

- Understand the potential of machine learning technology.

Accurate prognostication of survival is needed to facilitate complex clinical decision making, especially when patients are approaching the end-of-life. Many important decisions regarding investigations, treatments, and personal care plans are dependent on how long a patient is expected to live. Traditionally, clinicians rely on their clinical judgement to formulate a prognosis, which is subjective by nature and often overly optimistic. This presentation will focus on two main technological advances that may enhance clinicians' accuracy of prognostication and decision making: (1) web-based prognostic tools and (2) machine learning algorithms. We will discuss the multiple prognostic models that have been developed for patients with advanced diseases, such as the Palliative Prognostic Score (PaP) and Palliative Prognostic Index (PPI) for patients with advanced cancer, the Integrated Prognostic Model for patients on hemodialysis, the Acute Physiology and Chronic Health Evaluation (APACHE) for critically ill patients, and the Model for End-Stage Liver Disease (MELD) for individuals with hepatic failure. Many of these prognostic models have been validated in multiple settings and are available as web-based tools. Studies have found that these tools are more accurate than clinician intuition alone and may help to reduce serious prognostic errors. However, they are often not used by palliative care clinicians because of lack of familiarity, lack of time, cumbersome data entry and difficulties with interpretation. By the end of this session, participants should feel more comfortable applying these prognostic tools in practice. The widespread use of electronic health records has also paved the way for machine learning algorithms to take advantage of big data to further improve the accuracy of prognostication. We shall discuss the potential of machine learning technology to augment prognostication and clinical decision making. The last 15 minutes of this session will be open to the audience for discussions.

### ***Caring for the Complex Congenital Heart—Should It Be Palliative from the Start? (FR457)***



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#### ***Objectives***

- Identify the current state of congenital heart disease (CHD) and its impact on quality of life for patients and families.

- Describe the role of early palliative care in supportive pediatric patients and families facing CHD.
- Discuss the perspective of primary cardiology teams on early integration of palliative care in the treatment of CHD patients.

In 2010, data extrapolated to the US population estimated that approximately 2 million people of all ages were living with CHD. It is now estimated 85-90% of all patients born with CHD in the past two decades are estimated to live survive to age 18. Although research suggests an increasing prevalence of palliative care from the time of diagnosis, the role of palliative care remains unclear. Families of children born with CHD face complex decisions and unpredictable outcomes from the start. Still, palliative care consultation is not routinely offered at the time of diagnosis, perhaps in part because of concerns about the message it may convey to families. Many families choose "palliative procedures", however, and CHD patients may survive well into adulthood, continuing to confront the challenges of limited treatment options and an uncertain prognosis. Strong collaboration between cardiology teams and palliative care teams is essential for promoting optimal quality of life for CHD patients and their families.

Using didactics, case studies, and discussion, this session will provide an overview of CHD and the distinct role of early palliative care for this patient population. It will also explore the crucial intersection of cardiac care and palliative care, as well as highlighting the unique challenges of adult patients with CHD. Topics will include:

1. Review of existing literature about benefits of early palliative care for assistance with decision-making and goal setting. Case studies highlighting both pediatric and adult patients living with CHD will be included.
2. A cardiologist's viewpoint on presenting palliative options to families, as well as tips on what PC teams need to know when partnering with cardiology.
3. Exploration of the long-term outcomes of CHD, including medical comorbidities as well as the emotional and social consequences of living into adulthood.

### ***Circle of Trust: How Psychodynamic Themes Such as the 'Holding Environment' Optimize Coping with Serious Illness (FR458)***



Keri Brenner, MD MPA, Stanford University, Palo Alto, CA. Vicki Jackson, MD MPH FAAHPM, Massachusetts General Hospital, Boston, MA. Linda Emanuel, MD PhD, Northwestern Medicine, Chicago, IL.

#### ***Objectives***

- Describe the essential aspects of holding presence, holding environment and containment as