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: • Baden-Württemberg • Hamburg	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
Nether-lands	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)

Time savings for health systems

Sweden [1]

- '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.' [2]

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.' [3]

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.' [4]

[1] https://www.politics.ox.ac.uk/materials/publications/15224/workingpaperno5ulrikedeetjen.pdf

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

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

[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3002127/

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%.' [5]
- In a survey of 180 physicians from seven of Sweden's 21 healthcare regions, 83% responded that they considered e-prescription to be safer. [6]

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%). [7]

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. [8]

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.' [9]

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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[5] http://ehealth-impact.eu/fileadmin/ehealth_impact/documents/ehealth-impact-7-2.pdf

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

[7] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2253693/

[8] Vitusapotek

[9] 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

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

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.' [11]

Planned roll-out in France

The French National Social Security Objectives and Management Agreement for 2018-2022, [12] 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'. [13]

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

[11] https://www.politics.ox.ac.uk/materials/publications/15224/workingpaperno5ulrikedeetjen.pdf

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

[13] https://www.gov.uk/government/news/regional-funding-announced-for-electronic-prescribing

Recommended dataset

According to International Standard DIS 175233, [14] 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

[14] https://www.iso.org/standard/59952.html