Identifying Readmission Problems

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20 Most Frequent Principal Diagnoses

Table 1. Top 20 principal diagnoses among nonmaternal, nonneonatal inpatient stays, 2018

Rank	Principal Diagnosis	Number of Stays	Percent of Stays	Aggregate Cost ($ billions)	Percent of Aggregate Cost	Mean Cost per Stay ($)
1	Septicemia	2,218,800	8.00%	41.5	10.30%	18,700
2	Heart failure	1,135,900	4.10%	14.5	3.60%	12,800
3	Osteoarthritis	1,128,100	4.10%	18	4.50%	16,000
4	Pneumonia (except that caused by tuberculosis)	740,700	2.70%	7.7	1.90%	10,500
5	Diabetes mellitus with complication	678,600	2.40%	7.9	1.90%	11,600
6	Acute myocardial infarction	658,600	2.40%	14.7	3.60%	22,300
7	Cardiac dysrhythmias	620,000	2.20%	7.5	1.90%	12,100
8	COPD and bronchiectasis	569,600	2.00%	5.3	1.30%	9,200
9	Acute and unspecified renal failure	565,800	2.00%	5.4	1.30%	9,600
10	Cerebral infarction	533,400	1.90%	7.9	2.00%	14,900
11	Skin and subcutaneous tissue infections	529,600	1.90%	4	1.00%	7,600
12	Depressive disorders	525,000	1.90%	2.8	0.70%	5,400
13	Spondylopathies/Spondyloarthropathy	519,600	1.90%	12.5	3.10%	24,000
14	Urinary tract infections	508,700	1.80%	3.8	0.90%	7,500
15	Respiratory failure; insufficiency; arrest	506,800	1.80%	9.1	2.20%	17,900
16	Schizophrenia spectrum and other psychotic disorders	399,900	1.40%	3.7	0.90%	9,300
17	Coronary atherosclerosis and other heart disease	358,900	1.30%	8.7	2.20%	24,400
18	Biliary tract disease	349,900	1.30%	4.5	1.10%	13,000
19	Fluid and electrolyte disorders	349,800	1.30%	2.7	0.70%	7,600
20	Complication of select surgical or medical care, injury, initial encounter*	338,800	1.20%	6	1.50%	17,700

Abbreviations: COPD, chronic obstructive pulmonary disease; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification
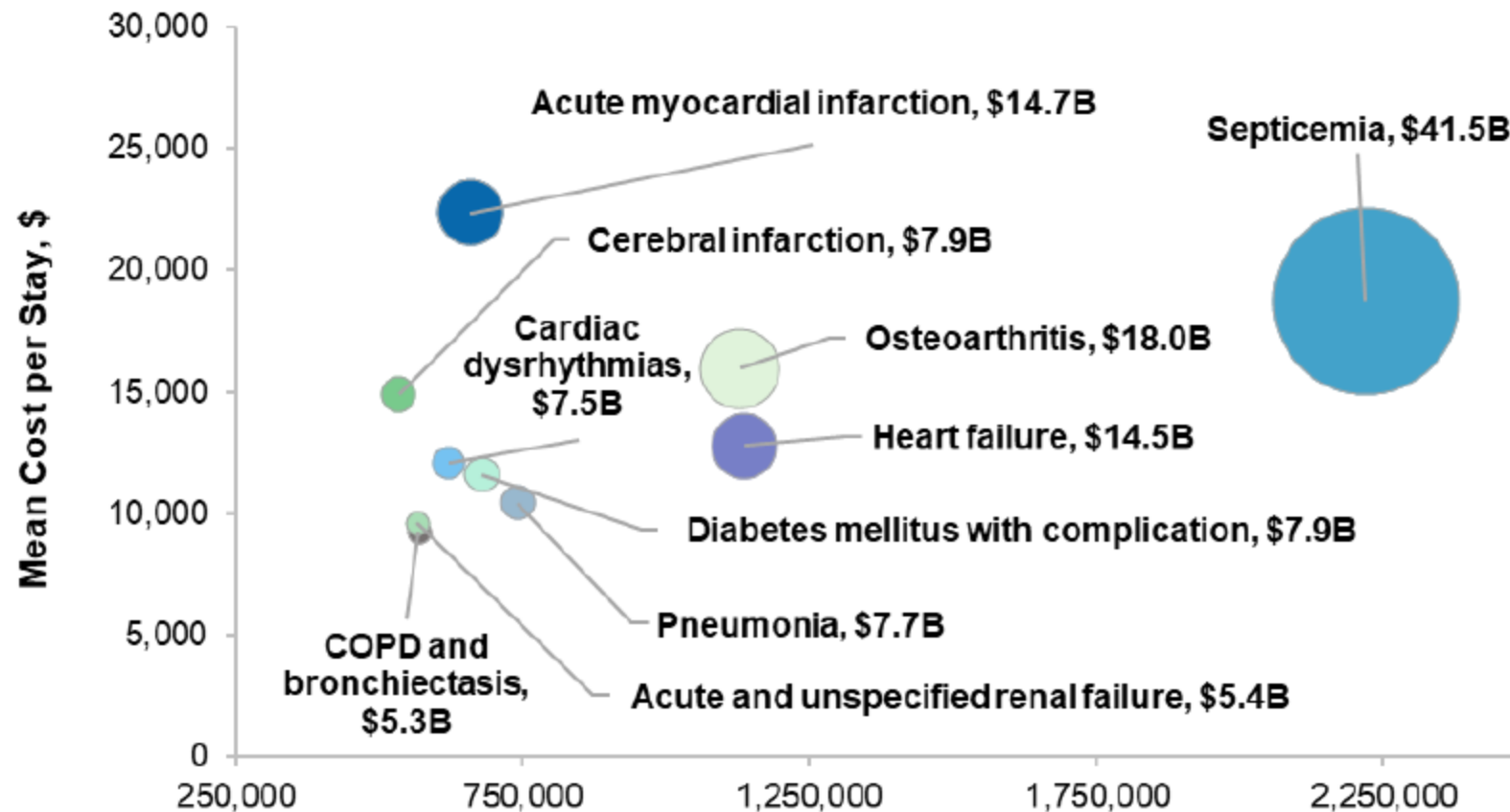
Notes: Diagnoses were identified using the Clinical Classifications Software Refined (CCSR) for ICD-10-CM Diagnoses. Number of stays is rounded to the nearest hundred. Mean cost per stay is rounded to the nearest $100.

* This includes complications, such as infection, for surgical or medical care other than those from cardiovascular, genitourinary, or internal orthopedic devices or from organ/tissue transplants.

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2018

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Average Cost & Number of Stays

Figure 1. Aggregate cost of nonmaternal, nonneonatal hospital inpatient stays, by mean cost and number of stays, 10 most frequent principal diagnoses, 2018

Abbreviation: B, billion; COPD, chronic obstructive pulmonary disease; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification

Notes: Diagnoses were identified using the Clinical Classifications Software Refined (CCSR) for ICD-10-CM Diagnoses. The pneumonia diagnosis group excludes pneumonia caused by tuberculosis.

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Top 20 Diagnoses Linked to Readmissions

Table A.7 Rate and Number of 30-Day All-Cause Readmissions by the 20 Most Common Principal Diagnoses at Index Admission, Ranked by Number of Readmissions, 2022

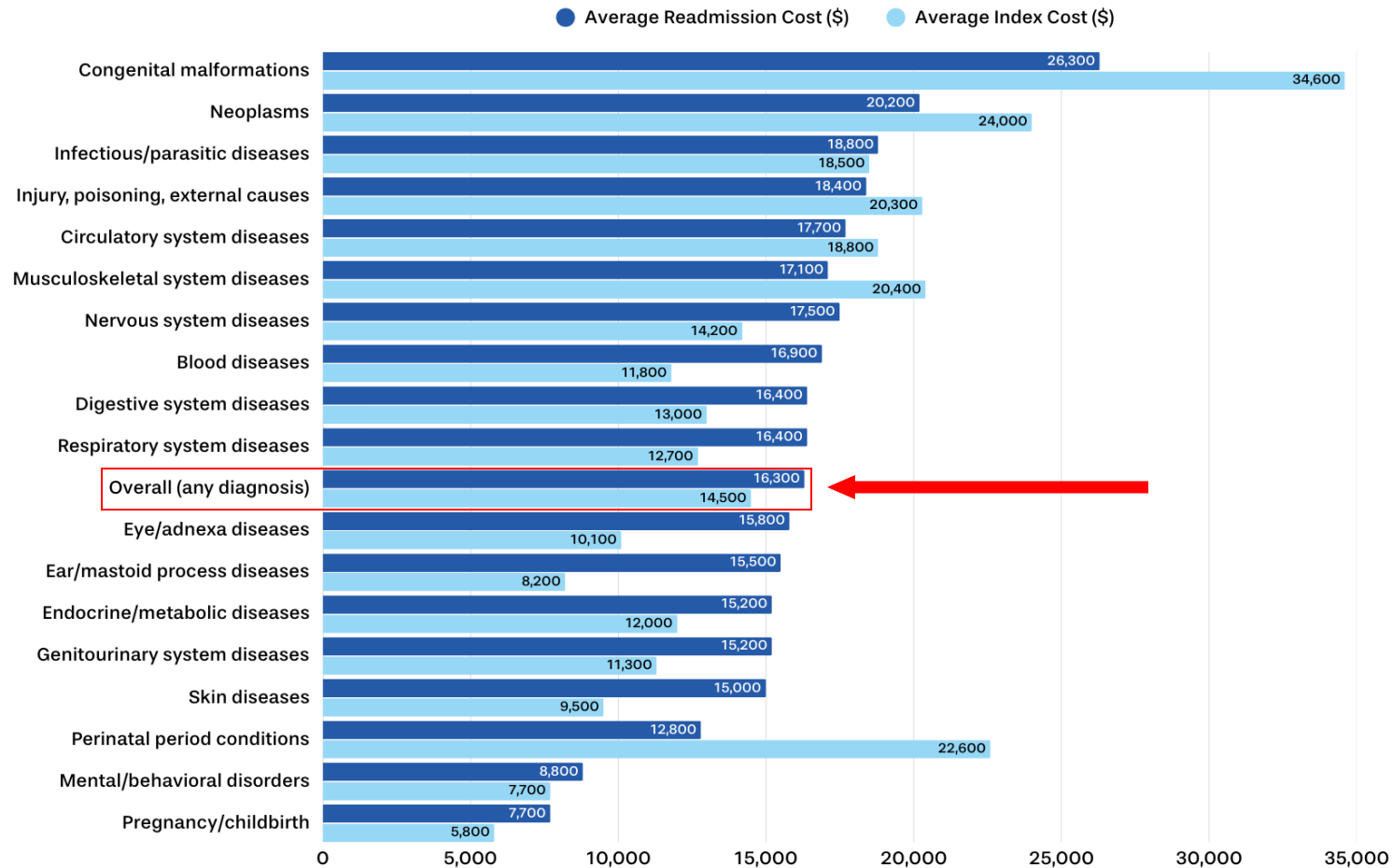| Rank	Principal Diagnosis at Index Admission	Number of 30-Day All-Cause Readmissions	30-Day All-Cause Readmission Rate[a]
1	INF002: Septicemia	337,000	17.7
2	CIR019: Heart failure	216,500	21.9
3	END003: Diabetes mellitus with complication	119,700	19.2
4	INF012: COVID-19	111,000	15
5	GEN002: Acute and unspecified renal failure	84,400	18
6	FAC006: Encounter for antineoplastic therapies	75,900	65.6
7	RSP002: Pneumonia (except that caused by tuberculosis)	74,700	16.2
8	CIR017: Cardiac dysrhythmias	72,500	13.1
9	MBD001: Schizophrenia spectrum and other psychotic disorders	68,400	19.7
10	GEN004: Urinary tract infections	66,200	15.6
11	RSP012: Respiratory failure; insufficiency; arrest	63,100	19.6
12	END011: Fluid and electrolyte disorders	61,600	19.5
13	CIR009: Acute myocardial infarction	60,800	12.6
14	INJ037: Complication of other surgical or medical care, injury, initial encounter	58,800	19.3
15	MBD017: Alcohol-related disorders	58,700	18.9
16	RSP008: Chronic obstructive pulmonary disease and bronchiectasis	56,200	20.2
17	NEU002: Cerebral infarction	53,100	11.2
18	GEN003: Chronic kidney disease	47,400	29
19	DIG019: Other specified and unspecified liver disease	45,900	31.3
20	MBD002: Depressive disorders	43,600	10.8

Notes: Principal diagnosis category is based on the Clinical Classifications Software Refined (CCSR) default categorization scheme for the principal diagnosis in inpatient data, v2024.1. The weighted number of 30-day all cause readmissions is presented for the top 20 principal diagnoses at the index stay and rounded to the nearest hundred. Diagnoses are sorted by the weighted number of readmissions. The definitions of an index admission and readmission are consistent with HCUP net.

a Rate per 100 Index Stays

Source: Agency for Healthcare Research and Quality (2024)

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Average Cost of Readmissions by Diagnosis

Figure 2. Average cost of index admissions and 30-day all-cause readmissions by principal diagnosis category at index admission, ranked by average readmission cost, 2020

● Average Readmission Cost ($)   ● Average Index Cost ($)

Diagnosis	Average Readmission Cost ($)	Average Index Cost ($)
Congenital malformations	26,300	34,600
Neoplasms	20,200	24,000
Infectious/parasitic diseases	18,800	18,500
Injury, poisoning, external causes	18,400	20,300
Circulatory system diseases	17,700	18,800
Musculoskeletal system diseases	17,100	20,400
Nervous system diseases	17,500	14,200
Blood diseases	16,900	11,800
Digestive system diseases	16,400	13,000
Respiratory system diseases	16,400	12,700
Overall (any diagnosis)	16,300	14,500
Eye/adnexa diseases	15,800	10,100
Ear/mastoid process diseases	15,500	8,200
Endocrine/metabolic diseases	15,200	12,000
Genitourinary system diseases	15,200	11,300
Skin diseases	15,000	9,500
Perinatal period conditions	12,800	22,600
Mental/behavioral disorders	8,800	7,700
Pregnancy/childbirth	7,700	5,800

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Readmissions Database (NRD), 2020.

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Readmissions by Location & Race/Ethnicity

Table 2. Rate and number of 30-day all-cause readmissions by patient location and race/ethnicity, 2016-2019 and 2020

Patient characteristic	Readmission rate[a]			Number of readmissions[b] (thousands)		
	2016-2019 (Mean)	2020	Percentage change, 2016-2019 (Mean)–2020	2016-2019 (Mean)	2020	Percentage change, 2016-2019 (Mean)–2020
Patient location						
Large central metropolitan	14.8	14.6	-1.3	1,157	989	-14.6
Large fringe metropolitan	13.9	13.8	-0.8	1,106	1,003	-9.3
Small and medium metropolitan	13.5	13.7	1.2	1,324	1,227	-7.3
Rural	13	13	-0.3	663	586	-11.7
Patient race and ethnicity						
White, non-Hispanic	13.8	13.9	0.3	2,782	2,473	-11.1
Black, non-Hispanic	16.2	16	-1.1	800	734	-8.3
Hispanic	13.1	12.7	-2.9	361	337	-6.7
Asian/Pacific Islander, non-Hispanic	11.6	11.7	0.7	92	87	-5.2
Other, non-Hispanic	12.1	12.4	2.4	110	111	0.4

[a] The readmission rate is calculated using discharges from January through November to allow for a 30-day follow up period.
[b] The number of readmissions is the 12-month count calculated by multiplying the readmission rate by the 12-month index admission count.
Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Readmissions Database (NRD), 2016-2020.
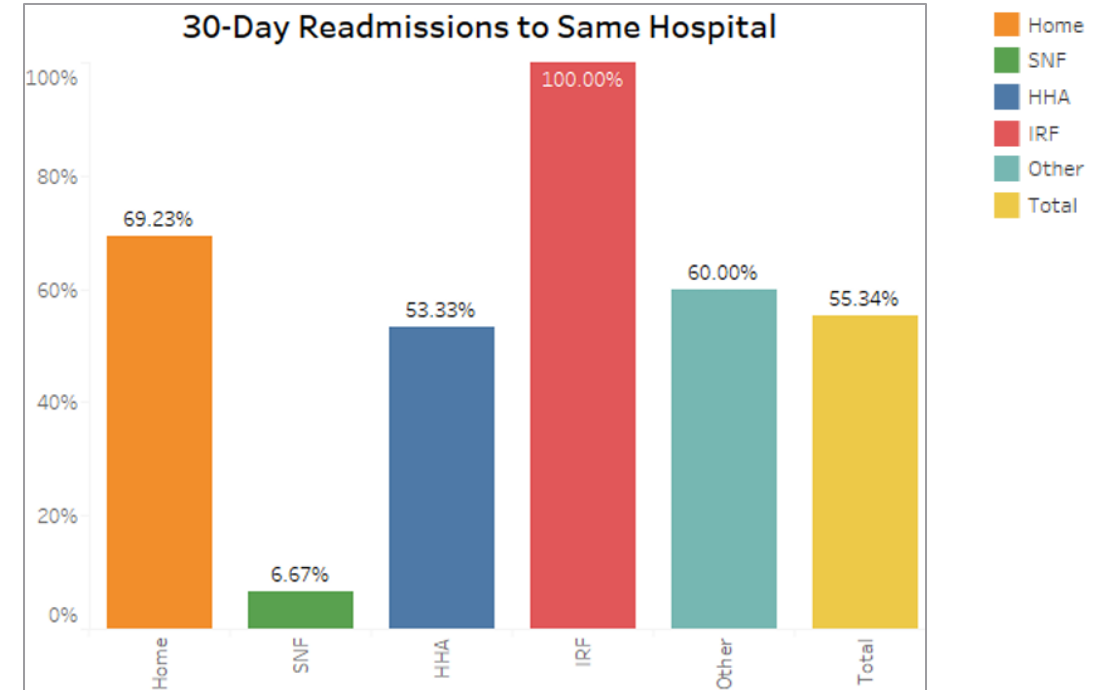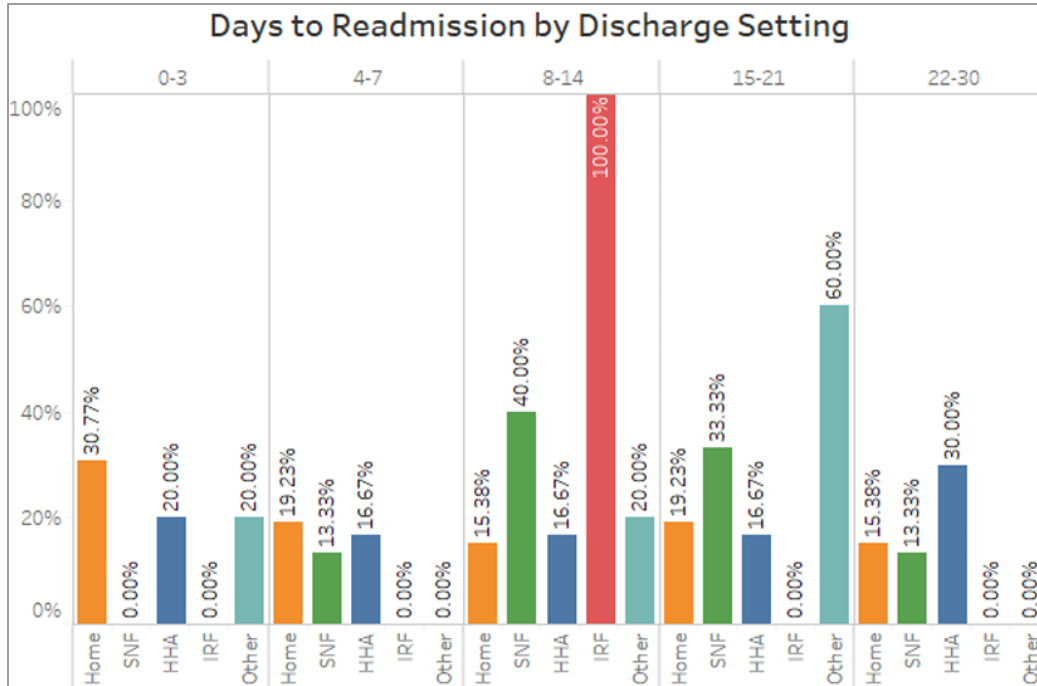
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Trends in Readmissions by Payer

Figure 1. Rates of 30-day all-cause readmissions by expected primary payer, 2016-2020

Readmission Discharge Distribution

Measure: Readmissions: All-cause   **Time Period:** 10/01/2021 – 09/30/2022   *If rate is not available, N/R (no rate) is displayed.*

*SNF=Skilled Nursing Facility, HHA=Home Health Agency, IRF=Inpatient Rehabilitation Facility

Source: Health Services Advisory Group (2023)

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Readmission Discharge Distribution

Measure: Readmissions: All-cause   **Time Period:** 10/01/2021 – 09/30/2022   *If rate is not available, N/R (no rate) is displayed.*

Setting Discharged To*	30-Day Readmit Rate	Discharges	Readmits Within 30 Days	30-Day Readmits to Same Hospital		30-Day Readmits to Different Hospital		Days to Readmission									
								0-3 Days		4-7 Days		8-14 Days		15-21 Days		22-30 Days	
				N	%	N	%	N	%	N	%	N	%	N	%	N	%
Home	12.50%	416	52	36	69.23%	16	30.77%	16	30.77%	10	19.23%	8	15.38%	10	19.23%	8	15.38%
SNF	13.64%	110	15	1	6.67%	14	93.33%	0	0.00%	2	13.33%	6	40.00%	5	33.33%	2	13.33%
HHA	25.42%	118	30	16	53.33%	14	46.67%	6	20.00%	5	16.67%	5	16.67%	5	16.67%	9	30.00%
IRF	7.14%	14	1	1	100.00%	0	0.00%	0	0.00%	0	0.00%	1	100.00%	0	0.00%	0	0.00%
Other	14.29%	35	5	3	60.00%	2	40.00%	1	20.00%	0	0.00%	1	20.00%	3	60.00%	0	0.00%
Total	14.86%	693	103	57	55.34%	46	44.66%	23	22.33%	17	16.50%	21	20.39%	23	22.33%	19	18.45%

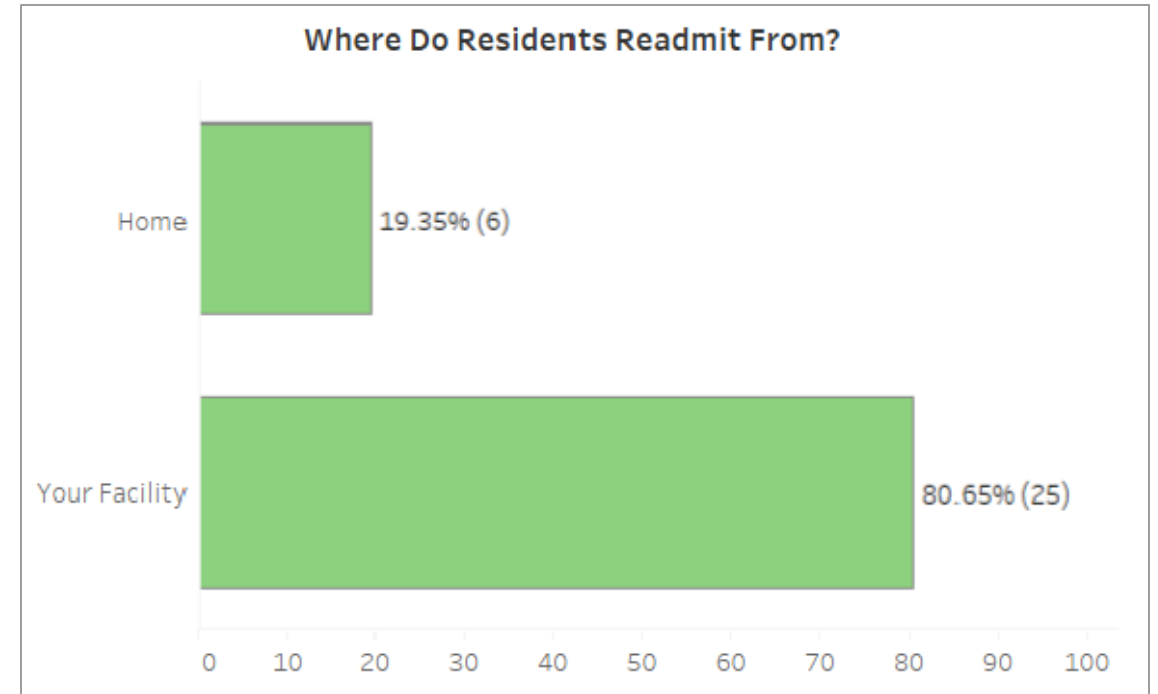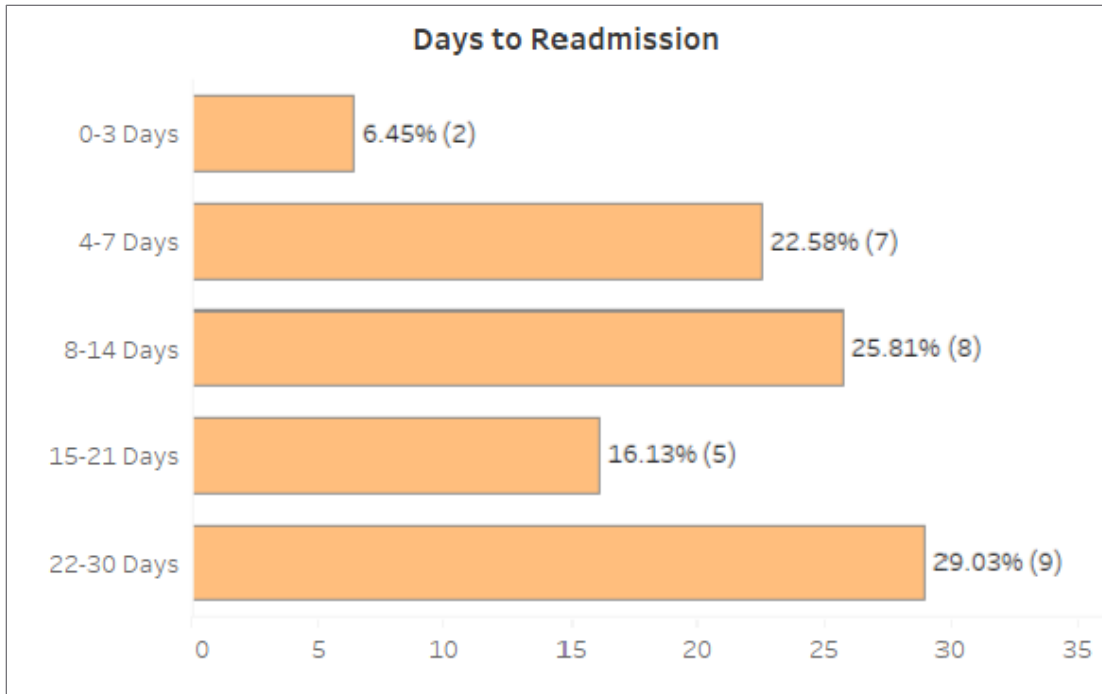*SNF=Skilled Nursing Facility, HHA=Home Health Agency, IRF=Inpatient Rehabilitation Facility

Source: Health Services Advisory Group (2023)

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Readmission Data

Measure: Readmissions: All-cause   **Time Period:** 10/01/2021 – 09/30/2022   *If rate is not available, N/R (no rate) is displayed.*

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Typical Strategies

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Typical Strategies

- Project RED (re-engineering discharge)
- Project BOOST (Better Outcomes for Older Adults through Safe Transitions)
- Four Pillars of Care Transitions (Coleman Model)
  - Medication self-management
  - The Personal Health Record
  - Timely primary care/specialty care follow up
  - Knowledge of red flags that indicates worsening condition and how to respond

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Create a Post-Discharge & Transition Plan

- Begin transition planning upon admission, day 1.
- Hardwire multidisciplinary rounds into the care planning process to comprehensively address the needs and goals of the patients and families.
- Ensure patients understand their condition and are empowered to care themselves.
- When patients meet high readmission-risk criteria, focus customized care coordination efforts on:
  - Social determinants of health
  - Patient-centered care planning that addresses potential transitional barriers
  - Complex care needs using intensive case management

Source: Health Services Advisory Group (2021)

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Follow Up & Monitor Patient After Discharge

- Perform a warm hand-off or SBAR (Situation, Background, Assessment, Recommendation) with post-acute providers to review transition plan.
- When patients are discharged home:
  - Confirm the correct phone number for contacting the patient post-discharge.
  - Implement a 24/7 telehealth program.
  - Use telehealth to increase access to medically underserved areas and patients; take into account patients with limited mobility.
  - Use telehealth for high-risk patients, including daily monitoring of vitals and following up when monitoring indicates abnormal vitals.
  - Partner with home health agencies that frontload visits.
  - Schedule the primary care provider appointment for the patient instead of giving him or her an appointment card or asking them to do it themselves.
  - Ensure patients have the means to arrive at follow-up appointments.

Source: Health Services Advisory Group (2021)

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Proven Strategies

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Know Your Readmitted Patients

- Review your data. Understand your readmitted population by performing a "5 whys" analysis into each case.
- Track and trend:
  - High-utilizer status.
  - Readmissions source (nursing home, home health, or home with or without assistance).
  - Unmet needs of those who have been readmitted.

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3 Goals to Reducing Readmissions

1

Early Intervention

2

Oversight

3

Connecting the Dots

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Top 10 Proven Strategies to Reduce Readmissions

1. **Discharge Awareness**: Receive prompt notification of patient discharge
2. **Engagement**: Speak their language and meet cultural needs
3. **Medication Management**: Fill medication within 48 hours and reconciliation
4. **Discharge Review**: Understand discharge instructions
5. **PCP Follow-up**: Arrange a PCP visit within 7–10 days
6. **Patient Understanding**: Identify and understand the cause of each patient's hospitalization
7. **Equipment Check**: Confirm appropriate tools and equipment are in place to manage conditions
8. **Symptom Education**: Understand signs, symptoms, and when to seek help
9. **Comprehensive Assessment**: Perform head-to-toe and ADL/IADL reviews
10. **Proactive Outreach**: Clinician outreach within 48 hours and minimum weekly thereafter
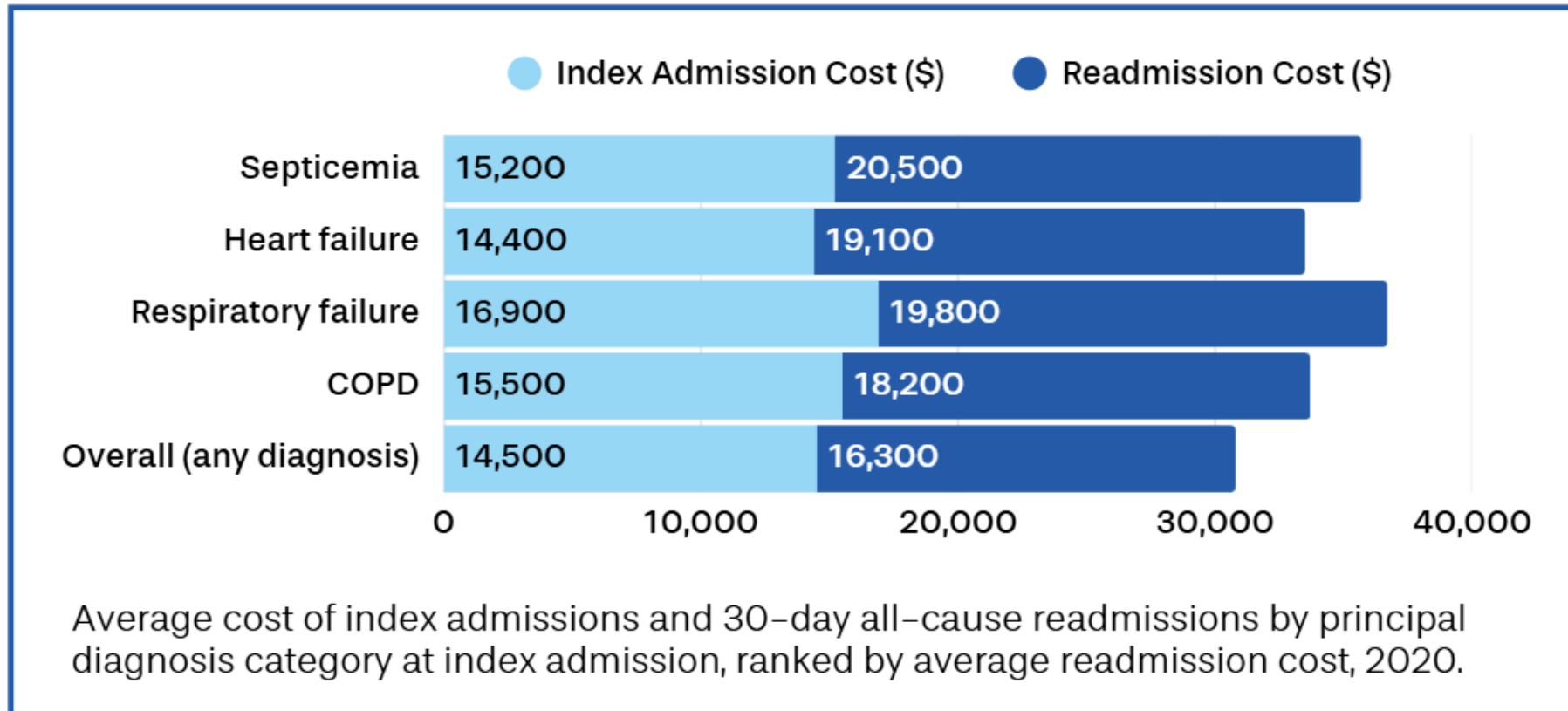
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Heart Failure Pathway

Week 1

Day	
Day 1	Introductory 1st Call
Day 2	Understanding Heart Failure
Day 3	Weight & Med Reminder
Day 4	
Day 5	Medication Management
Day 6	
Day 7	Action Plan

Week 2

Day	
Day 8	
Day 9	DASH Diet
Day 10	Low Salt
Day 11	
Day 12	
Day 13	Types of Heart Failure
Day 14	

Week 3

Day	
Day 15	
Day 16	Action Plan
Day 17	
Day 18	
Day 19	Medication Adherence
Day 20	
Day 21	Check In

Week 4

Day	
Day 22	
Day 23	
Day 24	
Day 25	Medication Management
Day 26	
Day 27	
Day 28	Goal Review
Day 29	
Day 30	Final Call & Outcomes

Key:
- Live Call/Video
- Text/SMS
- Email

Source: Avery Telehealth

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20

Conquering Readmissions

The High Cost of Readmissions

1 in 5 Medicare patients are readmitted within 30 days.

	Index Admission Cost ($)	Readmission Cost ($)
Septicemia	15,200	20,500
Heart failure	14,400	19,100
Respiratory failure	16,900	19,800
COPD	15,500	18,200
Overall (any diagnosis)	14,500	16,300

Average cost of index admissions and 30–day all–cause readmissions by principal diagnosis category at index admission, ranked by average readmission cost, 2020.

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Readmissions Reduction Savings – 30%

Principal Diagnosis	Avg. Readmission Cost	Readmission Rate	Reduction %	Savings per 1,000
Septicemia	$ 20,500	17.7%	30%	$ 1,088,550
Heart Failure	$ 19,100	21.9%	30%	$ 1,254,870
Respiratory Failure	$ 19,800	19.6%	30%	$ 1,164,240
COPD	$ 18,200	20.2%	30%	$ 1,102,920
Overall	$ 14,500	16.4%	30%	$ 713,400
				$ 5,323,980

Source: AHRQ (2022)

Readmissions Reduction Savings – 40%

Principal Diagnosis	Avg. Readmission Cost	Readmission Rate	Reduction %	Savings per 1,000
Septicemia	$ 20,500	17.7%	40%	$ 1,451,000
Heart Failure	$ 19,100	21.9%	40%	$ 1,673,160
Respiratory Failure	$ 19,800	19.6%	40%	$ 1,552,320
COPD	$ 18,200	20.2%	40%	$ 1,470,560
Overall	$ 14,500	16.4%	40%	$ 951,200
				$ 7,098,640

Source: AHRQ (2022)

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Readmissions Reduction Savings – 50%

Principal Diagnosis	Avg. Readmission Cost	Readmission Rate	Reduction %	Savings per 1,000
Septicemia	$ 20,500	17.7%	50%	$ 1,814,250
Heart Failure	$ 19,100	21.9%	50%	$ 2,091,450
Respiratory Failure	$ 19,800	19.6%	50%	$ 1,940,400
COPD	$ 18,200	20.2%	50%	$ 1,838,200
Overall	$ 14,500	16.4%	50%	$ 1,189,000
				$ 8,873,300

Source: AHRQ (2022)

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Questions & Answers

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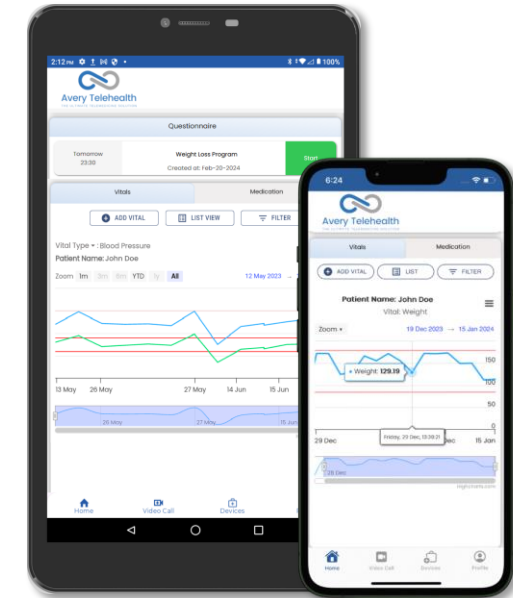✉️ info@averytelehealth.com

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