

## *e-prescription – making it happen*

*December 2018*

### **Introduction**

As the owner and manager of pharmacies in six European countries, McKesson Europe supports any innovation that can produce better results for patients and help to drive system efficiencies, thereby reducing overall healthcare costs. Electronic prescribing of medicines (e-prescription) has the potential to deliver distinct advantages for prescribers, pharmacists and patients alike, but many healthcare services in Europe have yet to make the most of this opportunity. This paper explores the advantages of e-prescription and the barriers that delay its full implementation. It then makes recommendations regarding policies that would facilitate its development in Europe.

### **What is e-prescription?**

PGEU, the representative body which represents the European pharmacy sector, defines e-prescription as ‘the computer-based electronic generation, transmission and filing of a medical prescription. It allows prescribers to write prescriptions which can be retrieved by a pharmacy electronically without the need for a paper prescription.’<sup>1</sup> This is distinct from a scanned bar code on a paper prescription. It is also a separate issue from online medical consultation or Electronic Health Records (although McKesson Europe supports linking these to e-prescription).

Similarly, the EU’s eHealth Network describes e-dispensing as ‘the act of electronically retrieving a prescription and reporting on giving the medicine to the patient as indicated in the corresponding ePrescription’.<sup>2</sup>

The eHealth Network also recommends as mandatory dataset elements for an e-prescription which are taken from International Standard DIS 175233.<sup>3</sup>



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<sup>1</sup> <https://www.pgeu.eu/en/component/policy/policy/110-policy/9-e-health.html?Itemid=101>

<sup>2</sup> [https://ec.europa.eu/health/sites/health/files/ehealth/docs/ev\\_20161121\\_co091\\_en.pdf](https://ec.europa.eu/health/sites/health/files/ehealth/docs/ev_20161121_co091_en.pdf)

<sup>3</sup> <https://www.iso.org/standard/59952.html> - please see our Supporting Material for a list of these elements.

## What are the benefits of e-prescription?

E-prescription systems bring many benefits to patients, prescribers, pharmacists and healthcare systems compared with the traditional paper-based version:

- **Accessibility:** Patients have better accessibility to time-critical medicines, as the e-prescription can go immediately to the patient's nominated pharmacy or the nearest responsible pharmacy dealing with urgencies.
- **Accuracy:** Greater accuracy is possible in dispensing and dosage as the prescription is far less likely to be misread, nor can it be physically lost. The dosage can also be digitally transferred to a monitor to remind the patient to take their medication on time. With the increase of polypharmacy (the concurrent use of multiple medications), particularly among older patients, accuracy is becoming ever more important.
- **Effectiveness:** Prescribers and pharmacists gain time through greater effectiveness, especially from repeat prescriptions. In Sweden, both groups have estimated that they save 30 minutes per day.<sup>4</sup>
- **Dispensing transparency:** In some countries (e.g. Norway), prescribers can monitor if a patient collects their prescribed medicine.
- **Clinical transparency:** There is increased transparency of what doctors prescribe, allowing assessment of their adherence to clinical guidelines and reducing the risk of fraudulent actions by prescribers, dispensers or patients.
- **Financial transparency:** There is a clear audit trail, allowing increased transparency of costs. This ensures greater accuracy when it comes to reimbursement and helps to prevent fraud.

## How advanced is e-prescription in Europe?

Some countries have already switched almost entirely to e-prescription. In Sweden, which introduced its first pilot project in 1983 and a national system in 2000, the e-health authority estimates that 99% of prescriptions are now electronic.<sup>5</sup> Estonia and Denmark have also progressed to over 99%,<sup>6</sup> Slovenia to 92%<sup>7</sup> and Norway to over 90%.<sup>8</sup>

Other countries have started the transition and made considerable progress. In England, the NHS has reached around 63% with its Electronic Prescription System (EPS) since its introduction in 2003.<sup>9</sup> It hopes to push this figure higher in EPS Phase 4 by making it the default option for prescribing.

On the other hand some countries have been slower to adopt the new technology.

## Our key messages

- ❖ *e-prescription can offer enormous benefits to patients and healthcare professional, saving time and resources.*
- ❖ *While some countries have made great progress, others have been slower to adopt this new technology.*
- ❖ *Real commitment by both governments and other stakeholders is required to ensure uptake in slower countries.*
- ❖ *A successful system should include elements such as: repeat dispensing, default e-prescription, pull-based prescription direction, a link to Electronic Health Records and agreed standards for flagging urgency.*

<sup>4</sup> <https://www.hiqa.ie/sites/default/files/2018-05/ePrescribing-An-Intl-Review.pdf>

<sup>5</sup> <https://www.ehalsomyndigheten.se/>

<sup>6</sup> <https://www.politics.ox.ac.uk/materials/publications/15224/workingpaperno5ulrikedeetjen.pdf>

<sup>7</sup> <https://www.sta.si/2565878/nijz-cilj-uporabe-erecepta-celo-presezen>

<sup>8</sup> <https://ehelse.no/e-helsekunnskap/statistikk/nasjonal-e-helsemonitor>

<sup>9</sup> <https://www.gov.uk/government/news/expansion-of-electronic-prescribing-at-gps-and-pharmacies>

In Ireland, although the Health Service Executive has great ambitions, there has so far only been one small-scale pilot project involving nine pharmacies.<sup>10</sup>

## What are the fundamental requirements for transition?

For the successful national adoption of e-prescription, a number of factors are essential:

- **Full commitment by all healthcare stakeholders:** The representative bodies of payers, physicians, hospitals and pharmacists must all be committed to transition to the new system, even if there are some individuals who are reluctant to change. Reluctant professionals may mean ineffective or slow uptake.
- **Long-term political commitment:** Professional commitment is unlikely to happen without long-term political commitment. This change must therefore be driven from the top, i.e. by government. With this, it must ensure that sufficient resources are made available, including a financial commitment.
- **A suitable legal framework:** The law must be adapted to the digital age so that it gives legal certainty to all parties involved. In Ireland, for example, the legislation has not been updated, and this is one reason why certain stakeholders are reluctant to go beyond the pilot study phase.
- **A robust, secure IT infrastructure:** Without confidence that e-prescription data can be sent and stored efficiently and securely, prescribers, pharmacists and patients may be reluctant to switch from paper-based systems.

## Our recommendations

In order to support the development of e-prescription in those European countries where uptake has been slow, McKesson Europe recommends the following approach to expedite its development:

- This requires **political commitment and leadership** from Health Ministries and national health services with a clear **national plan** of phased introduction. This can take some years and needs considerable effort, but only in this way can the transition be made.
- The health service in each country should appoint a **dedicated agency/department** to take the lead in supporting the transition from a paper-based system.
- There should be **communication about the benefits of the new system**, in particular time saving and the increase in quality and safety.
- There must be **commitment by all key actors** – doctors, hospitals, pharmacists and payers – to ensure that the system works and that their members/staff are properly trained. This will require the responsible health service agency to lead discussions with representatives of these stakeholders. Stakeholder involvement is also essential to ensure that the necessary legal changes have been made and, during the pilot phase, to develop a standards-based approach.
- **Investment in IT infrastructure** is essential. This requires agreement on technical standards for hardware and software, including data security encryption, interoperability and above all financing. McKesson Europe also recommends that this is built on existing IT systems rather than from scratch, and in such a way that they can talk with each other.

<sup>10</sup> <http://www.mclernons.ie/pharmacysoftware/news/a-shining-example-mclernons-e-prescribing-pilot-in-mallow-gets-a-visit-from-the-chief-information-officer/1021>

McKesson Europe recommends that the following operational aspects are included in the establishment phase:

- Prescribers should be able to issue **repeat prescriptions** for the same maximum permitted period as paper prescriptions so that patients with chronic conditions can better manage their conditions.
- Once the system is sufficiently developed, there should be a switch to **e-prescription by default** in order to encourage swifter transition from paper prescribing.
- **Prescription direction should be based on a pull system** rather than a push system, meaning either that:
  - The patient or their nominated representative, e.g. their pharmacist, can download the e-prescription from a secure cloud storage system;
  - OR if there is already a pharmacy nominated by the patient (this happens for example in England and Norway): the pharmacy downloads the e-prescription when it is ready to process it, and assumes responsibility at that point.
- To enable patients to collect prescriptions from a community pharmacy in another EEA Member State, **cross-border interoperability** should be based on the eHealth Network guidelines.<sup>11</sup>
- e-prescriptions should be **fully linked to Electronic Health Records** so that both prescribers and pharmacists can access and update all relevant patient information as required. This must be based on full consent of the patient and fully respect the EU's General Data Protection Regulation.
- e-prescription systems should allow **pharmacists to communicate directly with prescribers**: this is not currently possible in Sweden, for example.
- If there is a mechanism to flag **urgent prescriptions**, this must be based on criteria commonly agreed between the health stakeholders.
- **The role of the pharmacist must not be negated or diminished.** Community or online pharmacy must remain the dispensing route so that they can provide quality assurance, including services to monitor a patient's progress, and also act as a point of contact if the patient needs advice on their prescription.
- Lastly, it is critical that there is a solution in place for emergency dispensing in case of any **system failure or disturbances**, e.g. having access to existing prescriptions to allow manual handling.

If these recommendations are taken up, the considerable benefits of e-prescription can be made more widely available throughout Europe.

## About McKesson Europe

McKesson Europe is a leading international wholesale and retail company and provider of logistics and services to the pharmaceutical and healthcare sector. With about 38,000 employees, the group is active in 13 European countries. Every day, the company serves over 2 million customers – at more than 2,300 pharmacies of its own, at about 300 managed pharmacies and at over 7,000 participants in the brand partnership schemes. With 118 own and seven managed wholesale branches in Europe, McKesson Europe supplies more than 50,000 pharmacies and hospitals every day with more than 100,000 pharmaceutical products.

## Facts and Figures

Please see our online Annex at: <https://www.mckesson.eu/mck-en/company/public-affairs/position-papers/eprescription/26778>

<sup>11</sup> [https://ec.europa.eu/health/sites/health/files/ehealth/docs/ev\\_20161121\\_co091\\_en.pdf](https://ec.europa.eu/health/sites/health/files/ehealth/docs/ev_20161121_co091_en.pdf)

## *e-prescription– Supporting Material*

December 2018

### Uptake of e-prescriptions in European countries

Country	e-prescriptions as % of total prescriptions	Latest update	Additional notes	Source
Belgium	43.5	July 2018	This figure covers only reimbursed medicines.	Lloyds Pharmacy Belgium
Denmark	99	2017		Healthcare Denmark / Ministry of Health
England	63	June 2018		Department of Health and Social Care
Estonia	99	Oct 2018		e-estonia
France	0	Nov 2018	The National Social Security Objectives and Management Agreement 2018-2022 commits to development of electronic prescriptions (see below).	Sécurité Sociale
Germany	0	Oct 2018	There are regional pilot projects: <ul style="list-style-type: none"> <li>• Baden-Württemberg</li> <li>• Hamburg</li> </ul>	Deutsche Apotheker Zeitung
Ireland	0	Sept 2018	A pilot project has taken place, but e-prescription has not officially launched.	Health Information and Quality Authority
Italy	83	Dec 2017		Federfarma - The Italian Pharmacy 2017
Netherlands	100		Since 2014, prescribers must use the electronic system (EVS).	KNMG (doctors' federation)
Norway	90+	End 2017		Directorate for e-health
Scotland	0	August 2017	The current system relies on scanned barcodes. The Chief Pharmaceutical Officer supports 'an incremental move to paperless prescribing'.	Achieving Excellence in Pharmaceutical Care - A Strategy for Scotland
Slovenia	92	August 2018	Started in 2015.	National Institute for Public Health
Sweden	99	August 2018		eHälsomyndigheten (e-health authority)

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## Time savings for health systems

### Sweden <sup>1</sup>

- 'In Sweden, physicians estimate that e-prescriptions save about 30 minutes daily, and 91 percent of physicians agreed that e-prescriptions helped them to save time compared to hand-written prescriptions.'
- 'In Sweden, where pharmacists' satisfaction rates with e-prescriptions are at 98 percent, free-text answers about benefits of e-prescriptions included time savings for 55 percent of pharmacists.'

### England

'GP practices on average also saved an hour and 20 minutes each day by signing electronic repeat prescriptions compared to paper versions and an average of an hour and 13 minute a day by producing electronic repeat prescriptions compared to paper ones.'<sup>2</sup>

## Cost-effectiveness

### England

'The transformative electronic prescription service (EPS) has managed to save the NHS £130 million over three years... Over the past three years the system has saved patients almost £75 million and has meant patients need to make fewer return trips to pharmacies as a result of their medications being out of stock... The biggest savings were recorded by prescribers who saved around £327 million between 2013 and 2016, while dispensers saved nearly £60 million.'<sup>3</sup>

## Fewer medication errors

### Netherlands

From a study conducted in three hospitals from 2005 to 2008:

'Pre-implementation, the mean percentage of medication orders containing at least one ME [medication error] was 55%, whereas this became 17% post-implementation. The introduction of CPOE/CDSS [electronic prescribing] has led to a significant immediate absolute reduction of 40.3% (95% CI: -45.13%; -35.48%) in medication orders with one or more errors.'<sup>4</sup>

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<sup>1</sup> <https://www.politics.ox.ac.uk/materials/publications/15224/workingpaperno5ulrikedeetjen.pdf>

<sup>2</sup> <https://digital.nhs.uk/news-and-events/news-archive/2017-news-archive/electronic-prescription-service-saves-nhs-130-million-over-three-years>

<sup>3</sup> <https://digital.nhs.uk/news-and-events/news-archive/2017-news-archive/electronic-prescription-service-saves-nhs-130-million-over-three-years>

<sup>4</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3002127/>

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## Sweden

- 'The prescription the doctor writes into the medical record of patients has exactly the same information that the pharmacist uses to dispense the drugs, which has led to a reduction in prescription error both of drugs delivered and suggested dosage by 15%.'<sup>5</sup>
- In a survey of 180 physicians from seven of Sweden's 21 healthcare regions, 83% responded that they considered e-prescription to be safer.<sup>6</sup>

## United Kingdom

A study conducted in a hospital over a four-week period in 2003 found that the introduction of electronic prescriptions reduced prescribing errors from 94 (3.8% of the total) to 48 (2.0%).<sup>7</sup>

## Convenience for patients

### Norway

Patients in Norway can access the prescription database to see how many more times they can collect a medicine under their current prescription and who has accessed their prescription information.<sup>8</sup>

## Cross-border interoperability

### EU project - eHealth Digital Service Infrastructure (eHDSI)

The European Commission's Communication on the Transformation of Digital Health and Care of April 2018 includes as its first pillar **Secure data access and sharing**:

'To facilitate greater cross-border healthcare access, the Commission is building eHealth Digital Service Infrastructure which will allow e-prescriptions and patient summaries to be exchanged between healthcare providers. The first cross-border exchanges are due to take place during 2018, with the aim to have all other EU countries on board by 2020. In the longer term, the Commission is working towards a European electronic health record exchange format accessible to all EU citizens.'<sup>9</sup>

### First cross-border exchange of e-prescriptions

- In October 2018, the Estonian and Finnish Health Ministries announced that they would start sharing e-prescription information by the end of the year. This will take place through eHDSI.
- In 2019, Sweden, Greece and Cyprus will join the exchange.

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<sup>5</sup> [http://ehealth-impact.eu/fileadmin/ehealth\\_impact/documents/ehealth-impact-7-2.pdf](http://ehealth-impact.eu/fileadmin/ehealth_impact/documents/ehealth-impact-7-2.pdf)

<sup>6</sup> Physicians' attitudes towards ePrescribing – evaluation of a Swedish full-scale implementation, BMC Medical Informatics and Decision Making 9(1):37-10, August 2009

<sup>7</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2253693/>

<sup>8</sup> Vitusapotek

<sup>9</sup> [https://ec.europa.eu/health/ehealth/overview\\_en](https://ec.europa.eu/health/ehealth/overview_en)

[https://ec.europa.eu/cefdigital/wiki/display/EHOPERATIONS/eHealth+DSI+Operations+Home?preview=/35208841/44899900/eHDSI\\_SP-Overall-Intro\\_v10\\_20170404.pdf](https://ec.europa.eu/cefdigital/wiki/display/EHOPERATIONS/eHealth+DSI+Operations+Home?preview=/35208841/44899900/eHDSI_SP-Overall-Intro_v10_20170404.pdf)

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- Estonian Health Minister Riina Sikkut said that the two major challenges for cross-border exchange of health data are the legal framework and interoperability.<sup>10</sup>

## Linking e-prescriptions and Electronic Health Records

### Estonia

'The Estonian e-prescription system enables data exchange between patients, providers, pharmacies, and the EHIF [Estonian Health Insurance Fund]. To issue a prescription, the provider creates an entry in a patient's shared medication record, based on which patients can obtain their medication in any pharmacy in the country based on their eID. Patients can also log in via an online portal and view the audit trail of data access and use. Patient consent is not required, although an opt-out mechanism allows patients to restrict data access either completely or partially.'<sup>11</sup>

### Planned roll-out in France

The French National Social Security Objectives and Management Agreement for 2018-2022,<sup>12</sup> signed in February 2018 by the Caisse nationale de l'Assurance Maladie (CNAM) and the Ministers in charge of social security, provides for the implementation of electronic prescriptions, among many other commitments. It aims to begin in 2019 with a target of 5,000 professional users in the first year and 50,000 professionals in 2022.

Despite previous declarations by healthcare professionals in favour of e-prescription, and a common roadmap for implementation in 2012, CNAM did not make progress as it had hoped in 2013 and 2014 because of a lack of agreement with the unions of doctors and pharmacists.

Eventually, CNAM launched pilot projects in three *départments* (Val-de-Marne, Saône-et-Loire and Maine-et-Loire) in November 2017. The teleservice, called PEM2D, is based on two LAP vendors and two pharmacy software vendors (including Pharmagest and Smart Rx). The device involves printing a QR code (two-dimensional barcode) on the patient's prescription, which is read by the pharmacist at the time of dispensing the medicines. However, the ultimate objective would be for prescriptions to be available on a common secure database in order to avoid paper printing.

### Planned roll-out in English hospitals

In February 2018, the UK government announced £78 million of funding in 2018-2021 to support transition to electronic prescribing among hospitals in England which have not made progress in this area. From this sum, £16 million will be divided between 13 NHS trusts for 2018 and 2019. The trusts have been chosen 'because they provide a mixture of acute, mental health and community services'.<sup>13</sup>

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<sup>10</sup> <https://www.euractiv.com/section/health-consumers/news/fri-estonia-and-finland-first-to-start-exchanging-healthcare-data-by-end-of-year/>

<sup>11</sup> <https://www.politics.ox.ac.uk/materials/publications/15224/workingpaperno5ulrikedeetjen.pdf>

<sup>12</sup> <http://www.securite-sociale.fr/CONVENTION-D-OBJECTIFS-ET-DE-GESTION-entre-l-Etat-et-la-Cnam-2018-2022>

<sup>13</sup> <https://www.gov.uk/government/news/regional-funding-announced-for-electronic-prescribing>

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## Recommended dataset

According to International Standard DIS 175233,<sup>14</sup> the mandatory elements of an e-prescription should cover the following categories:

- A.1.1 Identification of the patient
  - A.1.1.1 Surname [ISO TS 22220]
  - A.1.1.2 Given name [ISO TS 22220]
  - A.1.1.3 Date of birth [ISO TS 22220]
  - A.1.1.4 Personal identifier
  - A.1.1.5 Gender
- A.1.2 Authentication of the prescription
  - A.1.2.1 Prescription ID
  - A.1.2.2 Issue date
- A.1.3 Identification of the prescribing health professional
  - A.1.3.1 Surname
  - A.1.3.2 Given name
  - A.1.3.3 Professional qualifications
  - A.1.3.4 Details of direct contact
  - A.1.3.5 Work address
  - A.1.3.6 (Digital or electronic) signature
  - A.1.3.7 Health care provider identifier (HCPI)
- A.1.4 Identification of the prescribed product
  - A.1.4.1 Name of the item [+ identifier as described in ISO IS 11615]
  - A.1.4.2 Name of the item [+ identifier as described in ISO IS 11616]
  - A.1.4.3 Strength of the item [Article 1 of Directive 2001/83/EC]
- A.1.5 Prescription information
  - A.1.5.1 Pharmaceutical dose form
  - A.1.5.2 Quantity
  - A.1.5.3 Dose regimen

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<sup>14</sup> <https://www.iso.org/standard/59952.html>