Development of Depending Prescribing practice in the context of pharmaceutical care in Interprofessional collaboration with General Practitioners: Challenges and Expectations

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Conflict of interest

- The author has received grants and/or support for travel, congress expenses, and has been invited to lectures by different pharmaceutical companies *(Novartis, Lundbeck, Angelini, Gedeon Richter, Lek, Stada, Pfizer, Pliva, Bonifar, Mylan)*.
- Member of the Slovenian Medication Reimbursement Committee at the Slovenian National Insurance and the Slovenian Reimbursement Committee at the Slovenian Ministry of Health.
- The author has no personal affiliations, financial relationships, or any commercial interests to disclose relative to this lecture.

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Outline

1. Introduction

2. Clinical pharmacy services – ambulatory practice

3. Clinical pharmacy services – prescribing development

4. Summary and recommendations

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Background – problem identification

- ***By 2050, approximately 1.5 billion people worldwide will be aged ≥ over 65, nearly triple the number reported in 2010.***
- **About half of older patients are treated with polypharmacy.** ***Total Polypharmacy*** *is a frequent „problem“ in this population (rule).*
- **Nearly 50% of older adults take medications that are not medically necessary, and 2/3 medications are prescribed by general practitioners (GPs).**
- **Many patients are still not treated as they should** (e.g. 40 % of patients with MDD). **Drug-drug interactions, medication errors, and inappropriate drug use**.
- **ADVANCED CLINICAL PHARMACY SERVICES ARE NEEDED.**

1. Quality and Outwork framework 2012 http://www.nhsemployers.org/Aboutus/Publications/Documents/QOF_2012-13.pdf
2. Kessler RC et al. JAMA. 2003 Jun 18;289(23):3095-105 & Santell JP. Reconciliation failures lead to medication errors. Jt Comm J Qual Patient Saf. 2006;32(4):225-9.
3. Co-morbidity and repeat admission to hospital for adverse drug reactions in older adults: retrospective cohort study M Zhang et al BMJ 2009;338:a275
4. https://www.who.int/nmh/publications/ncd_profiles2011/en/ & Janssens B, Petrovic M, Jacquet W. Medication Use and Its Potential Impact on the Oral Health Status of LTCF Residents in Flanders (Belgium). J Am Med Dir Assoc. 2017 Sep 1;18(9):809.e1-809.e8
5. Andreas S, et al. Prevalence of mental disorders in elderly people: the European MentDis_ICF65+ study. Br J Psychiatry. 2017;210(2):125-131

„Real drug-related problems“ in daily practice

- Adherence to evidence-based guidelines for depression and anxiety disorders within the Dutch primary medical care setting found that only 27% of patients with anxiety disorders received consistent guideline **care *(Slovenia similar).* *Similar results have been observed in cardiovascular treatment.***
- *Potentially inappropriate medications (*PIMs) rates of 59% in adult inpatients. At least one PIM was 70.3% (95% CI 67.2-73.4). At least one psychotropic PIM was observed in 1.014 (55 %) residents.

Smolders M, Laurant M, Verhaak P, et al. Adherence to evidence-based guidelines for depression and anxiety disorders is associated with recording of the diagnosis. *Gen Hosp Psychiatry*. 2009;31(5):460-469. & Folsom DP, et al. Schizophrenia in late life: emerging issues. Dialogues Clin Neurosci. 2006;8(1):45-52. & Elkis H, Buckley PF. Treatment-Resistant Schizophrenia. Psychiatr Clin North Am. 2016 Jun;39(2):239-65. Stuhec M, Hahn M, Taskova I, Bayraktar I, Fitzgerald I, Molitschnig L, Tatarević A, Lindner N, Agnoletto L, da Costa FA. **Wien Klin Wochenschr 2013; 125 (7-8): 180–188. Soerensen AL, Nielsen LP, Poulsen BK, Lisby M, Mainz J. Potentially inappropriate prescriptions in patients admitted to a psychiatric hospital. Nord J Psychiatry. 2016;70(5):365–73**
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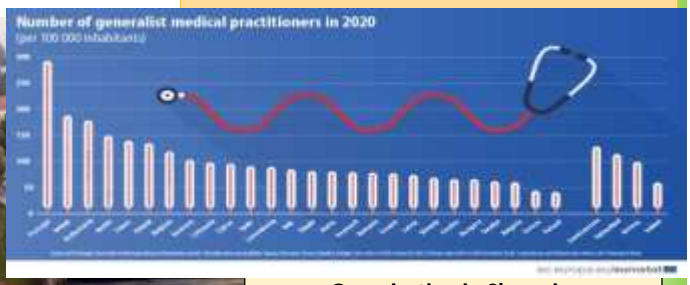
Ambulatory care as part of Slovenian health care system – lack of GPs



Organisation in Slovenia:

- 878 primary care ambulatory settings in Slovenia (1 GP and nurse)
- 60 primary care settings in Slovenia (community health center)
- Community pharmacies
- Nursing homes
- Each patient has their own GP
- 26 hospitals

Picture available: https://www.prlekija-on.net/lokalno/12002/zdravstveni-dom-ljutomer-postal-ucni-zavod.html

Where do clinical pharmacists work?

Ambulatory settings in the Slovenian health care system

WORKING PLACE:
GP WORKING PLACE = PHARMACIST WORKING PLACE (SAME OFFICE, SAME CHARTS, SAME DATA, SAME PLACE).
WE HAVE ALL PATIENTS DATA AVAILABLE.

PATIENTS

PHARMACIST

WAITING PLACE

News in 2025: Payment, eSystem (all reviews must be inside the eSystem, which is necessary for payment), and Pharmacists have complete access to the records and lab tests (legislation changes)!

Picture available: https://www.prlekija-on.net/lokalno/12002/zdravstveni-dom-ljutomer-postal-ucni-zavod.html

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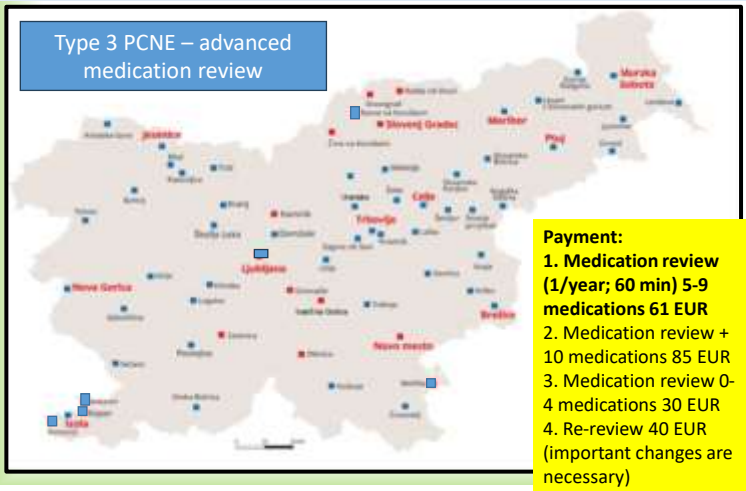
Ambulatory clinical pharmacy settings – situation 2025 (pilot 2012-2015; reimbursement 2016, hospitals 2025)



Payment:
1. Medication review (1/year; 60 min) 5-9 medications 61 EUR
2. Medication review + 10 medications 85 EUR
3. Medication review 0-4 medications 30 EUR
4. Re-review 40 EUR (important changes are necessary)

No clinical pharmacist:
- **Patients can go to the setting in another primary care centre**

Clinical pharmacist (50/60 SETTINGS):
- **Patients should go to the setting in a regional primary care centre**
- **60 centres in Slovenia and 26 hospitals**

EACH PRIMARY CARE SETTING:
-CONTRACT WITH INSURANCE COMPANY FOR THIS SERVICE
Necessary condition: THEY should EMPLOY CLINICAL PHARMACIST OR CONTRACT (list)
- MOST OF THEM ARE EMPLOYED IN HOSPITALS AND PHARMACIES

Slovenian National Insurance.

Implementation paper: Development to Reimbursement = good summary for development

> Int J Clin Pharm. 2021 Dec;43(6):1722-1727. doi: 10.1007/s11096-021-01306-2. Epub 2021 Jul 6.

Clinical pharmacist consultant in primary care settings in Slovenia focused on elderly patients on polypharmacy: successful national program from development to reimbursement

Matej Stuhec [1 2 3]

Affiliations + expand
PMID: 34228266 DOI: 10.1007/s11096-021-01306-2

Abstract

Clinical pharmacists in most primary care sett... review service. This paper describes the devel...

...oners t... ...een 201... ...ot trial and recommended that the service be extended to all... ...n Slovenia. Following successful negotiations, the program... ...y people. Future research should examine the service with...

All accepted (99.1%) interventions except one were still maintained 6 months after the proposed interventions.

Only 3/18 patients had an indication for receiving antipsychotics (schizophrenia and delusional disorders).

Accepting clinical pharmacist recommendations reduced **the total number of medications by 7.5% from 13.4 to 12.4 per patient**, the total number of **prescribed PIMs by 21.8% from 312 to 244, the number of pXDDIs by 54.9% from 71 to 31** and also **improved treatment guidelines adherence for antidepressants and antipsychotics** ($p < 0.05$).

24 patients were included (mean age = 80.6, SD = 6.8). **The mean number of medications per patient before the medical review was 12.2 (SD = 3.1) and decreased to 10.3 (SD = 3.0) at the end of the study period ($p < 0.05$)**, EQ-5D questionnaire

Stuhec M. Clinical pharmacist consultant in primary care settings in Slovenia focused on elderly patients on polypharmacy: successful national program from development to reimbursement. Int J Clin Pharm. 2021 Dec;43(6):1722-1727.

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Acceptance and implementation: perspective of general practitioners in Slovenia

Table 5.

The acceptance rates and implementation of recommendations by the GPs ($N = 90$)

Acceptance	Implementation	N	%
ACCEPTED		**55**	**61%**
Yes	*implemented*	*22*	*24%*
Yes	*to be implemented*	*33*	*37%*
PARTIALLY OR CONDITIONALLY ACCEPTED		**23**	**26%**
Partially	*implemented*	*3*	*3%*
Partially	*to be implemented*	*2*	*2%*
Partially	*implemented as needed*	*7*	*8%*
Conditionally	*implementation depending on the specialist's decision*	*7*	*8%*
Conditionally	*implementation depending on the patient response*	*4*	*4%*
NOT ACCEPTED		**12**	**13%**
No	*n/a*	*9*	*10%*
No, although the recommendation is valid	*n/a*	*3*	*3%*

Polypharmacotherapy was the most common stated reason on the referral form.

During the study period (February to June 2018), 179 patients were referred to the medication review, 97 for review of medical documentation (type 2b) and 82 for conversation with the CP (type 3), 26 different GPs: prospective observational study

Nabergoj Makovec U, Tomsic T, Kos M, Stegne Ignjatovic T, Poplas Susic A. Pharmacist-led clinical medication review service in primary care: the perspective of general practitioners. *BMC Prim Care*. 2023;24(1):6.

Barriers and sugesstions

BARRIERS:

- **Lack of time** to recognize patients in need of service
- **Additional workload** to study and implement the recommendations
- MR is not yet embedded in GP's daily routine
- Non-digital patients' medical records
- Patients ' cognitive function – only enable provision type 2b MR

SUGGESTIONS:

- General improvements of the health system (e.g. more time for patients, digitalisation of medical records)
- Improvements at the service level (more specific inclusion criteria, inclusion of nurses in referrals, reminder systems)
- Raising awareness among GPs

MR = medication review, GP = general practitioners

Nabergoj Makovec U, Tomsic T, Kos M, Stegne Ignjatovic T, Poplas Susic A. Pharmacist-led clinical medication review service in primary care: the perspective of general practitioners. BMC Prim Care. 2023;24(1):6.

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Breaking research – *Prescriber in Slovenia, 15.9.2025 & 12.11.2025*

Clinical pharmacist prescriber in primary care in Slovenia: prospective non-randomised interventional study focused on clinical outcomes and quality of life

Pharmacist prescriber implementation in the experiences of general practitioners, pharmacist prescribers and patients: qualitative study based on pilot trial in Slovenia

Funded research project V3-24041 Examining the benefits and risks of depending prescribing practice in the context of pharmaceutical care (2y) – University of Maribor (Medical Faculty) and University of Ljubljana (Medical Faculty) – Working group (9 people; 4 GPs and five clinical pharmacists from practice) – first meeting 2023. The project was confirmed after long negotiations! The Ministry of Health opened the grant proposal for this project.

Patient's full name and personal identification number:	The form is attached to the referral for the consultant pharmacist. Communication between the physician and pharmacist is reciprocal.
Physician (full name and signature): Date:	Consultant pharmacist (full name and signature): Date:
The consultant pharmacist may, within the framework of the agreement, prescribe/discontinue medication and monitor pharmacotherapy (the authorization applies to all). The physician indicates what the consultant pharmacist is authorized to do (please mark below):	The consultant pharmacist prepares the ePrescription, which the physician reviews (approves, modifies, or cancels). The pharmacist records each consultation in the medical record, available to the physician. The pharmacist may also enter laboratory tests related to the planned or prescribed therapy.
☐ all pharmacotherapeutic groups of medicines from the list (Annex – mandatory to mark)	The consultant pharmacist may prescribe all medicines included in the list (all items in the Annex below) and optimize treatment for the specified indications. In this case, the pharmacist will review all groups and prescribe medication. The physician may mark one, several, or all groups.
☐ individual medications within these groups (Annex – mandatory to mark chosen groups)	Enter here only if you authorize the pharmacist solely for a specific medication within one of the groups, not the entire group (otherwise mark the entire medicine group from the Annex).
☐ specific medications not included in the Annex but within the expertise of the consultant pharmacist	Please specify the medication, indication, and monitoring method in detail (for groups or medicines not included in the Annex).
Specify particular details you wish to transfer to the consultant pharmacist:	E.g., allergies, when to necessarily call the physician, drug non-responsiveness, and other specifics.

Annex: List of pharmacotherapeutic groups or conditions that the consultant pharmacist may prescribe (MUST be marked with an X):

1.	**ALL GROUPS listed (numbers 2.–11.) – I authorize the pharmacist for prescribing, monitoring, and optimization of all groups**
2.	Lipids not within target range (initiation and titration of oral medications) – diagnosis: dyslipidemia
3.	Neuropathic pain – adjustment of therapy (initiation and titration) – diagnosis: neuropathic pain
4.	Blood pressure not within target range (initiation and titration) – diagnosis: arterial hypertension
5.	Diabetes – HbA1c and/or blood glucose not within target range (initiation and titration) – diagnosis: type II diabetes
6.	Depression remission not achieved (initiation and titration) – diagnosis: depression
7.	Medications for dementia drugs (initiation and titration) – diagnosis: dementia
8.	Drugs for gout treatment (initiation and titration) – diagnosis: gout
9.	Dose adjustment according to renal and hepatic function – diagnosis: chronic kidney and/or chronic liver disease
10.	Deprescribing (within the framework of therapy optimization)
11.	Titration of medications for asthma treatment – diagnosis: asthma

- The pharmacist may prescribe those medicines within individual groups as a general practitioner may.

ESCP

Collaborative practice agreements (CPA) document – Pharmacist prescriber – key document

- Agreement was confirmed.
- 10 medication groups were agreed upon.
- Pharmacists prescribed (but final confirmation with digital signature was done by GPs – ethical question, legislation.
- A 6-month prospective study
- The trial protocol was approved by the Commission of the Republic of Slovenia for Medical Ethics (15.10.2024). **Patients should approve the participation!**
- Outcomes were measured (e.g., N medications, PIMs, DDIs, QALY, MAI index and specific outcomes for different conditions (e.g. PHQ-9 for depression).
- Pharmacists could initiate, discontinue or switch medication for existing conditions. GPs confirmed prescribed medication (legislation).
- **Aim: Develop practical collaboration and suggest legislation changes – pilot only in ambulatory settings in primary care. Finished 30.9.2025.**

ESCP

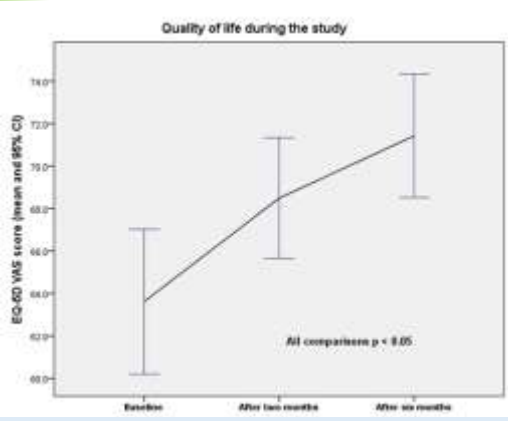
Protocols - Results

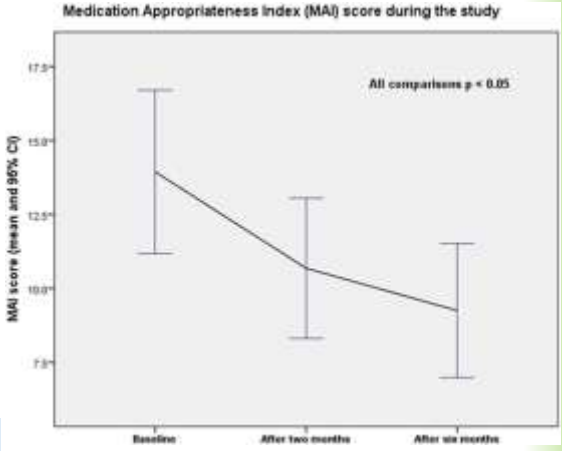
Protocol number	Protocol	Predefined Clinical outcomes based on:	Prescription authority
1	Lipids not in target range (dyslipidemia diagnosis)	↓-LDL target value	Initiation, Adjustments, Discontinuations
2	Neuropathic pain—therapy adjustment (neuropathic pain diagnosis)	Visual Analogue Scale [VAS] target score	Initiation, Adjustments, Discontinuations
3	Blood pressure not in target range (arterial hypertension diagnosis)	Blood pressure in mmHg target value	Initiation, Adjustments, Discontinuations
4	Diabetes—HbA1c not in target range (type II diabetes diagnosis)	HbA1c target value	Initiation, Adjustment, Discontinuation (only oral medications)
5	Depression remission not achieved (unipolar depression diagnosis)	Depression remission (Patient Health Questionnaire-9 [PHQ-9] target score)	Initiation, Adjustment, Discontinuation
6	Use of anti-dementia drugs (Alzheimer's dementia diagnosis)	Mini-Mental State Examination (MMSE) target score	Initiation, Adjustment, Discontinuation
7	Gout treatment (gout diagnosis)	Uric acid level target value	Initiation, Adjustment, Discontinuation
8	Adjustments based on renal and hepatic function (renal and/or hepatic insufficiency)	Adjustments according to the Summary of the Product Characteristics	Initiation, Adjustment, Discontinuation
9	Deprescribing to optimize therapy	Process list: criteria adherence, Medications without indication	Adjustment, Discontinuation
10	Titration of asthma medications (asthma diagnosis)	Asthma Control Test target score	Adjustment only
Out of the protocol	Only medications specified by the general practitioners (GPs) in the CPA document were allowed – (medications that GPs in Slovenia can prescribe autonomously)		

- **126 patients, 23 GPs, five clinical pharmacists, four different settings.** All pharmacists with 5-10 years of experience working in these settings = good collaboration with GPs.
- 72.3 years (SD = 10.0), 7.68 diagnoses (SD = 3.9).
- During the study, clinical pharmacists prescribed 264 prescriptions to 119 patients (acceptance rate of 91.3%).
- **Adherence to treatment guidelines improved significantly** (29.8% vs. 90.9%; p = 0.000). The effect size, expressed as an odds ratio (OR), was 25.7 (95% CI: 15.6–42.4).
- **The number of prescriptions achieving the predefined clinical outcomes was significantly higher at the end of the study** (70.8% vs. 6.4%; p = 0.000), with an OR of 33.9 (95% CI: 19.1–60.4).
- This results in a **return on investment (ROI) of EUR 22.3** for every EUR 1 invested.

Stuhec M, Kovacic A, Korpar M, Banovic Koscak A, Koder B, et al. Clinical pharmacist prescriber in primary care in Slovenia: prospective non-randomised interventional study focused on clinical outcomes and quality of life. Front. Pharmacol. 2025; 16: 1690480.

Primary outcomes (PROs) – Quality of life and MAI score





Quality of life improved from 63.6/100 (SD = 18.7) at baseline to 71.4/100 (SD = 15.9) at the end of the study (p = 0.000), QALY difference of 0.0252. The effect size (Cohen's d) was 0.448 (95% CI: 0.084 to 0.812.

Stuhec M, Kovacic A, Korpar M, Banovic Koscak A, Koder B, et al. Clinical pharmacist prescriber in primary care in Slovenia: prospective non-randomised interventional study focused on clinical outcomes and quality of life. Front. Pharmacol. 2025; 16: 1690480.

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Pharmacist prescriber in Slovenia – CASE

Outcome scales	Medication review N#1	Medication review N#2	Medication review N#3
Date	December 2025	February 2025	July 2025
Medication Changes	Pharmacist initiated amitriptyline at 25 mg twice daily with a plan to titrate to 50 mg twice daily and semaglutide at 3 mg daily, increasing to 7 mg daily after two weeks. Quetiapine was discontinued. Accepted by the general practitioner.	No additional pharmacological changes were recommended at this visit. However, the clinical pharmacist provided counselling on the importance of adherence to fenofibrate therapy.	No changes. No additional pharmacological changes were recommended.
Levels of glycated hemoglobin (HbA1c)	9.9%	8.2%	8.8%
Patient Health Questionnaire-9 (PHQ-9) score	11/27 (no remission)	4/27 (remission)	4/27 (remission)
EQ-5D Visual Analogue Scale (VAS) score	10/10	5/10	3/10
EQ-5D visual analogue scale (EQ-5D-VAS) score	30/100	80/100	80/100
Triglyceride levels	4.97 mmol/L	9.5 mmol/L	2.8 mmol/L

Stuhec M. Case Report: Clinical pharmacist prescriber in depression treatment in primary care settings: clinical case focused on prescribing practice. Front. Psychiatry 2025; 16: 1677152.

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Materials and methods - Qualitative study

- Semi-structured interviews.
- 17 participants: four pharmacist prescribers, five patients, and eight GPs.
- Recruitment continued until data saturation was achieved.
- 2022 Consolidated Framework for Implementation Research (CFIR).
- Consolidated Criteria for Reporting Qualitative Research.
- Recorded interviews and transcribed them in MAXQDA®.
- Two researchers independently coded the transcripts.

Stuhec M, Kovacic A, Korpar M, Banovic Koscak A, Koder B, Mahoric D, Bernik Golubic S, Homar V, Stepanovic A, Rotar Pavlic D and Gorup Cedilnik E (2025) Pharmacist prescriber implementation in the experiences of general practitioners, pharmacist prescribers and patients: qualitative study based on pilot trial in Slovenia. Front. Pharmacol. 16:1712595

Pharmacist prescriber – Qualitative study

- **Across all groups, participants expressed positive experiences with integrating pharmacist prescribers into the Slovenian healthcare system.**
- GPs highlighted effective collaboration, particularly through medication review, as a foundation for pharmacist prescribing.
- *Patients valued enhanced monitoring by clinical pharmacists* and perceived improved quality of prescribing and clinical outcomes.
- *Pharmacist prescribers reported professional satisfaction* with monitoring and prescribing responsibilities.
- **Both pharmacist prescribers and GPs emphasised the need for additional competencies for pharmacist prescribers in Slovenia**. *Reported barriers included the absence of legislation, reimbursement mechanisms, and structured education.*

Stuhec M, Kovacic A, Korpar M, Banovic Koscak A, Koder B, Mahoric D, Bernik Golubic S, Homar V, Stepanovic A, Rotar Pavlic D and Gorup Cedilnik E (2025) Pharmacist prescriber implementation in the experiences of general practitioners, pharmacist prescribers and patients: qualitative study based on pilot trial in Slovenia. Front. Pharmacol. 16:1712595

Results – acceptability, advantages

GPs repeatedly stated they found the intervention acceptable and were even enthusiastic about it.

> GP4: "I believe this is the future."

The patients also voiced general approval.

> PT5: "I liked it a lot. It's an advantage."

> GP 1: "The patients were pleased with one more expert focused on medications."

Trust

> PH2: "This collaboration is based on mutual trust from before."

> GP4: "It seems there has to be a sort of individual trust. I completely trust our colleague [pharmacist prescriber]. . . she is a top expert, she goes beyond . . . This trust has to be built."

Continuous care

The GPs also noticed the advantages of the continuous care:

> GP7: "She [the pharmacist prescriber] monitored those patients more regularly than I in my clinic . . . we usually hand over this responsibility to the patient. Call when you run out of meds. Call . . . so we can do lab control. But now all this was done by the pharmacist prescriber, which was great."

Results – acceptability, advantages

Quality of care

> GP6: "I think everything went quicker. Before, I asked for a review, which took me a few days to deal with. However, we spoke on the phone and immediately dealt with it."

> GP6: "I think two heads are better than one. Everybody has their point of view, everyone knows the patient from another angle."

Collaboration

One of the GPs stressed that the pharmacist prescribers and she worked as a team, mutually encouraging each other towards better results:

> *GP7: "We encouraged each other, which was also good. She [said] I think we should try to go on here [referring to increasing medication dose], and I said yes, I think so too, and we agree. Great, let's go on."*

Communication

> *GP3: "She [the pharmacist prescriber] always called that she prescribed something . . . She always let me know and explained why she decided that way."*

Knowledge and expertise

Both GPs and patients had gained trust in the pharmacists' skills.

> PT1: "I trust her one hundred per cent."

> GP2: "I usually accepted most [of the pharmacist's recommendations], because she has more pharmacological knowledge . . . I learned a lot from her."

Results - barriers

GP3: "There will have to be a big mindset shift, necessary for all of us. But that could be positive for us and the patients."

GP4: "I support it, but it has to be consensual, in the sense that the GP has to agree to it."

Logistical difficulties

Participants described various issues that made the intervention more challenging to implement. The pharmacist prescribers encountered logistical difficulties that made the prescribing process more complex.

PH3: "My biggest barrier is that I'm not at the primary care settings all the time . . . if nothing else, you can discuss things over coffee breaks . . . Right now, everything is discussed in meetings . . . which means additional burden for me."

Communication

GP9: "There are some communication barriers, because we are not together in the office."

Legislation

PH4: "Currently, the legislation does not allow prescribing for pharmacists . . . A change of legislation will be needed . . . as well as the division of responsibility between a pharmacist prescriber and a GP."

Access to medical data

GP3: "I believe it's very important that they have access to all patients' medical data, because that's the only way it's going to be safe."

Explanation to patients about new pharmacist role

PH3: "Sometimes . . . some people had doubts, they wondered whether they'd still be able to go to their GP. We must let everyone know that we don't interfere with GP-patient relationships, but it's just the pharmacist's support."

Technical and administrative support

GP4: "If the reports were in the national electronic record, everyone who met this patient would be able to open it and see it."

Results - barriers

Human resources

However, one GP commented that they would have liked for the pharmacist prescribers to manage more patients if they wanted to relieve the GP clinics in any way:

GP8: "I don't see a huge advantage, because the quantity is too small . . . We have to prescribe enormous amounts of meds in a working day, and here the pharmacist prescribing doesn't even show up . . . It would be different if [the pharmacist prescribers] were there just for my patients."

They believed access to pharmacist prescribers would have to be limited in some way:

GP1: "If we just open the door . . . for everything, this will be a lot of work for the pharmacist prescribers."

National implementation

PH4: "I think the support would be greater if at first it were dependent prescribing."

GP7: "For us GPs, it will be difficult to let go of control."

Knowledge and expertise

They did underscore some limitations, since pharmacist prescribers might not confidently diagnose new conditions, and might not be able to perform a differential diagnosis of some symptoms:

GP3: "I only maybe have some reservations about titrating medications for asthma or COPD . . . Sometimes people can have dyspnea, and it's basically an infection . . . this needs some more diagnostics, not just titration of therapy."

Pharmacist prescribers themselves were well aware that they needed extensive knowledge, additional education, and a lot of practice. However, they were not equally confident in all areas.

Professional responsibility

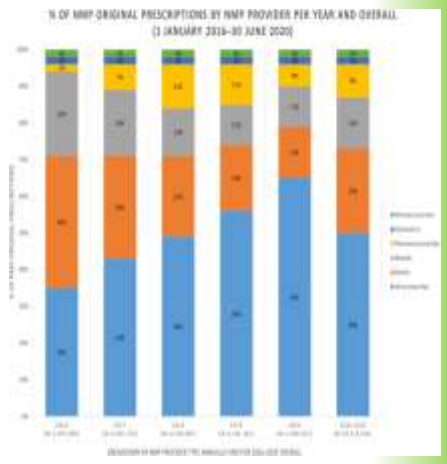
GP1: "I think everyone is responsible for their own prescribing."

However, some were not so sure, mainly because of the difference between the dependent and independent prescribing:

GP6: "In a way, everyone should be responsible for prescribing. But still, the pharmacist prescriber is part of our team; they are not GPs, so I don't know how that would work." And: "For now, we still have the complete picture and responsibility and the last word on whether to send the prescription out."

Non-medical prescribing in other countries

Country	Practice	Barriers & possibility for improvements
New Zealand	• Nurse practitioners, midwives, and optometrists prescribe independently, • Pharmacist prescribers, registered nurse prescribers prescribe collaboratively with GPs	• Pharmacist prescribers contributed modestly (0.25%) to all New Zealand prescribing • Could be improved in primary care to help manage the increasing prescribing burden (long-term conditions and an ageing population)
Austria	• Community pharmacists may dispense prescription-only drugs in exceptional emergency cases	• Limited implementation of prescribing frameworks, hindered by institutional inertia, staff shortages, and restricted access to patient data (additional training and policy support) • Pharmacists emphasized the need for legal clarity, targeted education



Rose, O., Egel, C., Pachmayr, J., and Clemens, S. (2025). Pharmacist-led prescribing in Austria: a mixed-methods study on clinical readiness and legal frameworks. *Pharmacy* 13 (5), 130. doi:10.3390/pharmacy13050130
Raghunandan, R., Marra, C. A., Tordoff, J., and Smith, A. (2021). Examining non-medical prescribing trends in New Zealand: 2016-2020. BMC Health Serv. Res. 21 (1), 418. doi:10.1186/s12913-021-06435-y

Non-medical prescribing in other countries

Country	Practice	Barriers & possibility for improvements
United Kingdom	• **2004: dependent (supplementary) prescribers** (under the supervision of a physician) • **2006: independent prescribers** (authorized to prescribe autonomously for any condition within their clinical competence) • **By 2026 all pharmacy graduates will qualify with independent prescribing competencies** (standards for education and training have been established)	2002: • Pharmacists and GPs: concerns regarding sustainable funding, limited professional support networks, insufficient continuing professional development opportunities • **GPs were cautious of inadequate pharmacist prescribers' clinical skills** 2024: • Pharmacist prescribers frequently experienced low confidence in prescribing practice
United States	• **Pharmacist prescriptive authority occurs with four identified models: patient-specific collaborative prescribing through collaborative practice agreements (CPAs),** population-specific prescribing through CPAs, statewide protocols, and class-specific prescribing. • Significant variability regarding what medications pharmacists can prescribe exists per state statutes	• The interest in pharmacist prescribing stems from current and future challenges within the U.S. health care system: access to care, cost of care, and the anticipated shortage of physicians.

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Outline

1. Introduction
2. Clinical pharmacy services – ambulatory practice
3. Clinical pharmacy services – prescribing development
4. **Summary and recommendations**

Summary and recommendations

- **Slovenia is the first country in Central and Southeastern Europe** to develop these services nationally (national pilot), marking a significant step for advancing clinical pharmacy in Europe.
- **Successful national reimbursement and legislation** were these initiatives' two most essential facilitators for medication review (expect similar now).
- **The next step is implementing a clinical pharmacist prescriber**, including necessary legislation changes, new competencies, and reimbursement. Expanding?
- **From this point of view, good clinical practices could be exported.**

Pilot – primary care settings – first meeting 2012 ☺

Pilot – primary care settings – pharmacist prescriber final meeting 8.9.2025 ☺

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