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Hospice Care:

The Surprise Question and predicting Mortality

May 20, 2023

TriCities Pain Conference



Objectives

1. 1. Develop a basic understanding of Hospice and dispel some misconceptions.
2. 2. Optimize how we recognize and predict mortality.
- 3.
4. 3. Appreciate how a referral for Hospice can benefit patients, families, and our healthcare systems.

Hospice Care

- ❖ When someone is diagnosed with a terminal illness, they have two paths to choose from.
- ❖ They can choose to seek treatment for their terminal illness, with or without palliative care support.
- ❖ Or they can choose to focus on comfort only when treatment is no longer an option or no longer desired.
- ❖ This is where hospice care is an option to be discussed.



Hospice Misconceptions

- It's the Doctor's responsibility to bring up hospice.
- Hospice is for people whose death is hours or minutes away.
- Hospice is a place.
- Hospice Care ends when my loved one dies
- A patient on Hospice has to be DNR/DNI
- Hospice provides 24-hour care.
- All patients who go to the Hospice House die.

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Causes of death

10 Leading Causes of Death by Age Group, United States – 2018

Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	Total
1	Congenital Anomalies 4,473	Unintentional Injury 1,226	Unintentional Injury 734	Unintentional Injury 692	Unintentional Injury 12,044	Unintentional Injury 24,614	Unintentional Injury 22,667	Malignant Neoplasms 37,301	Malignant Neoplasms 113,947	Heart Disease 526,509	Heart Disease 655,381
2	Short Gestation 3,679	Congenital Anomalies 384	Malignant Neoplasms 393	Suicide 596	Suicide 6,211	Suicide 8,020	Malignant Neoplasms 10,640	Heart Disease 32,220	Heart Disease 81,042	Malignant Neoplasms 431,102	Malignant Neoplasms 599,274
3	Maternal Pregnancy Comp. 1,358	Homicide 353	Congenital Anomalies 201	Malignant Neoplasms 450	Homicide 4,607	Homicide 5,234	Heart Disease 10,532	Unintentional Injury 23,056	Unintentional Injury 23,693	Chronic Low. Respiratory Disease 135,560	Unintentional Injury 167,127
4	SIDS 1,334	Malignant Neoplasms 326	Homicide 121	Congenital Anomalies 172	Malignant Neoplasms 1,371	Malignant Neoplasms 3,684	Suicide 7,521	Suicide 8,345	Chronic Low. Respiratory Disease 18,804	Cerebro-vascular 127,244	Chronic Low. Respiratory Disease 159,486
5	Unintentional Injury 1,168	Influenza & Pneumonia 122	Influenza & Pneumonia 71	Homicide 168	Heart Disease 905	Heart Disease 3,561	Homicide 3,304	Liver Disease 8,157	Diabetes Mellitus 14,941	Alzheimer's Disease 120,658	Cerebro-vascular 147,810
6	Placenta Cord. Membranes 724	Heart Disease 115	Chronic Low. Respiratory Disease 68	Heart Disease 101	Congenital Anomalies 354	Liver Disease 1,008	Liver Disease 3,108	Diabetes Mellitus 6,414	Liver Disease 13,945	Diabetes Mellitus 60,182	Alzheimer's Disease 122,019
7	Bacterial Sepsis 579	Perinatal Period 62	Heart Disease 68	Chronic Low Respiratory Disease 64	Diabetes Mellitus 246	Diabetes Mellitus 837	Diabetes Mellitus 2,282	Cerebro-vascular 5,128	Cerebro-vascular 12,789	Unintentional Injury 57,213	Diabetes Mellitus 84,946
8	Circulatory System Disease 428	Septicemia 54	Cerebro-vascular 34	Cerebro-vascular 54	Influenza & Pneumonia 200	Cerebro-vascular 567	Cerebro-vascular 1,704	Chronic Low. Respiratory Disease 3,807	Suicide 8,540	Influenza & Pneumonia 48,888	Influenza & Pneumonia 59,120
9	Respiratory Distress 390	Chronic Low. Respiratory Disease 50	Septicemia 34	Influenza & Pneumonia 51	Chronic Low. Respiratory Disease 165	HIV 482	Influenza & Pneumonia 956	Septicemia 2,380	Septicemia 5,956	Nephritis 42,232	Nephritis 51,386
10	Neonatal Hemorrhage 375	Cerebro-vascular 43	Benign Neoplasms 19	Benign Neoplasms 30	Complicated Pregnancy 151	Influenza & Pneumonia 457	Septicemia 829	Influenza & Pneumonia 2,339	Influenza & Pneumonia 5,858	Parkinson's Disease 32,988	Suicide 48,344

Data Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: National Center for Injury Prevention and Control, CDC using WISQARS™.



Centers for Disease
Control and Prevention
National Center for Injury
Prevention and Control

Figure 10: % of Hospice Decedents by Principal Diagnosis for 2017 & 2018

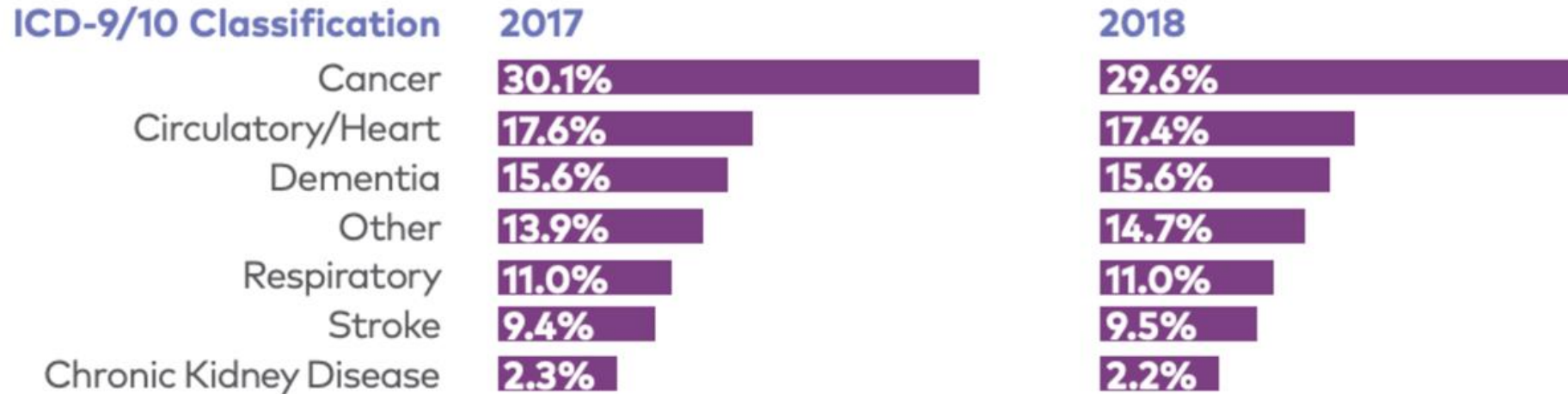
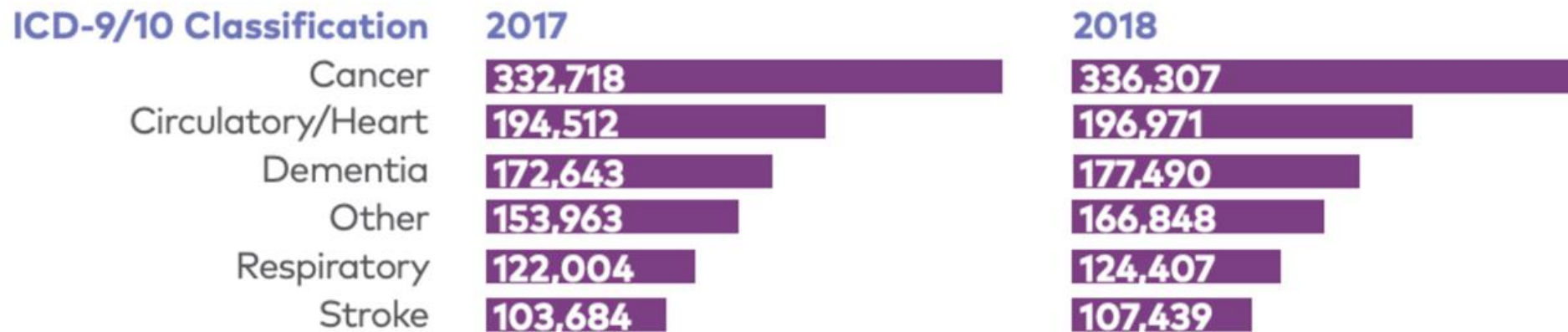


Figure 11: No. of Hospice Decedents by Principal Diagnosis for 2017 & 2018



Would you be surprised if your
patient passed away within 6
months?

The Surprise Question in Yakima

- 2015:** Dr. Mimi Pattison in Yakima at Circle of Life Symposium introduced The Surprise Question to the group
- 2016:** 10-month adventure to add The Surprise Question to the hospital's electronic admission order set
Created Inpatient Navigation Team
Needed Leader/Administrator Buy-In
Physician Education
All took place in the midst of the Virginia Mason/Yakima Memorial affiliation
- 2017:** Haiti Road to New Jersey Road (i.e., a nearly impassible path to a simply pothole-filled path)
Clinical Trial Began
Physician Education/Behavior Modification
New Angle to Education: Teamwork
- 2018:** Beginning Work in Clinics
- 2019:** Broadening the Work
Focusing on Accountability
Conversion to Cerner

The Surprise Question



- ❖ In the first months 2/3 of physicians *always* answered "Yes"
- ❖ In 2017, 1150 patients died after the physician responded "Yes" (14,862 total responses)
- ❖ In 2018, 533 patients died after the physician responded "Yes" (15,190 total responses)
- ❖ When even one physician answered "No," they were typically correct

The Surprise Question



Out of all patients that died in the first six months after admission:

- More than 50% died within 30 days of admission
- ~75% died within 60 days of admission

Goals-of-Care Conversations



- **Indicators of a poor prognosis:**
 - Decreasing functional status
 - Malnutrition
 - Multiple co-morbidities
 - Frequent hospitalizations
- Ask yourself the “Surprise Question”

Goals of Care Discussions

- ❖ Start conversations early
- ❖ Goals-of-care discussions are rarely a single conversation, they are a process
- ❖ Help facilitate understanding of scope of illness and likely progression
- ❖ Identify relevant goals and values
- ❖ Only then can you make recommendations for treatments

- Michelle is a 59 year old female presenting to the ED. She has had progressively worsening dyspnea over the last 3 days with a productive cough with yellow sputum and chills. Her primary diagnosis is metastatic adenocarcinoma of the pancreas. This diagnosis was confirmed with a liver lesion biopsy 9 approximately months ago.



- ❖ Patient is ill appearing with labored breathing on 4 lpm via nasal cannula.
- ❖ BP 105/60, P110, R30, T100.2, SaO2 92%
- ❖ Pertinent exam findings included a cardiac exam revealing regular and tachycardic rhythm. Bilateral rhonchi with prolonged expiratory phase, and some wheezing on expiration.
- ❖ CXR revealed numerous pulmonary nodules and an obscured right heart border suggesting RML infiltrate. CT angiogram imaging was negative for PE.

- She has been treated with a course of chemotherapy with no regression of the disease.
- She completed a course of immunotherapy approximately 4 months ago and despite this, has metastasis to her liver, adrenal glands, and lumbar spine.

- Her past medical hx of CAD with a CABG x3 vessels 9 yrs ago, COPD, hyperlipidemia, HTN, chronic knee pain, and CKD stage 3A (with an eGFR of 47).
- She is on oxycodone 10 mg q3 prn and reports taking approximately 60-70 mg daily.



- Would you be surprised if this patient were to pass away within 6 months?
- Is Michelle's pain optimally treated?
- What would be an ideal long term plan of care for Michelle?



Pain management

How can we achieve better pain relief with Michelle?
She's taking oxycodone about 6-7 times per day with little relief.

Michelle needs a long acting narcotic for pain relief. What would be ideal?

How do we best approach this?

Would you recommend OxyContin for long acting pain relief?
How about a Fentanyl patch?

Should we start morphine sulfate extended release?

What about Methadone?

Methadone for pain relief

- The drug is structurally similar to propoxyphene (Darvon) so if your patient has a history of being allergic to Darvon then methadone would be contraindicated.
- The drug has a long half life so stick with the start low and go slow motif (especially if being initiated on opiate naïve patients)
- QT prolongation can occur at daily doses of 50 mg/day but this is more common at daily doses greater than 100 mg/day
- Palliative care patients should have an ECG performed 2 weeks after a dose increase

<i>Drug</i>	<i>Interaction type</i>	<i>Clinical effect</i>	<i>Practitioner considerations</i>
Naloxone, naltrexone, pentazocine, nalbuphine-mixed opiate antagonists/partial agonists	Pharmacodynamic—receptor blockade	Precipitate abstinence syndrome	Must avoid in patients on methadone therapy; may use naloxone to treat overdose
Rifampin, carbamazepine, phenytoin, ²⁶ nevirapine ²⁷	Pharmacokinetic—enhance elimination	Reduce blood concentrations and effectiveness and may produce abstinence syndrome	Increase dose of methadone
Benzodiazepines, ethanol	Pharmacodynamic—additive/synergistic CNS depression	Increased sedation and risk of respiratory failure	Avoid in patients on methadone therapy
Ritonavir, ²⁸ fluvoxamine ²⁹	Pharmacokinetic—decreased metabolism	Produce methadone toxicity	Reduce dose of methadone
Zidovudine, ³⁰ desipramine ³¹	Pharmacokinetic—reduced clearance	Increased risk of zidovudine and desipramine toxicity	Reduce zidovudine dosage and monitor for toxicity; monitor desipramine serum concentrations
Thyroxine	Laboratory increased concentrations of thyroxine binding globulin	Altered thyroid function tests (increased T ₃ , T ₄ , FTI, and TBG).	Monitor for euthyroid state with free T ₃ and T ₄ and TSH levels
Opiate analgesics	Pharmacodynamic cross-tolerance between opioid agents	Partial tolerance to analgesic effect of opioids	Titrate and adjust dosage interval to attain analgesia, avoid mixed agonist-antagonists (eg. pentazocine) or substitute with non-narcotic analgesics (eg. NSAIDs)

T₃ = triiodothyronine, T₄ = thyroxine, FTI = free thyroxine index, TBG = thyroxine binding globin; TSH = thyroid-stimulating hormone; NSAIDs = nonsteroidal anti-inflammatory drugs

Back to Michelle

- Long acting pain relief dosing can be estimated with using the daily dose of the breakthrough narcotic. Our patient Michael is using 60-70 mg of oxycodone daily.
- Using the opiate conversion calculator we can determine that oxycodone 60 mg is equivalent to morphine 90 mg daily.
- We could start Michael on 30-45 mg of MSER twice daily.
- Using the opiate conversion we learn that MSER 90 mg is equivalent to Methadone 30 mg daily.
- We could start our patient on Methadone 10 mg BID.

Key Take Home Points

- When initiating a long acting narcotic, start low and reassess after 3-7 days for adjustment of dose. Preferably after 5 days with Methadone.
- Consider starting a long acting narcotic when your patient is using short acting narcotics consistently 3-4 times a day or more.
- ECG on your patient 2 weeks post dose increase to evaluate for an increased QTc

Hospital post discharge Mortality and Skilled Nursing Facilities

Hospital to SNF Mortality Data

PMC PubMed Central®

[J Am Med Dir Assoc.](#) Author manuscript; available in PMC 2022 Aug 16. *Published in final edited form as: J Am Med Dir Assoc. 2022 Aug; 23(8): 1403–1408.* Published online 2022 Feb 25. doi: [10.1016/j.jamda.2022.01.069](https://doi.org/10.1016/j.jamda.2022.01.069)

PMCID: PMC9378493 | NIHMSID: NIHMS1785833 | PMID: [35227666](https://pubmed.ncbi.nlm.nih.gov/35227666/)

Risk Prediction Model for 6-Month Mortality for Patients Discharged to Skilled Nursing Facilities

[Anupam Chandra](#), MD, [Paul Y. Takahashi](#), MD, [Rozalina G. McCoy](#), MD, MS, [Bjoerg Thorsteinsdottir](#), MD, [Gregory J. Hanson](#), MD, [Rajeev Chaudhry](#), MBBS, MPH, [Parvez A. Rahman](#), [Curtis B. Storlie](#), PhD, and [Dennis H. Murphree, Jr.](#), PhD

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Increased Mortality risk dc to SNF

- 15% of US adults 65 yrs and older are hospitalized annually
- Mean age 81 years old, 61% female
- 11,647 hospital to SNF patients; 9803 alive at 180 days & 1844 who died between day 1 and 180
- Average age of pts who died 83 vs 78 (survived 180 days)
- Higher usage of ED/ICU usage, screened positive for delirium, higher incidence of pressure ulcer, and increasing co-morbid conditions

Anupam Chandra et al

Post discharge HF to SNF

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[Card Fail Rev.](#) 2017 Nov; 3(2): 122–129.
doi: [10.15420/cfr.2017:12:1](https://doi.org/10.15420/cfr.2017:12:1)

PMCID: PMC5739905 | PMID: [29387465](https://pubmed.ncbi.nlm.nih.gov/29387465/)

Predictors of Post-discharge Mortality Among Patients Hospitalized for Acute Heart Failure

[Ovidiu Chioncel](#),¹ [Sean P Collins](#),²
[Stephen J Greene](#),³ [Peter S Pang](#),⁴
[Andrew P Ambrosy](#),³ [Elena-Laura Antohi](#),¹
[Muthiah Vaduganathan](#),⁵ [Javed Butler](#),⁶ and
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Abstract Go to: ►

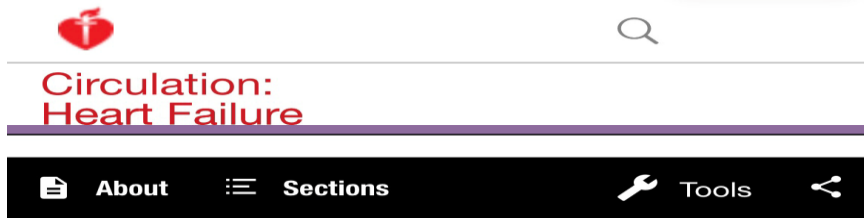
Acute Heart Failure (AHF) is a “multi-event disease” and hospitalisation is a critical event in the clinical course of HF. Despite relatively rapid relief of symptoms, hospitalisation for AHF is followed by an increased risk of death and re-hospitalisation.

[Feedback](#)

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- 416,997 pts with 26% mortality at 1 year
- Only 60.5% pts ultimately discharged home
- Impaired functional/cognitive status, on parental nutritional support, presence of pressure ulcer on admit to SNF
- 49.7% readmissions within 7 days post hospital discharge
- 28.6% of HF discharges were readmitted with half of pts being admitted within 7 days of SNF admission

Heart Failure 30 Day Readmissions

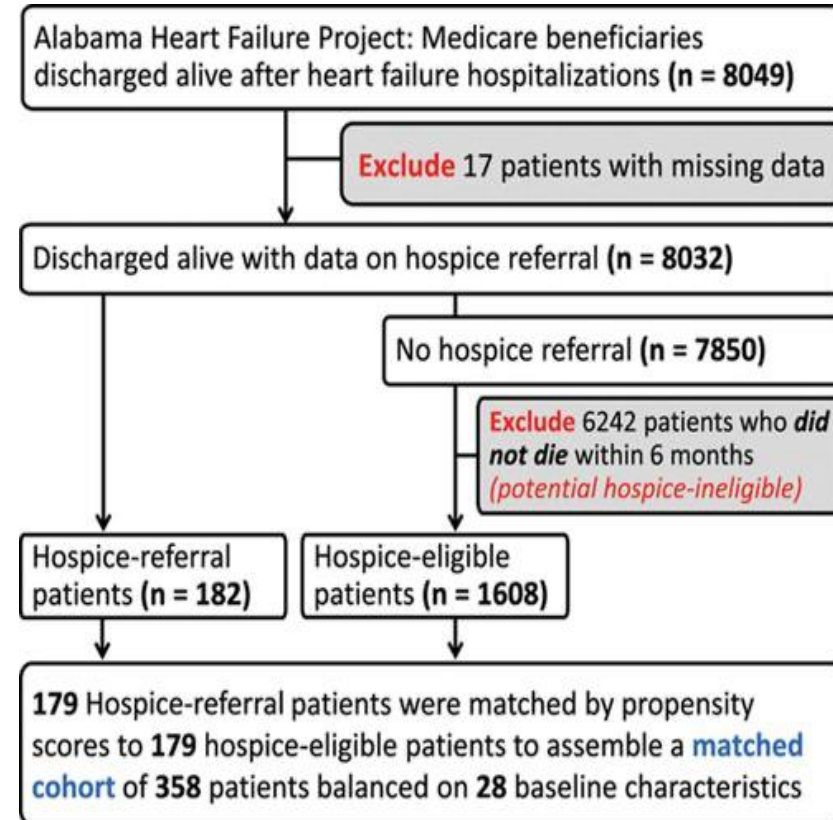


FREE ACCESS | RESEARCH ARTICLE

Discharge Hospice Referral and Lower 30-Day All-Cause Readmission in Medicare Beneficiaries Hospitalized for Heart Failure

Raya E. Kheirbek, MD, Ross D. Fletcher, MD, Marie A. Bakitas, DNSc, CRNP, Gregg C. Fonarow, MD, Sridivya Parvataneni, MD, Donna Bearden, MD, MPH, Frank A. Bailey, MD, Charity J. Morgan, PhD, Steven Singh, MD, Marc R. Blackman, MD, Michael R. Zile, MD, Kanan Patel, MBBS, MPH, Momanna B. Ahmed, BGS, Rodney O. Tucker, MD, Cynthia J. Brown, MD, MSPH, Thomas E. Love, PhD, Wilbert S. Aronow, MD, Jeffrey M. Roseman, MD, PhD, Michael W. Rich, MD, Richard M. Allman, MD and Ali Ahmed, MD, MPH

Originally published 27 May 2015 | <https://doi.org/10.1161/CIRCHEARTFAILURE.115.002153> | Circulation: Heart Failure. 2015;8:733–740



Heart Failure 30 day re-admissions

- 8,032 Medicare Beneficiaries Hospitalized for HF in 106 AL hospitals
- 182 (2%) referred to Hospice
- 179 Hospice referred vs 179 matched Hospice Eligible pts
- Hospital readmission within 30 days was 4% for the Hospice referred cohort vs 41% for the Hospice eligible
- 1 out of every 4 Medicare beneficiaries hospitalized for acute decompensated HF are readmitted within 30 days of discharge nationally

Hospital Readmission Reduction Program

- Started in 2012 and as of 2018 has saved Medicare over \$2 billion
- Penalizes hospitals for 30 day re-admission
- 2010 - 2016 readmission fell 3.6% for acute MI & 3% for HF
- 2018 HRRP started penalizing SNFs for readmission

Why Primary Care is ready for an innovation revolution

- **Immense and growing need**
- **Lack of access to specialists**
- **Need to better identify patients who can benefit from our limited clinician resources**
- **A desire to optimize care in the home**
- **We are strong advocates for patients - this is another way to advocate**

Original Investigation | Health Informatics

Prospective Comparison of Medical Oncologists and a Machine Learning Model to Predict 3-Month Mortality in Patients With Metastatic Solid Tumors

Finly J. Zachariah, MD; Lorenzo A. Rossi, PhD; Laura M. Roberts, MS; Linda D. Bosserman, MD

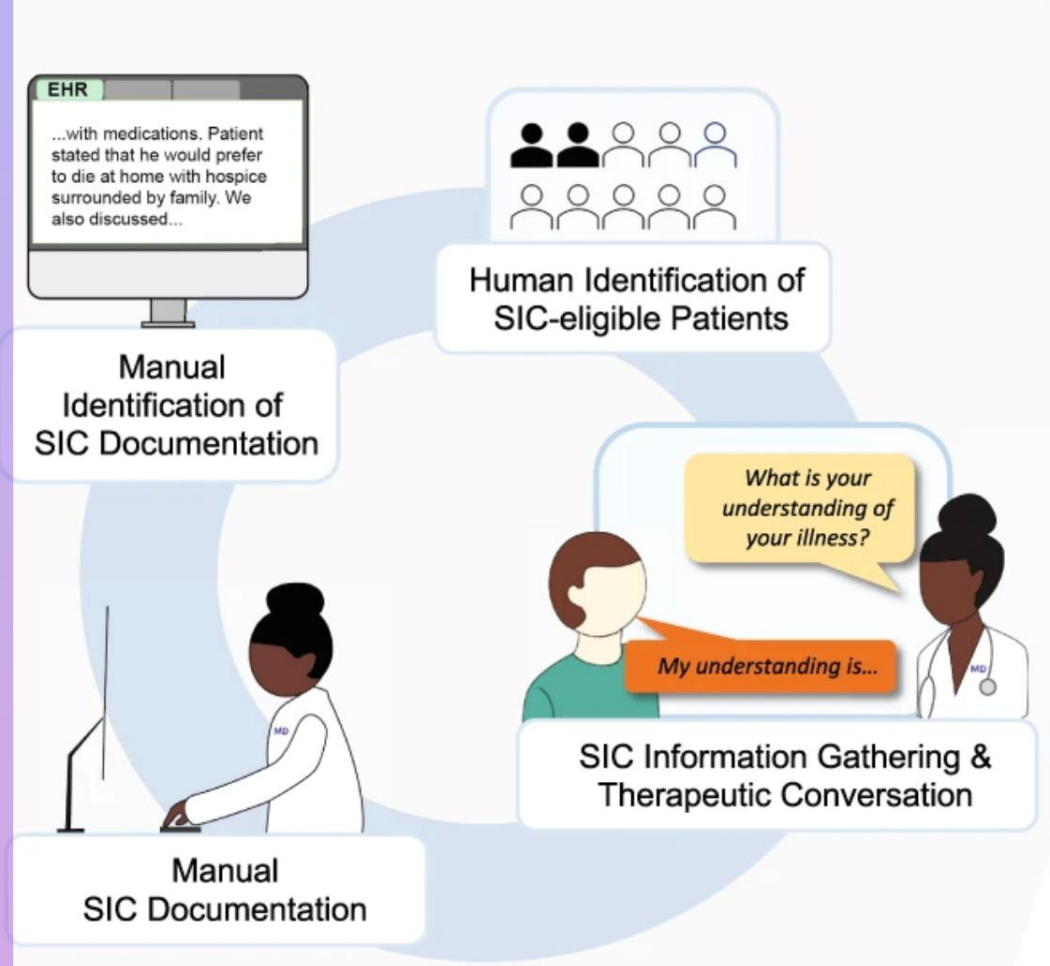
Enhancing serious illness communication using artificial intelligence

Isaac S. Chua ^{1,2,3}✉, Christine S. Ritchie^{3,4} and David W. Bates ^{1,3}

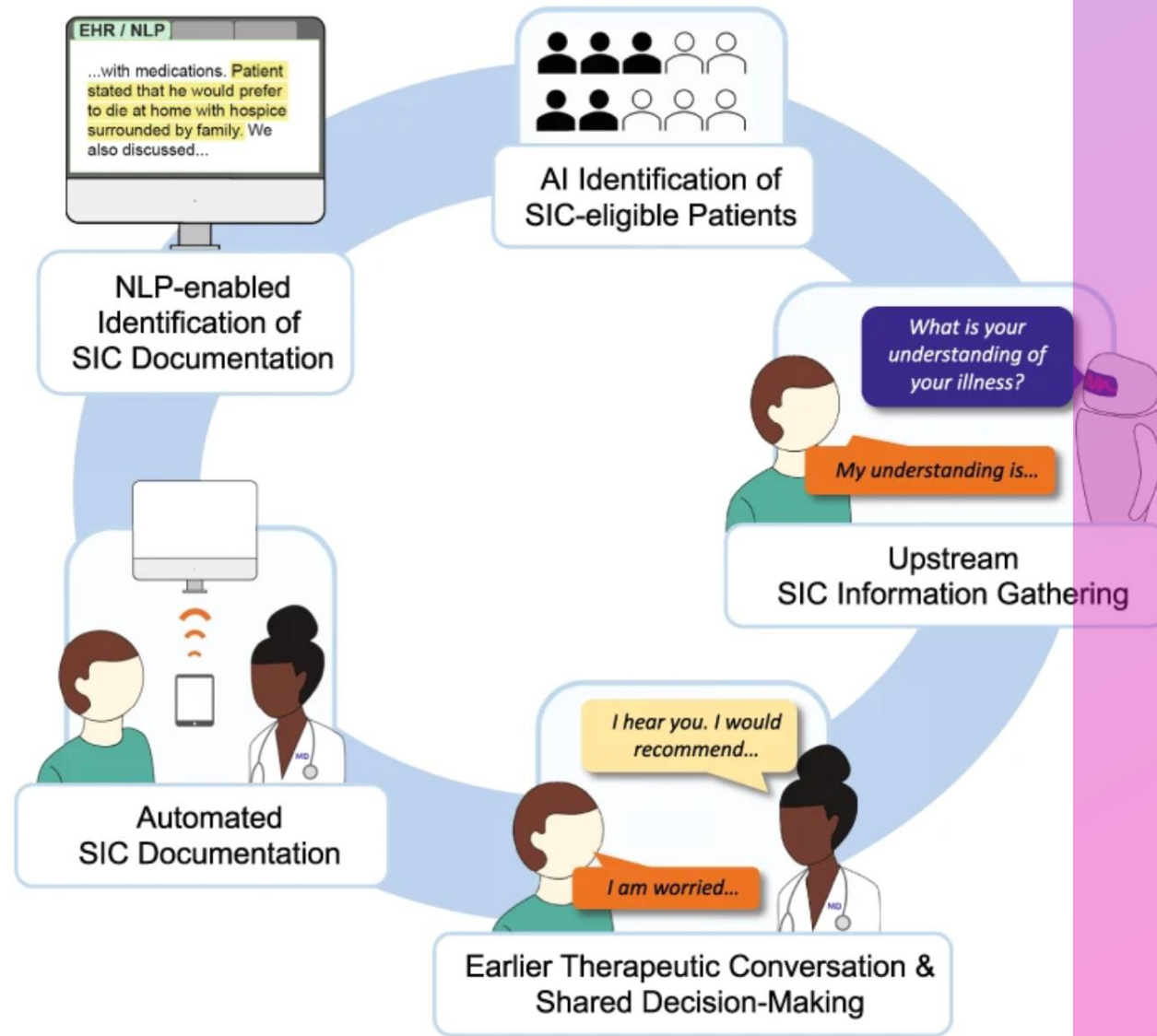
Delivery of serious illness communication (SIC) is necessary to ensure that all seriously ill patients receive goal-concordant care. However, the current SIC delivery process contains barriers that prevent the delivery of timely and effective SIC. In this paper, we describe the current bottlenecks of the traditional SIC workflow and explore how a hybrid artificial intelligence-human workflow may improve the efficiency and effectiveness of SIC delivery in busy practice settings.

npj Digital Medicine (2022)5:14; <https://doi.org/10.1038/s41746-022-00556-2>

Current State

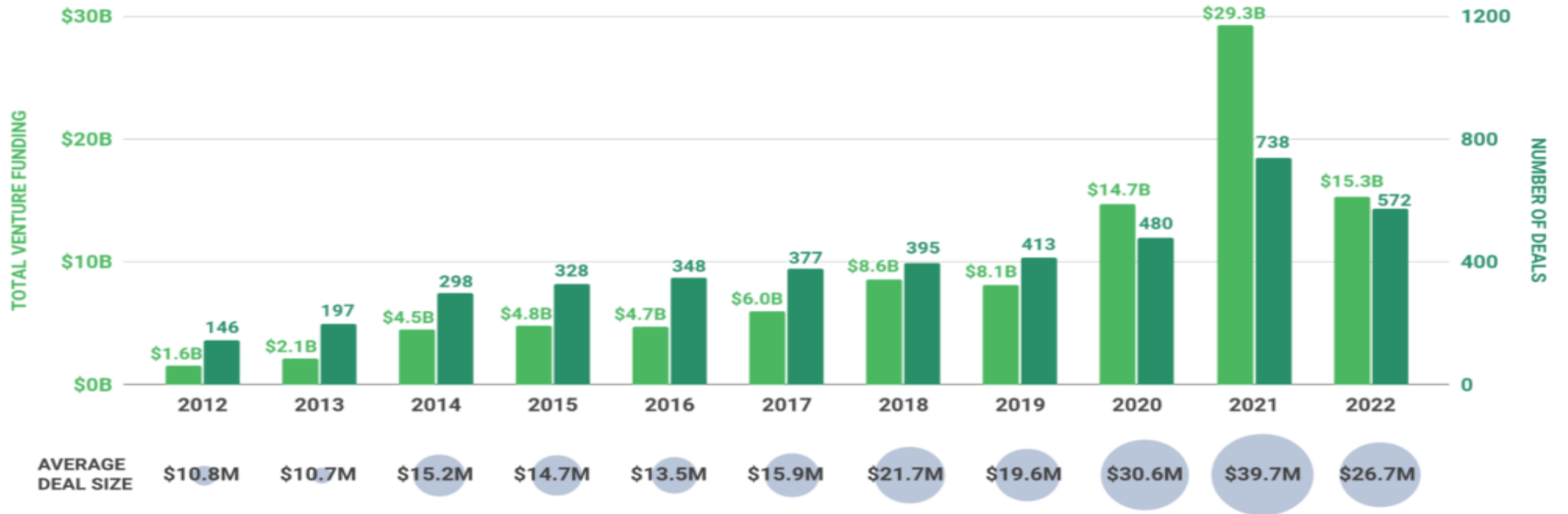


Future State



U.S. DIGITAL HEALTH FUNDING AND DEAL SIZE

2012-2022



Note: Includes U.S. deals >\$2M; data through December 31, 2022
 Source: Rock Health Digital Health Venture Funding Database

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Washington state and local hospital data

- 2021 Washington Hospital Medicare post discharge 180 day mortality

2021 Medicare Patients 180 day Post hospital discharge mortality rates.

In Washington, **23.9%** of all hospital Medicare patients discharged die within 180 days of their discharge.

Only **4.2%** (**1 in 5.8**) are discharged to hospice.

Top performing hospitals identify **1 in 3.5** hospice eligible patients.

Bottom performing hospitals only identify 1 in 18.

Kadlec discharges 1 in 5.2

Trios discharges 1 in 4.6

Trios Hospital had the highest Medicare patient 180-day mortality rate in the state at 27.8% in 2021

How can Hospice benefit your patients and our Medical communities?

- Timely Hospice referrals improve Hospital quality metrics for post acute discharge mortality rates and all-cause 30 day re-admission penalties.
- Hospice referrals have an emotional and spiritual benefit to the patient and their loved ones vs the final days of life being spent in the hospital.
- Post acute discharge of Medicare pts to SNFs are in general a demographic with the highest mortality risk.

How can Hospice benefit your patients and our Medical communities?

- Hospice Care includes physical, spiritual, and emotional support for the patient and the respective families
- Bereavement support with free grief counseling for family of the decedent
- Cork's Place (with Chaplaincy Healthcare) is a dedicated free bereavement support

References

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Web Based Resources:

www.vitaltalk.org

www.theconversationproject.org

www.advancecareplanning.ca

Thank you



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