

# Integrating pharmacogenetic information into medication reviews – an interprofessional challenge

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## Background & Objectives

- Inter-individual differences in **drug response** are well-known.
    - Ranging from an adequate effect to nonresponse and even toxicities
  - Drug response can be influenced by the patients' **genetic makeup** [1].
    - Affecting expression and/or activity of enzymes and transporters involved in absorption, distribution, metabolism and excretion
  - Evidence on **drug-gene interactions** is accumulating, notably for antidepressants.
    - Pharmacogenomics Knowledge Base ([www.pharmgkb.org](http://www.pharmgkb.org))
    - Recommendations for pharmacogenetic (PGx)-guided drug selection and dosing ([www.epicpgx.org](http://www.epicpgx.org))
    - Information in drug labels [2]
  - PGx-testing is **not yet routinely applied** in clinical practice.
    - Barriers include lacking education of healthcare professionals and non-established interprofessional procedures [3]
  - Drug response can also be influenced by **other factors**.
    - Such as drug-drug – and drug-food interactions, renal- and liver function as well as adherence
- **Therefore, we aim to:**
- a) integrate PGx-information into medication reviews as a pharmacy service
  - b) promote interprofessional decision making on drug selection and dosing, considering PGx-information

## Pharmacy Service

**Setting:**

- Solothurner Spitäler
- Psychiatry inpatients and outpatients
- Service may be initiated by physicians and pharmacists

**Patient Selection:**

➤ **Medication with known PGx-association AND:**

a) adverse drug reactions	} reactive testing
OR/AND	
b) insufficient response	} pre-emptive testing
OR/AND	
c) planned new prescription or therapy change	

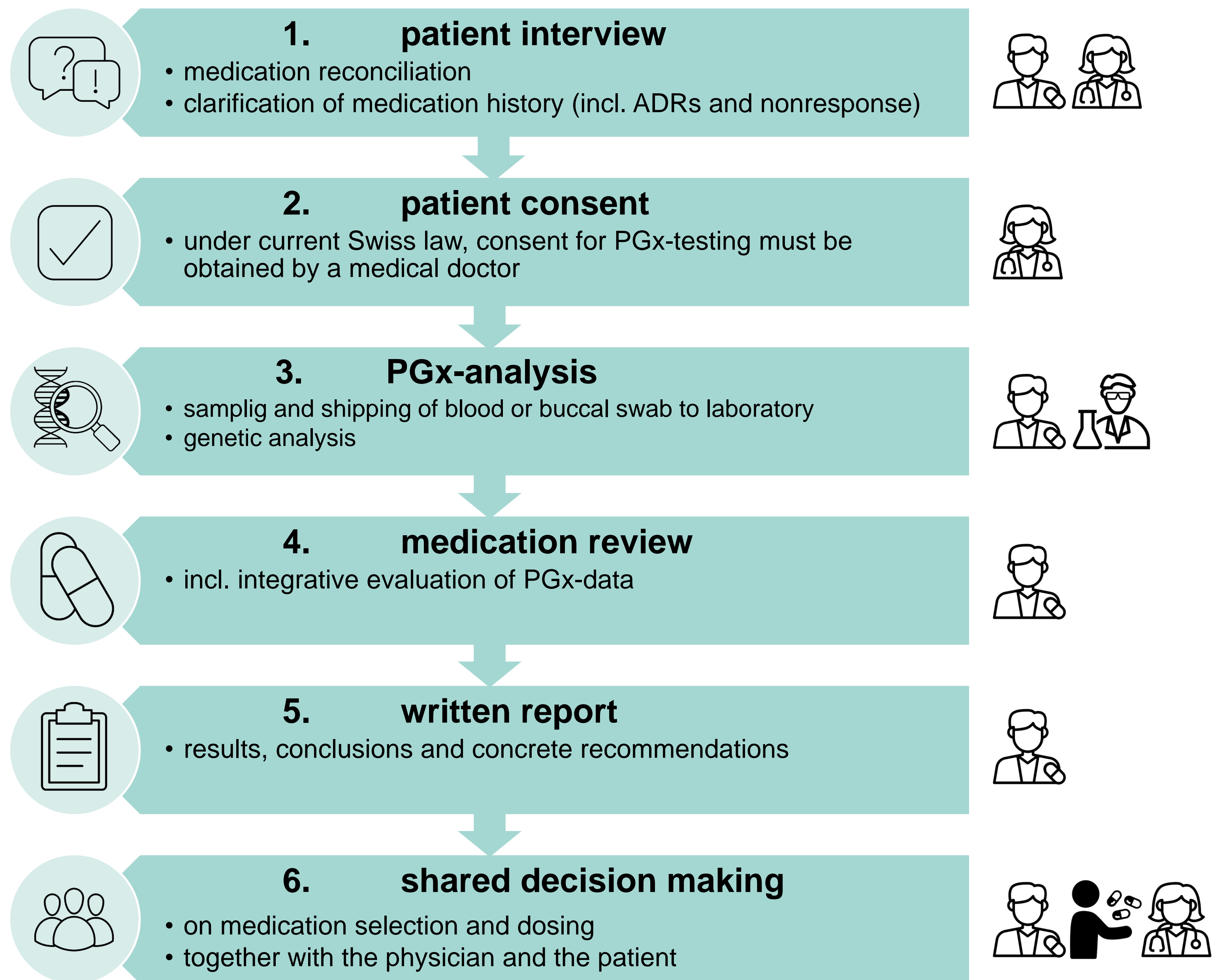


Figure 2: Step-by-step pharmacist-guided integration of PGx-information into a medication review, as a basis for shared decision making on medication selection and dosing.

## Discussion & Conclusion

To achieve best possible benefits, we postulate that **PGx-information should be analyzed in the context** of the medication history, the current therapy as well as other factors influencing drug response. The herein described PGx pharmacy service enables an extensive medication analysis including PGx-information, to personalize pharmacotherapy recommendations. This **rational preselection** based on primarily kinetic considerations, provides a **basis for interprofessional decision making** together with the physician [4]. We are currently collecting data within a case series (NCT04154553), for a qualitative evaluation of the herein proposed **pharmacist-led PGx-service**.

## Literature

<sup>1</sup> Meyer zu Schwabedissen, HE. Springer: Cham, Switzerland. 2015; Volume 7, pp. 93–112.  
<sup>2</sup> Jeiziner, C. et al. *Pharmacogenomics J.* 2021; 21(4):423-434.

<sup>3</sup> Chenoweth, MJ. et al. *Clin. Pharmacol. Ther.* 2020; 107(1):57-61.  
<sup>4</sup> Stäuble, CK. et al. *Life.* 2021; 11(7):673.

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