adoption of the EPS is a complex and nuanced issue, hearing from key stakeholders in the implementation and use of the service. From that it will explore possible avenues that EPS might change in the future – identifying the need for the pharmacy profession to embrace digital technology to help support patients in this new environment.

The report will argue there are still hurdles to overcome when it comes to the widespread adoption of this service. But where adoption has been high, there have been cost savings and increased convenience for patients, pharmacy and the wider NHS, and an increase in time doctors and pharmacies have to focus on other services.

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Executive Summary
People in the UK are living longer than at any time in history. The National Health Service (NHS) is receiving record funding and is producing better health outcomes than ever before, but the NHS faces many challenges. A greater and ageing population with many long-term health and social problems, and the need to fund new medicines and procedures, means the NHS is facing unprecedented demand from rising public expectations. These factors are aligning to create an NHS in crisis.

In 2014, the Government published its plans for the direction of the NHS including a commitment to making better use of digital technology.\textsuperscript{1} The 5 Year Forward View included initiatives such as:

\begin{itemize}
  \item Patient access to their electronic health record and ability to write in the record
  \item Electronic repeat prescribing routinely available everywhere
  \item Health apps and increased capacity and support for people to make better use of smartphones to access their health care
  \item Greater use of IT for quality improvement audits
\end{itemize}

These developments have implications for the way repeat medicines will be managed, ordered and obtained now and in the future. Pharmacy services will need to adapt to support the NHS digital vision and patients who choose to order their medication online.
2 What are repeat prescriptions?

Patients with long-term conditions need to receive regular repeat prescriptions from their General Practitioner (GP). Most patients receive these as repeat prescriptions. The National Prescribing Centre (NPC) defines repeat prescribing as:

“A partnership between patient and prescriber that allows the prescriber to authorise a prescription so it can be repeatedly issued at agreed intervals, without the patient having to consult the prescriber at each issue.”

Repeat prescribing systems have been developed to try and minimise inconvenience for patients and workloads for general practices, whilst maintaining safety. However, the process is complex and time consuming for patients and general practice staff.

In 2004, the NPC mapped out the main elements of the repeat prescribing process (figure 1).

Figure 1: A map of the main elements of the repeat prescribing process, 2004
Patient decides to reorder their repeat prescription

Ordered electronically
  Online via website
  No problem
    Electronically signed by GP
    Uploaded to spine NHS web
    Downloaded by patient's nominated pharmacy
  Problem
    Prescription request electronically forwarded to GP to resolve

Ordered manually
  Via appointment
  Drop off at surgery
  Ring surgery
  Ring pharmacy who order on patient's behalf
  Problem
    Prescribed for GP
    Problem resolved
    Signed by GP
    Collected by patient at Pharmacy
  No problem
    Prescription printed
    Dispensed
The Electronic Prescription Service (EPS)

The Electronic Prescription Service (EPS) makes it possible for repeat prescriptions to be sent electronically to the pharmacy or disperer of the patient’s choice. This means patients will no longer have to collect a paper repeat prescription from their GP practice, instead they can go straight to their nominated pharmacy to pick up medicines or arrange to have them delivered.

EPS was introduced in 2003 and has undergone a number of pilots and changes, but is now well tested and accepted with the NHS encouraging all practices and patients to use this system. NHS Digital has recently commented:

“In the future, EPS Phase 4 will become the default option for prescribing, dispensing and reimbursement of prescriptions in primary care in England. Paper prescriptions will continue to be available in special circumstances, but the vast majority of prescriptions will be processed electronically.”

Most GP surgeries (6,875: 91.5%) and pharmacies (11,686: 99.4%) are now able to use EPS and in August 2017 59% of all prescription items went via the EPS system, although this ranged by Clinical Commissioning Groups (CCGs) from 16% to 72%.

The different steps in the pathway between EPS and paper repeat prescriptions are shown in figure 2. EPS has the potential to: improve convenience for patients ordering their repeat prescriptions; improve GP work-flow with prescription requests; and improve the process for the GPs authorising prescriptions. EPS will also make it easier for prescriptions to be tracked from the point of ordering to dispensing so they are less likely to be lost in the system. It will also allow pharmacists to be paid more accurately as the electronic transfer of dispensed prescription data to the NHS Business Authority will replace manual entry and reduce human error.

Online Ordering

The NHS are encouraging patients to order their medications online. However, not all patients will have the opportunity or ability to order repeat prescriptions online. Some may not have access to the internet or the cognitive ability or dexterity to order repeat medications online. At present although 30% are aware of this service, only 11% use online ordering and in some CCGs the figure is a low as 3%.

Repeat Dispensing

Repeat dispensing (RD) allows patients on stable long-term treatments to have their medications prescribed in batches for a fixed period of time, which means the patient does not have to collect a prescription each month; they simply receive supplies from the pharmacy. Originally RD was undertaken using paper prescriptions, but as EPS has developed, the majority of RD is now conducted electronically.

Currently the proportion of prescriptions dispensed through RD is only 10%. The fact that some CCGs have 30% of items dispensed as RD suggests that this method of providing repeat medicines is likely to grow as GPs become more confident in using EPS.
3. What is the scale of repeat prescriptions now and in the future?

Prescribed medicines are the most common intervention in the NHS, and are the second highest area of spending in the NHS, after staffing costs. In total 1.10 billion prescription items were dispensed in England in 2016, a 1.89 per cent increase on the previous year.6

The overall net ingredient cost of prescribing in 2016 was £9.21 billion and the dispensing fees received by pharmacies totaled £1.01 billion.7

In 2014, it was reported that 77% of prescriptions were issued as repeat prescriptions8, meaning the cost of repeat prescriptions to the NHS in 2016 was £7.9 billion.

Overall 43% of the population (29 million people) were prescribed at least one repeat medicine. The proportion of patients on repeat prescriptions increases with age (figure 3) with a range from 20% (0-9 year olds) to greater than 75% (over 40 year olds). 92% (12.7m people) of those aged 60 years and over would have been prescribed at least one repeat prescription.

**Figure 3: Proportion of people on at least one repeat prescription**

Key: Female Male
The number of repeat prescriptions patients receive also increases with age (table 1) with the mean number of repeat prescriptions for a patient on repeats being 4.3, but for people aged 70 years and over the mean number rises to 7, with little difference between the sexes.

Table 1: Number of patients prescribed at least one repeat prescription medicines when proportion data is applied to 2014 UK population

<table>
<thead>
<tr>
<th>Age band</th>
<th>Male</th>
<th>Proportion of people on at least one repeat medicine</th>
<th>Total number of patients in each age band on at least one repeat medicine</th>
<th>Female</th>
<th>Proportion of people on at least one repeat medicine</th>
<th>Total number of patients in each age band on at least one repeat medicine</th>
<th>Total of either sex in each age band on at least one repeat medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 9</td>
<td>3,638,788</td>
<td>21%</td>
<td>764,145</td>
<td>3,468,614</td>
<td>18%</td>
<td>824,351</td>
<td>1,388,496</td>
</tr>
<tr>
<td>10 to 19</td>
<td>3,780,512</td>
<td>21%</td>
<td>793,908</td>
<td>3,593,707</td>
<td>24%</td>
<td>862,490</td>
<td>1,656,397</td>
</tr>
<tr>
<td>20 to 29</td>
<td>4,391,018</td>
<td>16%</td>
<td>702,563</td>
<td>4,313,168</td>
<td>32%</td>
<td>1,380,214</td>
<td>2,082,777</td>
</tr>
<tr>
<td>30 to 39</td>
<td>4,151,883</td>
<td>28%</td>
<td>1,162,527</td>
<td>4,198,424</td>
<td>38%</td>
<td>1,595,401</td>
<td>2,757,928</td>
</tr>
<tr>
<td>40 to 49</td>
<td>4,473,851</td>
<td>39%</td>
<td>1,744,802</td>
<td>4,589,182</td>
<td>45%</td>
<td>2,065,132</td>
<td>3,809,934</td>
</tr>
<tr>
<td>50 to 59</td>
<td>4,100,012</td>
<td>53%</td>
<td>2,173,006</td>
<td>4,200,879</td>
<td>81%</td>
<td>2,562,536</td>
<td>4,735,543</td>
</tr>
<tr>
<td>60 to 69</td>
<td>3,449,685</td>
<td>76%</td>
<td>2,621,761</td>
<td>3,623,692</td>
<td>78%</td>
<td>2,826,480</td>
<td>5,448,240</td>
</tr>
<tr>
<td>70 to 79</td>
<td>2,229,805</td>
<td>90%</td>
<td>2,006,915</td>
<td>2,543,822</td>
<td>91%</td>
<td>2,314,878</td>
<td>4,321,793</td>
</tr>
<tr>
<td>80 to 89</td>
<td>1,021,174</td>
<td>94%</td>
<td>959,904</td>
<td>1,499,261</td>
<td>95%</td>
<td>1,424,298</td>
<td>2,842,202</td>
</tr>
<tr>
<td>90 or more</td>
<td>157,781</td>
<td>94%</td>
<td>148,314</td>
<td>393,029</td>
<td>95%</td>
<td>373,378</td>
<td>521,692</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>31,394,609</strong></td>
<td><strong>18%</strong></td>
<td><strong>13,077,844</strong></td>
<td><strong>32,423,778</strong></td>
<td><strong>18%</strong></td>
<td><strong>16,029,156</strong></td>
<td><strong>29,107,001</strong></td>
</tr>
</tbody>
</table>

The peak age-band for numbers of patients prescribed at least one repeat medicine was 60 to 69 year olds (table 1). In this age-band 5.4m patients would have been prescribed at least one repeat medicine in 2014. This is because the 60-69 years old age-band has one of the largest populations (6.3m) and have a mean number of repeat medicines of 5 items per patient.
Table 2 shows a breakdown of repeat prescribing by British National Formulary (BNF) sections. In these BNF sections the majority of items prescribed are as repeat prescriptions. Medicines for diabetes are the costliest BNF section, which is generally treated with repeat medication tablets and injections for reducing blood sugar levels.

Table 2: Top 20 British National Formulary sections by cost – March 2017

<table>
<thead>
<tr>
<th>Drugs Used in Diabetes</th>
<th>Total items March 2017</th>
<th>Total Cost March 2017</th>
<th>Proportion prescribed as repeats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drugs Used in Diabetes</td>
<td>4,367,438</td>
<td>£82,950,732</td>
<td>84%</td>
</tr>
<tr>
<td>Corticosteroids (Respiratory) e.g. asthma and Chronic Obstructive Respiratory Disease (COPD)</td>
<td>1,713,242</td>
<td>£56,436,882</td>
<td>91%</td>
</tr>
<tr>
<td>Anticonvulsants</td>
<td>2,198,408</td>
<td>£46,724,423</td>
<td>79%</td>
</tr>
<tr>
<td>Analgesics e.g. long-term pain conditions and cancer pain</td>
<td>5,589,014</td>
<td>£41,737,819</td>
<td>61%</td>
</tr>
<tr>
<td>Oral Nutrition e.g. food supplements to treat people with malnutrition</td>
<td>589,204</td>
<td>£33,325,527</td>
<td>61%</td>
</tr>
<tr>
<td>Anticoagulants and Protamine e.g. to prevent strokes and to treat blood clots in legs and lungs</td>
<td>1,341,859</td>
<td>£30,457,760</td>
<td>78%</td>
</tr>
<tr>
<td>Bronchodilators e.g. to treat asthma and COPD</td>
<td>2,597,441</td>
<td>£27,660,092</td>
<td>78%</td>
</tr>
<tr>
<td>Antidepressant Drugs</td>
<td>5,572,289</td>
<td>£21,605,681</td>
<td>72%</td>
</tr>
<tr>
<td>Drugs For Genito-Urinary Disorders e.g. urinary incontinence/ frequency</td>
<td>1,539,130</td>
<td>£20,083,186</td>
<td>82%</td>
</tr>
<tr>
<td>Lipid-Regulating Drugs e.g. for prevention of strokes and heart attacks</td>
<td>5,885,365</td>
<td>£17,742,873</td>
<td>97%</td>
</tr>
<tr>
<td>Antibacterial Drugs</td>
<td>3,228,232</td>
<td>£16,712,707</td>
<td>7%</td>
</tr>
<tr>
<td>Nit,Calc Block &amp; Other Antianginal Drugs e.g. for treating the symptoms of angina</td>
<td>4,034,699</td>
<td>£15,282,419</td>
<td>94%</td>
</tr>
<tr>
<td>Hypertension and Heart Failure e.g. for treating high blood pressure, heart failure and other cardiovascular diseases</td>
<td>5,798,349</td>
<td>£13,223,329</td>
<td>94%</td>
</tr>
<tr>
<td>Thyroid and Antithyroid Drugs</td>
<td>2,584,163</td>
<td>£12,810,989</td>
<td>87%</td>
</tr>
<tr>
<td>Vitamins e.g. vitamin D for preventing osteoporosis</td>
<td>2,594,175</td>
<td>£12,627,114</td>
<td>79%</td>
</tr>
<tr>
<td>Wound Management &amp; Other Dressings</td>
<td>425,716</td>
<td>£11,500,082</td>
<td>11%</td>
</tr>
<tr>
<td>Catheters</td>
<td>100,388</td>
<td>£11,176,847</td>
<td>52%</td>
</tr>
<tr>
<td>Drugs Used In Rheumatic Diseases &amp; Gout e.g. medicines for managing and reducing symptoms of rheumatoid arthritis</td>
<td>1,841,533</td>
<td>£10,314,556</td>
<td>41%</td>
</tr>
<tr>
<td>Drugs Used In Parkinson’s disease/Related Disorders</td>
<td>405,676</td>
<td>£9,441,281</td>
<td>71%</td>
</tr>
<tr>
<td>Drugs Used In Rheumatic Diseases &amp; Gout e.g. medicines for managing and reducing symptoms of rheumatoid arthritis</td>
<td>5,290,992</td>
<td>£9,325,759</td>
<td>81%</td>
</tr>
</tbody>
</table>
In the future

Growth in prescription numbers are being driven by an increasingly older population. The number of items dispensed to older people (i.e. aged 60 years or over) increased by 71 million between 2012 and 2015. And whilst people aged 60 years and over only represent 23% of the population they are responsible for the majority (60%) of prescription items.\(^\text{10}\)

According to the Office of National Statistics (ONS), the number of people aged 75 years and over is projected to rise by 90% to 9.9 million by mid-2039, whilst the number of people aged between 60 and 74 is projected to rise by 25% to 12 million.\(^\text{11}\) Assuming the number of items prescribed per person does not change in the next 25 years, by 2039 there will be 300 million more items a year prescribed to people aged 60 years and above. And given that 77% of these people are on repeat prescriptions, 231 million of these will be repeat prescription items.

Figure 4: Predicted increase in the number of prescription items (millions) prescribed to people aged 60 years old and over in the coming decades

Age per se is not the driver of increased numbers of repeat prescriptions. As people age they tend to live with more long-term conditions, which tend to be treated with repeat prescriptions. Analysis conducted by the Royal College of GPs suggests that by 2025 the number of people living with one or more serious long-term conditions (multi-morbidity) in the UK will increase by nearly a million from 8.2 million to 9.1 million.\(^\text{12}\)

The types of medical conditions that older people will be living with in the future are likely to be those we have seen increasing in recent years: e.g. diabetes; cancer; dementia; mental health problems; strokes; long-term pain conditions; and heart disease. The management of these conditions rely heavily on long-term repeat prescribing as the main medical intervention.
4. What is the cost and time for practices and patients in managing, ordering and obtaining repeat prescriptions?

For practices

According to NHS Digital, 80% of repeat prescription medicines can be ordered online through repeat dispensing. This would save general practices an average of 80 minutes a day (6 hours 40 minutes a week per practice) not having to write out paper repeat prescriptions. Financial savings from EPS between 2013 and 2016 are estimated by NHS Digital to be nearly £600 million: NHS £137 million; general practices £328 million; pharmacies £59 million; and patients £75 million.

A small qualitative analysis of the general practice workload generated by repeat prescriptions was conducted for this report. Prescription managers at 10 general practices were interviewed about how much time was spent in processing repeat prescription requests and what the impact has been of EPS. The interviews were conducted in the summer of 2017 when practices have been encouraged by NHS Digital to move patients to online ordering and use of EPS.

General practice staff managing repeat prescribing have reported that they found it a complex process which required collaboration between administration staff and clinical staff such as GPs. In one study, more than half of the repeat prescription requests had problems such as requests for medicines and doses differing from those on the electronic repeat list. Reception staff managed these problems by making judgements that bridged the gap between what the protocol said should be done and managing the processes in a pragmatic way, i.e. making sure scripts were processed, signed and dispatched in a safe and timely way. Reception staff made important and often under-recognised contributions to quality and safety.

Ordering of repeat prescriptions

Requests for repeat medicines were primarily managed by receptionists or office based staff. Practices reported they were discouraging phone ordering by patients because of the time taken for each call and the risk of patients ordering the wrong medicine or not knowing what to order.
Ordering electronically or by handing in a written request was also seen as medico-legally less risky as the patient had to indicate exactly what they wanted.

Ordering by phone was still allowed for some vulnerable people who could not order in any other way. In one practice where phone ordering was still allowed it was a full-time job for one receptionist to deal with the calls.

Similarly, ordering by community pharmacy was declining mostly due to CCG policies. Some ordering was still allowed such as for patients on medicines compliance aids (MCAs), but prescriptions for patients using MCAs was considered by some practices to be “out of hand” as they took up large amounts of time to process. Often these requests came in as one bundle creating a bottle-neck of work. As pharmacy and patient telephone ordering was being discouraged or banned, practices were seeing an increase in online ordering. However, some practice staff were having to spend more time training patients how to use online ordering or resetting online passwords.

Practices were actively encouraging patients to order their medicines online and to nominate a pharmacy for EPS.

Some practices were notifying all newly registered patients about EPS in the patient handbook and staff were suggesting EPS as an option to all patients who handed in script requests at the surgery or rang in their request. Where patients were not capable of ordering online, one practice encouraged these patients to allow for “proxy access” for relatives to order on their behalf. Another practice had used their patient participation group to promote EPS and online ordering to other patients.

The amount of time spent on dealing with requests and processing script requests ranged from around 1 day per week to being a fulltime job for larger practices. One receptionist commented:

“Prescription requests are a big part of our job…a huge amount of our time is spent in printing, sorting and filing prescriptions.”

Admin staff said that often with paper prescriptions they had to find an opportunity for a GP to sign a more urgent script.

“It’s a nightmare getting them signed.”

“Doctors get annoyed when we take paper scripts to them for signing.”

With EPS, the request can simply be sent to the GP’s electronic signing “pile” indicating if it is urgent with a red exclamation mark.
Managing repeat prescriptions

Often the management of repeat prescriptions is being dealt with by staff based in back offices rather than at the reception. The larger practice said that they had a rota of staff dealing with repeat prescriptions. The following steps were involved in admin staff time:

**Receiving orders from patients handing in a request slip**
+ Requests are left in a prescription box in reception and emptied periodically so does not use up practice time

**Taking calls and orders from pharmacists**
+ Discouraged or not allowed by many practices so workload has decreased

**Generating paper prescriptions: getting them signed; folding and stapling; filling in pharmacy boxes for collection**
+ This is a time-consuming process, which also has a cost in terms of printers and printer cartridges
+ The process of filling in the paper scripts has been reducing as the number of EPS scripts increases

**Dealing with queries on prescriptions**
+ This is the most time-consuming stage whether requests are made on paper or electronically
+ Staff did say that questions and queries that came as part of an electronic request could be managed more easily as they could simply be forwarded on to the GP or practice pharmacist
+ Resolving the clinical issues such as reauthorising a prescription as a repeat is the same whether the query came electronically or on paper. However, with electronic requests it was easier for clinicians to send messages back to the patient such as to book in a review or a blood test

Another advantage of EPS was that patients could place orders online at any time of the day including out-of-hours when the practice was closed. This also meant patients could attach queries without having to telephone the practice during office hours.

“They write their queries online with their repeat order so they do not have to contact the surgery by phone or in person.”

In some practices EPS was still in its infancy with doctors only just starting to use EPS for stable patients.
Generating electronic prescriptions

Even if patients did not order medicines online, having a nominated pharmacy (allowing the prescription to be sent electronically from surgery to pharmacy) was considered by most interview responders to save a large amount of practice time.

The prescriptions with no queries could be assigned to the GP who “bulk signs” the scripts electronically. Where there was a query it was easier with EPS to send a message to the GP or practice pharmacist about the problem by adding the query to the EPS request. Similarly, the clinician could also send a message to the patient as an attachment to their electronic prescription rather than having to try to telephone the patient, which often took several calls at different times to make contact.

Importantly, EPS generated scripts are more secure. Paper scripts were reported to often have “gone missing” between the point of printing, being signed by GPs and delivered to the pharmacy. For example, they may never have been printed or they may have been filed in the wrong pharmacy collection box. Sometimes patients who did not receive a prescription had said they had ordered the repeat prescription medicines, but there was no way of proving whether this was true or not. With EPS, these problems were eliminated because there was an electronic audit trail from the point of request through to electronically signing. If a request “goes missing” it can be seen at what point in the pathway this has occurred:

“With EPS you can track it [the prescription request] and see exactly where it is.”

This saved both practice staff and patients time and reduced complaints. Overall the time saved by EPS was considered to be large. One practice reported that:

“EPS must have halved the time”
And this was the general opinion of most practices interviewed.

Problems experienced by practice staff with patient online ordering

A number of patient groups were mentioned as less likely to be able to order online. These included older people; people with cognitive impairment; people with mental health problems and those with chaotic life styles. This was because they did not own a computer, could not use a computer, or were simply not inclined to order their medicines in this way.

“Older people don’t understand [how to use a computer]."
“Some just won’t entertain online ordering.”

Many interview respondents were helping patients use online ordering by showing them how to get online at the practice reception and by guiding them over the telephone. Despite the availability of apps for ordering medicines and booking appointments, this technology did not appear to be being used very widely. Practices seemed to be concentrating on promoting online ordering on personal computers and were less aware of apps as a means of accessing ordering medicines and making appointments.
For patients

Patients can order repeat prescriptions in a number of ways including: using online ordering via the practice website; handing in the right-hand side of the prescription in at the surgery; telephoning the surgery or asking their community pharmacists to order on their behalf. General practices have discouraged or banned ordering by telephone for most patients to reduce the risk of errors and to free up practice staff to perform other duties. CCGs are increasingly asking community pharmacists not to order medicines on patients’ behalf because of concerns over excessive and wasteful ordering. Patients are being encouraged to use online ordering, but this does not suit all patients and some do not have the capability or access to use this type of technology. The ordering and obtaining of repeat prescriptions is anecdotally considered to be a cumbersome and time-consuming process for most people.

To find out more about how ordering repeat medicines affects patients, a survey was conducted for this report over the summer of 2017. The survey questioned members of the public in the towns and cities of Manchester, Leeds, York, Dewsbury and Bradford through recruiting people in shopping areas. People aged 18 years and over on repeat medicines were asked to answer questions about how they ordered, managed and collected repeat prescriptions, and after they were dispensed, how they obtained the supplies of medicines, and the time taken for each stage.

169 patients agreed to take part. 64% were female and 45% were aged over 60 years of age. 54% said they were working, 38% were not working and 39% said they were retired.

Seventy five percent had to re-order their repeats monthly; 20% weekly, and 5% more than every 2 months. The number of repeat items is shown in figure 5.

Figure 5: The proportion of repeat prescription items patients were prescribed

<table>
<thead>
<tr>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-4</td>
<td>5-10</td>
<td>+10</td>
<td></td>
</tr>
</tbody>
</table>
Most people either reordered medicines themselves or asked their pharmacy to do the ordering. Only 1% ordered online and nobody used an app. Other surveys suggest that between 61% and 81% of patients order their medicines directly from general practices and 13% to 21% have their medicines ordered by their community pharmacist, which is in line with this survey.\textsuperscript{16,17} How patients reordered their repeat prescription medicines is shown in figure 6.

Figure 6: How patients reorder their repeat prescription medicines

The majority of the respondents (86%) said that pharmacists never checked the items that were needed when they were ordered on behalf of the patient.

When asked about placing an order for repeat prescription medicines, most patients found this to be a quick process although for 7% of patients the process took an hour or more (figure 7).

Figure 7: Amount of time taken by patients in ordering repeat prescription medicines

- Pharmacy order
- Drop off slip
- Ring Surgery
- View practice website
- Via Smartphone app
- Relative/carer

- None, done by pharmacy
- Up to 5 minutes
- Up to 10 minutes
- Up to 1 hour
- More than an hour
When asked how the prescription got from the general practice to the pharmacy, the majority said it went electronically from GP to pharmacist (via EPS). A paper prescription script was still dropped off by 13% of respondents (figure 8).

**Figure 8: The method for prescriptions to get from the general practice to the pharmacy**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>Pharmacy collect</td>
</tr>
<tr>
<td>38%</td>
<td>Sent electronically</td>
</tr>
<tr>
<td>25%</td>
<td>Dropped off by patient</td>
</tr>
<tr>
<td>13%</td>
<td>Don't Know</td>
</tr>
</tbody>
</table>

The collection and delivery of scripts from surgery to pharmacy was not a time-consuming process for patients as this was mostly done by pharmacists or electronically (figure 9).

**Figure 9: Time taken for patients to collect repeat prescriptions from the general practice and take to the pharmacy**

<table>
<thead>
<tr>
<th>Time</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Done by pharmacy</td>
<td>80%</td>
</tr>
<tr>
<td>Up to 10 minutes</td>
<td>50%</td>
</tr>
<tr>
<td>Up to 1 hour</td>
<td>40%</td>
</tr>
<tr>
<td>Longer than 1 hour</td>
<td>20%</td>
</tr>
</tbody>
</table>

Dispensed medicines were collected by patients or relatives of patients in 40% of responses with the remainder (60%) being delivered by the pharmacy (figure 10). This figure is much higher than reported in other surveys and may be a reflection of the people in the sample group. In 2014, the National Pharmacy Association (NPA) surveyed 3,000 pharmacies and 150,000 patients and found only 12.9% of patients had their medicines delivered to their home.18
Where patients did collect medicines from the pharmacy, this was reported as a time-consuming process with 20% saying it took up to an hour and a small minority spending a day or more obtaining their medicine supplies (figure 11).

Where patients did collect medicines from the pharmacy, this was reported as a time-consuming process with 20% saying it took up to an hour and a small minority spending a day or more obtaining their medicine supplies (figure 11).

Overall, the majority of people thought the process of reordering repeat medicines and obtaining supplies not easy. On a scale of 1 (no problem) to 10 (very complex) most patients scored 7 (figure 12).
Interviewees also provided comments about their experience of ordering and obtaining repeat prescriptions:

“The process is too complex and several steps could easily be removed or automated to make the process more streamlined.”

“I am a 45yr old male who works full time so having to take time out of my day to order and pick up a repeat is an annoyance. For anyone not good with technology there isn’t a way to get a fast prescription.”

“When I ring the pharmacy and they don’t have the prescription, but the surgery have sent it, it’s annoying and messes me about.”

A survey of 1,000 people conducted on behalf of internet pharmacy company Pharmacy2U, found that, on average, people who used electronic prescription with online delivery saved 3 hours and 39 minutes a month taking into account time spent in GP waiting rooms (41 minutes a month), traveling to pick up medicines (51 minutes a month), queuing (45 minutes a month), and arranging GP appointments (42 minutes a month).19

In the same survey, patients were also found to save an average of £147 a year on transport and other costs associated with managing their repeat prescriptions by having their medicines delivered directly to their door. Over a fifth (22%) of respondents said they had missed a GP appointment or failed to pick up a prescription due to difficulties in making the opening hours, 11% had difficulty getting time off work, and 10% had difficulty in physically making it out of the house.

The convenience of having medicines delivered directly to the door was voted the greatest benefit of using an online repeat prescription service (38% of respondents), followed by its speed (22%), reliability (17%), flexibility (17%) and its reminder service (7%). Perhaps not surprisingly, Pharmacy2U has recently reported a 350% increase in patients registering to have their NHS repeat prescriptions delivered directly to their door in the last year.20

The sample in the Pharmacy2U survey may have been biased towards those who had a bad experience or in ordering repeat prescription so had opted to use an online delivery service instead. However, the findings do resonate with those of the earlier survey where patients find the current process of ordering and obtaining repeat prescription medicines difficult, and want the process made more simple and convenient.
5. The problems with repeat prescriptions

Medicines can improve the quality of life and extend life for many older people. However, medicines can cause harm \(^{21,22}\) and preventable harm costs the NHS £500 million a year.\(^{23}\) The more medicines patients take, the greater the risk of harm from adverse drugs effects. Reports of drug-related hospital admissions suggests that over 6% of acute admissions result from prescription medicines.\(^{21,22}\) The continuation of multiple medicines into old age raises the question of whether repeat prescription medicines are still appropriate, particularly when evidence of efficacy or safety is seldom derived from clinical trials in the old and the potential to extend life expectancy may no longer be the priority.\(^8\)

Studies have also shown problems in the control of systems for authorising and reviewing repeat prescriptions.\(^{15,24}\) A report for the General Medical Council on the prevalence and causes of prescribing errors in general practice found a high frequency of errors (4.9% of all items prescribed) such as incorrect or incomplete information and incorrect dosage or strength of medicine.\(^{25}\) The move to EPS may reduce the incidence of some types of error. However, EPS may well introduce new types of error particularly if GPs are no longer in a position to provide clinical oversight of repeat prescribing.

CCGs and general practices have also raised concerns about medicines waste as a result of community pharmacists ordering repeat medicines on behalf of patients.\(^{17}\) CCG audits have identified issues such as requests being made too soon, ordering items the patient did not need, and ordering medicines that had been stopped.\(^{26,27}\) For example, Luton CCG showed that community pharmacists over-ordered prescription items by 45% at a cost equivalent of £2.19 million.\(^{27}\) As a result of studies like Luton CCG’s, an increasing number of CCGs have been asking GP practices to stop allowing pharmacies to order medicines for patients.

Initiatives to reduce inappropriate prescribing

Reducing waste medicines
In 2010, a national report estimated the level of waste of medicines in England to be £300 million per year.\(^{28}\) The NHS is keen to reduce this waste of medicines, which typically occurs at three levels: unnecessary prescribing; unnecessary ordering; and non-adherence.

Unnecessary prescribing
Medication reviews of older people on polypharmacy (the simultaneous use of multiple drugs to treat a single ailment or condition), consistently show that savings of between £120-£180 per patient per year can be made primarily by rationalising prescribing and stopping prescriptions patients no longer need.

Unnecessary ordering
Ordering of medicines that are not needed such as “when required” medicines is thought to occur at relatively large scale. If the project conducted by Luton CCG stopping community pharmacy ordering is accurate then wasteful ordering could run into the hundreds of millions of pounds each year across the UK.
Non-adherence

The area of waste medicines that is least understood is non-adherence. Non-adherence with medicine taking is a major problem with health consequences for individual patients and financial consequences for the NHS. Improvements in medicine taking may well have greater impacts on health improvement than improvements in treatments.\(^29\) The costs of non-adherence is not just from wasted medicines, but also from poorly controlled disease resulting in significant costs from hospitalisation and greater use of NHS resources.

Despite an agreement that non-adherence is a major problem, little work has been conducted to establish the true rate of non-adherence. Estimates range between a third and half of medicines are not taken in the way intended by the prescriber.\(^30\) Home visits conducted by Prescribing Support Services Ltd have identified waste prescribing on average of £105 per patient per review, of which £58 is due to unnecessary prescribing and £47 due to wasteful ordering and non-adherence, but these are visits to a selected group of people who are known to have adherence issues.\(^31\)

Patients may be non-adherent out of choice (intentional non-adherence) or as a result of not being able to take the medicine through lack of access to supplies, confusion about what to take, inability to access the packaging or use a device, or due to forgetfulness or cognitive impairment. In addition, patients may sometimes be adherent and at other times non-adherent. The problem is complex and little research has been undertaken to successfully find ways to improve adherence. Interventions that have shown to be of benefit include more convenient care, better patient information, reminders, self-monitoring, telephone follow-ups and supportive care.\(^29\)

Deprescribing

People with multimorbidity (more than one medical condition) are often prescribed many repeat medicines because doctors are encouraged to follow evidence based medicine guidelines. Most of these guidelines are produced by the National Institute for Health and Care Excellence (NICE)\(^32\) and many underpin the GP contract, which further encourages prescribing.\(^33\) Whilst this prescribing is often a good thing there is an increasing move to identify problematic polypharmacy, which is the prescribing of multiple medications inappropriately, or where the intended benefit of the medication is not realised.\(^34\)

NICE has recognised that healthcare professionals should take greater recognition of multimorbidity and treat individuals holistically so that the number of prescriptions and appointments are reduced.\(^36\) Importantly, underpinning this approach is a greater involvement with the patient so a joint decision can be made on what is most important to the individual’s health priorities, lifestyle and goals. There is now a general move to start addressing this problem by working with patients to deprescribe the medicines they do not need. However, this practice is not widespread yet in the NHS and many patients continue to receive medicines they do not need.

Reducing patient requests for low value prescriptions

NHS England is currently undertaking a review of medicines that it considers to be of “low value” and can be bought over-the-counter. Most of these medicines are likely to be for acute problems, which are considered to be ineffective, unnecessary or inappropriate to prescribe on the NHS. This initiative is projected to save the NHS up to £400 million a year.\(^36\)
6. Future developments in the role of pharmacy and repeat prescriptions

The pharmacy profession needs to balance providing a more convenient service to patients with a professional need to maintain contact with patients to provide support with answering their questions and concerns about medicines and supporting medicine adherence. There is a general move in the NHS for CCGs to stop pharmacists ordering medicines on behalf of patients in preference for online ordering. And as digital solutions move forward at a pace because the NHS and patients are demanding easier and more convenient services, the pharmacy profession needs to embrace digital technology to help support patients in this new environment.

Clinical pharmacy

Dr. Arnold Zermansky has described the GP as the “conductor of the orchestra”, where the orchestra members are the ensemble players such as practice nurses, practice pharmacists, prescribers from hospitals and other provider units and community pharmacists. With an increasing population of older people prescribed polypharmacy, there is a greater need for continuity of care. The current prescription system risks a collusion of anonymity between GPs and pharmacists where nobody is taking charge of prescribing and care opportunities are missed.

Increasing numbers of general practices now have practice-based clinical pharmacists performing roles GPs would have traditionally undertaken. These include managing requests for prescriptions, performing medication reviews, managing changes to medicines when patients are discharged from hospital and seeing patients in clinics to review the response to medicines. These pharmacists are increasingly qualifying as independent prescribers, allowing them to legally initiate, amend, authorise and sign prescriptions. This change in the role of pharmacists has been driven by workforce changes in general practice from doctors not wanting a career as a full-time GP, not wanting to continue as a GP, or retiring early. 20 per cent of a GPs workload is involved in managing prescribing and many of these activities can be done by a practice pharmacist. In addition, the increasing complexity of prescribing in general practices has driven the need for the practice pharmacist role. The numbers of practice pharmacists are still relatively small, but are likely to grow significantly in the coming years. It is probable that in the future the GP will remain the overseer of the patient’s total care, but the majority of the repeat prescriptions will be managed by practice pharmacists who are independent prescribers.

Community pharmacy

Community pharmacists have been seeking increasing clinical roles for many years, but are being held back by national contracts which result in the majority of income coming from dispensing services. The Pharmaceutical Services Negotiating Committee (PSNC) see a greater role for community pharmacists in optimising the use of medicines and supporting people to self-care. A number of factors could accelerate this model.
Firstly, there is a recognition that community pharmacist skills are underused especially in their public health role and in supporting self-care, monitoring of medicines, and in their ability to support patients with medicine taking. Secondly, changes in technology will allow community pharmacists to have greater access to the patient’s clinical record and potentially enable greater interaction with the wider health care team. Currently most community pharmacists do not have access to the patient record, but many other health care professionals in the NHS do, such as district nurses, other community care providers and acute trusts (with patient consent for record sharing). In some pilot areas community pharmacists do have access to the summary care record (with patient permission). The future could see the patient, and not NHS officials, deciding who should have access and can add to their record. The record may well be held by the patient, not the GP, and be analogous to an online bank account being held by the individual.

In Scotland, community pharmacists are already funded to provide Chronic Medication Services (CMS). In the CMS the GP produces a 24, 48 or 56-week serial prescription to be dispensed at an interval indicated by the GP. Details are sent back to the GP practice after each dispensing by the community pharmacist. Going forward this model of care could be developed to support people on polypharmacy and other vulnerable people as part of the GP clinical management plan. The practice and community pharmacist would work closely together to manage medicine-related problems. For example, the practice pharmacist reviewing ongoing clinical need for medicines and working with the community pharmacists to provide regular support and advice to the patient. This would be on areas such as adherence issues, undertaking clinical assessments for responses to medicines, and checking for suspected adverse effects.

Online pharmacy

The way in which people shop, do their banking and access advice and services has seen dramatic changes with the development of the internet. The public expects health services to also be taking advantage of changes in technology. NHS Digital plans to push forward the use of digital technology for booking appointments, the ordering of prescriptions and the transfer of prescriptions to pharmacies. Electronic prescriptions currently account for half of all prescriptions issued in England and the aim is to increase this to 90% with EPS Phase 4.

Patients can currently log onto their general practice website to place an order and nominate their chosen pharmacy for their repeat medicine and the renaming of NHS Choices to NHS.UK is set to make this process even easier.

Pharmacy in general has been slow to make use of digital solutions to support medicines optimisation, but numerous new opportunities exist in telehealth (the remote exchange of data between a patient and a health care professional) to remotely monitor an individual’s condition and disease, monitor effects of medicines, provide adherence support, gain feedback on patients’ symptom control and suspected adverse effects, and optimise prescribing.

Being able to train and support patients to order their repeat medicines online is a skill pharmacists and their support staff must develop to enable patients to take advantage of online health care. The NHS Forward View is committed to improving digital inclusion through initiatives such as training more than 220,000 people to use online resources, making Wi-Fi available in all GP surgeries, and training NHS staff to have better digital skills.
7__Conclusion

Repeat prescriptions account for 77% of all prescribed medicine with an estimated 29 million people receiving repeat prescriptions at a cost of nearly £8 billion of NHS expenditure each year. Repeat prescribing increases with age with the majority of people aged 65 years old and over prescribed at least one repeat medicine and people over 70 years old averaging 7 repeat prescription items. As the population gets older, the more repeat prescriptions will rise with the increase in the order of hundreds of millions of items a year.

Patients do not currently find the process of ordering and obtaining repeat medicines easy. Neither do practices, which spend a great deal of time processing and managing repeat prescription requests and issues. The move to digitise all repeat prescription ordering and prescribing of medicines will make a big difference to general practice workload and will help improve efficiency and security of prescribing.

The ubiquity of internet ordering and home deliveries has changed the expectation of the public to have more timely and convenient ways of accessing goods and services. These changes have been slow to be introduced into the NHS, but EPS will help improve convenience and efficiency for patients. Remote dispensing and home deliveries are increasingly being asked for by patients although the actual take up of patients using online ordering is still relatively small. Some members of society will struggle to become digitally included and these groups will need support in using digital technology.

The changing role of pharmacists is likely to result in more general practice-based pharmacists dealing with medicine optimisations, patient support and prescription safety. Whilst these services will reduce some of the risks associated with medicines, pharmacists will also need to develop new services that support patients on repeat medications.
Changes in digital technology will have transformed the way patients order and obtain their repeat prescriptions with the majority using online services. Most older people will have adopted the use of computers, smartphones and tablets and will be very comfortable with using this technology to access their personally held clinical record to add data to their clinical record, to book appointments, to communicate with their health care providers and to order their repeat medicines.

Those patients who cannot, or do not wish to use digital technology including people with learning disabilities, cognitive impairment and the frail elderly, will have their repeat medicines proactively managed by pharmacists who have access to their clinical record and will communicate with these patients before their repeat medicines are next due.

As a result of the large numbers of people prescribed polypharmacy aspects of medicines, monitoring will be done by computers. “Machine learning” computers identify patients at high risk of harm from medicines by continuously analysing data in the clinical record that relates prescribed medicines to data that predicts harm (eg a change in kidney function), or not achieving the desired outcome e.g. a blood pressure target. It may identify problems with adherence. The computer will inform the patient with advice.

The repeat prescribing process will be managed by clinical pharmacists who have access to the clinical record, the wider medical and social care team, and are independent prescribers. Many of these functions will be undertaken from a central hub where the pharmacists have access to the clinical records of patients from a large number of GP surgeries.

Treatment regimens will continue to become more complex, and burdensome, so systems will be developed to ensure medicine optimisation and adherence concerns are addressed. This includes ensuring continuity of care with a named pharmacist, who will work directly with the patient needing complex polypharmacy (or their carers), to monitor and facilitate medicines use, and oversee repeat prescriptions.
Clinical pharmacists will work closely with pharmacists who dispense medicines to share information about the patients’ medicines care plan and to help get the best outcomes from medicines for individual patients. There will be many more clinical pharmacists proactively managing the decisions about prescribing. The number of high street pharmacies will diminish and pharmacists will group together to provide public health and clinical services in locations easily accessible to the public.

For economies of scale the majority of repeat dispensing will be removed from these pharmacies and preparations of prescriptions will be centralised using robot technology. Acute scripts and some repeat medicines will still be dispensed at the community pharmacy.

Pharmacists will have an enhanced role. They will see patients face-to-face at GP surgeries and high street pharmacies and also use telemedicine technology to maintain regular contact with housebound patients. These pharmacists have a much greater role in managing patients and many will be working as advanced clinical practitioners with enhanced clinical assessment skills.

Some medicines will be tailored to suit the genetic make-up of individual patients (pharmacogenomics) and pharmacists will have a role in choosing the correct medicine for individuals. Gene technology will also be used to cure certain inherited disease such as cystic fibrosis.

There will be fewer General Practitioners who will mainly concentrate on diagnosis. They will remain in overall control of patient care by being the coordinator of care, working more like consultants, to direct the activity of other members of the multidisciplinary health care team.
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