PHIG PARTNERS

Tools You Can Use: Resources and Strategies for Leveraging Data to Inform Workforce Planning and Pathways

BY PHIG PARTNERS

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SHAPING TOMORROW'S PUBLIC HEALTH TODAY.

Using Labor Analytics for Workforce Planning

Scott Murakami

Hawaii PHIG Workforce Director and P.I.

2025 PHIG ARC – St. Louis, MO

Wednesday, August 20, 2025

3:45pm to 5:00pm

Why Labor Analytics?

- Within a geographic region:
  - Number of Jobs
  - Median Income
  - Demographic Information
    - Anticipate Retirements
  - Migration Patterns
    - Commuting to Work
    - Transitioning to and from Other Occupations
  - Identify Compatible Occupations (Index of Knowledge, Skills, and Ability)
  - Anticipate future worker shortages or surplus through the educational pipeline.
  - Analyze Compensation

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Types of Data

- Government Data (Structural Data)
  - Government survey data such as:
    - Current Population Survey
    - American Community Survey
    - Quarterly Census on Employment and Wages
    - U.S. Census Data
    - National Center for Education Statistics, Integrate Post-Secondary Education Data System
    - O*NET
  - Issue: Suppression
- Job Posting Data (Big Data)
  - Data collected from job posting on the internet
  - Issue: Data is Dirty – Large volumes of heterogenous data

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Hawaiʻi PHIG Workforce Development Process: Recruit to Retain People with a Purpose

1. Workforce Planning

Identifies economic, cultural, social, and environmental issues that can impact our incumbent workers. Identifies the changing workforce needs of public health in Hawaiʻi.
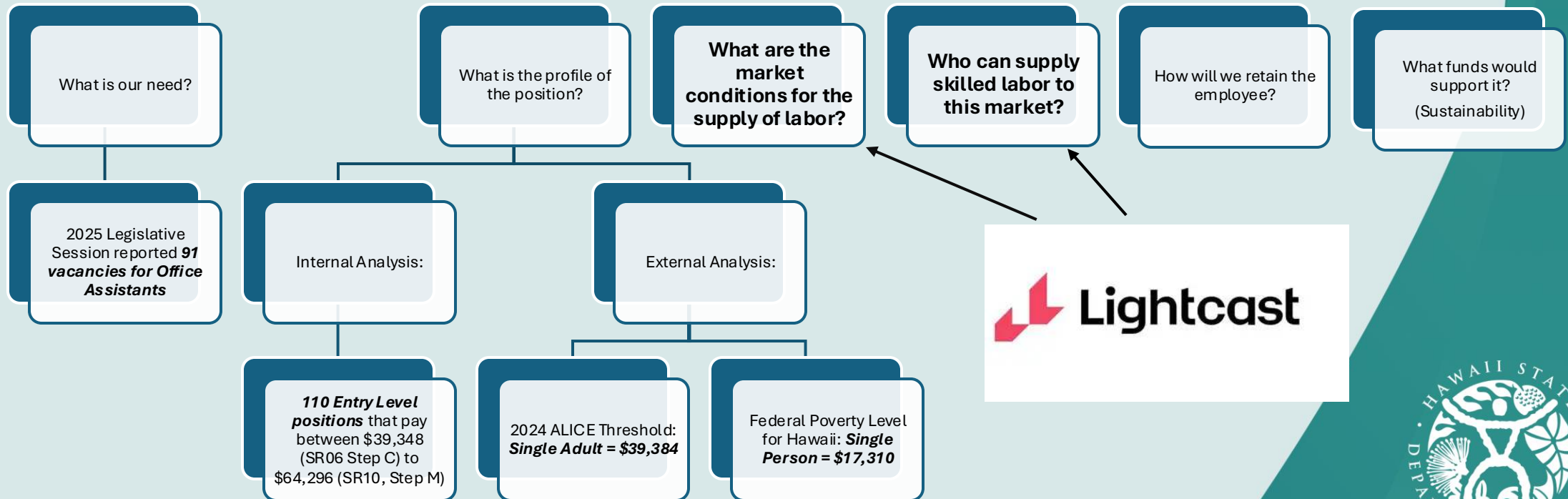
2. Employee Retention

Focus on people. Give employees resources to be the best version of themselves and build resiliency. Shifting the culture to drive positive outcomes that address greater challenges together in the future.

3. New Employee Recruitment

Create pathway support for students and job seekers who share the mission and vision of the Hawaiʻi State Department of Health.

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1. Workforce Planning: Labor Analytics

What is our need?

- 2025 Legislative Session reported *91 vacancies for Office Assistants*

What is the profile of the position?

- Internal Analysis:
  - *110 Entry Level positions* that pay between $39,348 (SR06 Step C) to $64,296 (SR10, Step M)
- External Analysis:
  - 2024 ALICE Threshold: *Single Adult = $39,384*
  - Federal Poverty Level for Hawaii: *Single Person = $17,310*

What are the market conditions for the supply of labor?

Who can supply skilled labor to this market?

How will we retain the employee?

What funds would support it? (Sustainability)

Lightcast

Demo: Labor Market Analysis Tool (Office Assistants – Summary Results)

- Employees in the occupation: 6,822
- Median Compensation: $50,586
- Current Demand: 255 in recruitment
- Projected Growth Rate: 3%
- Largest Employment by Industry:
  - Education and Hospitals (State Government)
  - State Gov, excluding Ed and Hospitals
  - Local Government (County
- Retirement Age: 2,659
- Education Pipeline: (Completers)
  - Leeward CC: 619
  - Kapiolani CC: 308
  - Windward CC: 202

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Future Direction – Forecasting the Social Determinants of Health (Possible TEP 2)

- Hypothesis: Forecasting Hawaii's social determinants of health will allow for the proactive posture of Hawaii's public health workforce.
  - Data source:
    - Genuine Progress Indicator (GPI)
    - Aloha+ Challenge
    - Hawaii Wellness and Resiliency Survey Data – Gov's Office on Wellness and Resiliency

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PHIG Workforce Sustainability Matrix

PHIG Project or Intiative	Short Term Objective	Long-Term Objective	Key Partners	Mutual Benefit	What does PHIG DOH Offer?	Tactical Play	Future Funding
Hiring Innvoation Rapid Employment (HIRE) Pilot Project	1. Establish pilot process redesign project to increase efficiency in hiring new employees. 2. Properly document the pilot project using benchmarks that clearly show impact from this pilot.	1. Policy changes that allow for great flexiblity in the hiring process that result in lower complaints and shortened recruitment process. 2. Possible adoption by sister state agencies or state-wide Department of Human Resource Development.	1. DOH HRO (internal) 2. Governor's Office/Hawaii State Legislature 3. Sister State Agencies	1. DOH reduced time for recruitment of delegated positions through the HIRE Project. 2. Policy win for the Governor's Office and the Hawaii State Legislature.	1. Director's initiative and program design. 2. Political will and legislative support. 3. PHIG Funding and TEP to establish the evaluation process and support written findings.	1. Establish the HIRE Projects as a PHIG TEP. 2. Ensure ongoing and regular monitoring of the HIRE progress for PHIG and DOH administration.	1. No ongoing funding requirment anticipated. 2. Policy and practice change required.
1 Labor Analytics and Projec	1. Create forecasting capabilities for high vacancy positions	1. Refine and maintain the forward assessment of the social determinants of health to improve future workforce planning.	1. DBEDT - READ (GPI) 2. HIPHI - Public Health Community 3. Health Care Sector Partnership w/Public Health Subsector	1. Application of READ Analytics 2. Better understanding of the public health labor market. 3. Increase advocacy of health care workforce needs.	1. Power to convene adhoc committee to expand labor market analysis to forecasting the social determinants of health	1. Convene an informal group of volunteers to review identify data sources that could proxy for the social determinant of health. 2. Build a demonstration projrect possibly TEP to detmine the viability of the forecast model in buidling a	1. This will require a 1.0 FTE Public Health Economist and ongoing advisory team support.
3 Recruitment of high vacancy, entry level, non-degree positions. SR-10 and below.	1. Develop program and policy for allowing the substitution of community college training programs for minimum and desireable qualifications. 2. MOA for training and recruitment program. 3. MOA for progression programs	1. Sustained opportunty for alternative entry level positions into the DOH. 2. Sustained progression through structured professional development program for entry level positions.	1. Leeward Community College - Campus Lead for the UHCCs. 2. All 7 Community College Campuses for Content. 3. OPVCC - System-wide Support	1. Joint development of employment pathways for non-traditional students into entry level administrative or subject matter positions. 2. Joint recruitment for training program that leads to employment opportunities.	1. Development of non-traditional pathway to temporary employment. 2. Content for non-traditional pathway. 3. Exploration of the viability of expanding in apprenticeship.	1. Support and contribute to the development of employment pathway and progression opportunity. 2. Explore alignment with Apprenticeship with DLIR through UHCCs.	1. WIOA Funding - for credit and non-credit certificate and micro certifications. 2. Title IV and private tuition support programs for qualifying credits programs. 3. Title IV TRIO Program for health equity and wrap around services. 4. Funding under 17.285 for apprenticeship

Collaboration/Partnerships with Academia: Entry Level Positions and Non-Traditional Students
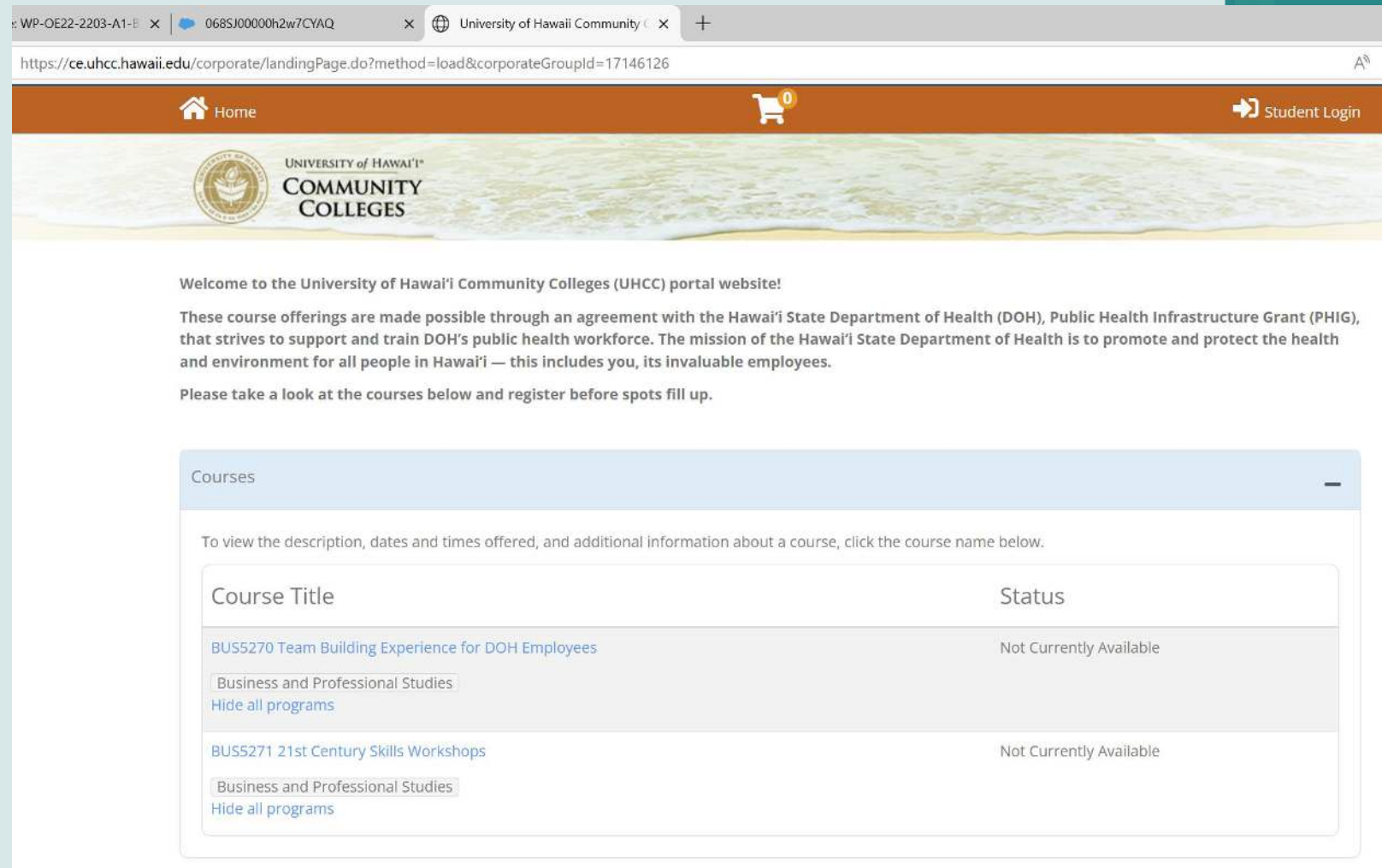
- **Act 291 Signed into law on July 3, 2025.**
  - **Statutory authority for DOH Hiring Innovation Rapid Employment (HIRE) pilot project (PHIG TEP) through 07/01/2028.**
    - *"The department of health shall have the following flexibilities regarding minimum qualifications for positions having a salary range at or below SR-10.*
      - *"Allowing certain community college development programs to be substituted for required or desired experience;"*

YES
BILL BECOMES A LAW!!!

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Collaboration/Partnerships with Academia:
Professional Development and Enrichment

- MOA with Leeward Community College to badge or micro credential non-traditional students into Office Assistant Positions and provide training for progression.

- Program is being developed to be sustained under the US DOL Workforce Innovation and Opportunity Act. (WIOA)

Program & Capability Mapping: A Common Language to Organize Public Health Infrastructure at Any Scale

Azalee Hoffbauer, MPH – Public Health Workforce Analyst - They/Them

Steve Holloway, MPH – Health Access Branch Director - He/Him

Digital accessibility statement

Why We Still Can't Answer Basic Questions About Our Workforce

What We Have Now

- Basic job titles from HR systems
- Fragmented data systems
- Siloed systems and departments
- Inconsistent terminology

What We Need

- Roles tied to programs and capabilities
- Multi-role visibility
- Shared schema
- Scalable, structured data
- Real-time, individual-level workforce data

"In order to build capacity, we must understand who makes up our workforce, what programs they work in, and their roles."

A Simple, Adaptable Framework

Maternal, Child, Adolescent & Family Health	Environmental Health	Communicable Disease Prevention, Investigation & Control	Access & Linkage with Care	Chronic Disease, Injury Prevention & Behavioral Health Promotion
WIC Nurse Family Partnership Farm to Child Cavity Free at Three	Hazardous Materials Colorado Clean Cars Community Water Fluoridation	Zoonotic Diseases Expedited Partner Therapy COVID-19 Emerging Infections	SNAP HPSA Loan Repayment Medicaid	Communities That Care Quitline WISEWOMAN Project AWARE

Assessment & Planning	Communications	Policy Development & Support	Partnerships
Data Collector Lab Tech Epidemiologist City/Urban Planner	Comms Specialist Fundraising Manager Public Info Officer Webmaster	Legislative Assistant Policy Advisor Policy Compliance Specialist	Community Partner Liaison Outreach Specialist Org/Site Manager

Organizational Competencies	Emergency Preparedness & Response	Health Equity & Social Determinants of Health	Additional Important Services
Program Manager HR Technician Auditor IT Specialist	EPR Liaison Emergency Dispatch City Emergency Manager	Promotora Training Specialist Community Health Worker	Logistic Manager Case Manager Social Worker Health Care Workers

A Simple, Adaptable Framework

Person → Service Area → Program → Capability → Role

- Works with any agency
- Piloted at state & local level
- Built to reflect real people doing real work

Data Isn't the Problem, The Structure Is
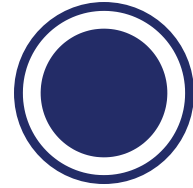
- "Data" isn't abstract, it's embedded in daily work
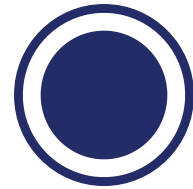
- Workforce data isn't a tech issue, it's a shared understanding issue
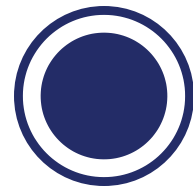
- Program & Capability Mapping gives us a common language to describe real infrastructure

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How It Works — At Any Level

"Infrastructure misalignments become visible"

- Data systems unused or underutilized
- Capabilities not tracked
- People improvising to fill systemic gaps

1 **Pull Existing HR Data**
Includes basic job role data and minor demographics

2 **Add 9 Key Fields**
FPHS Area, Program Area, Sub Program Area 1-3, Targeted Program, FPHS Capability, CALPHO Specific Capabilities, & General Occupational Description

3 **Collect Additional Data**
Use interviews, org charts, self report surveys, create your own data collection methods

4 **Use Your Current Tools**
Excel, Google-sheets, etc.

Clarity, Visibility, and Functionality

Staff

- See who does what, where, and how
- Track "other duties as assigned," temporary roles, surge deployments
- Understand capacity by capability, not just job title

Systems

- Reveal how infrastructure is organized
- Link roles to funding, policy, systems
- Spot gaps, duplication, or fragility in operations

Community

- Align workforce to program delivery
- Share with external partners and funders
- Demonstrate value + capacity beyond staffing counts

From Hesitancy to Action

"Workforce data is not risky,
it is necessary"

- We already have what we need to begin
- The framework is scalable, grounded, and flexible
- This isn't a burden, it's a step toward clarity and transformation

Adaptability Is the Path to Sustainability

- Start with One Person or Team
- Scale within Programs or Departments
- Adapt and Evolve Across Full Systems

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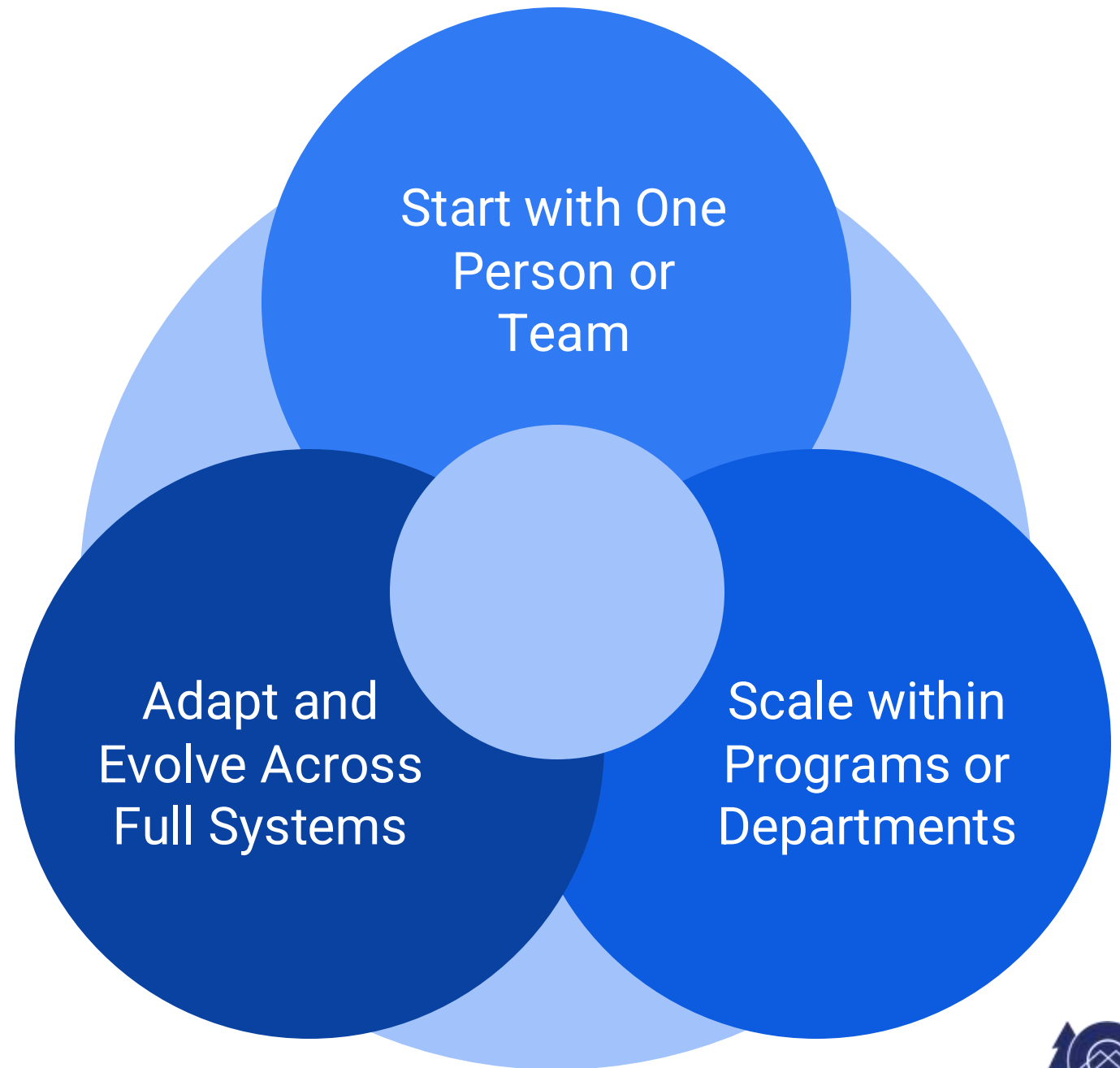
The Heart of Public Health
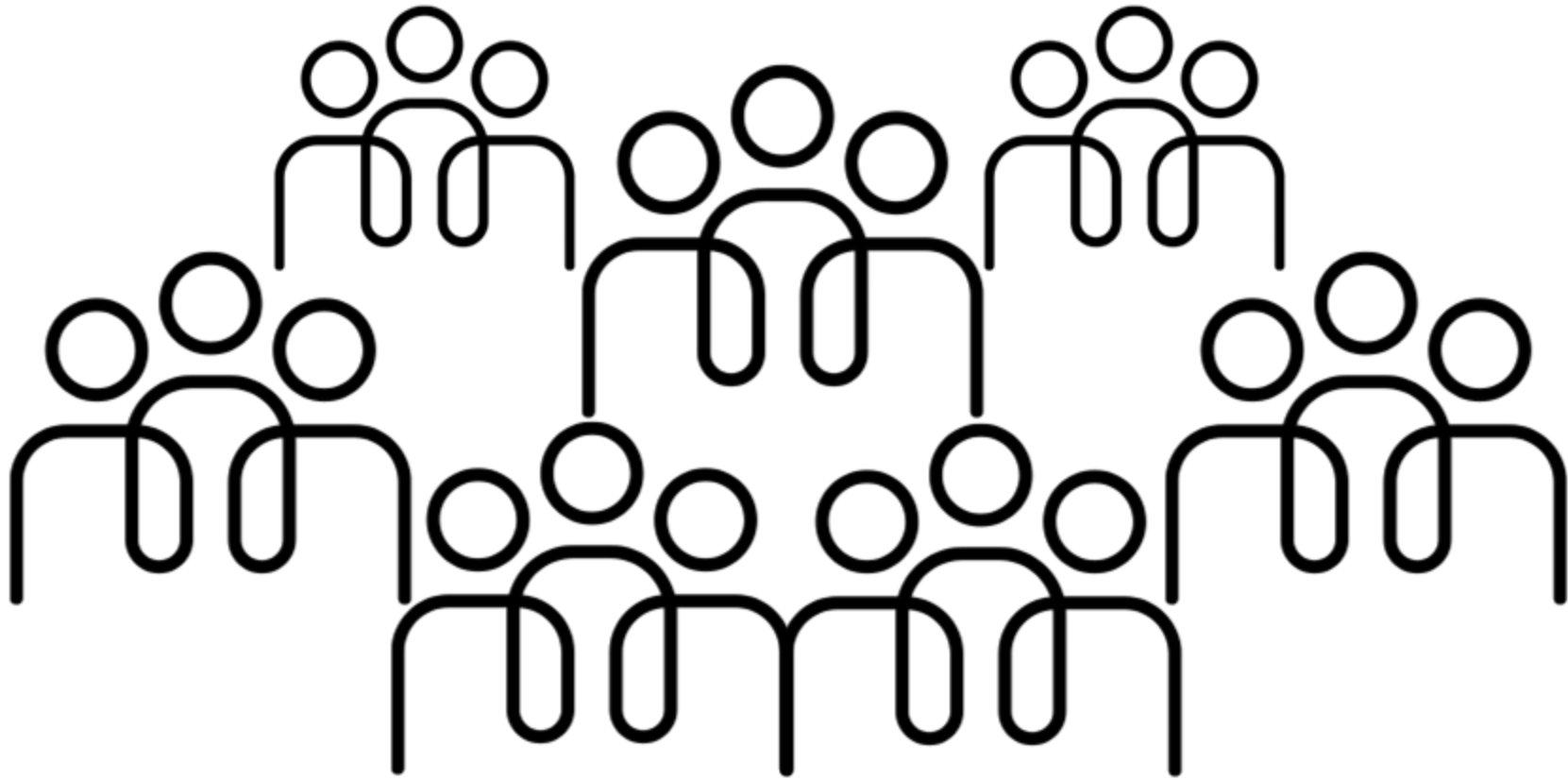
Start Where You Are, Use What You Have

➜ Champions who see the value
➜ Agencies ready to use the framework
➜ Coordinated organic growth

"The common language exists. Now we just need to use it."

Cracking the Data Code: A Repeatable Workforce Framework to Assess Data Literacy and Transform the Public Health Workforce

Emma Spencer, PhD, MPH

Division Director, Public Health Statistics and Performance Management

Agenda

1. **Project Overview**
2. **Competency and Skills Framework**
3. **Assessment Design**
4. **Gap Analysis Results and Next Steps**
5. **Further Application**

OUR MISSION

Why do we exist?
To protect, promote and improve the health of all people in Florida through integrated state, county and community efforts.

OUR VISION

What do we want to achieve?
To be the Healthiest State in the Nation.

OUR VALUES

What do we use to achieve our mission and vision?

I nnovation
We search for creative solutions and manage resources wisely.

C ollaboration
We use teamwork to achieve common goals and solve problems.

A ccountability
We perform with integrity and respect.

R esponsiveness
We achieve our mission by serving our customers and engaging our partners.

E xcellence
We promote quality outcomes through learning and continuous performance improvement.

State Health Office

67 County Health Departments (CHDs)

23 Million Population
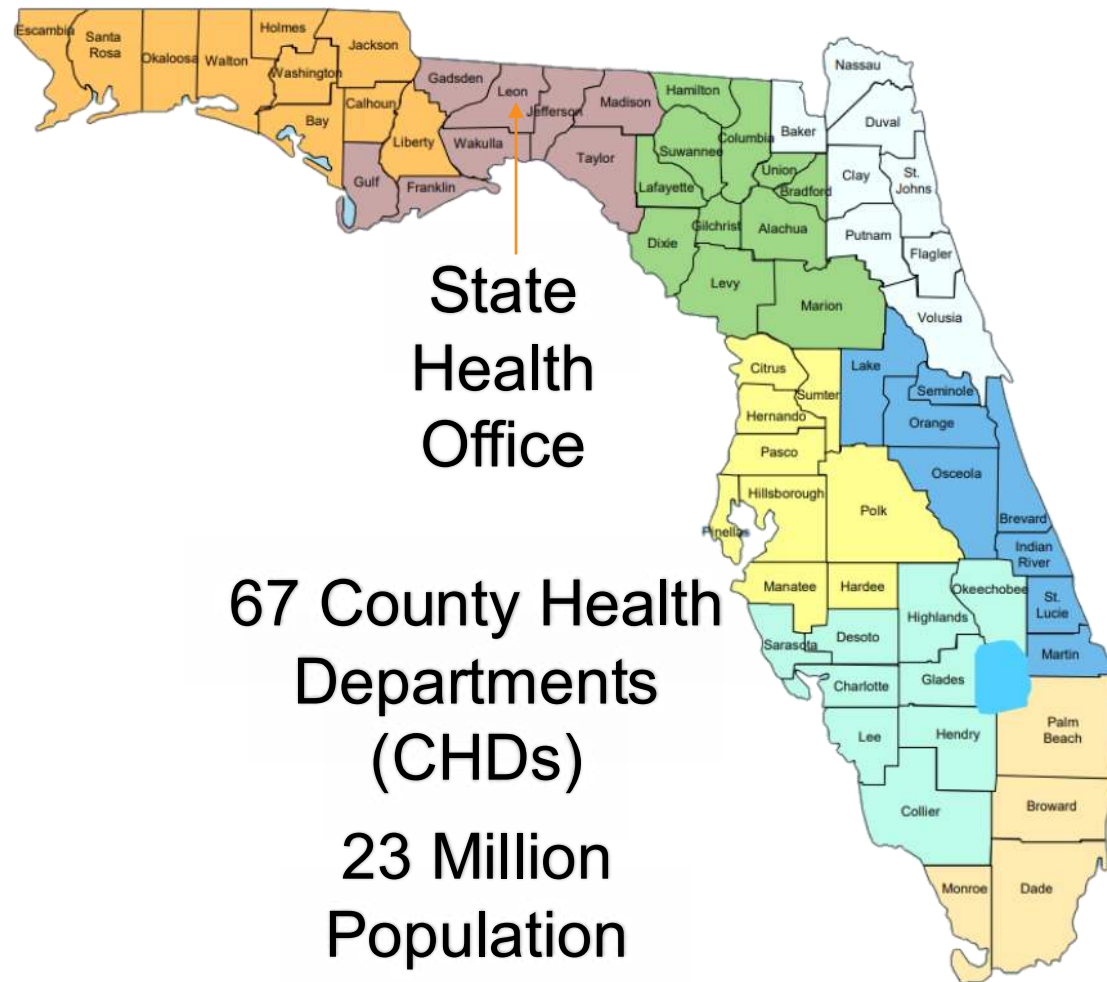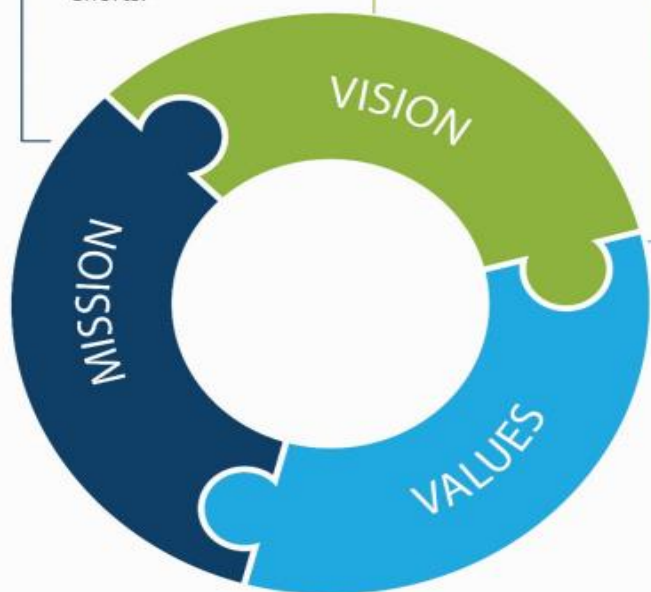
PROJECT OVERVIEW

DOH Data Modernization Workforce Development

SKILLS ASSESSMENT

- Analyze existing data and frameworks.
- Conduct informant interviews.
- Conduct Focus Groups.
- Launch Data Literacy Assessment.

GAP ANALYSIS

- Identification of knowledge gaps.
- Identify top training recommendations.

TRAINING PLAN

- Develop a training plan to address training needs.
- Deliver training.
- Develop an HR Toolkit.
- Develop Evaluation Strategy.

DOH Data Modernization Workforce Development

Data Literacy Training Course
Department-wide course covering basic-level of data literacy and recommendations for further training

+

Training Plan
Training plan template that establishes key performance indicators

+

HR Toolkit
Includes interview questions, preferred knowledge & skills for data-driven positions, position descriptions, & performance expectations

Assessment Analysis Report & Findings and Gap Analysis Report *(i.e., identified training needs, urgency, key insights)*

Interviews
Build an understanding of the skills/competencies needed; surface relevant personas and functions; inform the design of focus groups

Focus Groups
For each group, determine the relevant personas, functions and uses cases, and associated Data Literacy expectations

Assessment
Department-wide assessment of current state proficiencies relative to desired Data Literacy skills and competencies

Workforce Assessment Components
- Personas
- Functions
- Use Cases
- Department Levels
- Data Literacy Definition
- Skills and Competencies
- Data Literacy Relevance

COMPETENCY AND SKILLS FRAMEWORK

Competency and Skills Inventory

Six data-related competencies were identified through analyzing industry standards and frameworks and refined with input received from focus groups and interviews.

Data Literacy Competencies

1. Data Management.
2. Data Interpretation and Visualization.
3. Security, Privacy, and Ethical Data Use.
4. Public Health Informatics.
5. Research Methods and Evaluation.
6. Advanced Analytics.*

*Skills specific to Advanced Analytics, requiring a higher level of data interaction and technical proficiency

Example Competency Skills

- Use of Spreadsheet Software.
- Use of Relational Databases.
- Data Cleaning and Preprocessing.
- ETL (Extract, Transform, and Load).
- Designing and Developing Surveys.
- Data Visualization Design.
- Unit and Regression Testing.*
- DataOps (CI/CD, Agile/DevOps).*

Competency Proficiency Levels

Four proficiency levels were identified, each signifies a progression in behaviors, skills, and use of tools and technology.

Competency Levels	Description	Definition
1 – Acquiring	Basic Knowledge	Possesses a basic understanding of the techniques and concepts, with a focus on learning.
2 – Applying	Practical Application	Independently applies terminology, concepts, principles, and addresses issues related to the competency. Recognizes implications of changes in policy, process, and procedures.
3 – Guiding	Advanced Application	Coaches' others in the application of the competency; recognized as a resource. May assist in the development of references and resources.
4 – Shaping	Recognized Authority	Considered an expert; often shapes direction through strategic insight and value-added input.

Each level includes:

- **Behaviors**: Observable actions and conduct demonstrated by individuals at each proficiency level.
- **Skills**: Knowledge, ability, and expertise required at each proficiency level to successfully perform tasks and solve problems.
- **Tools & Technology**: Software, hardware, and coding languages used by individuals at each proficiency level.

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Persona Groupings

WHAT ARE PERSONAS?

Personas are used to classify a workforce based on characteristics, needs, and behaviors of different workforce segments. In this case, our personas will classify the Department's workforce based on data interaction and usage.

Data Consumer Function	Staff Development Function	Data Provider Function
Use data to find insights, make decisions, and create value for critical objectives	Equip people with the skills to perform various roles that interact with data	Make the data available to the data consumers through back-end infrastructure

WHY USE PERSONAS?

Personas enable clustering of the workforce into groups with similar training needs or skills.

While we recognize the full course curriculum will be aimed at Entry, Mid, and Senior / Executive level staff, there may be a greater diversity of data competency needs. Personas provide a deeper lens of data interactions across the above staff levels.

BENEFITS OF USING PERSONAS:

- Improved learning experiences.
- More relevant training and courses.
- Targeted to more than just level, but also by function.

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Functions and Proficiency Alignment

Data-Related Functions: 45 data related functions were identified, each with functional use case examples, to capture the diverse ways employees interact with data across various roles within the Department.

Department Levels: Functions were categorized into three levels: Entry Level (basic data use), Mid Level (advanced expertise), and Executive/Senior (strategic decision-making and leadership).

Proficiency Alignment: A Proficiency Expectations Matrix was developed to depict the Department's expectations for the data-related functions across various Departmental levels, competencies, and proficiency levels.

Interviews & Focus Groups: Stakeholder interviews and focus groups were conducted to understand current data use, leading to refinements of the proficiency expectations.

EXAMPLE FUNCTIONS:
• Accounting / Finance.
• Administrative / Office Support.
• Auditing / Monitoring / Evaluating.
• Clinical / Community Health.
• Communications.
• Customer Service.
• Data Architecture.
• Data Engineering.
• Data Governance Administrative.
• Data Governance Management.

ASSESSMENT DESIGN
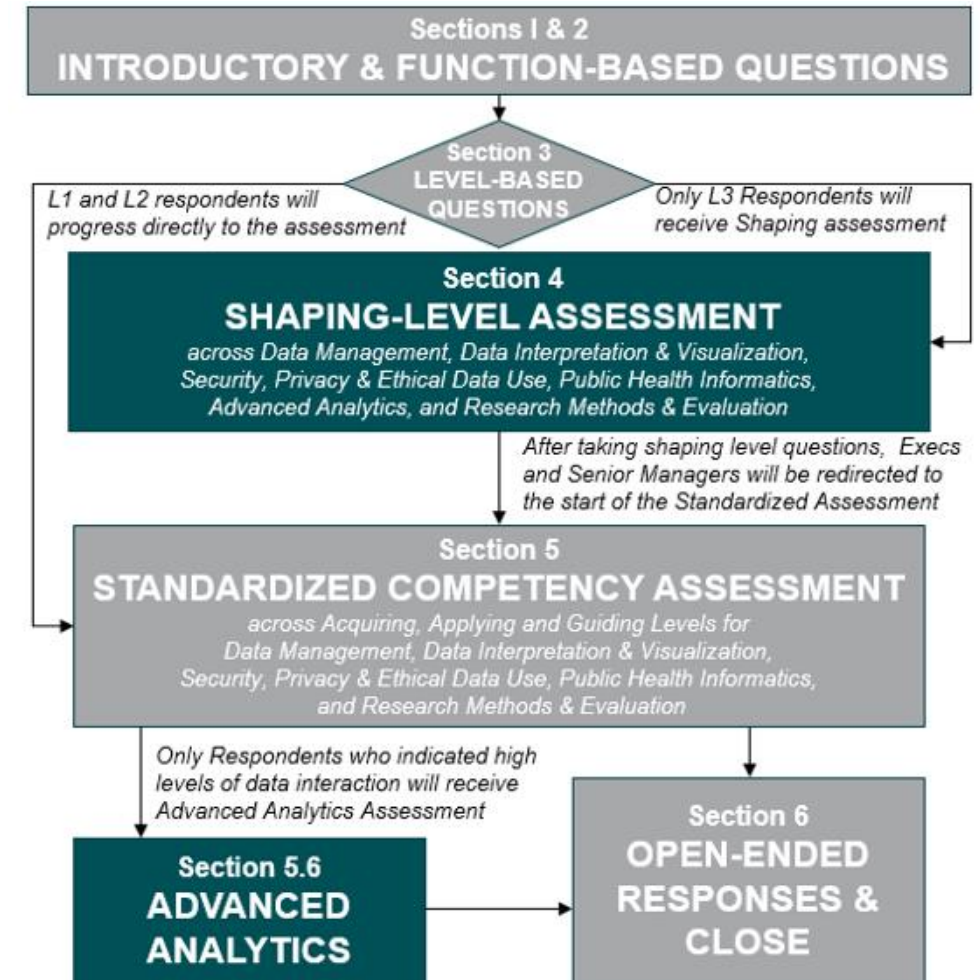
Assessment Framework

Sections 1 & 2

All respondents answered a set of **Introductory Questions** to determine:

- High level demographic information (i.e., Title(s), Location in the Department, Office, etc.).
- General awareness of data literacy and governance.
- Data interaction level.
- Primary data related function through a list of funneling drop downs.

Sections 3 & 4

All respondents answered a set of questions to determine **Organizational Level**:

- Entry and Mid Level respondents were immediately routed to the beginning of the Standardized Assessment.
- Senior Management / Executive respondents were routed to a smaller set of Shaping level questions first, before being re-routed to the beginning of the Standardized Assessment.

Sections I & 2
INTRODUCTORY & FUNCTION-BASED QUESTIONS

Section 3
LEVEL-BASED QUESTIONS

L1 and L2 respondents will progress directly to the assessment

Only L3 Respondents will receive Shaping assessment

Section 4
SHAPING-LEVEL ASSESSMENT
across Data Management, Data Interpretation & Visualization, Security, Privacy & Ethical Data Use, Public Health Informatics, Advanced Analytics, and Research Methods & Evaluation

After taking shaping level questions, Execs and Senior Managers will be redirected to the start of the Standardized Assessment

Section 5
STANDARDIZED COMPETENCY ASSESSMENT
across Acquiring, Applying and Guiding Levels for Data Management, Data Interpretation & Visualization, Security, Privacy & Ethical Data Use, Public Health Informatics, and Research Methods & Evaluation

Only Respondents who indicated high levels of data interaction will receive Advanced Analytics Assessment

Section 5.6
ADVANCED ANALYTICS

Section 6
OPEN-ENDED RESPONSES & CLOSE

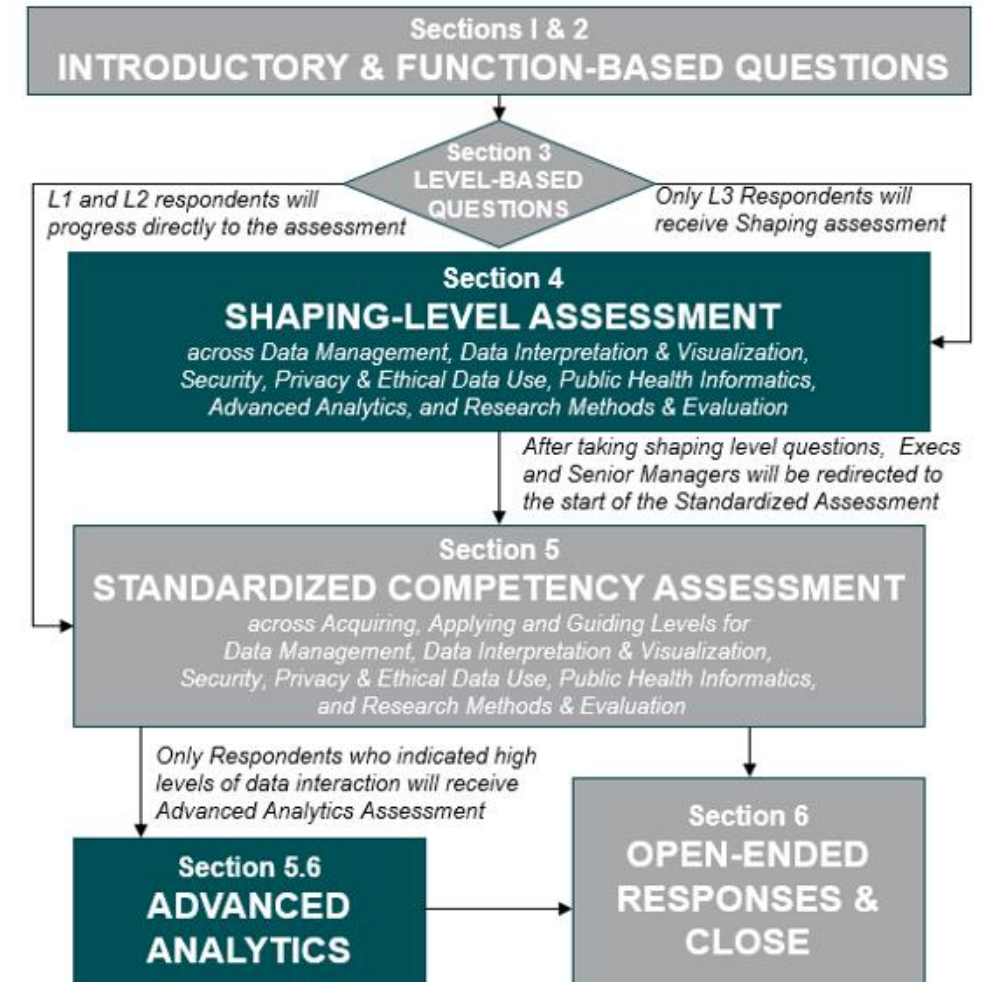Florida HEALTH

Assessment Framework Cont.

Section 5

All respondents received the same exact set of questions during the **Standardized Assessment**. The Assessment included questions across all six competencies:

- One Likert Scale question to reflect respondent's self-assessed proficiency across Applying, Acquiring and Guiding levels.
- Knowledge-based multiple-choice questions to assess Acquiring, Applying, and Guiding levels of proficiency.

Section 6

Once respondents completed the standardized portion of the Assessment, they:

- Were asked to reflect on their **general perceptions, attitude and experiences toward data** in the form of an open-ended question. This helped gauge the current state sentiment related to data and data literacy topics.

Sections 1 & 2
INTRODUCTORY & FUNCTION-BASED QUESTIONS

Section 3
LEVEL-BASED QUESTIONS

L1 and L2 respondents will progress directly to the assessment

Only L3 Respondents will receive Shaping assessment

Section 4
SHAPING-LEVEL ASSESSMENT
across Data Management, Data Interpretation & Visualization, Security, Privacy & Ethical Data Use, Public Health Informatics, Advanced Analytics, and Research Methods & Evaluation

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Section 5.6
ADVANCED ANALYTICS

Section 6
OPEN-ENDED RESPONSES & CLOSE

Assessment Outcomes

HOW WERE ASSESSMENT SCORES ANALYZED?

The aggregate Assessment scores for data-related functions were analyzed and compared against the pre-established expectations outlined in the Proficiency Expectations Matrix, which specified the expected proficiency level for functions across all six competencies.

Mid Level Employee Proficiency Expectations Example:

This employee is a public health professional who manages health program activities, is responsible for completing legislative bill analysis related to their program and participates in accreditation-required quality improvement initiatives as a representative from their area.

Functions	Competencies					
	Data Management	Data Interpretation and Visualization	Public Health Informatics	Security, Privacy, and Ethical Data Use	Advanced Analytics	Research Methods and Evaluation
Program Management	Guiding	Applying	Acquiring	Applying	Applying	Acquiring
Policy Advisory	Acquiring	Applying	Not Applicable	Applying	Applying	Applying
Performance Improvement	Applying	Applying	Not Applicable	Acquiring	Applying	Applying

GAP ANALYSIS
RESULTS & NEXT STEPS

Key Findings

What can we take away from this gap analysis?

High-Level Results:

Senior Management/Executives scores met expectations for the Shaping proficiency level.

Mid-Level Supervisors demonstrated gaps, particularly in the areas of Performance Improvement, Supervisory, and Accounting.

- **Security, Privacy, and Ethical Data Use** competency showed fewer proficiency gaps, especially at the **Acquiring** level.

- **Advanced Analytics** and **Data Management competencies** exhibited notable gaps at **Applying** and **Guiding** proficiency levels.

To bridge competency gaps, the Department will implement targeted training and HR resources to address priority skill gaps.

Next Steps

Through a gap analysis of the Assessment results, the Department identified existing gaps. To address these, a foundational training, a training plan, and a Human Resources Toolkit are currently in development.

Training Plan

Description: A roadmap to guide the Department in building and enhancing data literacy across all workforce levels.

Objective: Provide a detailed blueprint for targeted training to upskill front line, middle management, and executive staff to effectively use data, fostering a data-driven culture.

Foundational Data Literacy Training Course

Description: A training course that will support a foundational understanding of data literacy across the Department's workforce.

Objective: Enhance the Department's foundational data competency, supporting the transition to a more data-driven organizational culture.
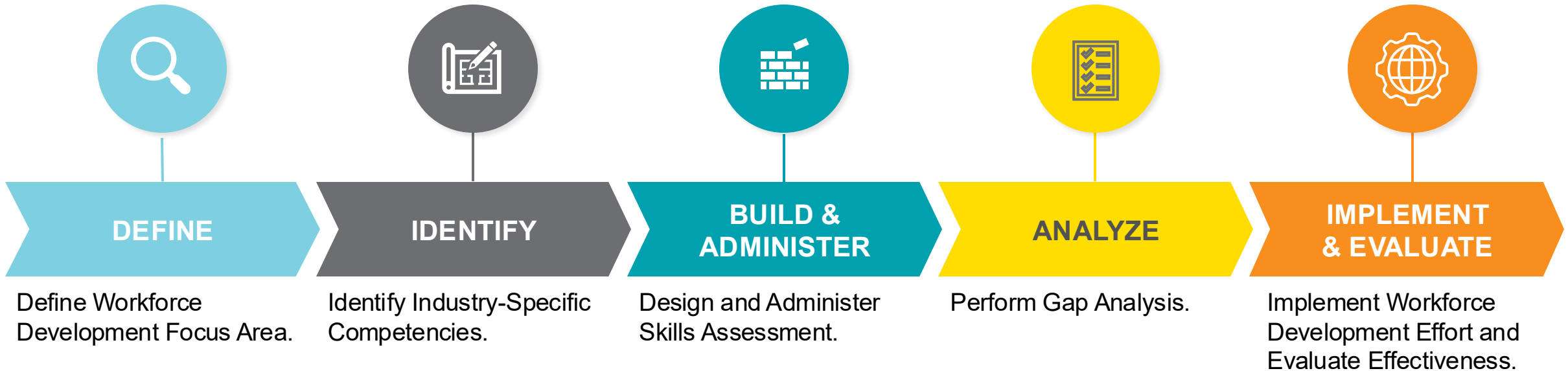
HR Toolkit

Description: A resource designed to support human resources in building and managing a data-literate workforce.

Objective: Provide the Department's human resources with the tools needed for recruiting, selecting, and hiring employees with the data literacy skills needed for their positions.

FURTHER APPLICATION

A Repeatable Framework

This workforce development framework can be applied beyond data literacy, offering opportunities for implementation across programs and public health entities of all sizes.

DEFINE	IDENTIFY	BUILD & ADMINISTER	ANALYZE	IMPLEMENT & EVALUATE
Define Workforce Development Focus Area.	Identify Industry-Specific Competencies.	Design and Administer Skills Assessment.	Perform Gap Analysis.	Implement Workforce Development Effort and Evaluate Effectiveness.

Contact Information

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THANK YOU