

Agenda Item 18:

Introduction to Primary Care Workforce Supply and Demand Model

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Table of Contents



Research Data Center (RDC) overview



Strategic intent: Model goals, approach, and outputs



The imperative: Why Primary Care workforce matters



Strategic partnership: Mathematica's dual-track expertise



Technical prework: Data mapping & synthesis and modeling exploration



Roadmap: Milestones through December results



Research Data Center Overview

Assembly Bill 133 (2021) created the Research Data Center within the Office of Health Workforce Development

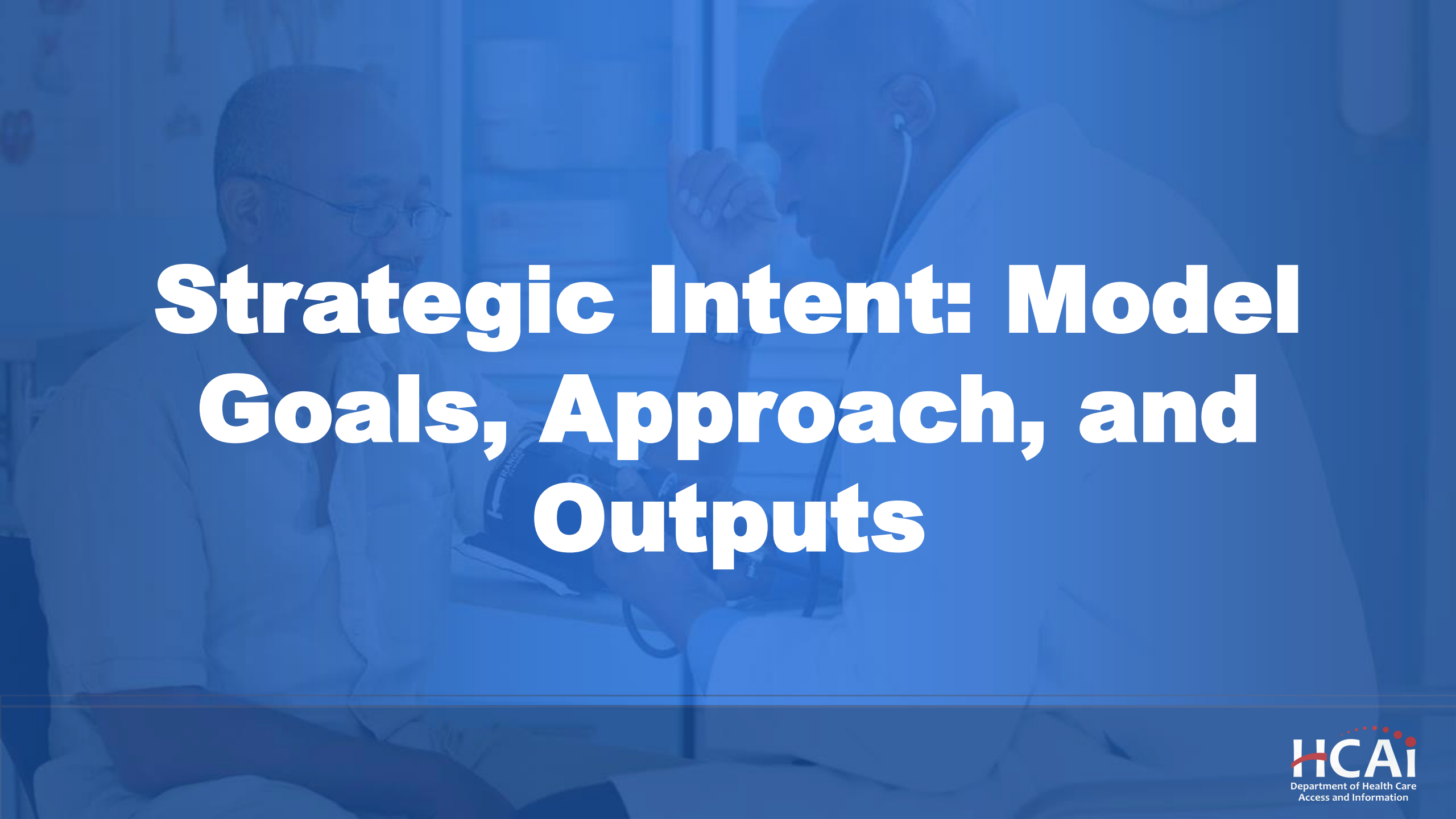
- Central source of health care workforce and education data in the state

Health and Safety Code Section 128051 requires HCAI to collect, to the extent available, all of the following data:

- The current supply of health care workers, by specialty.
- The geographical distribution of health care workers, by specialty.
- The diversity of the health care workforce, by specialty, including, but not necessarily limited to, data on race, ethnicity, and languages spoken.
- The current and forecasted demand for health care workers, by specialty.
- The capacity of educational programs to train new healthcare workers, including details on slots, enrollment, attrition, and wait times.

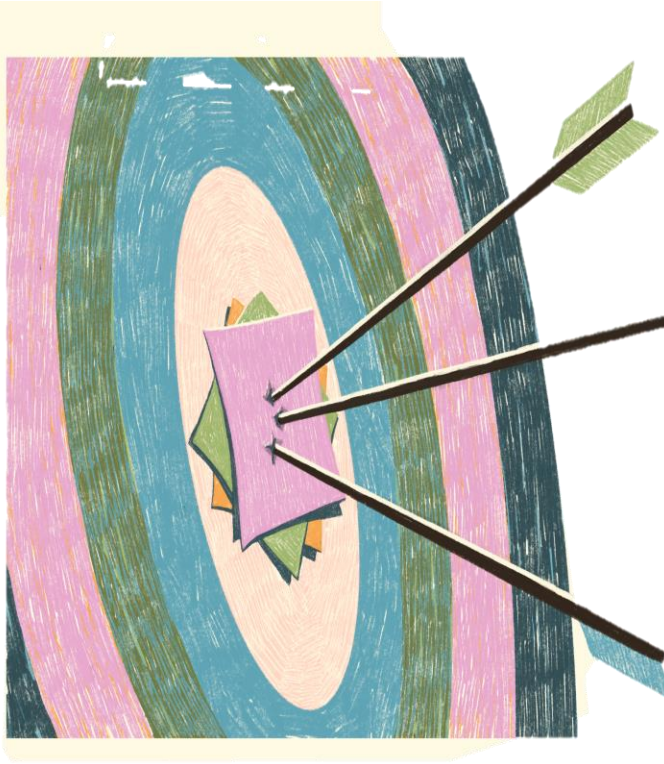
Business and Professions Code Section 502 requires that workforce data include information reported by licensed professionals, such as:

- Race and ethnicity, languages spoken, gender, educational background, area of practice or specialty, hours spent in direct patient care, work hours, address, and other relevant details.



Strategic Intent: Model Goals, Approach, and Outputs

Model Goals, Approach and Outputs



- **Goal:** To equip policy leaders and decision makers with a granular, equity-focused predictive tool that identifies statewide primary care workforce gaps and pinpoints neighborhood-level access issues using a team-based care approach
- **Approach:** A collaboration between HCAI and Mathematica's dual track team, pairing subject matter experts with technical modelers to develop needs-based, team-based care modeling using HCAI License Renewal Survey data and other datasets
- **Output:** Tool for policy and resource allocation
- **Outcome:** HCAI and other partners use the model outputs to make decisions, including allocation of resources

Strategic Vision for the Model

Sub-County Granularity

- Move beyond countywide gaps/ shortages that mask neighborhood access issues.
- Identify PC ‘deserts’ at a hyper-local level based on observed service areas.

Multifaceted Access

- Moving beyond simple shortages to model real-world access barriers like travel distance, insurance mix and others.
- Include claims-based and patient-reported measures where feasible.

Team-Based Care Composition

- Evaluate the optimal mix of core and extended PC teams to provide quality care.
- Model dependencies between provider types and optimal provider mix.



The Imperative: Why Primary Care Workforce Matters

Primary Care Key Facts

- Research has shown that more primary care is associated with¹:
 - Patients receiving better care and living longer
 - Fewer people in emergency department, less expensive hospitalizations
 - Lower overall health care costs



¹ <https://www.chcf.org/resource/why-health-care-is-so-expensive/not-enough-prevention-in-health-care/>

Primary Care Key Facts

- **Over 10.5 million** residents live in areas designated a primary care workforce shortage area throughout the state^{1, 2}
 - **Nearly 2/3 (64%)** of these residents are Black, Latinx/e, or American Indian
- In 2022, more than **240,000** hospital stays in California could have been prevented with preventive care³



¹ <https://data.hrsa.gov/>

² [https://data.census.gov/table?q=DP05:+ACS+Demographic+and+Housing+Estimates&g=040XX00US06\\$1400000&y=2024](https://data.census.gov/table?q=DP05:+ACS+Demographic+and+Housing+Estimates&g=040XX00US06$1400000&y=2024)

³ <https://cpehn.org/publications/the-high-cost-of-inequity-how-preventable-hospitalizations-harm-californians/>



Strategic Partnership: Mathematica's Dual- Track Expertise

Mathematica: Dual-Track Partnership

Our partnership leverages a two-pronged expert division to ensure technical rigor and policy relevance.



Subject Matter Experts

Focus on subject matter expertise and policy context. Subject matter experts lead research activities and oversee the Steering Committee, translating assumptions into clinical realities.



Modeling Experts

Focus on the technical engine. Modeling experts work hand-in-hand with the HCAI modeling team to build the modeling framework, handle data mapping, and execute complex sub-county analysis

Governance and Collaboration

A steering committee led by Mathematica SMEs is working closely with Health Workforce leadership to:

- **Review evidence, conduct interviews and discussions:** conduct research, gather information, and draft assumptions.
- **Vet assumptions:** consult with state and national experts.
- **Build consensus:** gain buy-in from broad group of partners to ensure model adoption.

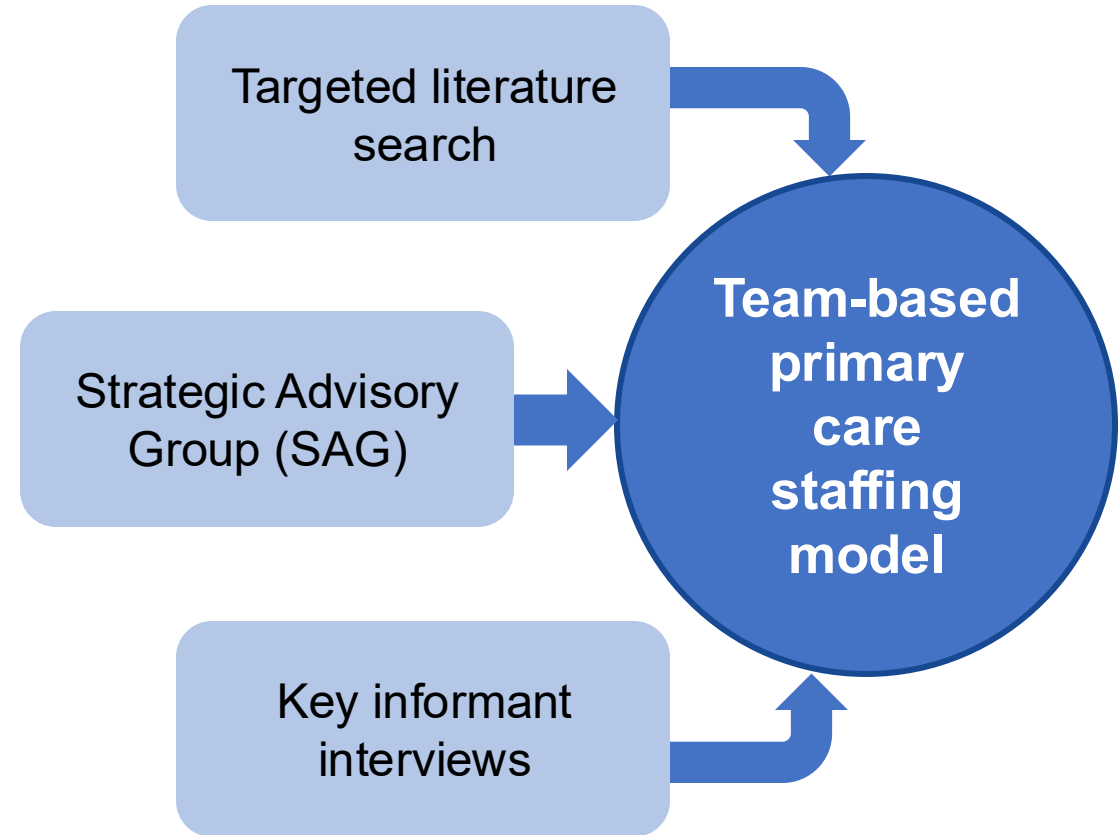


Collaborative Process to Develop Assumptions

Mathematica will coordinate a **rigorous, methodical process** to develop and finalize a team-based primary care staffing model and other relevant assumptions to be used in the supply and demand modeling.

The team-based primary care staffing model will build on the existing evidence base and **state and national primary care expert opinion** to refine and finalize the care model.

Building a Team-based Primary Care Staffing Model



Technical Modeling Prework

Parallel to governance, modeling experts are conducting deep-dive research to refine the model's foundational logic.

Synthesis and Mapping:

Synthesis of research/assumptions and comprehensive data mapping across internal and external sources

Advanced Methodology:

Defining the core modeling methodologies for sub-county analysis and access issue exploration

Scenario Framework:

Developing the logic for scenario modeling

Roadmap: Milestones through December

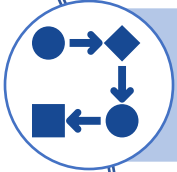
Project Timeline

We are here



Pre-Work Phase (Now-Sept)

Research synthesis, data mapping, and SME assumptions gathering



Core Build (Oct)

Technical model build begins with technical teams (HCAI and Mathematica)



Validation (Nov)

Iterative vetting sessions and SME reviews



Updates to Council (Nov)

We will provide updates at the Nov. Council meeting



Final Delivery (Dec)

Results memo including strategic recommendations for HCAI leadership

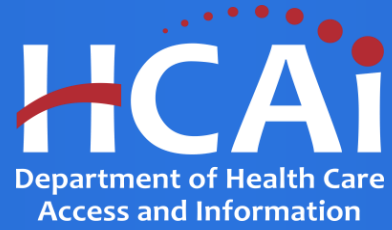
The Team

Mathematica

- *Diane Rittenhouse, M.D., MPH, Senior Fellow at Mathematica*
- *Katie Coleman, MSPH, Founder and Principal of Research to Practice*
- *R. Vincent Pohl, Ph.D., Principal Researcher at Mathematica*

HCAI

- *Kevin McInturf – Data Scientist*
- *Mindy Ng – Workforce Modeling Specialist*
- *Jamilla Abugazia, MPH – Workforce Modeling Specialist*
- *Mandana Masoumirad, PhD – Research Scientist*
- *Ellice Ramm, MA – Workforce Research Specialist*
- *Baldev Grewal – Workforce Visualization and Analytics Specialist*
- *Jaclyn Moriel – Workforce Research Data Center Lead*
- *Sophie Barbu, MBA – Research and Evaluation Branch Strategist*
- *Carolyn Rider, MA – Workforce Visualization and Analytics Unit Chief*
- *Chipu Maringa, MA, PhD – Workforce Research and Analytics Section Chief*
- *Eric Neuhauser, MPA – Research and Evaluation Branch Chief*



Thank you!

Questions?