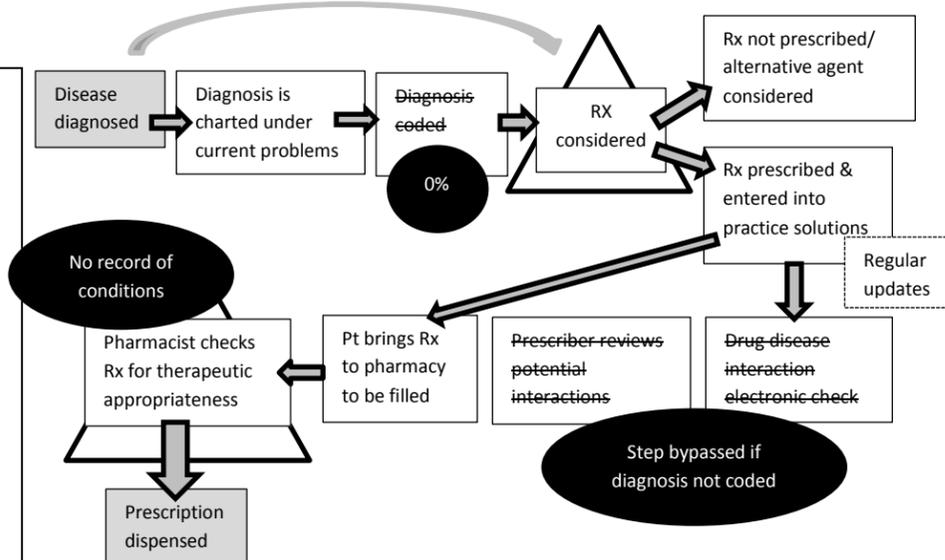# Preventing Clinically Significant Drug/Disease Interactions in Primary Care

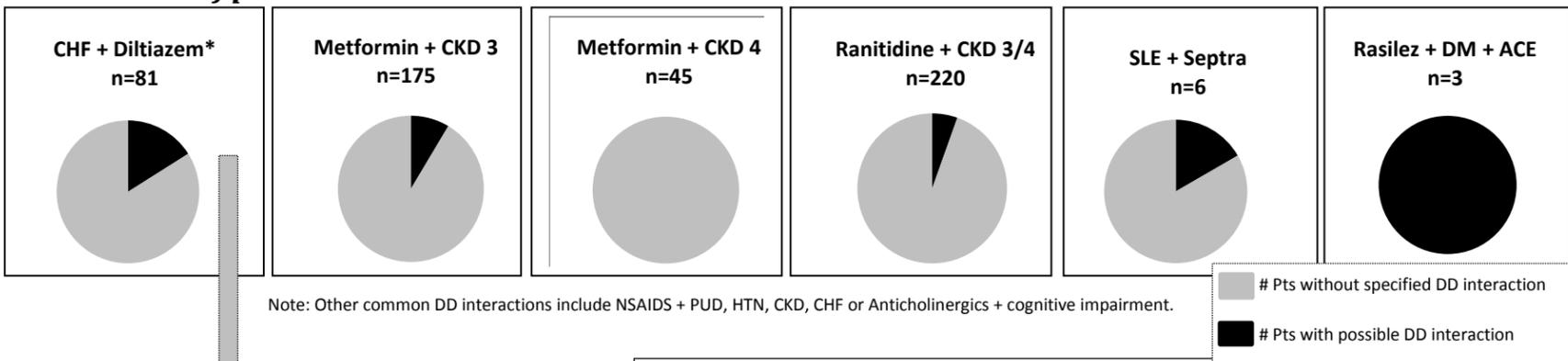## The Problem and Current Situation

Background

Patients expect that drug- disease interactions (DDI) are considered before a new medication is prescribed and the clinical significance is considered in order to prevent possible adverse drug events. The following steps allow opportunity for DDI identification before the drug reaches the patient.

1. Rx is prescribed by physician
   a. Cognitive check
   b. Electronic check
2. Rx is filled at the pharmacy:
   a. Cognitive check
   b. Electronic check

Flow: Disease diagnosed → Diagnosis is charted under current problems → Diagnosis coded (0%) → RX considered → Rx not prescribed/ alternative agent considered / Rx prescribed & entered into practice solutions → Regular updates

No record of conditions → Pharmacist checks Rx for therapeutic appropriateness → Pt brings Rx to pharmacy to be filled → Prescriber reviews potential interactions → Drug disease interaction electronic check

Step bypassed if diagnosis not coded

Prescription dispensed

Ultimate Goal: To reduce the risk of possible drug disease interactions.

Breakdown of problem

| CHF + Diltiazem* n=81	Metformin + CKD 3 n=175	Metformin + CKD 4 n=45	Ranitidine + CKD 3/4 n=220	SLE + Septra n=6	Rasilez + DM + ACE n=3

Note: Other common DD interactions include NSAIDS + PUD, HTN, CKD, CHF or Anticholinergics + cognitive impairment.

- ▦ # Pts without specified DD interaction
- ■ # Pts with possible DD interaction

- ▦ CHF
- ▧ Deceased (n=2)
- ▨ Normal LVEF (>40%) (n=9)
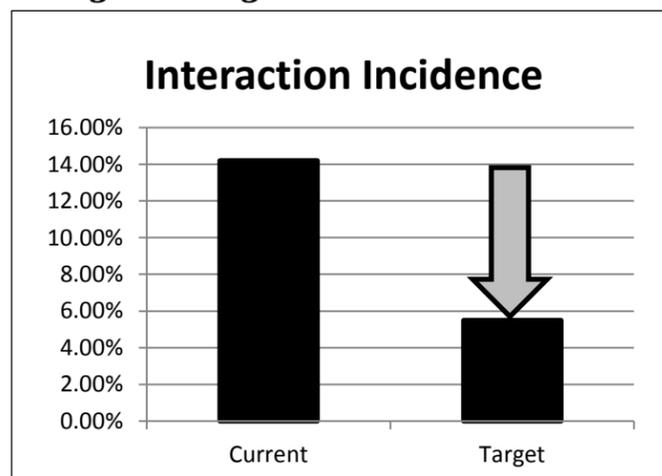- ▤ Co-morbid A Fib and COPD, LVEF unknown (n=2)
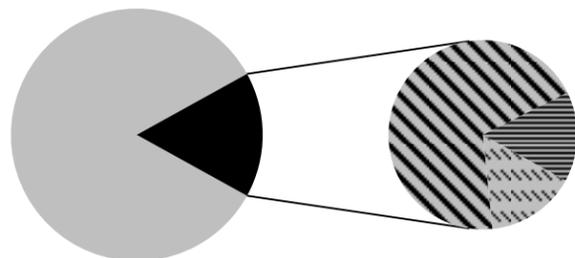
*CHF + Diltiazem combination seen in 13 patients. All patients with preserved LVEF (n=9) or co-morbid conditions warranting treatment

Number of Interactions identified

(CKD, CHF, DM, SLE)

Target Setting

Interaction Incidence

(Current vs Target; axis 0.00% to 16.00%)
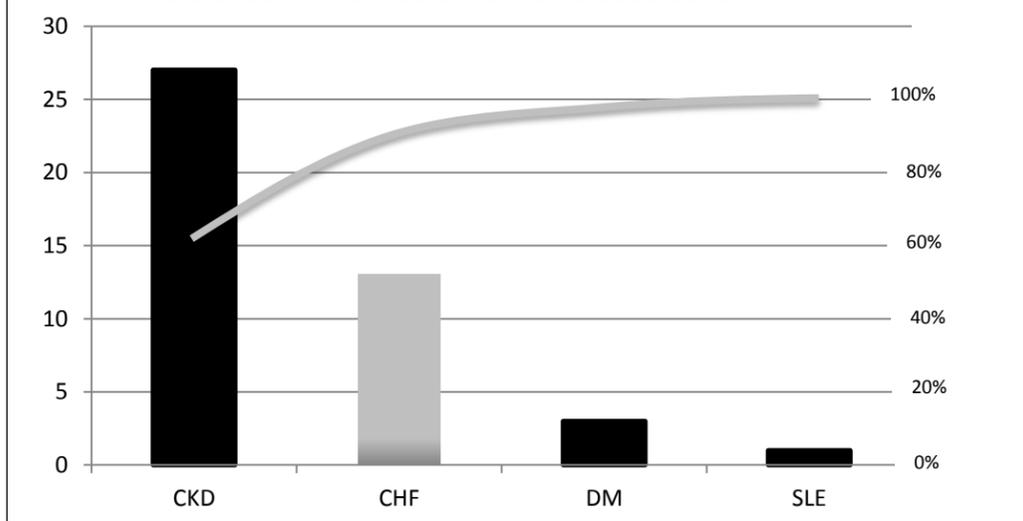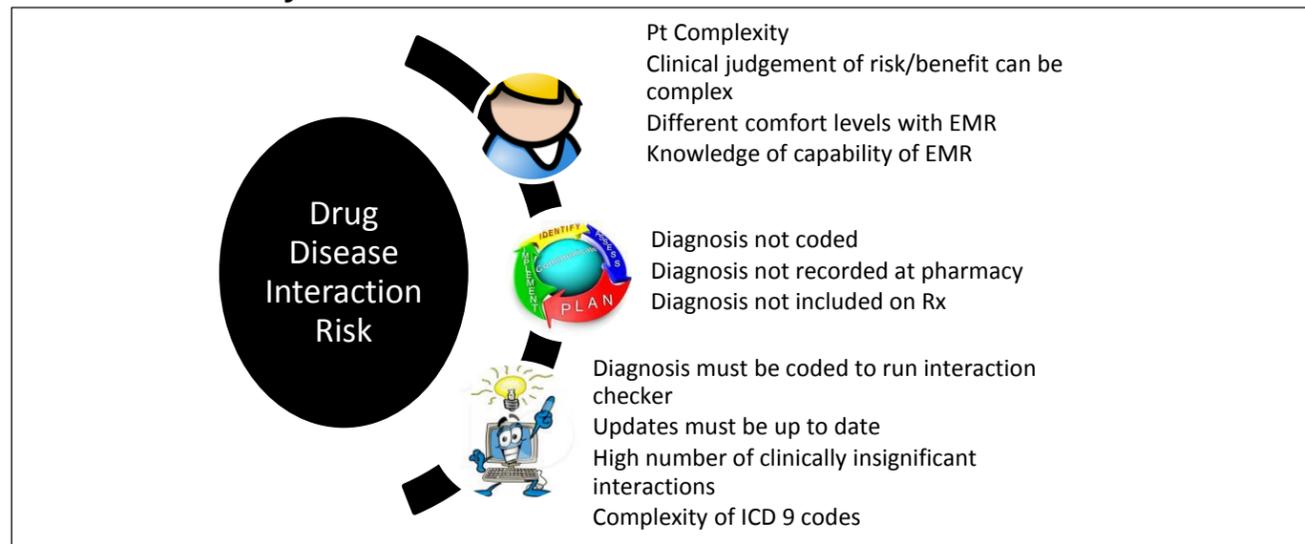
Target:
What? Reduce the frequency of possible drug-disease interactions by 61% (ARR 9%) targeting CKD/Drug interactions.
When? By July 2012

Root Cause Analysis

Drug Disease Interaction Risk

- Pt Complexity
- Clinical judgement of risk/benefit can be complex
- Different comfort levels with EMR
- Knowledge of capability of EMR

- Diagnosis not coded
- Diagnosis not recorded at pharmacy
- Diagnosis not included on Rx

- Diagnosis must be coded to run interaction checker
- Updates must be up to date
- High number of clinically insignificant interactions
- Complexity of ICD 9 codes

Proposed Situation:

Initiate coding standards for CKD 3, 4 and 5 that reflect the Snowmed coding system for CKD.

Implementation Plan

1. Presented A3 to IT/ EMR Committee Jan 15/13
2. Trial done with one doctor to further define potential benefit and risks (time/insignificant interactions).
3. Data collected at 6months and to be collected at 9 and 12 months post implementation
4. Consider countermeasures: physician satisfaction, physician confidence, billing

Results/ Next Steps:

Preliminary data suggests no significant reduction in potential drug disease interactions. Next step to work with community pharmacists to optimize 2nd check and to provide an education event for prescribers re significant drug disease interactions and management strategies in order to improve confidence in managing these alerts.

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