

# HOW PHYSICIANS RENEW ELECTRONIC PRESCRIPTIONS IN PRIMARY CARE: THERAPEUTIC DECISION OR TECHNICAL TASK?

Taina Oravainen  
Doctoral researcher, MSc (Pharm)  
[taina.oravainen@helsinki.fi](mailto:taina.oravainen@helsinki.fi)

NSQH 2024, Oslo Norway 29.8.2024



# CONFLICT OF INTEREST DISCLOSURE

- I have no conflict of interest to disclose



# BACKGROUND

- A systematic review found that a significant number of patient safety incidents in primary care were related to prescribing and medication management (1)
- Electronic prescribing (e-prescribing) has shown promise to enhance patient safety and medication management (2)
  - Improved workflow and efficiency (3,4,5), easier monitoring of medication use and adherence (3,4,5) and reduced the risk of medication errors (2,4,6)
- Little research has focused on challenges with electronic prescription renewal, especially from a physician's perspective (7)



Photo: Apteekkari.fi



# BACKGROUND

- In Finland, e-prescribing became mandatory at all levels of health care in 2017
- All ePrescriptions and associated dispensing notes are stored in the nationwide Prescription Centre
  - The Prescription Centre can be accessed through patient information or pharmacy systems
  - Patients can view their own prescription data in MyKanta pages

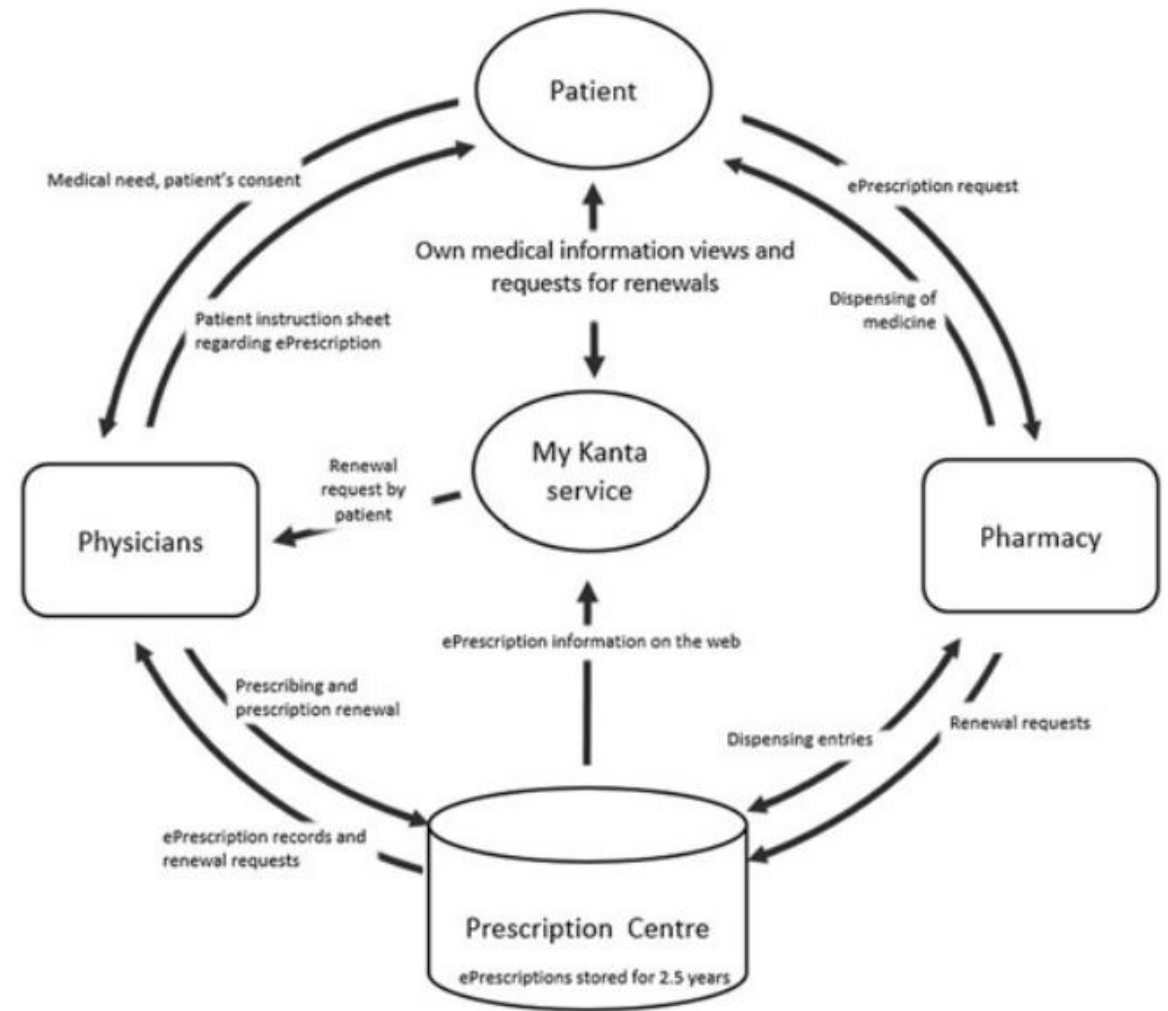
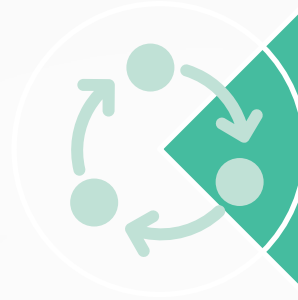


Figure: Kauppinen et al. 2017 (5)



# AIMS

The aim of this study was to explore:



the current renewal practices of electronic prescriptions from a primary care physician's perspective



identify the factors affecting medication management, medication safety, and physicians' workflows during renewals



In addition, this study investigated the physicians' proposed solutions to improve renewal practices



# METHODS

- The study was carried out in the Kirkkonummi Health Centre
  - April-July 2019
- We combined two qualitative study methods: on-site physician shadowing and focus groups

**Shadowing phase:** the physicians were shadowed on-site during renewal, and field notes were gathered

The shadowing data were analysed by inductive content analysis, and semi structured questions for the focus groups were finalized based on the findings of shadowing

**Focus group phase:** two focus groups were held using semi structured questions at the Kirkkonummi Health Centre

The focus group data were analysed by inductive content analysis, and the final findings and the physicians' proposed solutions to improve renewal practices were composed

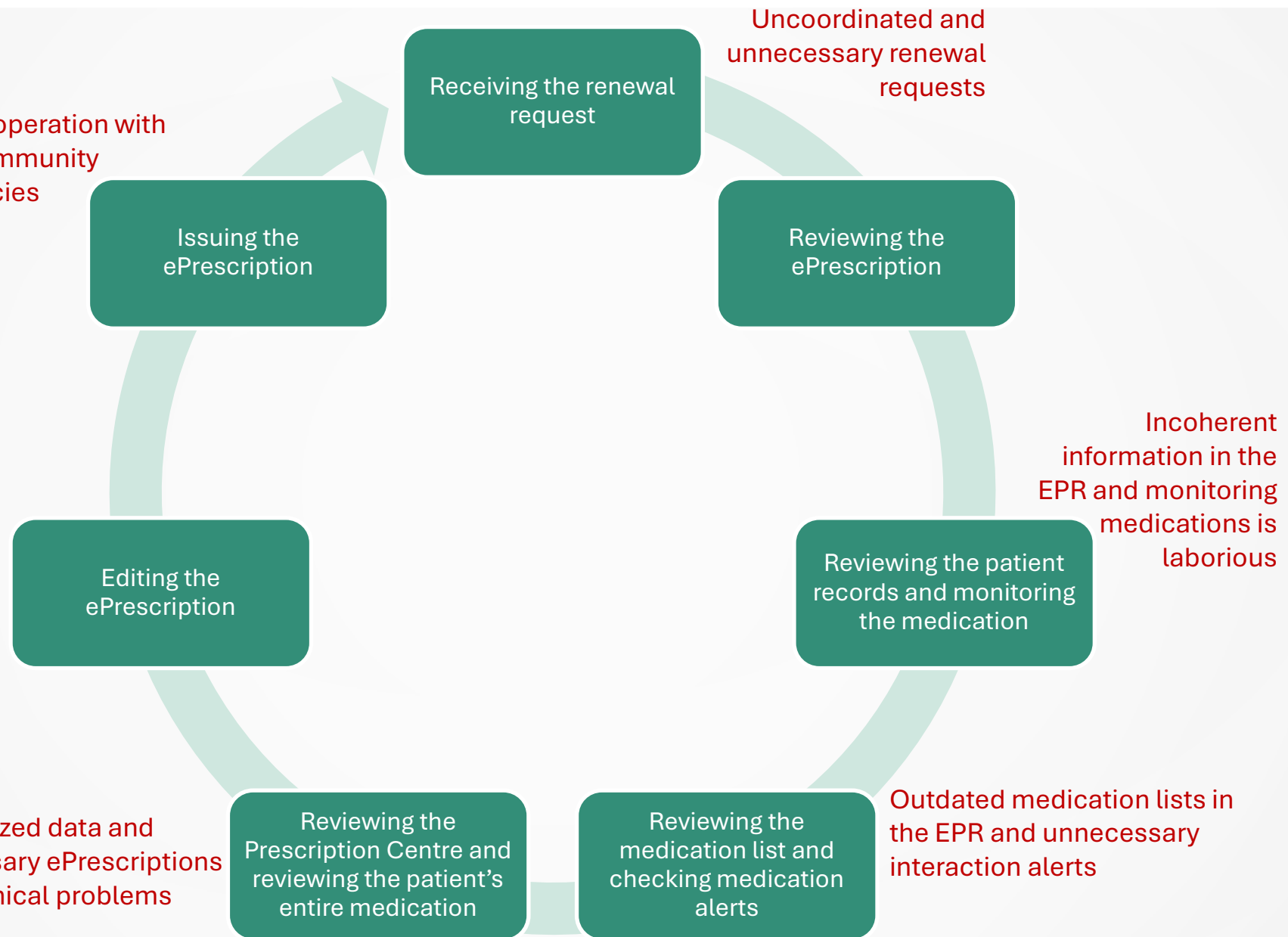


# RESULTS

- A total of 12 primary health care physicians participated in the study
  - five in the shadowing phase and seven in the focus group discussions
- Generally, the physicians were content with the technical implementation of the renewal process
- The renewal of ePrescriptions was a multi-stage process that was seen as both a therapeutic decision and a technical task
  - There were a lot of renewal requests to process and not enough time to review and monitor medications comprehensively while renewing
- Finding necessary information and getting a comprehensive picture of the patient's health status and care was laborious



Little cooperation with local community pharmacies







# RESULTS

Development proposals to improve the renewal process:

Better coordination of the renewal process

The medication list in the EPR should be connected to the Prescription Centre

Making the layout of the Prescription Centre more visual so that dispensing events could be reviewed more quickly

Maintaining up-to-date treatment plans and cancelling unnecessary prescriptions from the Prescription Centre

Medication list reviews conducted by nurses, community pharmacists and patients



# CONCLUSIONS

- Renewing was seen by the physicians as a therapeutic decision, but multiple system-driven problems and limited time allocations made it a rather technical task
- The physicians had the premises for medication reconciliation and monitoring, but in practice, this work was often technically too laborious
  - poorly up-to-date medication regimen information
  - poor interoperability between the EPR and the Prescription Centre
- The renewal process could be improved with better coordination of renewing, information system improvements and better interprofessional cooperation



This presentation was based on the article "How Physicians Renew Electronic Prescriptions in Primary Care: Therapeutic Decision or Technical Task?"

<https://doi.org/10.3390/ijerph182010937>





International Journal of  
*Environmental Research  
and Public Health*



Article

## How Physicians Renew Electronic Prescriptions in Primary Care: Therapeutic Decision or Technical Task?

Taina Oravainen <sup>1,\*</sup>, Marja Airaksinen <sup>1</sup>, Kaija Hannula <sup>2</sup> and Kirsi Kvarnström <sup>1,3</sup>

<sup>1</sup> Clinical Pharmacy Group, Division of Pharmacology and Pharmacotherapy, Faculty of Pharmacy, University of Helsinki, 00014 Helsinki, Finland; marjaairaksinen@gmail.com (M.A.); kirsi.kvarnstrom@hus.fi (K.K.)

<sup>2</sup> Kirkkonummi Health Centre, 02400 Kirkkonummi, Finland; kaija.hannula@kirkkonummi.fi

<sup>3</sup> HUS Pharmacy, University of Helsinki and Helsinki University Hospital, 00290 Helsinki, Finland

\* Correspondence: taina.oravainen@helsinki.fi

**Abstract:** In long-term pharmacotherapies, the renewal of prescriptions is part of the medication use process. Although the majority of medicines are used with renewed prescriptions, little research has focused on renewal practices. The aim of this study was to explore current renewal practices from a primary care physician's perspective to identify system-based challenges and development needs related to the renewal practices. This qualitative study was conducted in two phases in public primary health care centres of Kirkkonummi, Finland. First, five physicians were shadowed on-site while they renewed prescriptions. The findings of the shadowing phase were further dis-



# REFERENCES

1. Panesar SS, deSilva D, Carson Stevens A ym.: How safe is primary care? A systematic review. *BMJ Qual Saf.* 25 (7): 544–553, 2016
2. Esmaeil Zadeh, P.; Tremblay, M.C. A review of the literature and proposed classification on e-prescribing: Functions, assimilation stages, benefits, concerns, and risks. *Res. Soc. Adm. Pharm.* 12, 1–19, 2016
3. Goldman, R.E.; Dubé, C.; Lapane, K.L. Beyond the basics: Refills by electronic prescribing. *Int. J. Med. Inform.* 2010, 79, 507–514
4. Kivekäs, E.; Enlund, H.; Borycki, E.; Saranto, K. General practitioners' attitudes towards electronic prescribing and the use of the national prescription centre. *J. Eval. Clin. Pract.* 22, 816–825, 2016
5. Kauppinen, H.; Ahonen, R.; Mäntyselkä, P.; Timonen, J. Medication safety and the usability of electronic prescribing as perceived by physicians—A semistructured interview among primary health care physicians in Finland. *J. Eval. Clin. Pract.* 23, 1187–1194, 2017
6. Lapane, K.L.; Waring, M.E.; Dubé, C.; Schneider, K.L. E-prescribing and patient safety: Results from a mixed method study. *Am. J. Pharm. Benefits* 2011, 3, e24–e34
7. Pattin, A.J.; Devore, N.; Fowler, J.; Weldy, D. An Examination of the Prescription Renewal Process and Implications for Primary Care Physicians and Community Pharmacists. *J. Pharm. Pract.* 2020, 33, 187–191



# THANK YOU!

Taina Oravainen  
Doctoral researcher, MSc (Pharm)  
[taina.oravainen@helsinki.fi](mailto:taina.oravainen@helsinki.fi)