

Introduction

- **3.53 m** policyholders of medical insurance funds administered by Discovery Health experienced admissions in acute facilities at a **cost of R39.57 bn** (\$2.8 bn) in 2019.
- Unplanned readmissions within 30 days of the index admission, are estimated to be **10.8% and 13.1%, of these admissions and costs, respectively.**
- The cost to stakeholders is not only financial, as unplanned readmissions cause a considerable additional morbidity burden, and consequently distress to patients and their loved ones.
- Discovery Health began its health system quality measurement efforts over 15 years ago, aligned with its consumer-centric approach, and the conviction that healthcare systems that prioritise the improvement of patient outcomes, can achieve world-class outcomes.

Method

Predictive Model

A predictive machine learning algorithm was deployed to identify hospitalised patients at increased risk of readmission for:

- **AMI**
- **COPD**
- **Heart Failure**
- **Pneumonia**

Readmissions are included in many of ICHOMs standard sets and is considered a meaningful measure for directing healthcare improvement.

Post-Discharge Call Pilot

A pilot intervention was deployed whereby a Discovery care manager would contact the patient at discharge and enquire if the patient experienced the proper discharge steps, and ensure that the patient had a follow up consultation with their GP or treating physician shortly after discharge.



Reports

Additionally, we have begun measuring, and sharing hospital readmission reports with acute facilities aligned with the Centres for Medicare & Medicaid Services Hospital readmissions reduction programme.

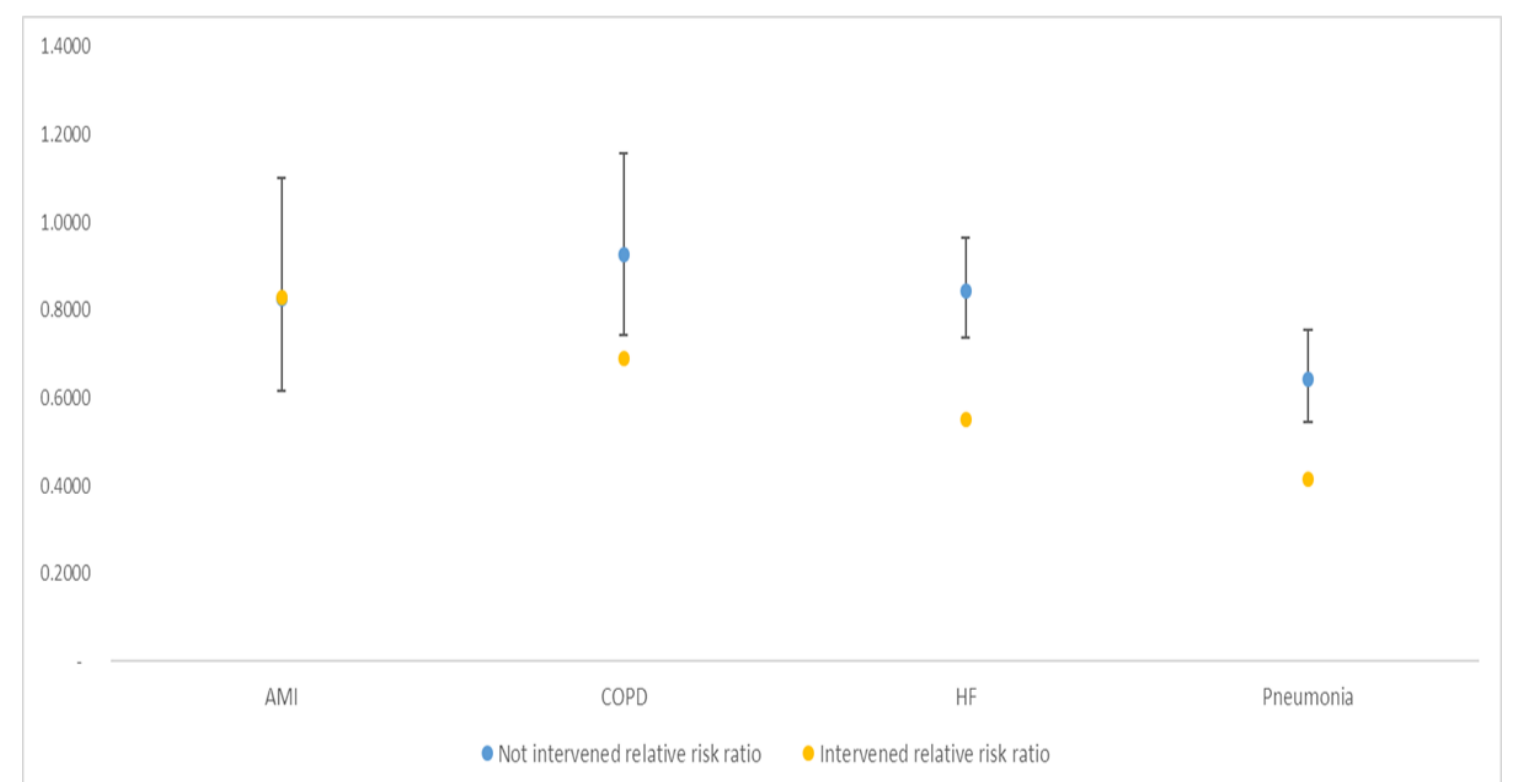
Results

- Between March- August 2020:
 - **270** outbound discharge planning interventions took place.
 - The readmission rate (RR) for the intervened population was **13%**, whereas a **23%** RR was expected based on the predictive model.
 - The RR for the non-intervened population was **17.4%**, relative to a **22.2%** expected readmission rate.

	Total	Readmissions	Intervened admissions	Intervened readmission rate	Intervened expected readmission rate
AMI	488	77	32	15.6%	20.0%
COPD	619	131	47	17.0%	23.9%
HF	1764	343	125	13.6%	24.6%
Pneumonia	1594	212	66	7.6%	20.6%
Total	4462	763	270	13.0%	23.0%

	Total	Readmissions	Not intervened admissions	Not intervened readmission rate	Not intervened expected readmission rate
AMI	488	77	456	15.8%	19.1%
COPD	619	131	572	21.5%	23.2%
HF	1764	343	1639	19.9%	23.6%
Pneumonia	1594	212	1525	13.6%	21.1%
Total	4462	763	4192	17.4%	22.2%

- Overall readmissions fared better than model predictions, the intervened population had a significantly lower comparative readmission rate when compared against model expectations, 56.5% observed vs expected (O vs E) for the intervened population, and 78.4% O vs E for the non-intervened population (p-val <0.001).
- Chronic obstructive failure, heart failure and pneumonia admissions all experienced lower observed readmissions (p-value <0.001), whereas patients admitted for acute myocardial infarction, did not experience statistically significant reductions in readmission rates.



Conclusion

Our experience has shown that readmission risk is modifiable, and supports the measurement and inclusion of readmission metrics for value based contracting with hospital providers.