Texas Consortium *for the* Non-Medical Drivers of Health

Advancing Research, Policy and Practice

Applying Systems Thinking to NMDOH Impact Measurement

June 8, 2023

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STEERING COMMITTEE

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GROUNDING PRINCIPLES

1 → We don't have all the answers, hence we are looking for active participation and shared learning as part of this collaborative.

2 → Measurement is the first (not last) thing that needs to be considered when addressing non-medical drivers of health.
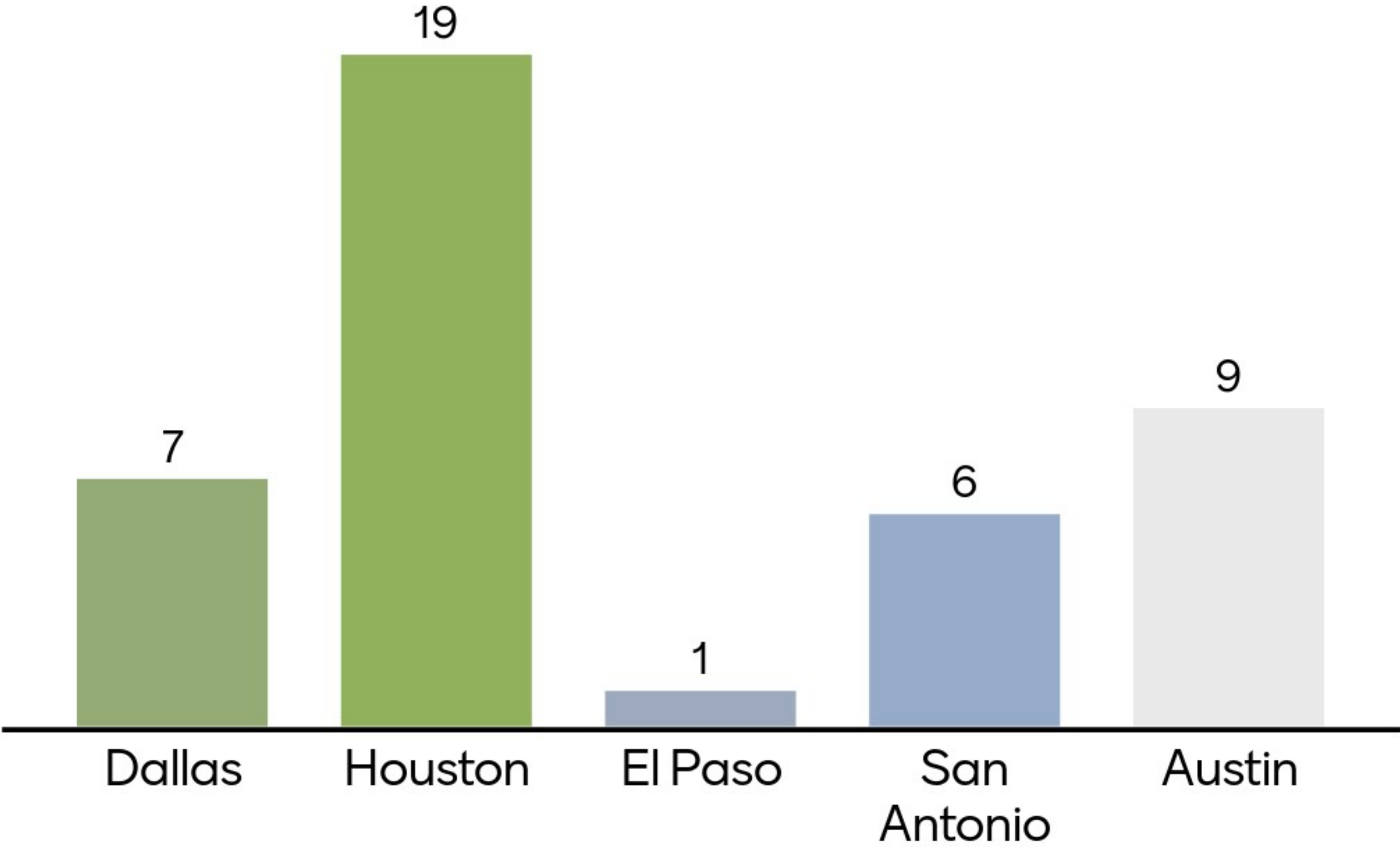
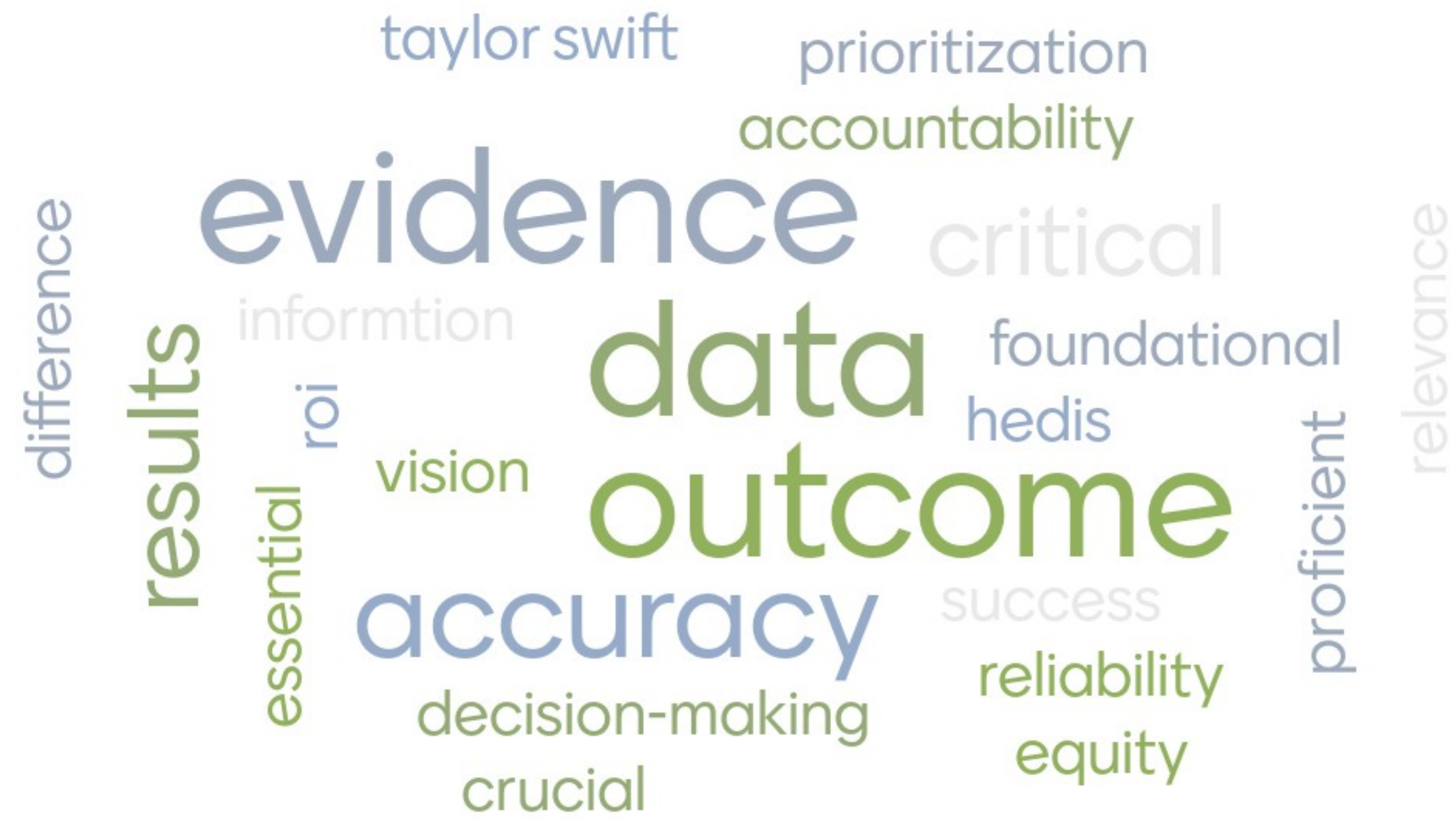**3** → While impact measurement can become overwhelming, it is achievable with the right tools, data and collaborators.

4 → Measurement is for everyone.

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Which is your favorite city in Texas?

City	Votes
Dallas	7
Houston	19
El Paso	1
San Antonio	6
Austin	9

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First word that comes to mind regarding the importance of impact measurement

taylor swift
prioritization
accountability
evidence
critical
difference
informtion
data
foundational
results
roi
hedis
relevance
vision
essential
outcome
accuracy
success
proficient
decision-making
reliability
equity
crucial

SESSION AGENDA

1 Getting started with impact measurement

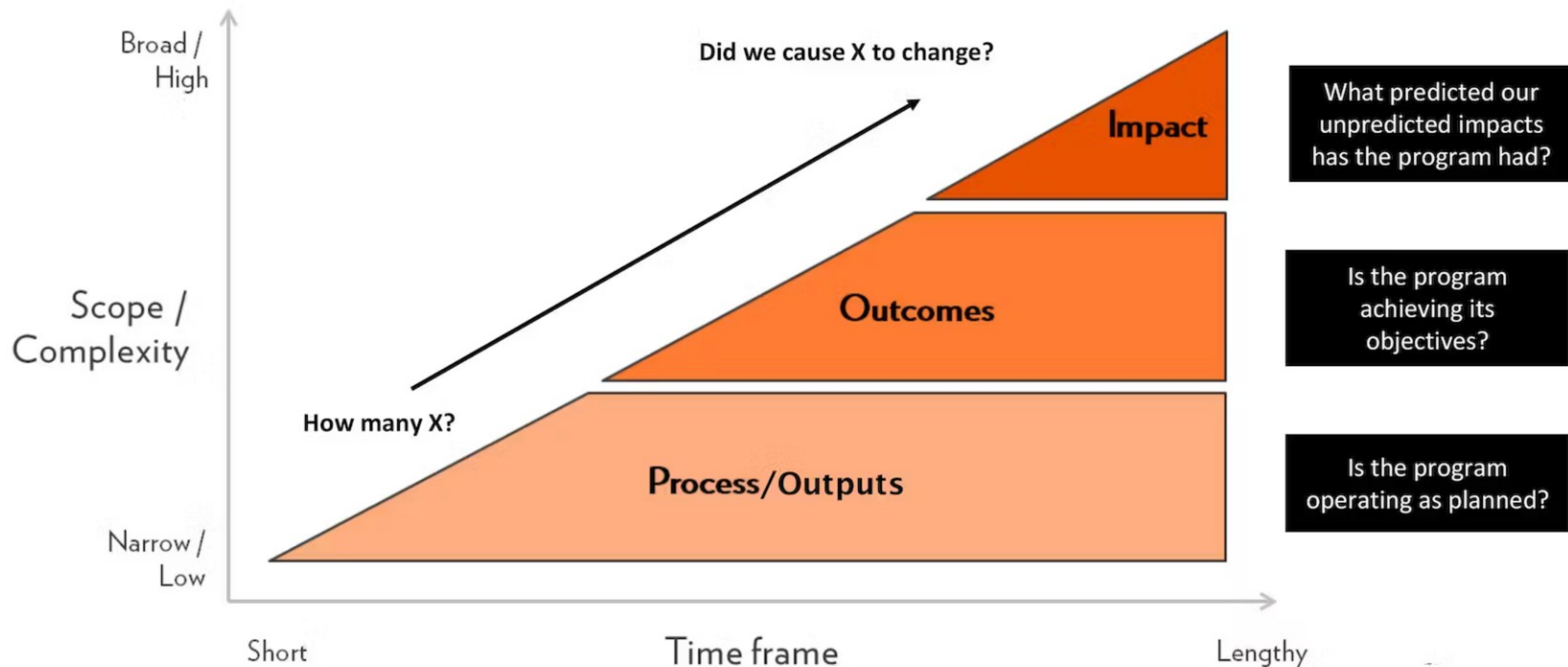**2** Impact measurement requires a data strategy

3 Current challenges

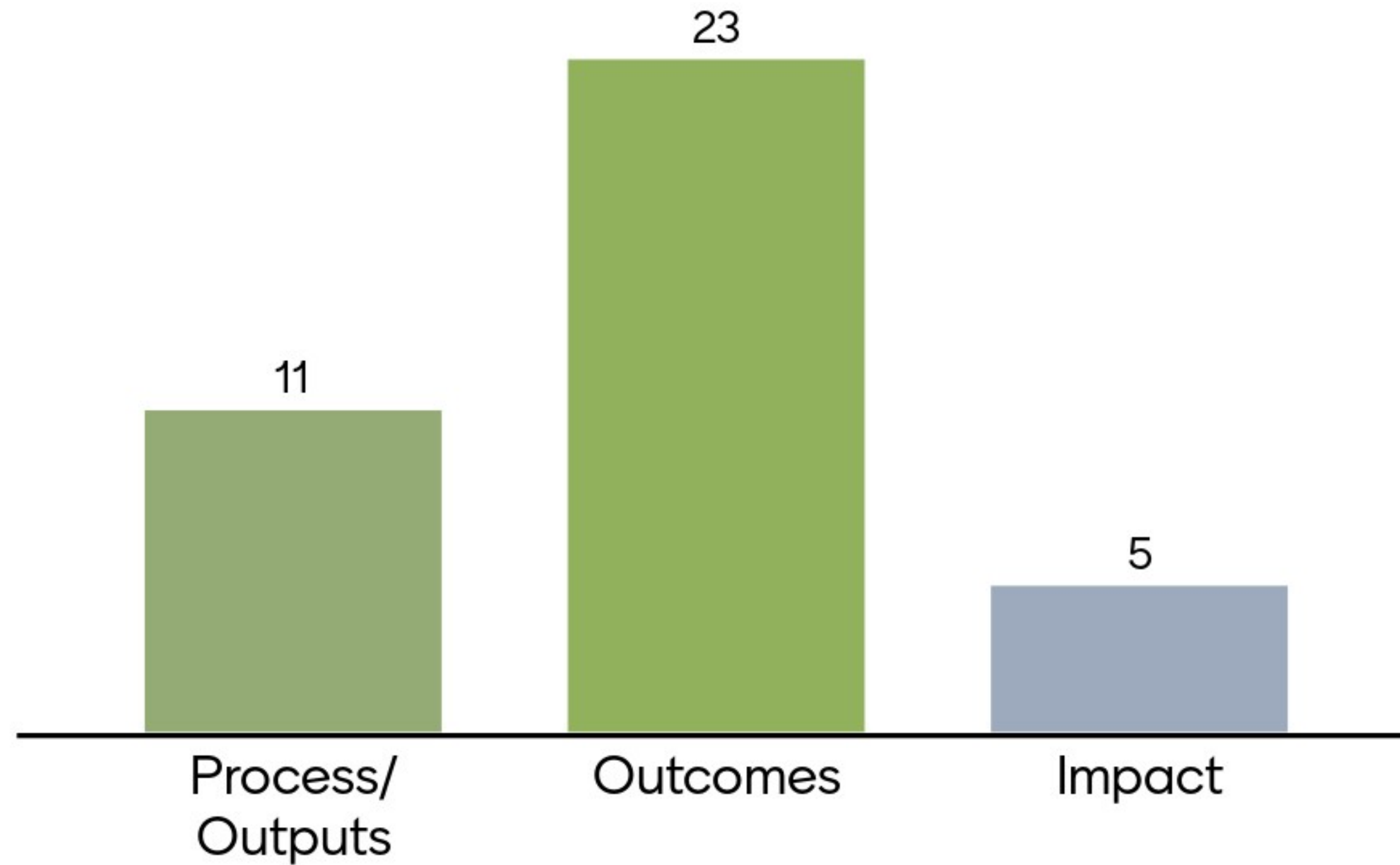**4** Approaching measurement through a systems lens

5 Breakout session discussions and reporting back

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IMPACT MEASUREMENT INITIATIVES OPERATE ON A SPECTRUM OF COMPLEXITY AND TIME-INTENSIVENESS

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Where on the complexity spectrum do your measurement initiatives reside?

EFFECTIVE MEASUREMENT IS FOUR DIMENSIONAL

TIME TO IMPACT	WHAT TO MEASURE	WHO IS IMPACTED	REQUIRED DATA
• Short term (<12 months) • Mid-term (12-36 months) • Long Term (>36 months)	• Process Measures • Output Measures • Outcome Measures	• Person, Patient, Family Level • Organization Level • Community Level • Population Level	• Demographics • Person-Generated Insights • Counts of Transactions • Clinical Information • Utilization Data

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EFFECTIVE MEASUREMENT REQUIRES AN UNDERSTANDING OF THE CONNECTIONS ACROSS INITIATIVES

SAMPLE CHALLENGE: INCREASING PERCENTAGE OF OUR COMMUNITY EARNING A LIVING WAGE
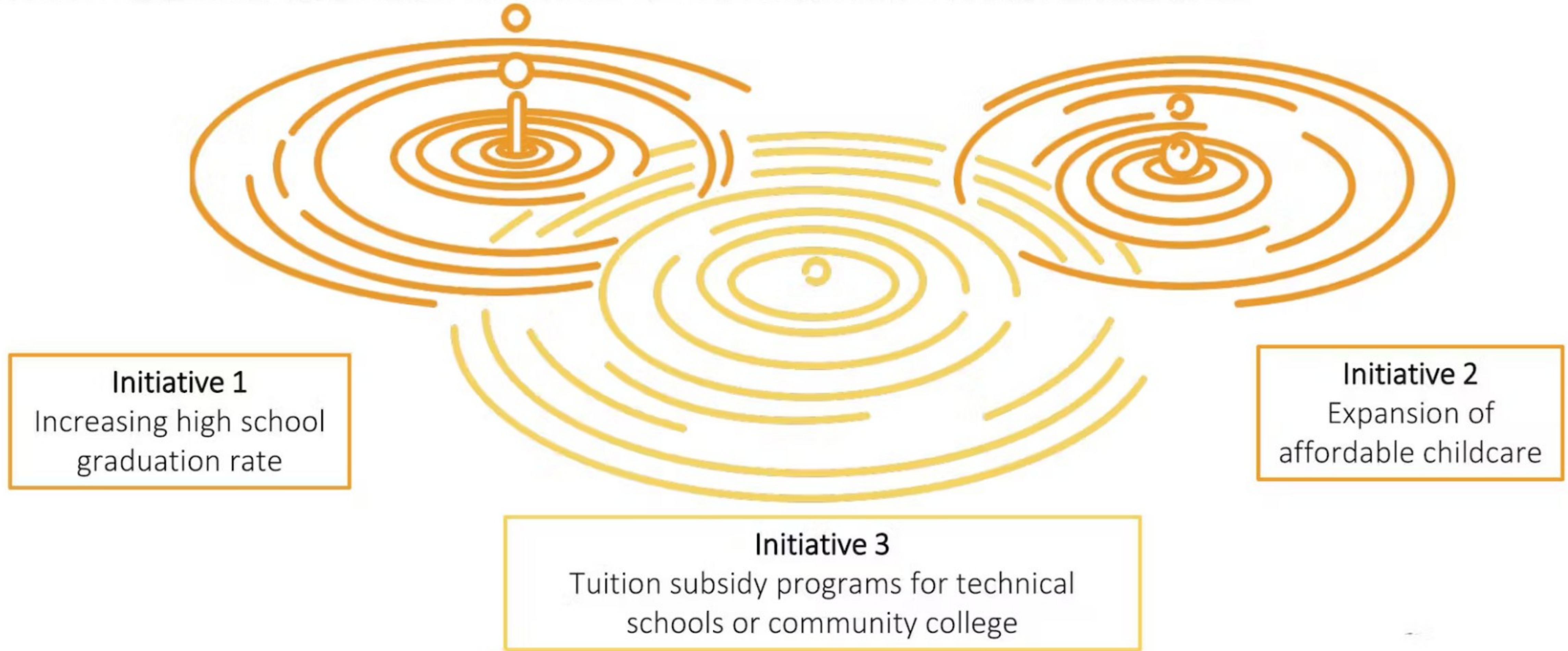
Initiative 1
Increasing high school graduation rate

Initiative 2
Expansion of affordable childcare

Initiative 3
Tuition subsidy programs for technical schools or community college

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1. **Prioritize** which social need you will focus on by considering:
   - Supply of resources required to assist you in meeting the need (e.g., is there a waitlist for housing?)
   - Individual vs. systemic need (e.g., workforce training opportunity vs. changing the education system)

2. Define your **SMART Goal**:
   - **S**pecific
   - **M**easurable
   - **A**chievable
   - **R**elevant
   - **T**ime bound

3. What resources will you need to **measure performance**?
   - Baseline data
   - Key performance metrics
   - Limited data sets
   - Data sharing and collection processes
   - Aligned operational processes

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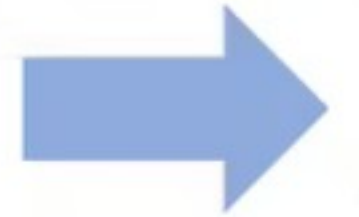# EXAMPLE: DIABETES CASES RELATED TO NUTRITION/FOOD INSECURITY

Current Health Outcomes

- High rates of ED utilization for diabetes related causes
- High age-adjusted death rate due to diabetes
- High hospitalization rates due to Type 2 diabetes

Disease Specific Indicators

- Incidence of diabetes adults
- Diabetes prevalence
- Obesity rates
- Age/race specific data

Social Need Indicators

- Food deserts
- Vehicle access, public transportation access
- Green space access
- Stable income
- Access to healthcare/insurance

Process/Output Indicators

- Number of SDOH screenings completed
- Number of referrals made to appropriate CBOs
- Number of closed referrals

Goal	
Specific	Reduce the rate of unnecessary ED utilization for Hispanic adults with diabetes by 15% in 2 years by:
Measurable	
Achievable	• Increasing the number of food insecurity assessments by 40% in Year 1
Relevant	• Increasing the number of food related referrals for this population by 30% in Year 2
Time Bound	

Output/Process Measures

Measurement:
- Eligibility criteria of population (demographics, disease states, definition of food insecure)
- Current unnecessary ED utilization for diabetes rate
- Process for collecting and reporting on assessments and referrals
- Process for collecting ED utilization across time for specific population (ICD-10)

EFFECTIVE MEASUREMENT CAN DRIVE CHANGE

BE MINDFUL OF WHAT STAKEHOLDERS VIEW AS KEY BENEFITS

"If you wish to influence an individual or a group to embrace a particular value in their daily lives, tell them a compelling story."
- Annette Simmons, author

"If you want people to make the right decisions with data, you have to get in their head in a way they understand. Throughout human history, the way to do that has been with stories,"
— Miro Kazakoff, MIT Sloan Lecturer

STAKEHOLDER	WHAT THEY CARE ABOUT
Patients and Family	• Better care, better outcomes, better life
Government & Policy	• Effectiveness on population health, community prosperity, economic development
Healthcare Providers	• Positive impact in inappropriate healthcare utilization, cost of care, improved quality
Payers (Commercial/Medicaid)	• Positive impact in inappropriate healthcare utilization, cost of care, member engagement/satisfaction
Funders	• ROI (either financial or social)

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SESSION AGENDA

1 Getting started with impact measurement

2 Impact measurement requires a data strategy

3 Current challenges

4 Approaching measurement through a systems lens

5 Breakout session discussions and reporting back

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MEASUREMENT BEGINS WITH THE SELECTION OF DATA

	Metric Selection Criteria
Accessibility	The measures should be easily understood by all. Accessible measures not only serve as a common reference frame for all Partners, but also facilitate dissemination of knowledge and positive marketing of outcomes.
Causality	Accessibility of the measure should be determined in the context of a measure's ability to offer proof of causality. The measure should reflect a logical argument for the mission and efforts relative to the overall community well-being.
Feasibility	While a measure may be desirable and easy to understand, it may be prohibitively difficult to actually obtain the data to calculate the measure.
Relevancy	Selected measures need to align with the existing standards and strategic goals. Data and measure alignment unite a community. As such, measures should demonstrate significant impact on patient health, functional status, and/or the healthcare system.
Credibility	The measures should demonstrate impact on a high volume of patients/clients and/or have a certain level of generalized acceptance. As possible, the measures should also allow for comparison with national benchmarks.

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DATA OPTIONS RANGE FROM THE SIMPLE TO THE COMPLEX

- At every step of your journey, there are data elements that can help you meet your goals
  - Use available data sources to help define baseline need within your community
  - Programmatic data helps you define and monitor your intervention
  - Aggregation of social and medical data can help you define impact at an individual and population level

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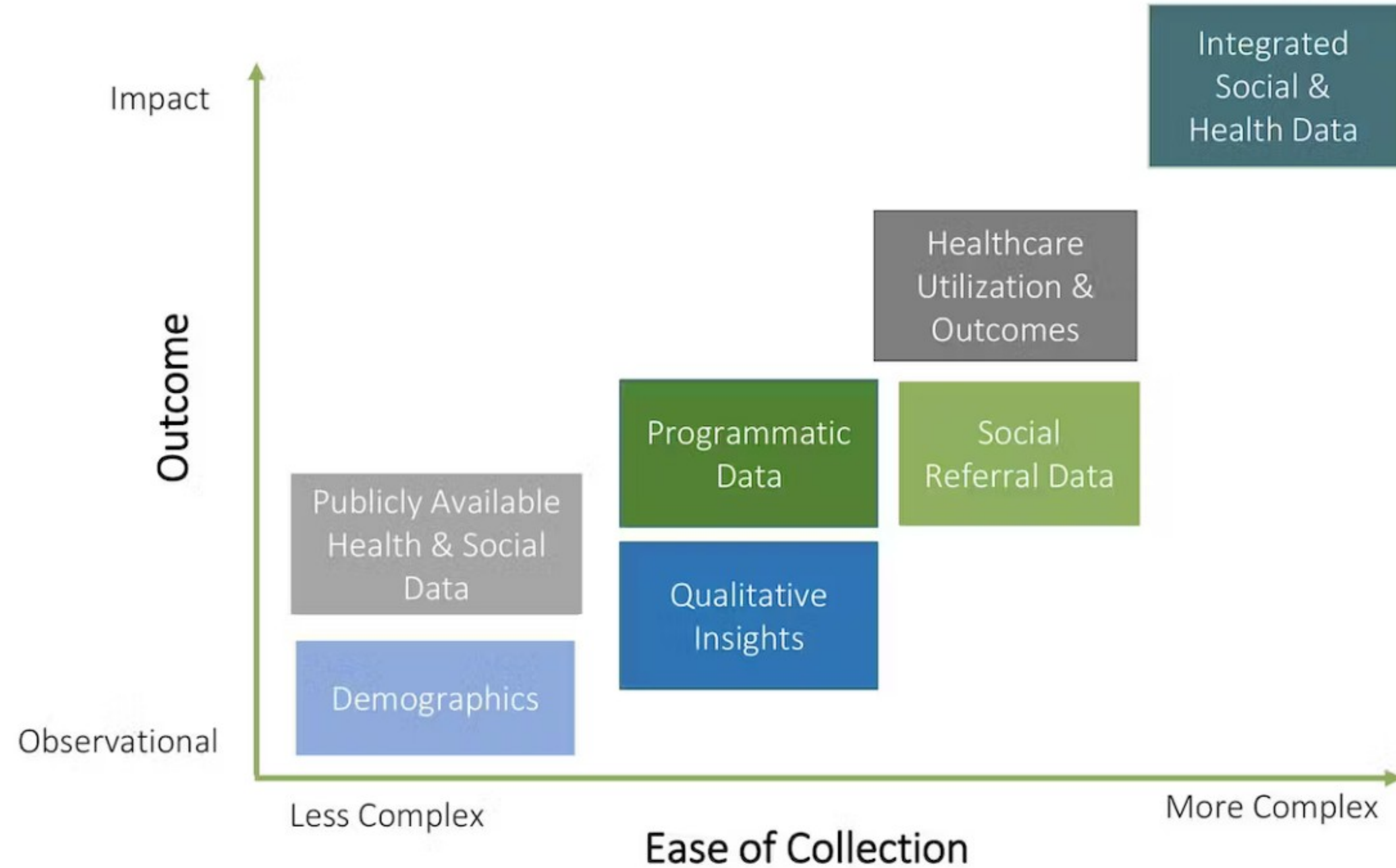
Which best describes you (or your team's) comfort level with data?
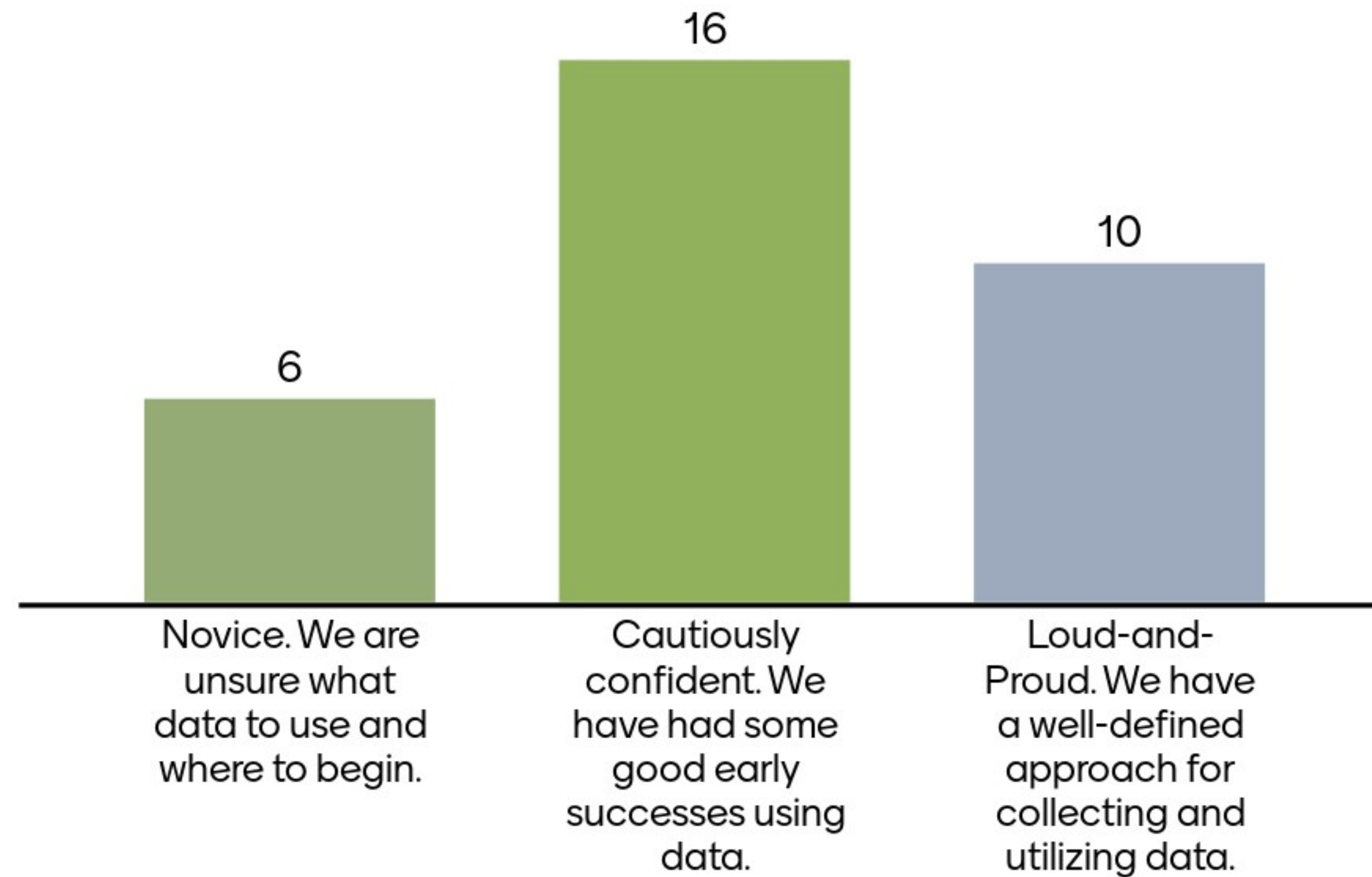
UNDERSTANDING WHERE (AND HOW) DATA WILL BE COLLECTED IS ESSENTIAL

Individual Level Data/Lower Investment → Secure Data Collection | Qualitative Data Collection | Social Referral Platforms | Program Data | EMR | CIE → Population Level Data/Higher Investment
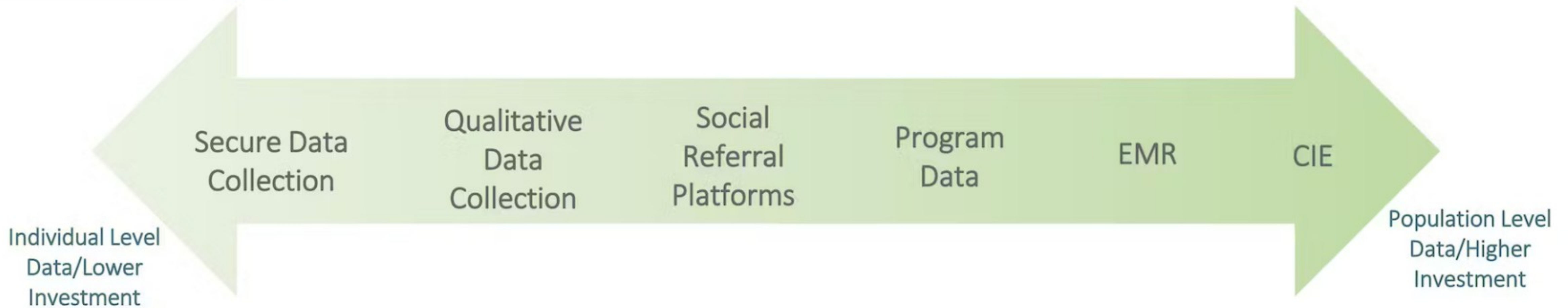
- While the ultimate goal is to aggregate social and medical data to demonstrate population level improvements, there are multiple data sources that are less complex and less resource intensive but still allow you to collect, analyze and report on key metrics at an individual/person level

- Moving along this continuum might require more financial investment, data sharing agreements, aligned clinical and data workflows

- Identify what your current data assets are, and which ones will provide you with the metrics that you with to use. Some may be immediate; some may be for future investment

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DATA NEEDS EVOLVE AS INITIATIVES MATURE

Establishing Baseline Needs

- **Strategic:**
  - Identify community needs and key populations to target for interventions
  - Establish intervention KPIs
- **Operational:**
  - Assess available data sets and the ownership and sharing requirements
  - Establish options for aggregating and storing data securely as needed
  - Create workflows for partners to consistently collect required data

Early Indicators of Success

- **Strategic:**
  - Identify quick wins (e.g., output/process measures - increased social care referrals, increased patient engagement)
- **Operational:**
  - Static reports that can be shared with key stakeholders
  - Pilot dashboard and other reporting/analytics to ensure that key initial metrics are being collected consistently, accurately and at the correct frequency

Initial Results

- **Strategic:**
  - Create a plan for how to engage funders based on early results
  - Evaluate early implementation results with partners; what worked what didn't? adjust as needed for next phase of implementation
- **Operational:**
  - Consider how to spread initiatives to other sites or to a broader population
  - Look at intersectionality across other programs that could amplify impact

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IMPACT MEASUREMENT ALSO REQUIRES GOOD STUDY DESIGN

Study Design Factors
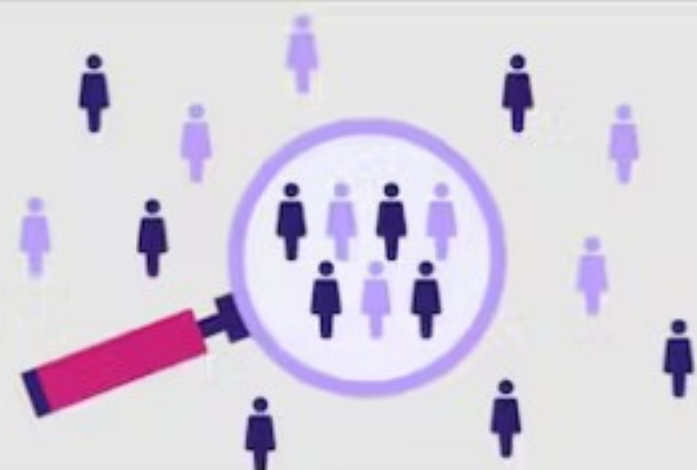
Cohort Selection
Essential for managing bias
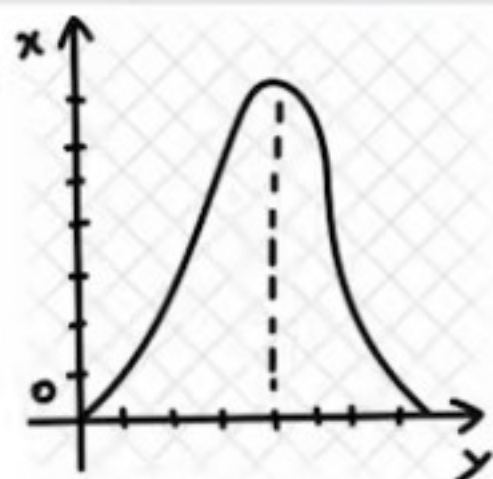
Sample Size
Essential for statistical significance
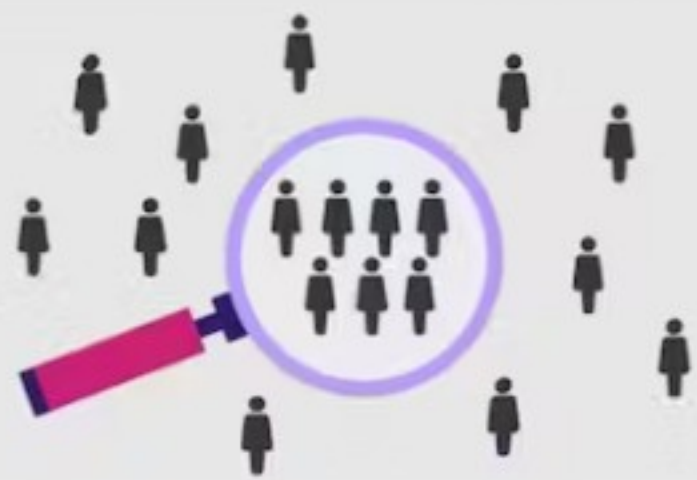
Control Group
Essential for impact comparison

COVID-19

Real Time Challenge
Accounting for the confounding impacts of COVID-19 has required a renewed effort on how to create relevant control groups.

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Health Clinic XYZ

Goal: The health clinic was concerned about social isolation and food insecurity in seniors in a targeted geographic area.

Intervention: The team decided that providing communal meals for seniors would allow them to address both issues – seniors would get access to nutritious food and be provided with an opportunity to socialize with others which they believed would reduce loneliness and thereby reduce depression in this population.

Measurement Tool: PHQ-9, a brief, self-administered questionnaire that assesses depression symptoms. Because the tool could be administered manually (i.e., pen/paper), they did not require any upfront investment in technology or data systems. Questionnaires were provided at each table for participants to complete. Questionnaires did not ask for identifying information in order to protect privacy.

Metrics Collected: Total number of people attending each meal; PHQ-9 scoring system

Results: The health clinic was able to provide 350 meals to seniors over a 6-month period. Based on total survey responses, 15% of participants were considered moderately depressed and another 35% were considered mildly depressed.

- Did Clinic XYZ create a successful intervention? How do you know?
- Are there any limitations to how this team designed the intervention that might impact their ability to demonstrate success?
- What other data might you want to look at?
- Were the results sufficient to demonstrate that the intervention improved outcomes to stakeholders such as funders/payers or the community?

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Non-medical drivers of health are often one, two or three steps removed from disease presentation or clinical need.

Poor Sleep Health

Increased Risk of Stroke

- Increased Need for Primary Care
- Increased Risk of ED and/or Hospital Utilization

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CHALLENGE #2: LACK OF STANDARDIZATION

Variation in what types of services are provided.	Variation in what types of individuals (or organizations) provide (and/or bills) for services.	Variation in the duration and intensity of services.

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CHALLENGE #3: DATA IS DIFFICULT TO COLLECT WITH POOR QUALITY ASSURANCE

Data complexities:

- Fragmented, inconsistent collection
- Mix of structured and unstructured data from different sources with different lag times
- Multiple legacy and/or start up technology platforms
- Lack of standards
- Poor data quality
- Legal challenges with data sharing

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CHALLENGE #5: WE LIVE IN SILO'S, BUT NEED TO MEASURE IMPACT AS SYSTEMS

Frits Ahlefeldt

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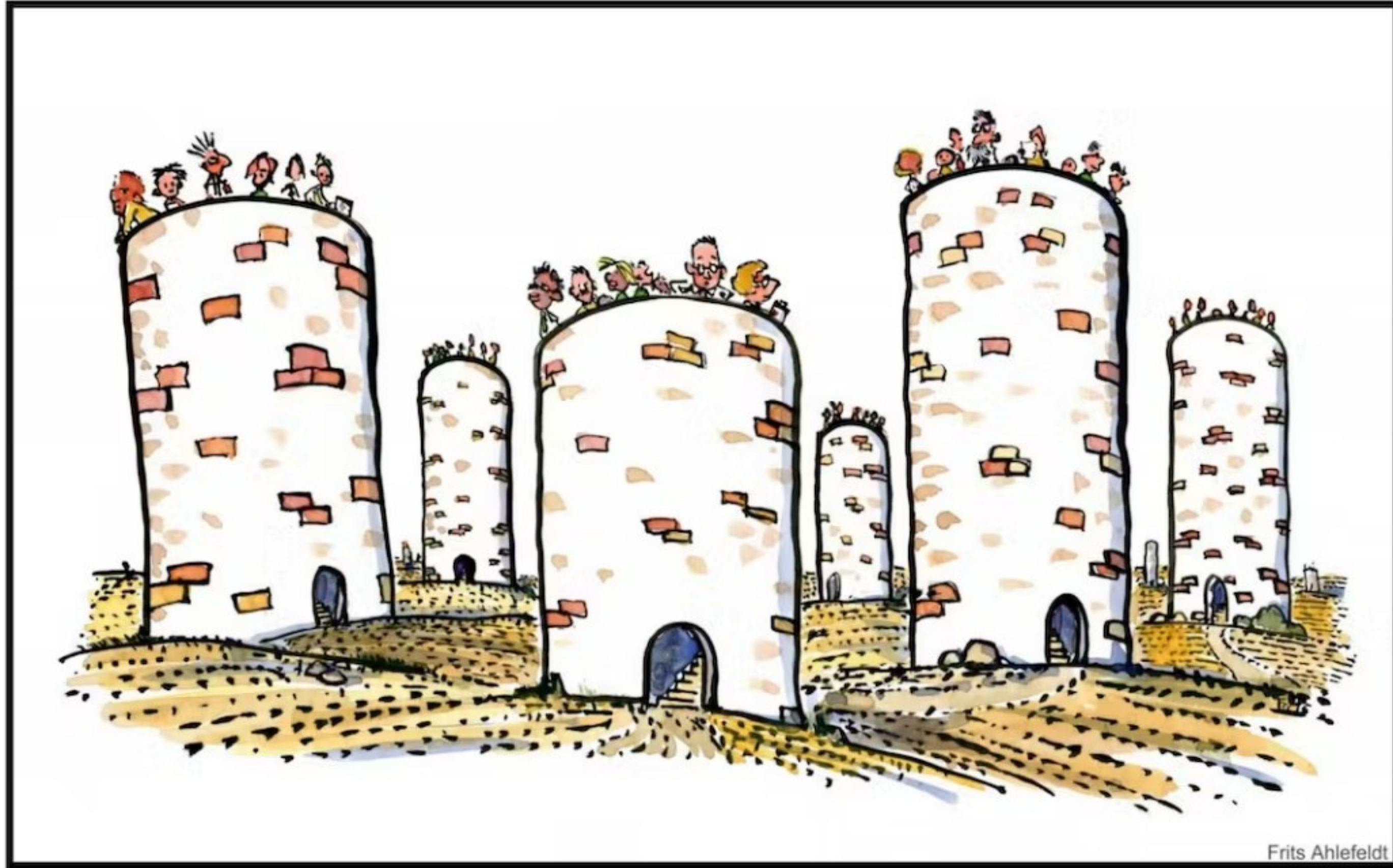
Based on your experience, rank order these challenges from most to least challenging.
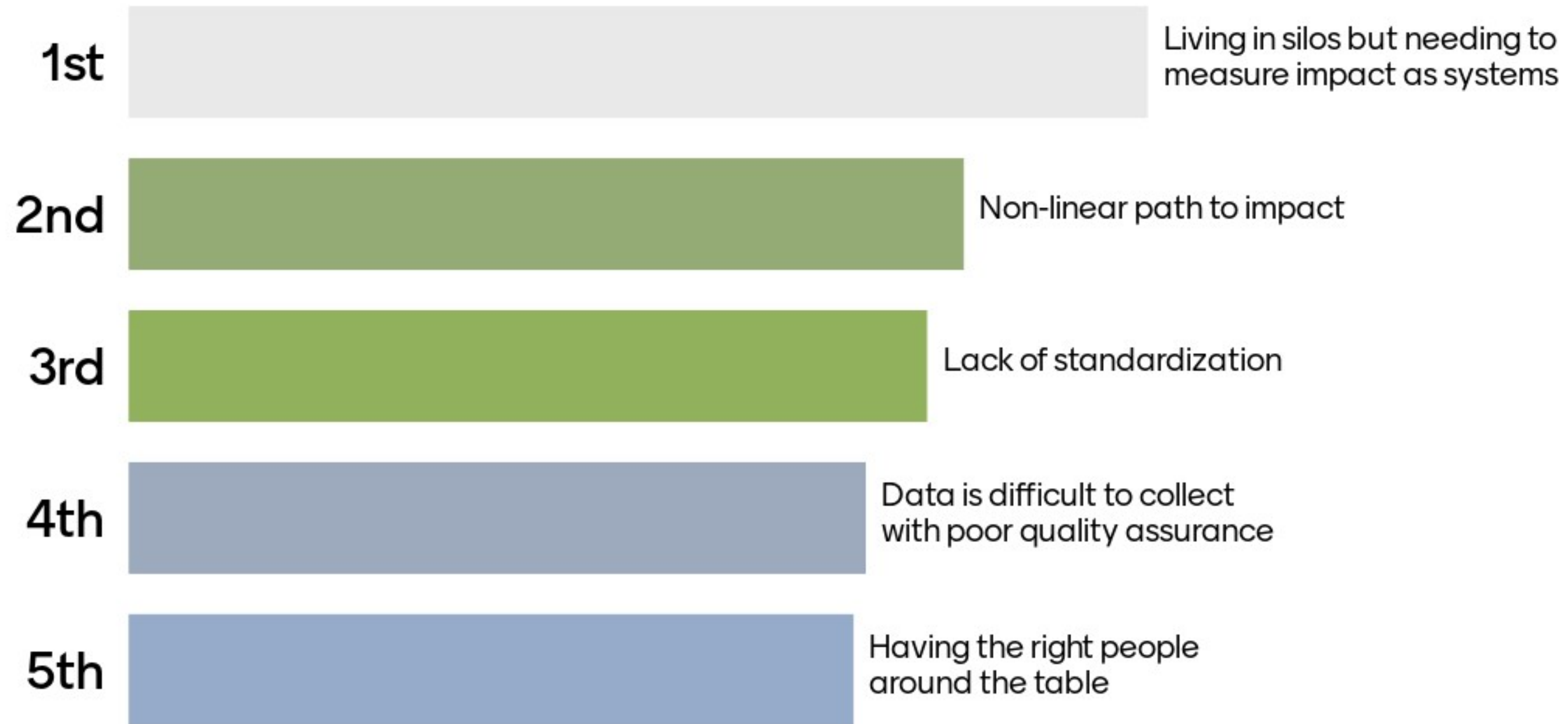
Rank		Challenge
1st		Living in silos but needing to measure impact as systems
2nd		Non-linear path to impact
3rd		Lack of standardization
4th		Data is difficult to collect with poor quality assurance
5th		Having the right people around the table

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SYSTEMS THINKING IS A DEFINED SKILL SET THAT BLENDS STRATEGY, OPERATIONS AND INNOVATION

TOOLS OF A SYSTEM THINKER

DISCONNECTION — INTERCONNECTEDNESS | LINEAR — CIRCULAR | SILOS — EMERGENCE

PARTS — WHOLES | ANALYSIS — SYNTHESIS | ISOLATION — RELATIONSHIPS

DISRUPT DESIGN
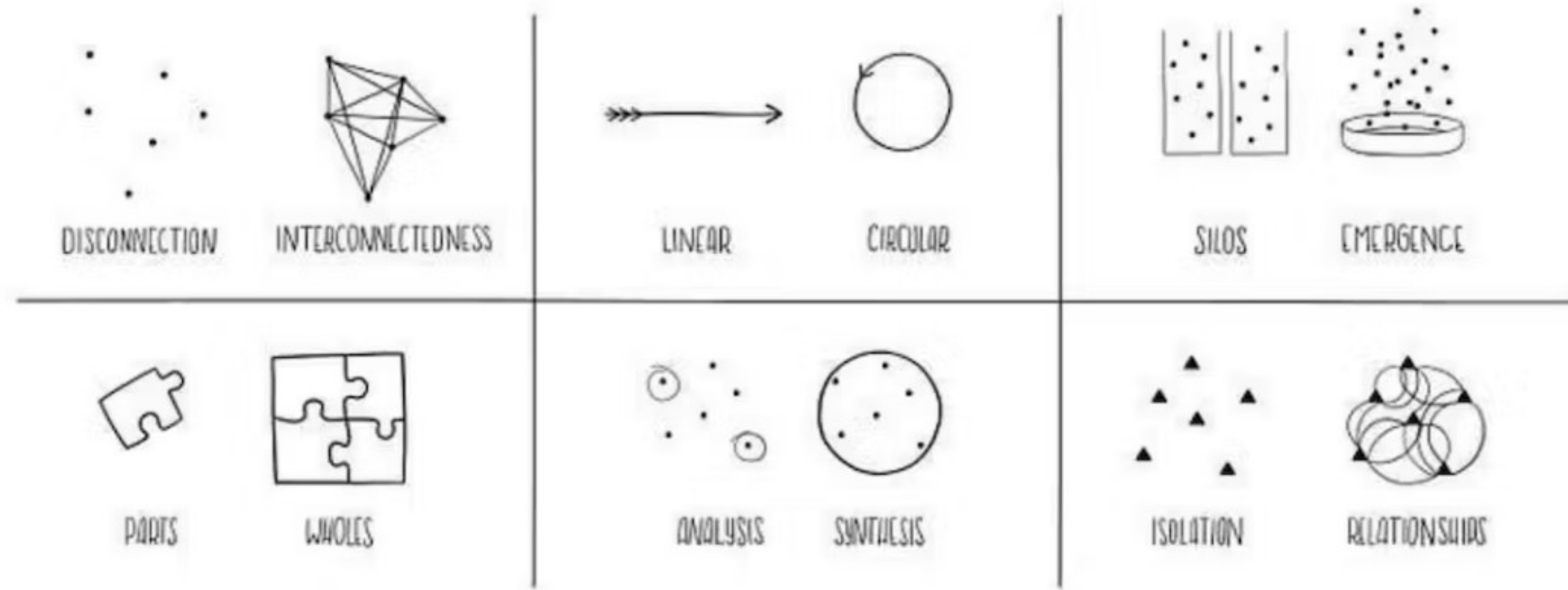
Systems thinking is a way of making sense of the complexity of the world by looking at it in terms of wholes and relationships rather than by splitting it down into its parts. It has been used as a way of exploring and developing effective action in complex contexts, enabling systems-level change.

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EXAMPLE SYSTEMS THINKING: 'Little s systems'

Objective: Decrease asthma-related Emergency Department (ED) visits and racial and ethnic disparities in asthma-related ED visits by children in Sesame County

Clinical

Asthma self-management education in all pediatric and family medicine clinics of partner FQHCs

Clinical-Community Linkages

Effective, patient-centered linkages between hospitals, pediatric providers, and community-based asthma-related home visiting programs

Community Programs

No-cost home remediation services to reduce asthma triggers in the home

Community-based asthma-related home visiting programs providing education, home asthma trigger identification, and connections to home remediation services

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Policy & Environment

Local Housing Authority interior design **policies** to eliminate asthma triggers (e.g., no carpeting)

Legal and other interventions with **commercial landlords** to conduct **property-wide remediation** for asthma triggers

Organizing to **relocate a recycling plant**, which bring trucks and pests into community

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LINKING SYSTEMS THINKING WITH IMPACT MEASUREMENT

BOLD GOALS	BALANCED ACCOUNTABILITY	PORTFOLIO OF INTERVENTIONS	CAPTURE OF COMMUNITY VOICE	DATA DRIVEN
Partnerships that aspire towards a fundamental shift beyond short-term programmatic work and towards long-term influences over policy, regulation and economic incentives.	Partnerships have aligned around a shared vision. Roles can be assigned that draw on the strengths of each partner.	Partnerships focus on a stepwise, upstream movement portfolio of interventions that have the greatest influence on the health of a community, rather than on access or care delivery.	Partnerships actively engage locally to ensure community leaders and neighborhood residents are ever-present.	Partnerships use data from **BOTH** clinical and community sources and a meaningful tool to identify needs, measure meaningful change and facilitate transparency across stakeholders.

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FRAMEWORK #1: AN ENHANCED 'LOGIC MODEL'

IMPACT ON A SINGLE PAGE

Situation → **Bold Goal**

Balanced Accountability (Inputs)

Resources, roles, responsibilities and needed inputs for success.

Capture of Community Voice

Approach for on-going community engagement.

Portfolio of Interventions (Activities)

Direct Interventions	Outputs
Intervention 1 *Intervention 2* *Intervention 3*	
Partially Upstream Interventions	**Outputs**
Intervention 4 *Intervention 5* *Intervention 6*	
Fully Upstream Interventions	**Outputs**
Intervention 7 *Intervention 8* *Intervention 9*	

Impacts

Initial Outcomes	Intermediate Outcomes	Long-Term Outcomes

Data-Driven
What data is needed for interventions (over time) to convey a compelling impact narrative?

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EXAMPLE: A SYSTEMS-ORIENTED APPROACH FOR SUSTAINABLE HOUSING

Balanced Accountability | **Portfolio of Interventions** | **Impact**

INPUTS	ACTIVITIES	OUTPUTS	INITIAL OUTCOMES	INTERMEDIATE OUTCOMES	ULTIMATE OUTCOMES
Multiple community-based organizations that bring a funding commitment	Afterschool program activities	Affordable housing units (number of)	Access to mental health services increases	Asthma problems among adults decrease	Academic proficiency scores increase
One community-based organization with project management experience who will serve a PMO	Commercial kitchen operation	Afterschool program participants (number of)	Asthma trigger exposure decreases	Asthma problems among children decrease	Crime rate decreases
Several advocacy groups who will engage local political leaders	Community gardening	Community garden plots (number of)	Employment skills increase	Caregiving burden decreases	Diabetes rate decreases
Hospital, clinic and primary care providers who will lead efforts to expand health and wellness services	Cooking/nutrition classes	Community garden users (number of)	Food security increases	Consumption of fresh fruits and vegetables increases	Disability rates decrease
Others, TBD	Employment training services	Community gatherings held (number of)	Housing quality improves	Health and well-being self-reports improve	Emergency room admissions decrease
	Financing supportive housing (new or rehab)	Community recreation room users (number of)	Knowledge of nutrition and healthy food preparation increases	Physical activity increases	Employment rate increases
	Fitness classes/recreation activities	Cooking and nutrition class participants (number of)	Opportunities for physical activity increase	School attendance increases	Graduation rate increases
	Mental health treatment services	Dollars invested (amount of)	Parenting skills improve	School mobility of children decreases	Health disparities decrease
	Substance abuse treatment services		Residential stability increases	Sense of community	High blood pressure rates decrease
					Homelessness decreases

Data-Driven

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QUESTIONS FOR ALL BREAKOUT GROUPS

1. What types data do you currently leverage?

2. What types of data do you wish you had access to?

3. What did you hear about the Texas Consortium that excites you?

4. What did you hear about the Texas Consortium that worries you?

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