Estimating the number of individuals eligible for SB1004 palliative care and appreciating baseline utilization patterns and costs toward the end of life

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Building blocks for implementing community-based palliative care

Estimating member/patient need

Estimating costs for delivering services

Evaluating current capacity for palliative care

Developing a strategy to expand services

Gauging and promoting sustainability and success

Webinar slides and a recording will be distributed at the end of the week

Objectives

- Appreciate why estimating # of eligible patients/members and baseline utilization patterns is useful, but potentially difficult
- Describe a prospective method for estimating the number of patients/members who would qualify for SB1004
- Describe a retrospective method for estimating number of eligible patients/members and appreciating baseline utilization patterns
- Review some findings from a recent retrospective analysis
- Review content and logistics for upcoming in-person workshops on this topic

Why these data are useful

- Informs program planning/network-building for specialty PC
- Appreciate how and when patients are accessing services currently
  - Can inform estimates of how long pts will receive PC
  - Help to focus education/outreach efforts for primary and specialty PC
- Good preparatory step for analyzing impact of PC services after implementation

Note: we will NOT be covering the related but distinct issue of using claims data to promote appropriate referrals (that is covered in Topic 4)

Why generating these data can be a little hard

- Not all eligibility criteria can be assessed using claims data
- Diagnosis and other data could be incomplete or inaccurate
- For some analyses need to go get data describing date of death
- Limited IT resources (e.g., no analytic software that assigns risk for hospitalization or death, or generally tough to extract data from claims system)
- Limited analytic staff time

SB 1004 population: general criteria

- Likely to or has started to use the hospital or emergency department as a means to manage his/her late stage disease
- Late stage of illness, appropriate documentation of continued decline in health status, not eligible for or declines hospice enrollment
- Death within a year would not be unexpected based on clinical status

See SB 1004 policy paper for description of most recent draft eligibility criteria
http://www.dhcs.ca.gov/provgovpart/Pages/Palliative-Care-and-SB-1004.aspx

SB 1004 population: general criteria

- Has received appropriate patient-desired medical therapy, or patient-desired medical therapy is no longer effective; not in reversible acute decompensation
- Beneficiary and (if applicable) family/patient-designated support person agrees to:
  - Attempt in-home, residential-based or outpatient disease management instead of first going to the emergency department; and
  - Participate in Advance Care Planning discussions

See SB 1004 policy paper for description of most recent draft eligibility criteria
http://www.dhcs.ca.gov/provgovpart/Pages/Palliative-Care-and-SB-1004.aspx

Disease-specific criteria

- Congestive Heart Failure (CHF):
  - Hospitalized for CHF with no further invasive interventions planned OR meets criteria for NYHA heart failure classification III or higher, <u>AND</u>
  - Ejection Fraction <30% for systolic failure OR significant co-morbidities

- Chronic Obstructive Pulmonary Disease (COPD):
  - FEV 1 <35% predicted AND 24-hour oxygen requirement <3 liters per minute <u>OR</u>
  - 24-hour oxygen requirement ≥3L per minute

See SB 1004 policy paper for description of most recent draft eligibility criteria
http://www.dhcs.ca.gov/provgovpart/Pages/Palliative-Care-and-SB-1004.aspx

Disease-specific criteria

- Advanced Cancer:
  - Stage III or IV solid organ cancer, lymphoma, or leukemia, AND
  - Karnofsky Performance Scale score ≤70 OR failure of 2 lines of standard chemotherapy

- Liver Disease:
  - Evidence of irreversible liver damage, serum albumin <3.0, and INR >1.3, AND
  - Ascites, subacute bacterial peritonitis, hepatic encephalopathy, hepatorenal syndrome, or recurrent esophageal varices OR
  - Evidence of irreversible liver damage and MELD score >19

See SB 1004 policy paper for description of most recent draft eligibility criteria
http://www.dhcs.ca.gov/provgovpart/Pages/Palliative-Care-and-SB-1004.aspx

Availability of data addressing eligibility criteria

- Some criteria are documented in claims data
  - *Diagnoses, use of health services, prior hospice enrollment, pharmaceuticals, home O2*
- Some criteria might be documented in an EHR
  - *Lab values/bio-markers, detailed info re stage of illness, ACP/goals of care discussions, functional status*
- Some criteria can only be reported by providers and/or patients/caregivers, or gathered by manual chart review
  - *All possible EHR values if not available from that source, patient preferences, care plans, willingness to attempt in-home therapy and participate in ACP*

It is not practical (and probably not possible) to consider all eligibility criteria when estimating number of eligible patients

What is documented in claims data?

GENERAL CRITERIA

- Use of hospital or emergency department
- Prior hospice enrollment

DISEASE-SPECIFIC CRITERIA

- Congestive Heart Failure:
  - Hospitalized for CHF
  - Presence of significant co-morbidities
- Chronic Obstructive Pulmonary Disease:
  - Claim for home O2
- Advanced Cancer:
  - Stage III or IV solid organ cancer, lymphoma, or leukemia
  - Has received 2 lines of standard chemotherapy
- Liver Disease:
  - Co-morbid conditions: ascites, subacute bacterial peritonitis, hepatic encephalopathy, hepatorenal syndrome, or recurrent esophageal varices

What might be documented in (and possible to extract from) an EHR?

GENERAL CRITERIA:

- Functional status data, documentation of hospice education/eligibility discussions, or goals of care discussions

DISEASE-SPECIFIC CRITERIA

- Congestive Heart Failure:
  - NYHA heart failure classification III or higher
  - Ejection Fraction <30% for systolic failure
- Chronic Obstructive Pulmonary Disease:
  - FEV 1 <35% predicted
  - 24-hour oxygen requirement
- Advanced Cancer:
  - Karnofsky Performance Scale score ≤70
- Liver Disease:
  - Serum albumin <3.0, and INR >1.3
  - MELD score >19

What is likely only knowable from chart review +/- discussion with providers and patient/family

GENERAL CRITERIA

- Not eligible for or declines hospice enrollment
- Death within a year would not be unexpected based on clinical status
- Has received appropriate patient-desired medical therapy
- Beneficiary and (if applicable) family/patient-designated support person agrees to:
  - Attempt in-home, residential-based or outpatient disease management instead of first going to the emergency department; and
  - Participate in Advance Care Planning discussions

DISEASE-SPECIFIC CRITERIA

- Congestive Heart Failure
  - No further invasive interventions planned

Other factors that impact enrollment

- Referring providers need to know about and refer to the program
- Patients need to be willing and able to accept services
- Eligibility needs to be recognized early enough to allow for a referral to PC
- PC providers need to have capacity to take on new patients

Take home: it is likely that only a subset of individuals identified by claims +/- EHR data +/- chart view or provider/patient interviews will in fact be eligible AND will be referred AND will accept services

Prospective and retrospective methods for estimating number of eligible patients

Prospective: determine number of members/patients with qualifying dx and appropriate utilization history, supplement with available indicators of advanced disease

"Based on current membership, how many patients with qualifying diagnoses appear to have advanced disease?"

Retrospective: identify a population of decedents with qualifying dx, look back from date of death to appreciate utilization patterns, timing of presentation in relation to death, costs in final year of life

"Based on recent historical experience, how many patients likely would have qualified for SB1004 PC and how did those patients utilize health care services?"

Prospective identification

- Mine claims data to identify members with qualifying diagnoses and some defined minimum amount of utilization
  - Use ICD-10 or HCC codes to specify disease group
  - Many patients have multiple conditions; assign primary
- Narrow to individuals with advanced disease (within each disease category)
  - Apply risk scores to determine probability of hospitalization or death (Optum Ingenix or similar tools, as available to plan/group)
  - Incorporate authorization/utilization data: admissions or ED visits, chemo/medications, home-equipment (hospital bed, O2, other DME), recent disenrollment from hospice

Retrospective decedent analysis

- Identify a population of decedents with qualifying diagnoses
  - In-hospital deaths
  - Other data to identify patients who died outside the hospital
- Exclude trauma patients
- Analyze the last 12-24 months of utilization
  - Number of decedents with qualifying dx
  - Utilization and costs of different types of services, over time
  - Estimate of when in relation to death became eligible for SB1004 PC
  - (Some) quality of care data

Retrospective decedent analysis metrics

- Frequency, duration, intensity of hospitalizations, total and trended
- Frequency and timing of ED visits
- 30-day readmissions
- In-hospital and 30 day deaths
- Clinic visits (and use of other outpatient/home-based services of interest)
- Use and timing of specialty PC
- Use and timing of hospice (if available)
- Cost of care, total and trended

Death Public Use Files from CA DPH

https://www.cdph.ca.gov/data/dataresources/requests/Pages/DeathDataFiles.aspx

California Department of PublicHealth CDPH

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Related Links
- California Health and Human Services Agency
- Department of Health Care Services (includes Medi-Cal)

Home > Data > Data Resources > Requesting Data > Death Data Files

Death Data Files

Unless there is a specific need for personal identifiers, non-confidential data files should be used. Some fields on the death files are only available for specific uses as prescribed by law. Confidential Death Files include personal identifiers such as Mother's Maiden Name (MMN) and/or S Security Number (SSN). Users may need to obtain approvals from the California Department of Public Health Vital Statistics Advisory Committee (VSAC) and the California Health and Human Services Agency's Committee for the Protection of Human Subjects (CPHS) in order to use confidential data files for research purposes. Once the files are obtained, users must follow strict guidelines to protect the confidentiality of the data.

Description of Files

Death Data files are compiled from the information reported on the death certificates, including detailed demographic information related to the decedent. Below are brief descriptions of available death data files.

- **Death Statistical Master Files**

  The Death Statistical Master Files are the larges nd most comprehensive of the death data files. These files are available with or without the personal identifiers. CPHS and the VSPAC approvals are required to obtain the Death Statistical Master Files with social security numbe mother's maiden names. For a list of variables ase click here.

- **Death Public Use Files**

  The Death Public Use Files are subsets of th cture and the variable coding methodology are designed to facilitate trend analysis and to simplify computer programming. These files contain the most commonly used variables and do not contain any personal identifiers. For a list of va les, please click here.

- **Fetal Death Statistical Master Files**

  For information about this file, please click here.

- **Multiple Cause of Death Files**

  These files were created by the National Center for Health Statistics (NCHS) and include underlying, immediate, intermediate, and contributing causes of death and demographic data. Each record may include up to 20 causes of death derived from California death certificates. All causes of death are coded according to the International Classification of Diseases. These files include certificate numbers, but do not include names or other personal identifiers. These files can be linked to other death files using the certificate number. A list of variables for these may be obtained at the NCHS or the Centers for Disease Control and Prevention.

Purchasing Files

Prices for these data may vary depending on the product and the years requested. The cost of data files and available years are provided in the applications listed below. **For applications please click here.**

Information items

1. Last Name of Decedent	6. Place of Birth
2. First Name of Decedent	7. Place of Death (County of Death)
3. Middle Name of Decedent	8. Date of Death
4. Sex of Decedent	9. Father’s Last Name
5. Date of Birth	

The data you need at an affordable price

- Minimal lag between death and file updates
- Flexible access options
  - Batch files: $200 for the first year, $10 for each additional year
  - Option to contract for quarterly/monthly delivery
- Simple application
  - Statement of how will use
  - Data security measures
  - Notarized

SFHN Decedent Analysis

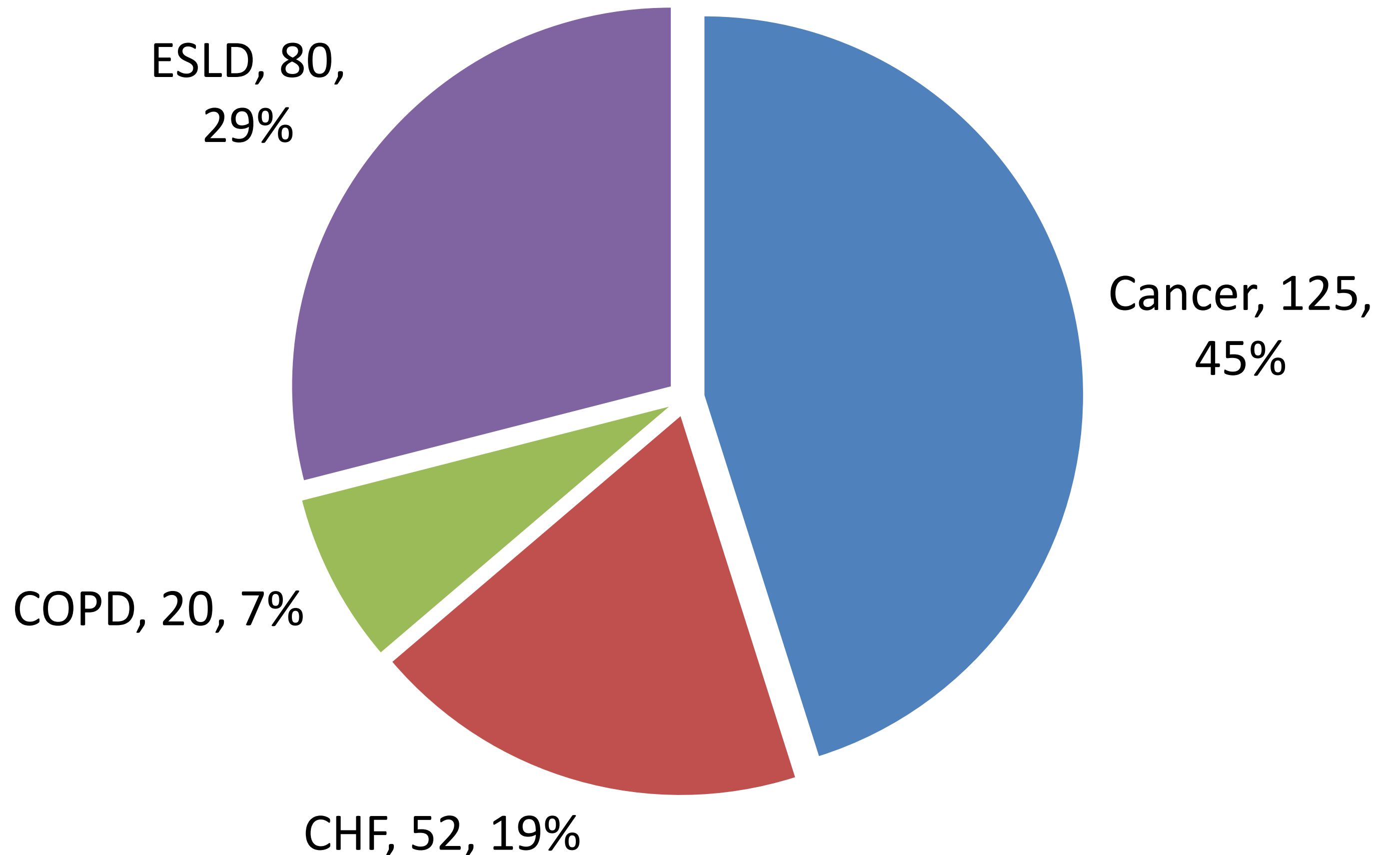
- Decedent population identified by combining CA public use death data file and utilization data from SFHN
- SFHN patient defined as “2+ ambulatory encounters” or “1 hospitalization + 1 ambulatory encounter” in final 2 years of life
- Data describing inpatient admissions, ED visits, clinic visits/ambulatory services, and nursing home utilization among individuals known to have died between 7/13-6/15
- For qualifying patients assembled data describing all clinical contacts for 2 years preceding death

SFHN Decedent Analysis

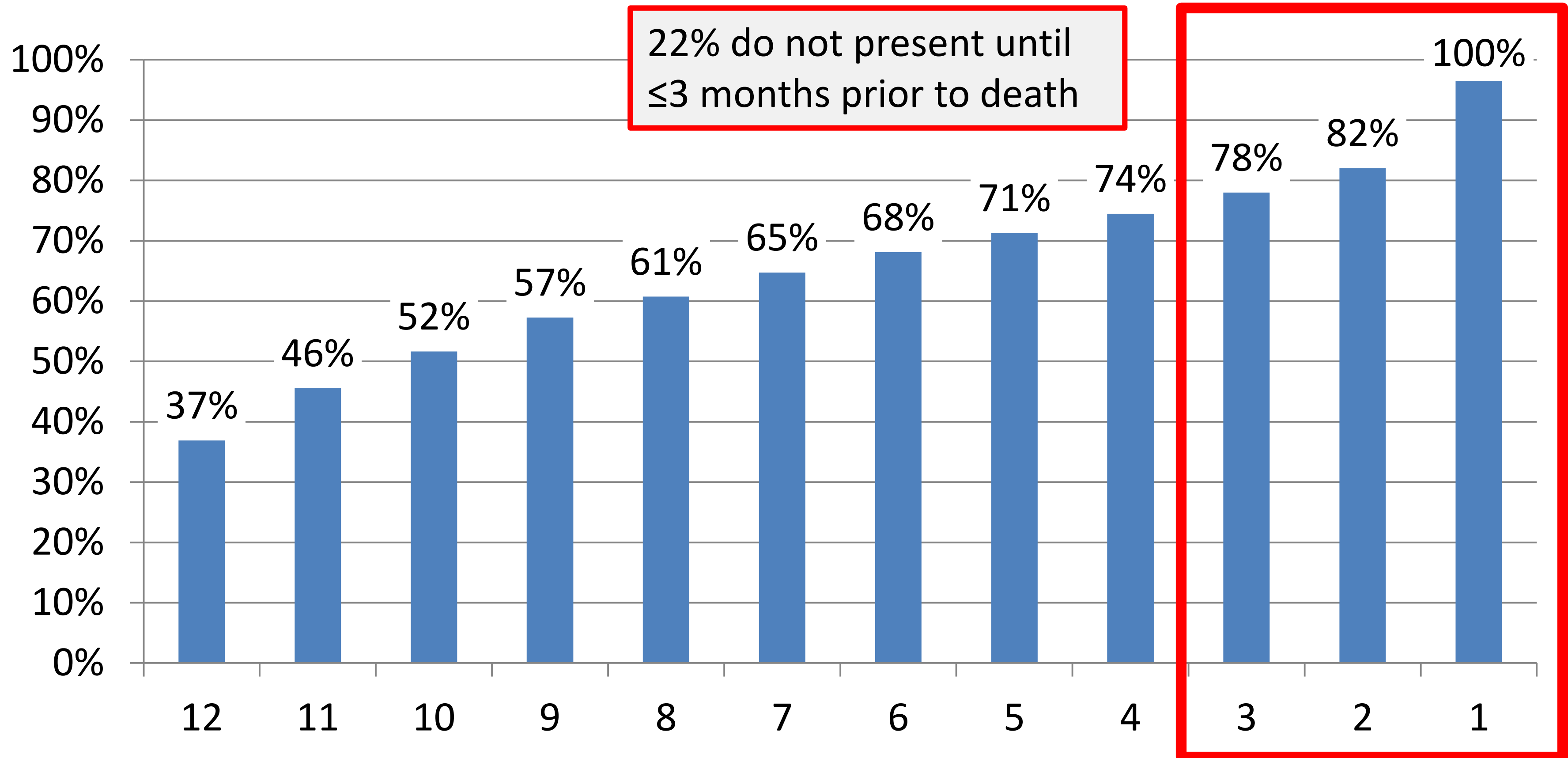
- Used primary and secondary diagnosis codes and procedure codes to determine disease groups
- For patients with multiple qualifying conditions (cancer + ESLD, CHF + COPD) assigned to a single disease group based on highest charges by condition
- For individuals with more than one primary payer, assigned to a single payer based on highest charges by payer
  - 747/2116 had primary payer = Medi-Cal
- SFHN data did not specify ICU days or use of hospice
- No cost accounting system so direct costs (to SFHN) computed based on charges

About how many SB1004 eligible patients are cared for by the SFHN in a typical year?

552/747 (74%) Medi-Cal beneficiaries (in 2-year data set) had SB1004 qualifying dx's. Estimated annual volume = 276



By what point in the last year of life are SB1004 patients becoming clinically active?



Proportion of SB1004 population that has become clinically active (begun accessing clinic/hospital/ED services), by month preceding death

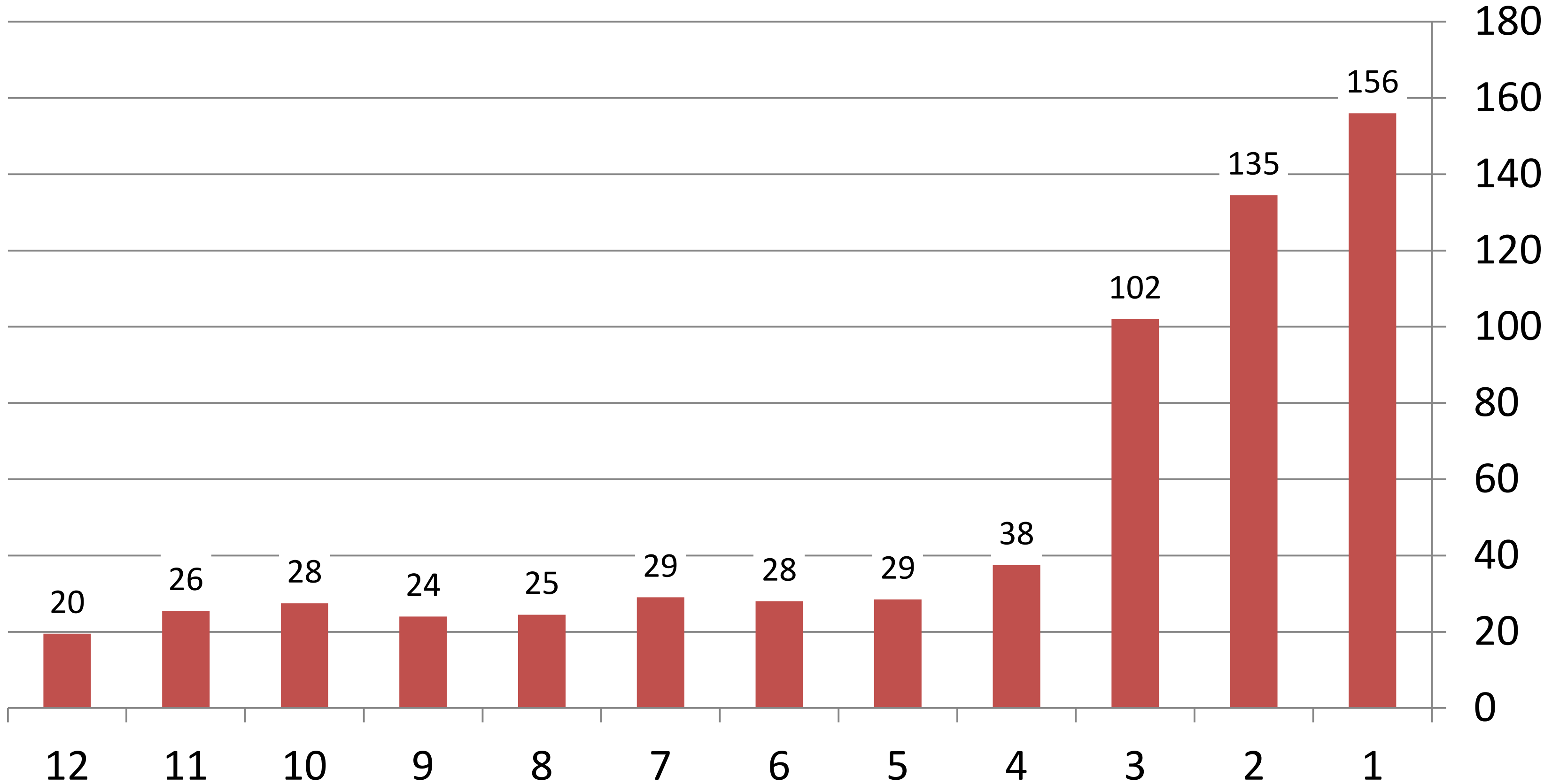
How often are SB1004 patients admitted to the hospital in the final year of life? In the final 6 months of life?

	Final year	Final 6 months
Avg per patient	2.97	2.32
Median per patient	3.00	2.00
Max per patient	28	20

What are the average costs per patient in the last year of life? In the last 6 months of life?

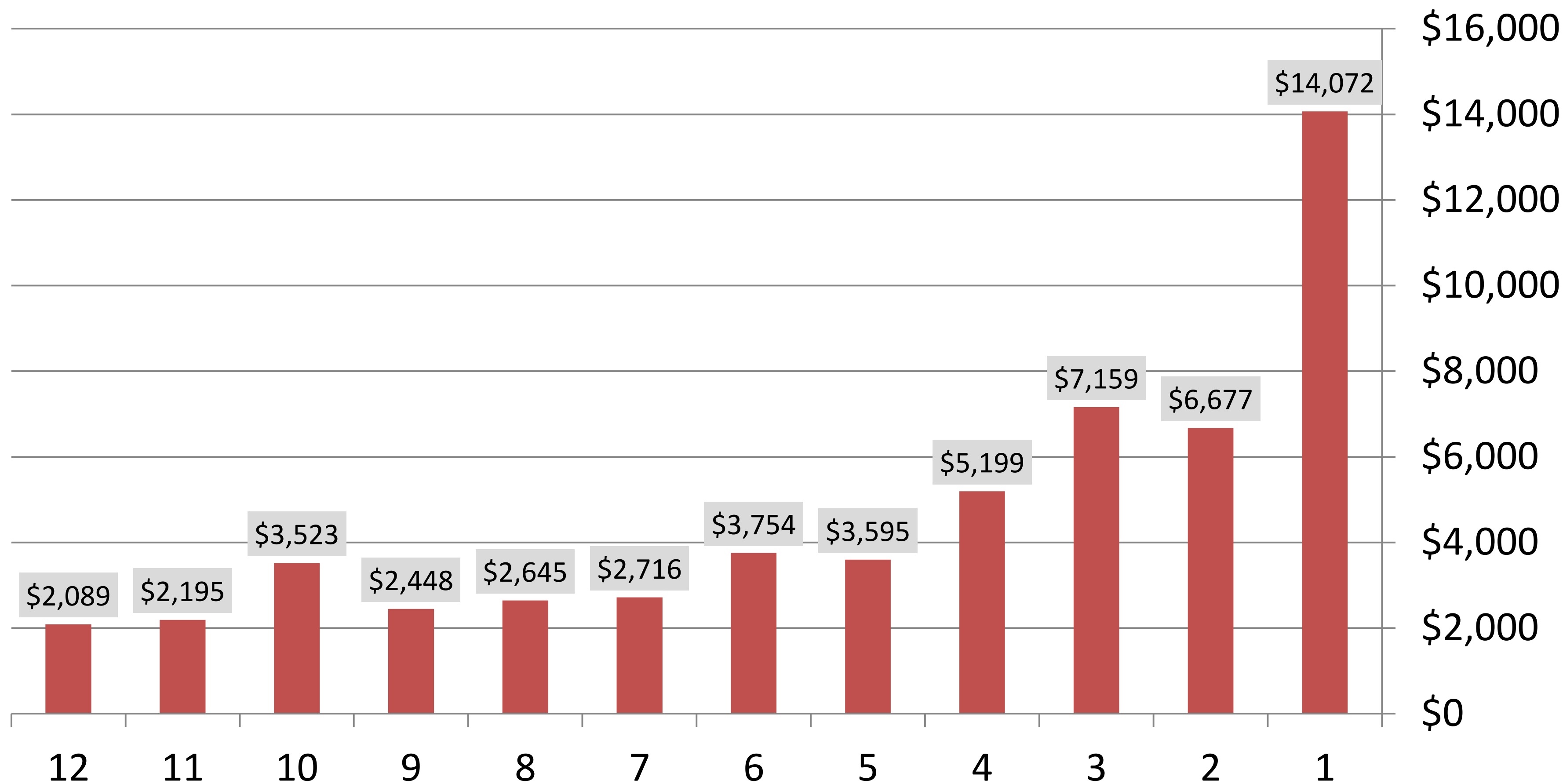
	Final year	Final 6 months	% in Final 6 Months
Mean	$56,072	$40,456	72%
Median	$34,402	$22,134	64%
Max	$645,855	$586,145	

What is the pattern for hospital admissions in the last year of life?



Number of annual admissions for SB1004 population (approximately 276 patients) by month preceding death

How are costs distributed over the last year of life?



Average cost (all services) per patient, per month prior to death

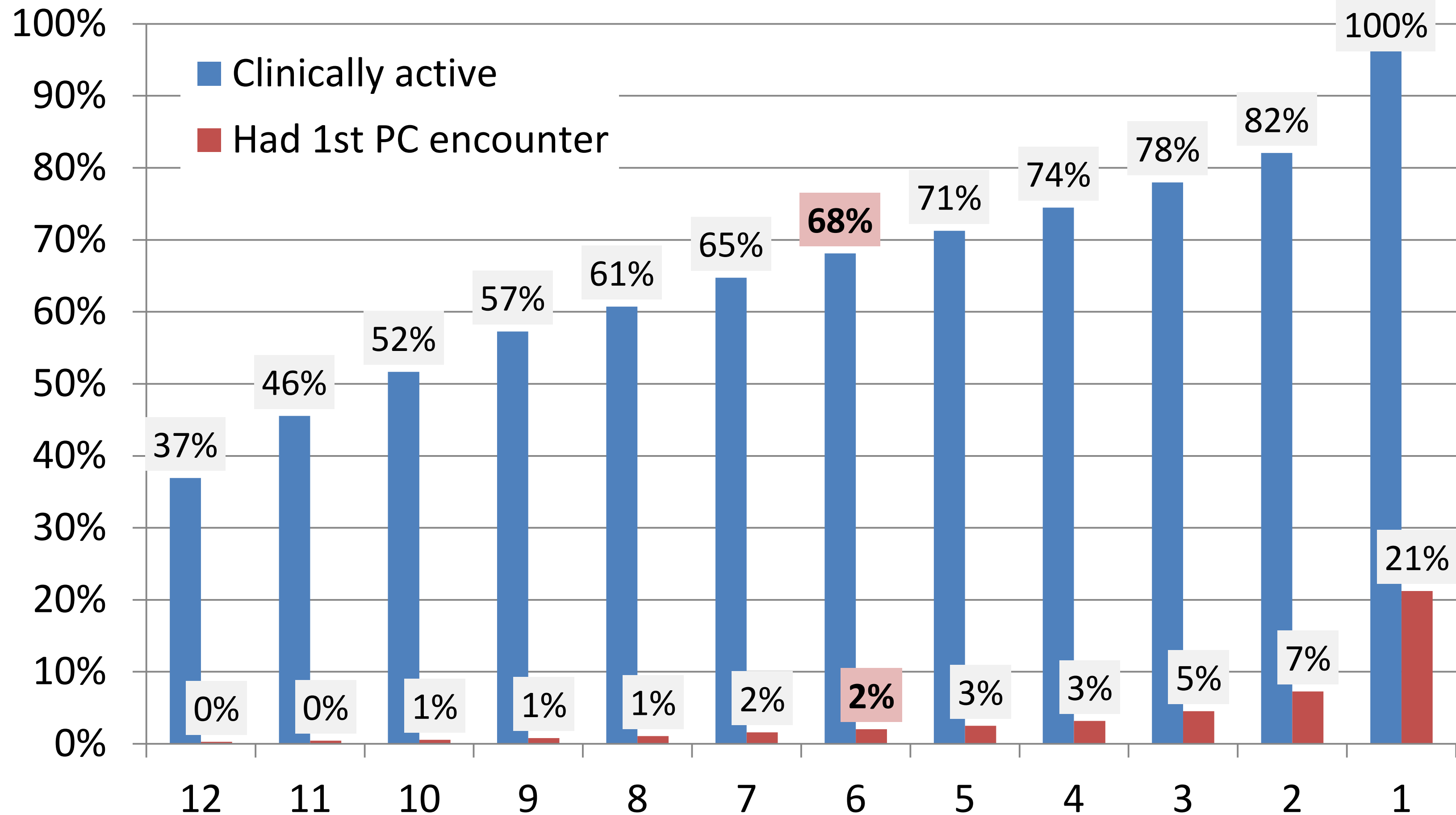
How many SB1004 patients are getting PC, and at what point in the disease course? (if only an inpatient PC service is available)?

- 69% of patients not referred to specialty PC
- 25% had 1st PC contact in the final 90 days of life
- 6% had 1st PC contact >90 days before death

Interval between first PC contact and death

- Mean: 60 days
- Median: 26.5 days
- Range: 0-352 days

Are SB1004 eligible patients clinically active early enough to allow for referral to a PC service?



At month 6 prior to death 68% of population is clinically active, but only 2% have had a contact with the specialty PC service

Review: key points prospective method for estimating # eligible pts

Pros:

- No need to acquire external data
- Great for medical groups/systems that can access lab values/bio-markers, other EHR data to identify patients with advanced disease
- Great for payers that can use pharmacy, DME and similar claims to identify patients with advanced disease
- Great for any organization that has access to analytic software that can assign acuity scores/assess risk for hospitalization to identify patients with advanced disease
- Requires effort, but likely easier of two methods

Cons:

- Likely to grossly over-estimate number of eligible patients if only consider primary diagnosis
- May be hard to refine estimates of acuity/eligibility depending on other (non-dx) data organization has access to
- Limited info about timing of service delivery in relation to death
- Limited data about quality indicators (because no date of death data)

Review: key points retrospective method for estimating # eligible patients and baseline utilization patterns

Pros

- Because working with decedent population no need to worry about indicators of advanced disease
- Yields useful information about expected volume, current utilization patterns and some aspects of care quality
- Can consider at what point in disease course patients likely became SB1004 eligible, to inform estimates of possible duration of services
- Supports implementation planning: are there obvious areas to target with outreach and education?

Cons

- Time intensive
- Must acquire death data

Workshop objectives

- Explore strategies for estimating the number of patients/members who would qualify for SB1004
- Review a method for appreciating baseline utilization patterns in the final year of life among eligible patients/members
- Consider how other groups have approached the task of estimating the number of PC-appropriate patients and baseline utilization patterns
- Identify local data sources and individuals within your organization who would do this work

Workshop description

<u>Approach</u>

- Participatory with opportunities to share strategies and experiences; planning with colleagues

<u>Who should attend</u>

- Individuals from the MCP or delegated groups with understanding of data systems, as well as those with clinical expertise

<u>Tools and resources</u>

- Code lists, process outlines for analyses, useful metrics to generate, planning worksheets

<u>Offerings/availability (registration open through July 19)</u>

- Northern California on Aug 17 (potential to open Aug 24, in Nor Cal if necessary)
- Southern California on Aug 29

Acknowledgements, and your questions

Thanks to colleagues who shared their knowledge (and/or data)

- Anne Kinderman, MD and Heather Harris, Zuckerberg San Francisco General
- J Brian Cassel, PhD, Virginia Commonwealth University
- Torrie Fields, Blue Shield of CA

Questions about the SB1004 Technical assistance series?

- Glenda Pacha gpacha@chcf.org
- www.chcf.org/sb1004

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