safety-code

The **Medication Safety Code** initiative

Personalized medicine in your pocket

THE PROBLEM

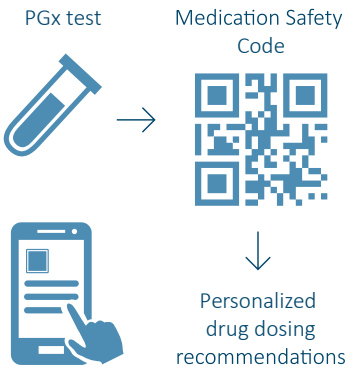
- 10,1% of hospitalized patients experience adverse drug reactions[1]
- 3,5% of hospital admissions are related to adverse drug reactions[1]
- Adverse drug reactions are the 4th leading cause of death in the USA[2]

A POSSIBLE SOLUTION

- A small set of so-called pharmacogenes has an impact on the safety and efficacy of many common medications.
- Pharmacogenomic (PGx) tests can detect variations in these pharmacogenes based on a blood or saliva sample.
- The Medication Safety Code (MSC) system captures these PGx test results and provides personalized drug dosing recommendations whenever needed during medical care.

THE MEDICATION SAFETY CODE AT A GLANCE

- The Medication Safety Code (MSC) is a QR code that captures PGx test results.
- After scanning the QR code with your smartphone, you are led to a website that displays patient-specific drug dosing recommendations.



- The Medication Safety Code system can help you individualize your patient‘s drug therapy and thus reduce the risk for adverse drug reactions and ineffective treatments.
- The MSC can be printed on personalized cards that patients can carry in their wallets, or they can be incorporated in paper-based lab reports.

HOW MANY PATIENTS CAN BENEFIT?

- Over half of all Caucasian patients exhibit at least one pharmacogenetic variant in one of the 8 most relevant pharmacogenes with significant therapeutic implications
- Over 30% of all patients older than 40 receive at least one drug for which pharmacogenetic dosing guidelines are available*

* based on US drug prescription data

PRIVACY AND DATA SECURITY

- The MSC system does not require central data storage: all pharmacogenetic data are inside the QR code.
- The MSC contains only PGx data that can be used to optimize a patient's drug therapy. No other sensitive health data (e.g. current medication or diseases) are captured.

TRY IT OUT

Laboratory contact
+0123456789
Some lab name
Some street name 123/45
1234 Some city name

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What is it?

The *Medication Safety Code* on the left represents a patient-specific genetic profile regarding important pharmacogenes.

How does it work?

After scanning the QR code (e.g. with a smartphone), you are led to a website that displays patient-specific drug dosing recommendations.

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Name: Jane Doe
Date of birth: 01.02.1934

Gene, status	*Critical drug substances (modification recommended!)*
CYP2C19 Poor metabolizer	Clopidogrel, Sertraline
CYP2D6 Ultrarapid metabolizer	Amitriptyline, Aripiprazole, Clomipramine, Codeine, Doxepin, Haloperidol, Imipramine, Metoprolol, Nortriptyline, Paroxetine, Propafenone, Risperidone, Tamoxifen, Tramadol, Venlafaxine
TPMT Poor metabolizer	Azathioprine, Mercaptopurine, Thioguanine
Other genes Not actionable	ABCB1, ADRB1, BRCA1, COMT, CYP1A2, CYP2A6, CYP2B6, CYP2C9, CYP3A4, CYP3A5, DPYD, G6PD, HMGCR, P2RY12, SULT1A1, UGT1A1, VKORC1

Date printed: 15.03.2016 Card number: 0000001

Further information, including

- examples of adverse drug reactions that can potentially be prevented by using the MSC system
- a complete list of drug substances for which the MSC system provides recommendations

is available at

http://www.safety-code.org

INTERESTED?

Please do not hesitate to contact us

- if you are a physician or pharmacist and are interested in offering individualized therapies to your patients.
- if you are a laboratory service provider and are interested in making your pharmacogenetic test results usable via the MSC system.
- or if you have any other requests or questions regarding the MSC system.

CONTACT

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REFERENCES

[1] Bouvy, J. C., De Bruin, M. L. & Koopmanschap, M. A. Epidemiology of adverse drug reactions in europe: a review of recent observational studies. Drug Saf. 38, 437–453 (2015).

[2] US Food and Drug Administration (FDA); http://www.fda.gov