

# RISK FACTORS FOR UNPLANNED AND RELATED READMISSION WITHIN 30 DAYS OF DISCHARGE

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## BACKGROUND

- Hospital readmission rates have been under a lot of recent scrutiny. Readmission rates are used as indicators for quality of care as well as payment incentives.
- Hospital Readmissions Reduction Program (HRRP), under the Affordable Care Act, will reduce payments to institutions with excessive readmissions within 30 days.

## OBJECTIVE

- This study was designed to investigate multiple factors, both social and medical, which can correlate to readmission within 30 days of hospital discharge.
- The data was set against many of the most common medical/social factors shown by previous studies to be resulting in readmission.

## METHODOLOGY

- Retrospective study
- We analyzed all readmissions in 2010 at Queens Hospital Center and stratified patients into 4 groups:
  - Planned and Related
  - Planned and Unrelated
  - Unplanned and Unrelated
  - Unplanned and Related**
- We then took the **unplanned and related** group and further investigated those patients against all the factors taken into consideration.
- We then had the Emergency Department re-screen all readmissions within that group to assure that they met published criteria, such as Milliman or Interqual guidelines, for admission.
- Total number of patients readmitted within 30 days in 2010: **1091**
- Total number of patient whom met inclusion criteria of Unplanned and Related: **287**
- These 287 patient had a total of **514** readmission visits
- 342** admissions met the published admission criteria.

## RISK FACTORS FOR READMISSION

Age	History of terminal disease
Gender	Primary Care Physician
Insurance	Infection
Medicare/Medicaid	Length of Stay
Previous location	Consults on Visit 0
Language	Consults on Visit 1
Home Caregiver	Discharge Medications
Homecare	Antibiotics
Number of Chronic Conditions	Medication Change
Ejection Fraction	Follow Up Appointment
Ambulatory	Appointment Kept
Dementia	New Anticoagulation
Diabetes	Surgery
History of COPD	History of HIV/AIDS
History of CHF	Hemoglobin A1c
Non-compliance	Glomerular Filtration
On Anticoagulation	History of Sickle Cell Disease
Psychiatric Diagnosis	Hemoglobin
Substance Abuse	RDW
Tobacco Use	BNP

## DATA

	COEFFICIENT	STANDARD ERROR	t-VALUE	p-VALUE
Constant	11.82	0.56	21.06	< 0.0001
Follow Up Appointment	2.33	0.81	2.88	0.0041
Diabetes mellitus	2.22	0.75	2.96	0.0032
Consults during index admission	-0.88	0.31	-2.89	0.0040
Recent Surgery	5.74	2.41	2.38	0.0175
Anticoagulation	3.26	1.63	1.99	0.0463

	TOTAL	Admission Criteria Met
Total number of readmissions	514	342
Average Age	57.79	61.58
Male Sex	284	188
Female Sex	230	154
Male: Female Ratio	1.23	1.22
Presenting from other Healthcare facilities	54	33
Readmitted with insurance	430	290
Readmissions without English fluency	119	82
Total readmissions who need homecare	158	127
Average number of chronic conditions	4.13	4.68
Bedbound patients	34	21
Needed Assistance with Ambulation	133	107
Readmissions with a history of Dementia	40	26
Readmissions with a history of DM	190	137
Readmissions with a history of COPD	71	64
Readmission with a history of CHF	103	81
Readmissions with a history of non-compliance	138	79
Readmissions on anticoagulation	62	47
Readmissions with a Psychiatric history	62	49
Readmissions with substance abuse history	98	60
Readmissions with a history of terminal disease	79	53
Readmissions where the PCP was notified	199	145
Average Length of Stay	5.54	5.62
Average number of days between Readmissions	12.73	13.08
Average consults called on Admission 0	0.92	0.91
Average consults called on Admission 1	0.98	1.05
Average discharge prescriptions	7.68	8.23
Average number of medication changes	2.70	2.64
Average days until follow up appointment	11.64	9.18
Number of patients which kept follow up appointment	131	90
Number of readmissions on new anticoagulation	27	18
Number of readmissions with recent surgery	12	3
Readmissions with a history of HIV/AIDS	12	8
Average HbA1c for those checked	7.32	7.21
Readmissions with a history of Sickle Cell	51	18
Average Hemoglobin	11.28	11.36
History of Smoking	94	72

## CONCLUSION

Factors associated with an increased risk for readmission:

- Male gender
- Diagnosis of diabetes mellitus (Type I/II)
- Increased number of chronic conditions
- Delay in outpatient follow up
- Fewer consults called on the index visit compare to subsequent visits
- Recent surgical procedures
- Initiation of anticoagulation

Factors that were not associated with an increased risk of readmission:

- Patients requiring homecare
- Bedbound/Total care status
- Diagnosis of dementia
- Presenting from a nursing home.
- Insurance status does not make one less likely to be readmitted

## DISCUSSION

By comparing data pools, we can further determine the likelihood of readmission of a given population subset:

CATEGORY	ALL VISITS	ONE TIME
Total number of readmissions	514	287
Average Age	57.78	58.73
Male: Female Ratio	1.23	1.19
Average number of chronic conditions	4.13	3.9

Younger patients are more likely to be readmitted again, and males are more likely to be readmitted than females.

Given the amount of readmissions with a diagnosis of Sickle Cell Disease, the average age is slightly skewed to the left.

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