



Optimal specialty palliative care (SPC) requires access to a transdisciplinary team that can comprehensively assess and address distress for patients living with serious illness and articulate patients' values and goals of care with an understanding of the disease process and treatment options. To ensure that patients who would benefit from SPC have access to such teams, Kaiser Permanente Northern California (KPNCAL) in 2016 designed a demand-driven staffing model that identifies optimal staffing levels for SPC physicians, nurses, social workers, and chaplains in each of its service areas based on the estimated number of patients who may need SPC.

## MODEL DESIGN

### DEMAND

*i.e. patients who need SPC*

To identify patients who would benefit from SPC, KPNCAL partnered with clinicians from SPC and various other specialties across the region to develop prospective patient identification registries for specific disease cohorts. These cohorts are designed to help teams identify and reach patients upstream and provide specialty-level palliative care at appropriate points throughout their illnesses.

#### SIZING THE POPULATION

Phase A of the registry, which launched in 2016, was based on disease-specific criteria for patients with cancer, lung disease, chronic kidney disease (CKD), and heart failure. The clinical specifications for each of these disease cohorts were clinically validated by specialty experts; see Figure 1 for more details. KPNCAL will launch phase B of the registry in 2019, adding four additional disease cohorts: dementia, amyotrophic lateral sclerosis (ALS), Huntington's disease, and Parkinson's disease.

Figure 1. Phase A Prospective Patient Identification Registry Specifications

COHORT	Specifications
<b>CANCER COHORT</b>	<ul style="list-style-type: none"> <li>Stage IV lung, esophageal, gallbladder, liver, biliary, pancreatic, and stomach tumors</li> <li>Advanced brain cancer</li> <li>Patients receiving palliative chemo</li> <li>Multiple myeloma and on dialysis for &gt; 6 months</li> </ul>
<b>CKD COHORT</b>	<ul style="list-style-type: none"> <li>Advanced CKD (GFR&lt;20) and likely to decline (as indicated by EF&lt;30, moderate/severe dementia, or SNF)</li> <li>Dialysis patients who are starting to decline (as indicated by high utilization*, CHF (EF&lt;30), or diastolic heart failure)</li> <li>Dialysis patients with advanced (stage IV) cancer</li> <li>CKD and moderate/severe dementia</li> </ul>
<b>HF COHORT</b>	<ul style="list-style-type: none"> <li>Systolic, diastolic, or combined heart failure and high utilization*</li> <li>Patients on IV inotrope (dobutamine, milrinone)</li> <li>AICD w/ EF &lt; 20</li> </ul>
<b>LUNG DISEASE COHORT</b>	<ul style="list-style-type: none"> <li>Interstitial or restrictive lung disease with high utilization:                             <ul style="list-style-type: none"> <li>Has active idiopathic pulmonary fibrosis (IPF) on problem list and has used O2 DME in the last 12 months; or</li> <li>Has active chronic hypoxemic respiratory failure on problem list and has used O2 DME in the last 12 months and at least one pulmonary encounters in the last 12 months</li> </ul> </li> <li>COPD with high utilization:                             <ul style="list-style-type: none"> <li>Has had at least one doctor's visit in the pulmonology department in the last 12 months; or</li> <li>Has used O2 DME in the last 12 months</li> </ul> </li> </ul>

Note: \*High utilization defined as (> 2 IP admissions in 6 months)

To estimate demand comprehensively, KPNCAL used the registry volumes from the phase A cohorts and added in non-registry referral volumes for palliative care from the previous year. In addition, KPNCAL considered a number of growth and adjustment factors, including membership growth rate, growth in non-member demand, and estimated net-loss rate (e.g. patient who refuse SPC or who fail to keep appointments).

#### INPATIENT vs. OUTPATIENT DEMAND

The KPNCAL staffing model considered hospitalization rates, length of stay, net-loss rate, and the number of average hospitalization per year to determine the percentage of the SPC population that could be seen in the inpatient setting. The model assumed that all patients could be seen in the outpatient setting, with consideration for net-loss rates.

### SUPPLY

*i.e. SPC staff needed to meet demand*

To understand the staff needed to provide SPC to all patients who would benefit from it, KPNCAL first calculated the staff needed to provide SPC for the average SPC patient using a transdisciplinary care model.

#### TWO TRANSDISCIPLINARY MODELS

To operationalize the principles of transdisciplinary SPC, KPNCAL recommended two models for providing care to patients; see Figure 2 for details.

Figure 2. Transdisciplinary Care Staffing Model

<b>CORE TEAM MODEL (current goal)</b>	At minimum, KPNCAL recommends that one medical discipline (physician or nurse) and one psycho-social discipline (social worker or chaplain) be present during a patient's initial SPC consult in order to adequately assess the patient's medical, psychological, social, and spiritual needs. The disciplines present in the follow-up consults are determined based on the patient needs identified in the initial consult.
<b>FULL TEAM MODEL (future goal)</b>	As a destination, KPNCAL recommends that all four disciplines (physician, nurse, social worker, and chaplain) be present during a patient's initial SPC consult in order to fully assess the patient's medical, psychological, social, and spiritual needs. The disciplines present in the follow-up consults are determined based on the patient needs identified in the initial consult.

For the SPC staffing model, KPNCAL calculated the staff needed to achieve the core team model at a minimum, as well as the staff needed to achieve the full team model as a destination.

#### ESTIMATING STAFF TIME NEEDED PER PATIENT

To understand the SPC staffing needs of the average patient, KPNCAL gathered a workgroup of subject matter experts to examine KPNCAL data on initial consults, follow-ups, and care coordination, as well as the available literature on SPC staffing and care models. See Figure 3 for an overview of the estimated SPC needs included in the KPNCAL staffing model.

Figure 3. The Average Patient's SPC Needs

<b>INPATIENT</b>	The workgroup estimated that the average SPC patient who is admitted to the hospital might need one initial consult and 2-3 follow-up consults in the inpatient setting. The disciplines present for those consults are determined by whether the team uses the Core or Full Team Model (see Figure 2).
<b>OUTPATIENT</b>	The workgroup estimated that the average SPC patient might need one initial consultation and 2-4 follow-up consults per year in the outpatient setting. The disciplines present for those consults are determined by whether the team uses the Core or Full Team Model (see Figure 2).

#### CALCULATING STAFFING NEEDS FOR SPC POPULATION

KPNCAL used the estimated staff time needed for an average patient to determine the total full-time equivalents (FTEs) needed for each of the four SPC disciplines to meet the SPC demand in each KPNCAL service area. For the model, one FTE was considered 40 hours, with adjustments for non-clinical time (e.g. department meetings, offsites) and benefits (e.g. sick leave and paid vacation time).

## IMPLEMENTATION TIMELINE AND OUTCOMES

### 2016

#### CREATING THE PHASE A REGISTRY COHORTS

To begin this work, KPNCAL brought together SPC leaders from across the region to identify potential disease cohorts for inclusion in the specialty palliative care registry, including cancer, CKD, heart failure, lung disease, neurologic conditions, failure to thrive groups, and more. Taking a phased approach to developing the registry, KPNCAL began by creating clinical specifications for four Phase A cohorts: cancer, CKD, heart failure, and lung disease. (See Figure 1 for an overview of the Phase A registry specifications.) The SPC registry launched with these four Phase A cohorts, with KPNCAL providing monthly registry updates to each service area in KPNCAL that included the patient-level information needed to identify and refer eligible patients.

#### BUILDING THE SPC STAFFING MODEL

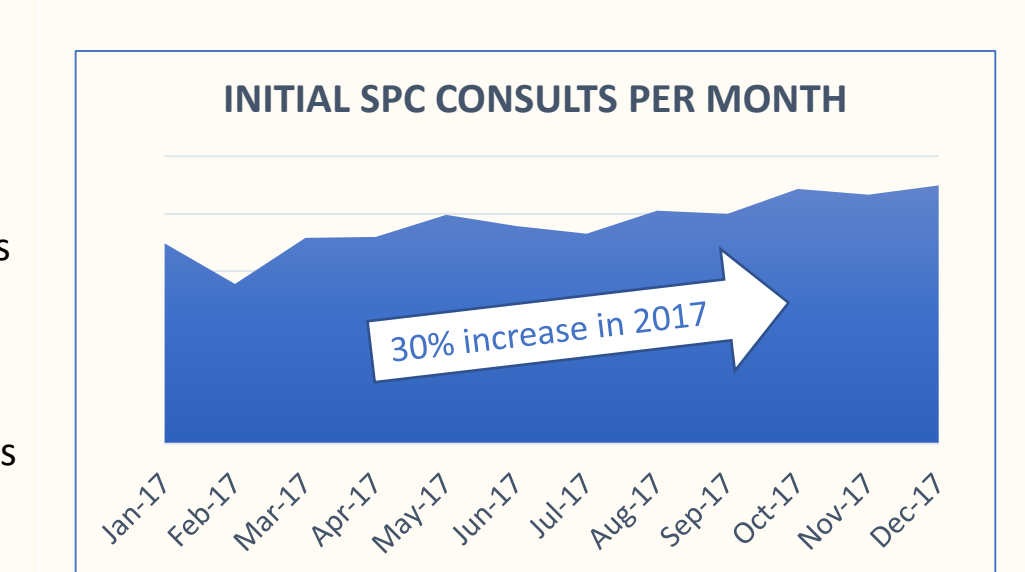
Once phase A of the registry was complete, KPNCAL used the registry to understand the demand for palliative care and calculate the FTEs needed in each service area to meet that demand (see Model Design for details).

### 2017

#### OPERATIONALIZING THE STAFFING MODEL

Using FTE estimates from the staffing model, KPNCAL developed a local planning tool that helped medical centers increase staffing to meet demand in their service area. Over a three-year period, the number of SPC clinicians across KPNCAL increased from 88 to 254 clinicians. This staffing increase has helped medical centers adapt as the population of patients who would benefit from SPC continues to grow. In 2017 alone, SPC consultations increased by 30% across KPNCAL.

Figure 4. 2017 SPC Consultation Volumes at KPNCAL

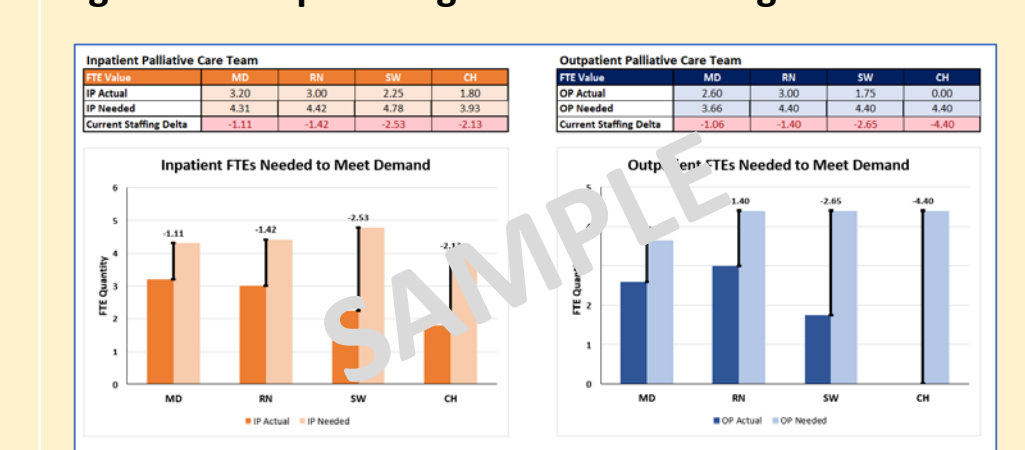


### 2018

#### DESIGNING LOCAL STAFFING DASHBOARD

To support local SPC leaders' efforts to understand demand and act on staffing needs in real time, KPNCAL designed user-friendly dashboards that display current and needed staff levels for each team (see Figure 5 for sample dashboard design).

Figure 5. Sample Design for New Staffing Tool



### 2019

#### MEASURING SUCCESS

KPNCAL in 2019 plans to develop and implement a measurement strategy that will examine the impact of staffing levels and transdisciplinary care models on outcomes. It also will develop an operational excellence strategy for SPC to promote the consistent implementation of the transdisciplinary model and delivery of high-quality care.



### PALLIATIVE CARE VISION

"Patients with serious illness and their families live as well and as fully as possible."

Learn more about palliative care at Kaiser Permanente at KP.org.

