PharmaCheck allows the screening of 20 high-risk situations in a targeted manner

PharmaCheck as a screening tool to intercept high-risk situations in internal medicine that could lead to adverse drug events


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Aim & objectives
To develop a screening tool to detect 20 high-risk situations
To assess its implementation in the routine of clinical pharmacy

Conclusion
PharmaCheck enhances clinical pharmacy service coverage
Contextualization of alerts by clinical pharmacist enhances their specificity

Development and implementation of PharmaCheck
- Development of a clinical rule-based system linked to the hospital’s data lake aggregating drug prescriptions, laboratory values, vital signs, and medical problems
- Daily screening of 20 high-risk situations potentially leading to adverse drug events
- Wide covering for all patients admitted in internal medicine Division
- Alerts assessment and contextualization by a clinical pharmacist
- Treatment adjustment suggestion to the prescriber (phone call) if needed

Provision of clinical pharmacy services in Geneva University Hospital
- 3 clinical pharmacists are involved in the Internal Medicine Division during medical rounds

Limitation of clinical pharmacist coverage
- Each week medication review can only be offered for ~45/200 inpatients due to limited resources

Electronic health records in Geneva University Hospital
- Contain structured data (drug prescriptions, lab values, vital signs) and unstructured data (patient problems)
- DPI-Data: hospital data lake
- All electronic patient records are dumped into a data lake in real-time

7 months (February/August 2020)
5,466 patients admitted
PharmaCheck screening
430 alerts, 387 patients
1.16 ± 0.46 alerts/patient

Development of a clinical rule-based system
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Daily screening of 20 high-risk situations
- Daily screening of 20 high-risk situations potentially leading to adverse drug events

Wide covering for all patients admitted in internal medicine Division
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Alerts assessment and contextualization by a clinical pharmacist
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Absence of intervention was linked to:
- Clinical context not requiring intervention (but rather follow-up)
- Low alert specificity due to unstructured data triggering elements (poor data quality)

Proposals rejection was linked to:
- Acceptable benefit-risk balance (20 situations)
- Unknown reason (4 situations)

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