Preventing Harm at Discharge

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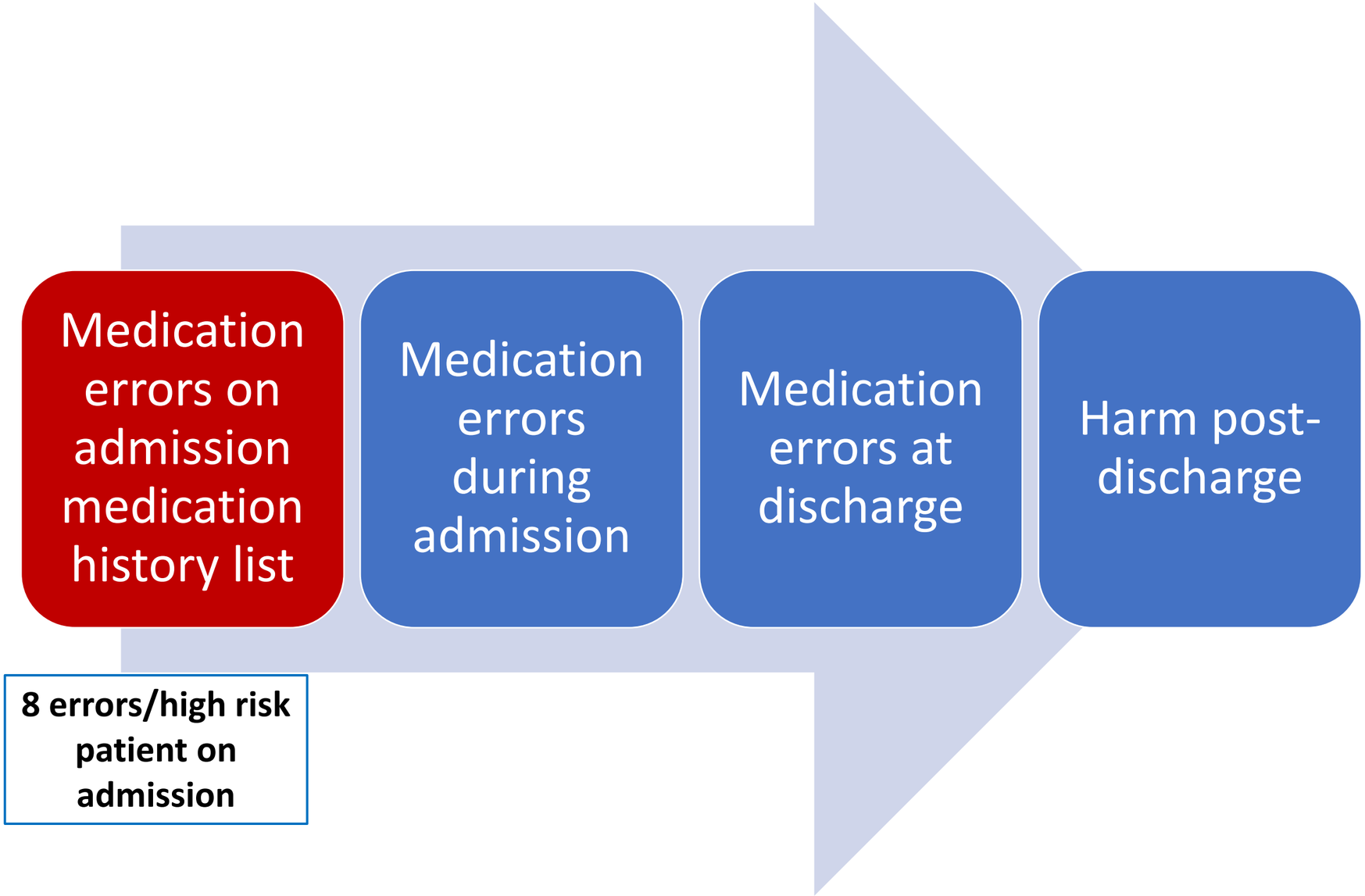
The Med Wreck Journey:
Hospital Admission

Med Wreck on Admission



SB1254

Effective January 2019

4118.5. **Hospital Pharmacies: Medication Profiles or Lists for High-Risk Patients** (a) A pharmacist at a hospital pharmacy shall obtain an accurate medication profile or list for **each high-risk patient upon admission of the high-risk patient…**

(b) Notwithstanding any other law, a pharmacy technician or an intern pharmacist may perform the task of obtaining an accurate medication profile or list for a high-risk patient …

(c) The hospital shall establish criteria regarding who is a high-risk patient for purposes of this section, and shall determine the timeframe for completion of the medication profile or list, based on the patient populations served by the hospital.

Pharmacy Lawbook, accessed 3/17/25

Demonstrating the Impact of SB1254 on Preventing Harm

Multicenter Quality Improvement Study

Thanh T, Stephens S,…Shane R, Preventing medication history errors in high-risk patients: Impact of California Senate Bill 1254. Am J Health-Syst Pharm. 2023: 80(9)e104–e110, https://doi.org/10.1093/ajhp/zxad038

Demonstrating the Impact of SB1254 on Preventing Harm

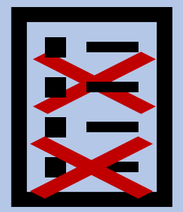
Results

2,273 medication histories

Number of medications/patient after history completed = 13 (median; IQR 9-19)

94% of med histories have at least 1 error (range 87%-94%)

54% of patients had a potentially **serious or life-threatening error**



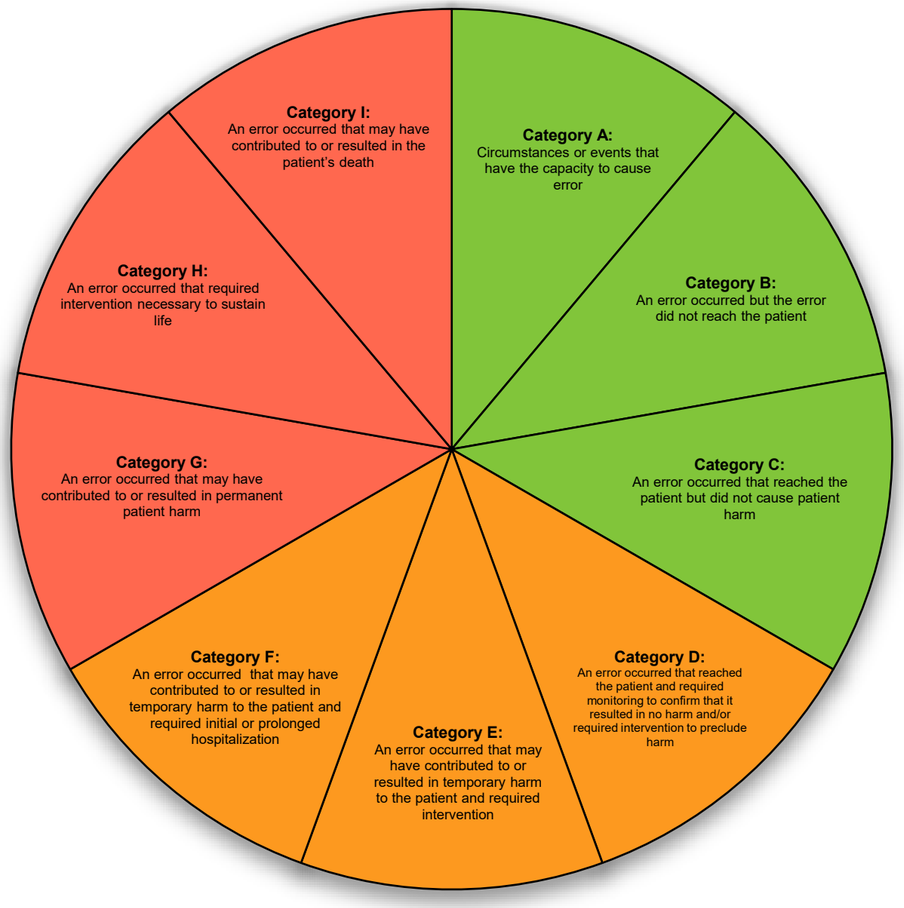
15,850 errors captured

25% of errors have potential for **serious/life threatening harm**

6 errors per medication history

Potential Severity of Errors

NCC MERP



Low Capacity for Harm	**Category A**	Circumstances or events that have the capacity to cause error
	Category B	An error **could have** occurred, but the error would not reach the patient
	Category C	An error **could have** occurred, but would not cause patient harm
Serious	**Category D**	The identified and intercepted error that **could have** reached the patient would require monitoring to confirm that it resulted in no harm and/or require intervention to preclude harm
	Category E	The identified and intercepted error **could have** contributed to or resulted in temporary harm to the patient and required intervention
	Category F	The identified and intercepted error **could have** contributed to or resulted in temporary harm to the patient and required initial or prolonged hospitalization
Life-Threatening	**Category G**	The identified and intercepted error **could have** contributed to or resulted in permanent patient harm
	Category H	The identified and intercepted error **could have** required intervention necessary to sustain life
	Category I	The identified and intercepted error **could have** contributed to or resulted in the patient's death

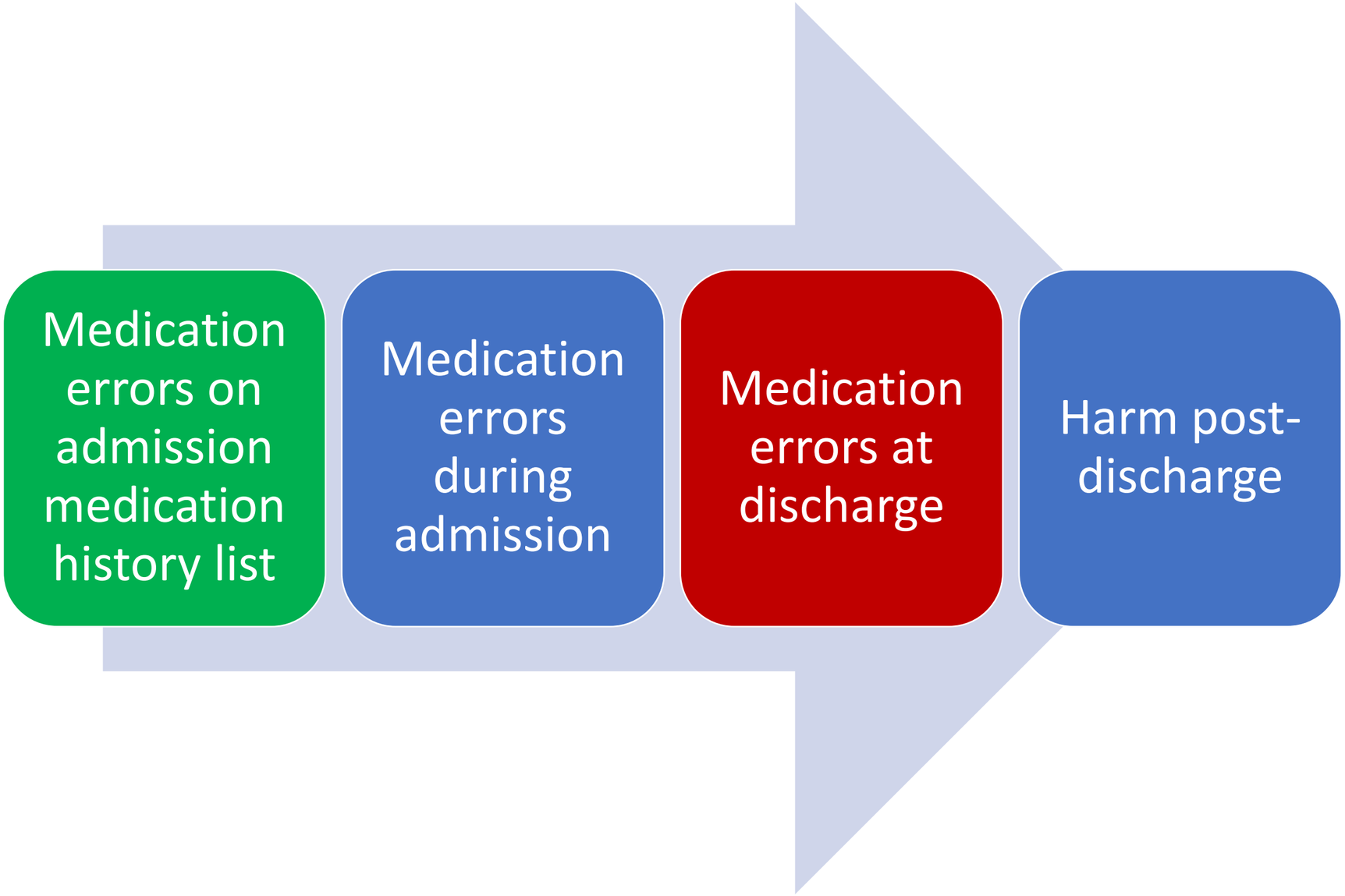
*NCC MERP: National Coordinating Council for Medication Error Reporting and Prevention

Pharmacist intervention on prescribing errors: Use of a standardized approach in the inpatient setting, https://doi.org/10.1093/ajhp/zxab278, accessed 8/31/24.

Admission Medication List: Examples of Errors

Patient Information	Error Identified & Resolved	Error Type & Severity	Harm Avoided
50 yo w/ stage III melanoma s/p resection, and h/o pulmonary embolism	Patient was taking aspirin 325mg daily for 2.5 months instead of Eliquis 5mg q12h due to lack of coverage	Adherence- Life Threatening	VTE recurrence
50 yo w/ ESRD s/p renal transplant	Tacrolimus 4 mg BID listed on PTA med list. Patient has been taking of 2mg qAM/1mg qPM due to high sensitivity to tacrolimus	Wrong Dose/Rate/ Frequency- Life Threatening	Drug Toxicity
40 yo w/no significant medical history	Flecainide 100mg q12hr on PTA med list. Patient on no meds PTA. Flecainide entered on wrong patient	Wrong Patient- Life Threatening	Risk of Arrhythmias

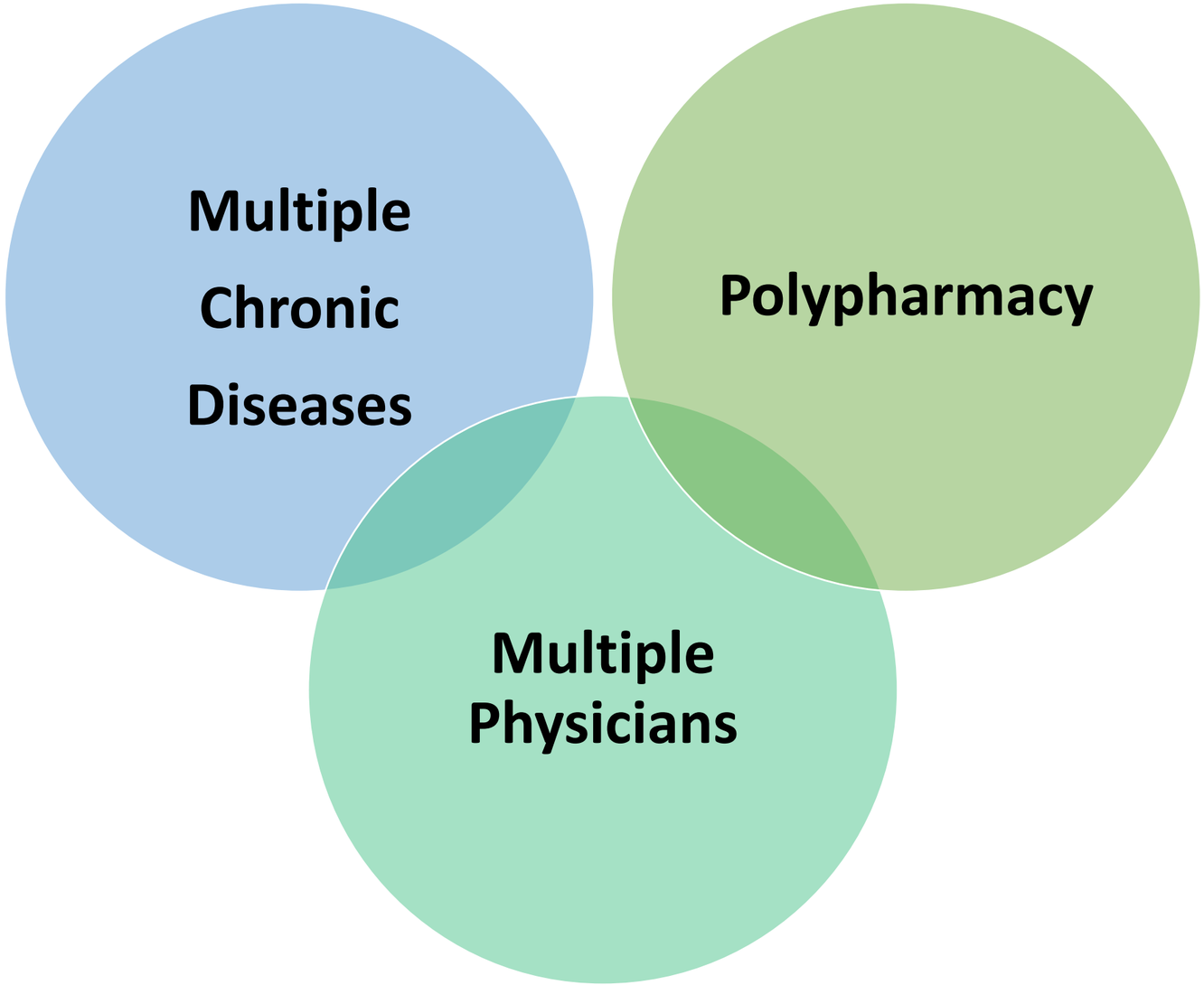
Med Wreck on Discharge



Evidence

- 2/5 patients have discrepancies in their medications at discharge[1]
- About half of all medication errors occur following discharge[2-3]
  - 36% patients experience one or more ***moderate*** adverse drug events post-discharge[2]
  - 29% patients experience one or more ***serious*** adverse drug events post-discharge[2]
- Approximately 20% of hospital readmissions are medication-related and about 70% of these medication-related readmissions are potentially preventable[4]

The “Poly” Problem



Hospital Discharge Challenges

With the aging population and increasing number of patients with chronic diseases, hospitals have increasingly sicker patients and bed capacity is frequently at or above capacity

Hospitals are focusing on expediting discharge to make room for patients in overcrowded emergency departments

There may be multiple providers involved in the patient's care

The electronic health record presents the providers with both the prior to medication list and hospital medication list to create the discharge medication list

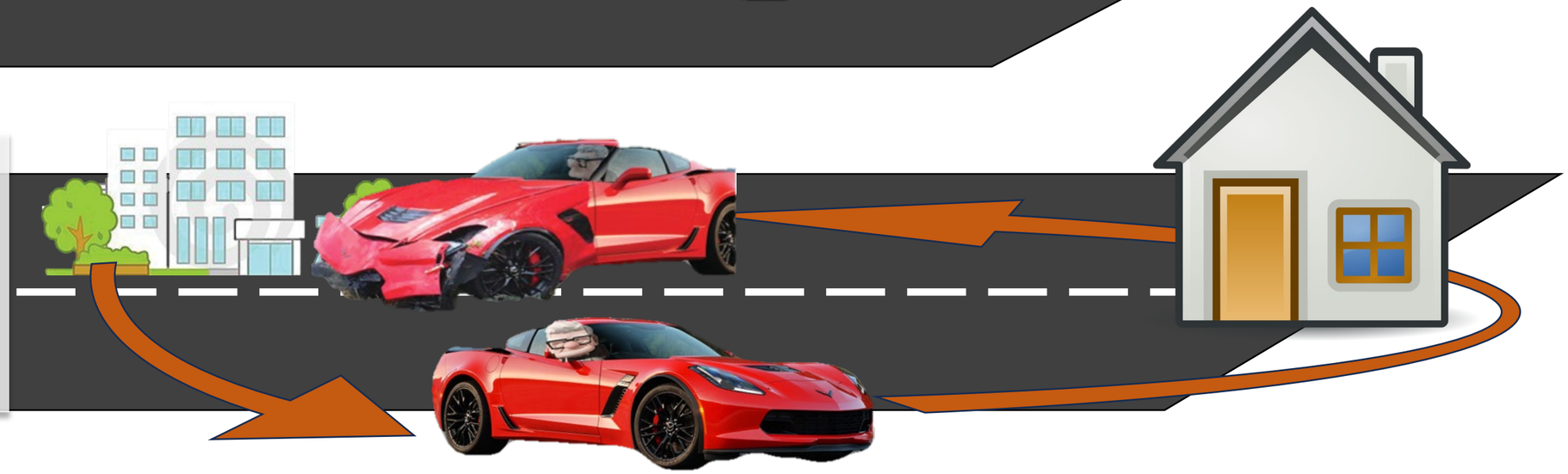
Busy providers may inadvertently continue medications that caused the admission, duplicate therapies the patient has at home or omit new medications that need to be continue

Discharge Med Wreck

Scenario 1: Patient Harm
A harmful medication error is identified soon after discharge

Scenario 2: Patient Harm
Medication error that causes harm over time

Scenario 3: Patient Discharged to Home and Readmitted
Readmission to the hospital for an adverse event or worsening condition (may not be recognized as a medication error)



The Solution

- Pharmacist discharge medication review prevented at least 1 error in 41%-67% of patients[5-7]
- Benefits of hospital pharmacists performing discharge review:
  - Prevent up to 2 errors per patients[8-9]
  - Prevent up to 61% adverse drug events classified as moderately harmful[7] and 25% adverse drug events with potential for serious and life-threatening harm[9]
  - Pharmacist led discharge service has been shown to significantly reduce 58% of significant errors in high-risk patients ($p<0.0001$)[9]
  - Errors corrected at discharge reduce the risk of errors when prescriptions are filled in community pharmacies as well as time to correct prescriptions

Transitions of Care System Quality Improvement Project Across 4 Hospitals: Discharge Medication Review

Goal

Evaluate # of errors intercepted by pharmacists and potential severity of errors

Methodology

6-week pilot at each site

Participating pharmacists and physicians trained on standard methodology

Pharmacists performed discharge medication review using standardized methodology and severity evaluation based on risk of harm if errors were not resolved.

Physician champions at each site responsible for review of errors to verify potential severity

Results

N=405 patients

Number of errors: 409

Number of serious or life-threatening errors: 174

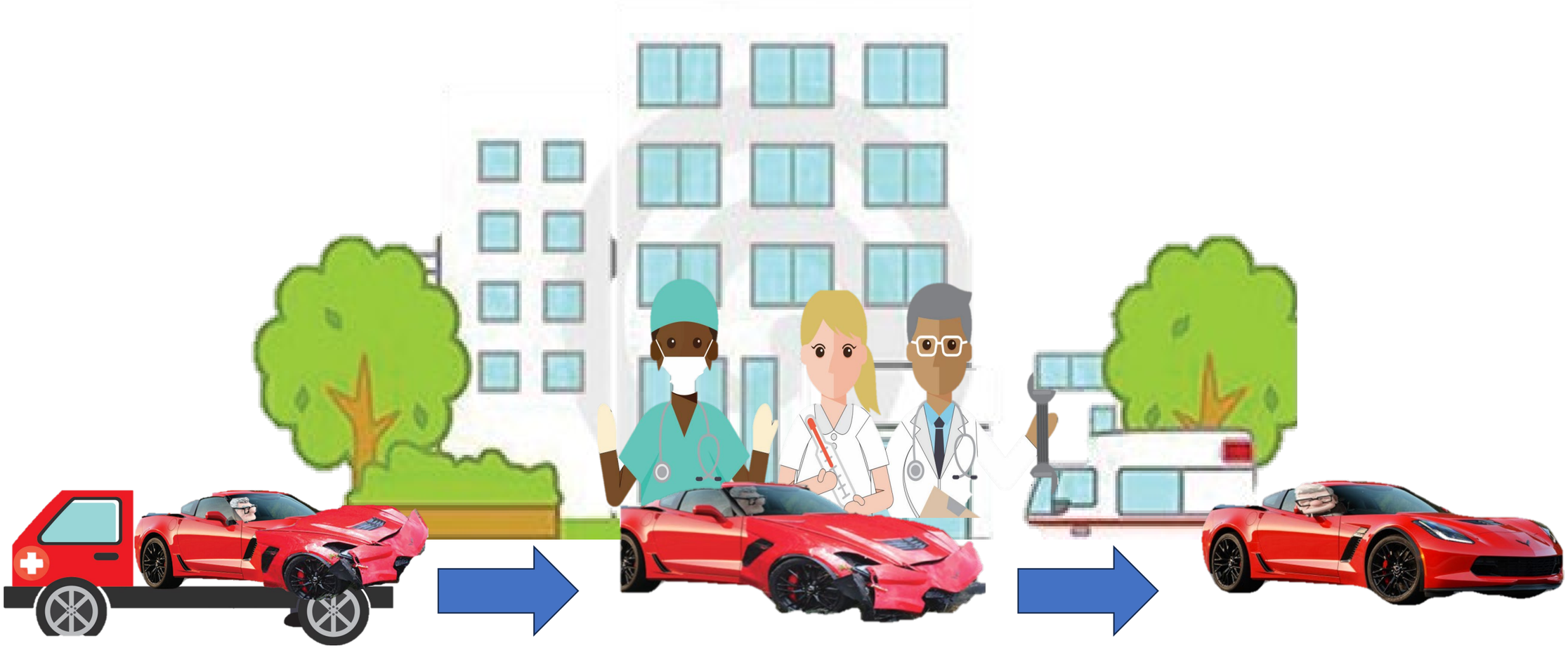
-42% of patients

-42% of errors

Discharge Medication List: Examples of Errors

Patient Information	Error Identified and Resolved	Error Type & Severity	Harm Avoided
91 yo M admitted for AMS, toxic metabolic encephalopathy, UTI, dementia.	Discharged with Lantus 18 units daily, Novolog 8 units BID, Humalog 0-10 units TID, increased sitagliptin 100mg daily. Blood sugars controlled on sitagliptin 50mg	Duplicate Therapy, Excessive Dose- Life Threatening	Severe Hypoglycemia
Patient allergic to sulfonamides (severe hives)	Patient discharge prescriptions for Bactrim; pharmacist modified to cefpodoxime 200mg BID, per C&S results	Allergy- Life Threatening	Anaphylaxis
72 yo patient admitted with middle cerebral artery infarct s/p thrombectomy; persistent SVT/atrial flutter PMH: PAH, HF, Afib	Discharged without anticoagulation Pharmacist recommended Apixiban 5mg po bid	Drug Omission- Life-threatening	Risk of Secondary Stroke

Goal: Preventing Harm at Hospital Discharge



Recommendation: For high-risk patients, as defined by the organization, pharmacy will ensure the accuracy of the medication list at discharge.

Summary

- Discharge medication orders are associated with errors that can cause patient harm after hospital discharge, especially in patients who are high-risk
  - Community pharmacists may not have access to hospital medical records and therefore, may not be able to determine that the prescriptions contain errors
- Average of 2 medication errors/patient at discharge; many of these are serious and can be life-threatening
- Section 4118.3.5 requires an accurate medication list for high-risk patients on admission

  Hospital Pharmacies: Medication Profiles or Lists for High-Risk Patients (a) A pharmacist at a hospital pharmacy shall obtain an accurate medication profile or list for each high-risk patient upon admission …
- Recommend amending this requirement to state **upon admission and discharge**

Pharmacy Lawbook, accessed 3/17/25

References

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