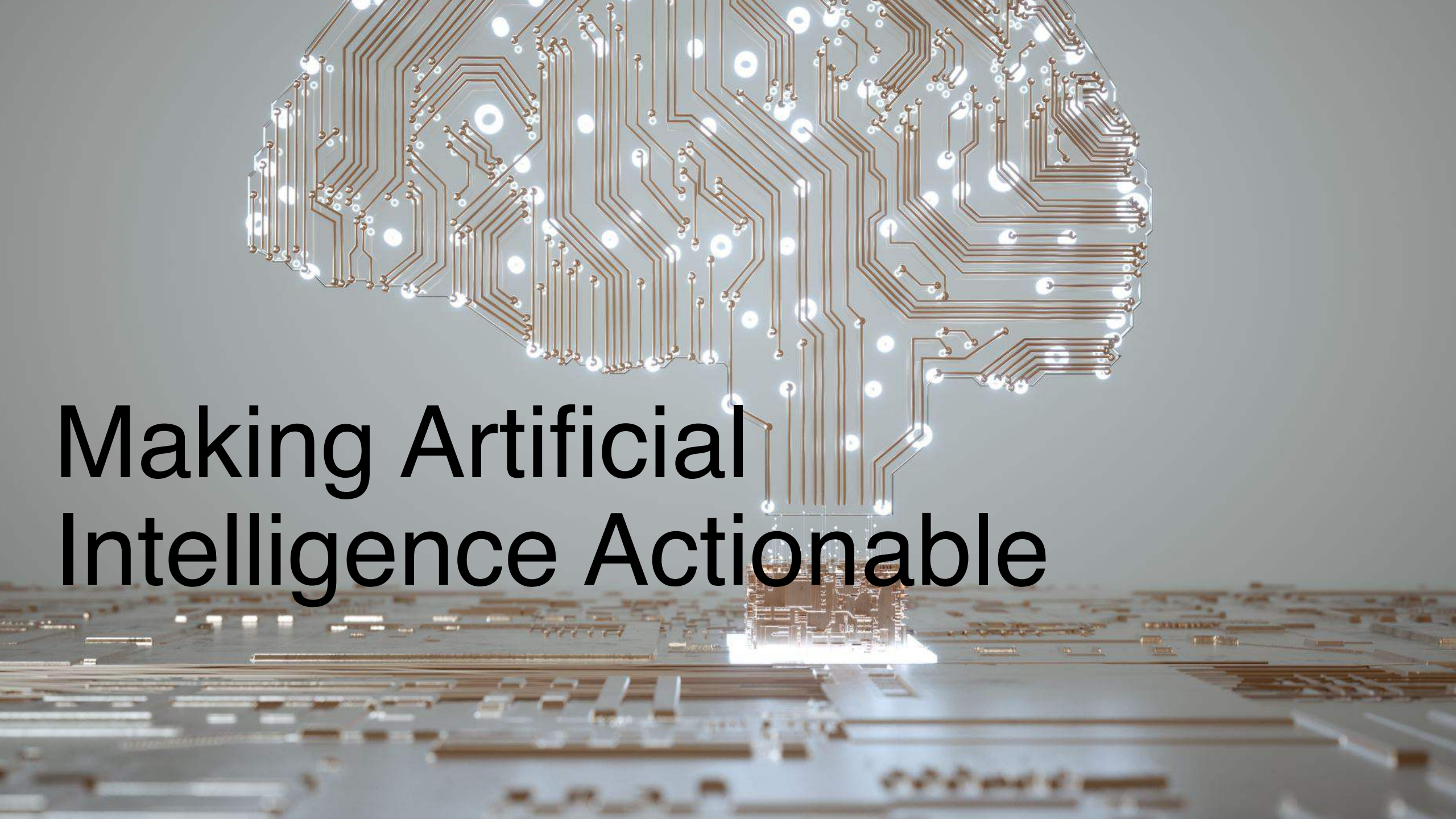

Making Artificial Intelligence Actionable

HEALTHCARE AND DATA ANALYTICS

- The healthcare industry has gone through massive technology driven transformation
- Organizations have increasing amounts of diversified data
- Data brings great value to healthcare activities, including healthcare administration, service improvements, and treatment outcomes
- Data provides essential agency/program information, improves outcomes, improves policies & procedures, plays a role in quality improvement, and helps with grants and funding
- One of the main values is the development of analytical techniques that provide personalized health services to users and supports human decision-making using automated algorithms.

DATA MANAGEMENT » IMPROVED OUTCOMES

Artificial Intelligence

Multiple data sources centralized:

- HIE ADT and Portal (RT)
- Value Based Contract Reports (D)
- TIP Reports (D)
- EMR Data (RT)

Apply algorithms, statistical analysis and simulations

A1 has limited intelligence based on the information ingested
In HC its at a junio[illegible]gh school level

Assisted Intelligence

<u>Dashboards</u>

- Persons. Places and Patterns
- Five Why's
- Behavioral Economics
- Measurement Based Care
- Value Based Care
- Appointment no-show rates
- Readmissions
- Engagement
- Performance by Agency, Clinic, Team, Provider, etc.

Actionable Intelligence

- Problem Identification
- Root Cause Analysis
- Develop a hypothesis
- PDQA
- Focus interventions on patterns and preferences
- Implement interventions
- Track progress based on monthly data
- Adjust as necessary

Collection

Organization

Analysis

Measure

Review, Renew, Expand

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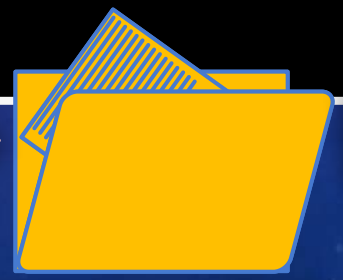
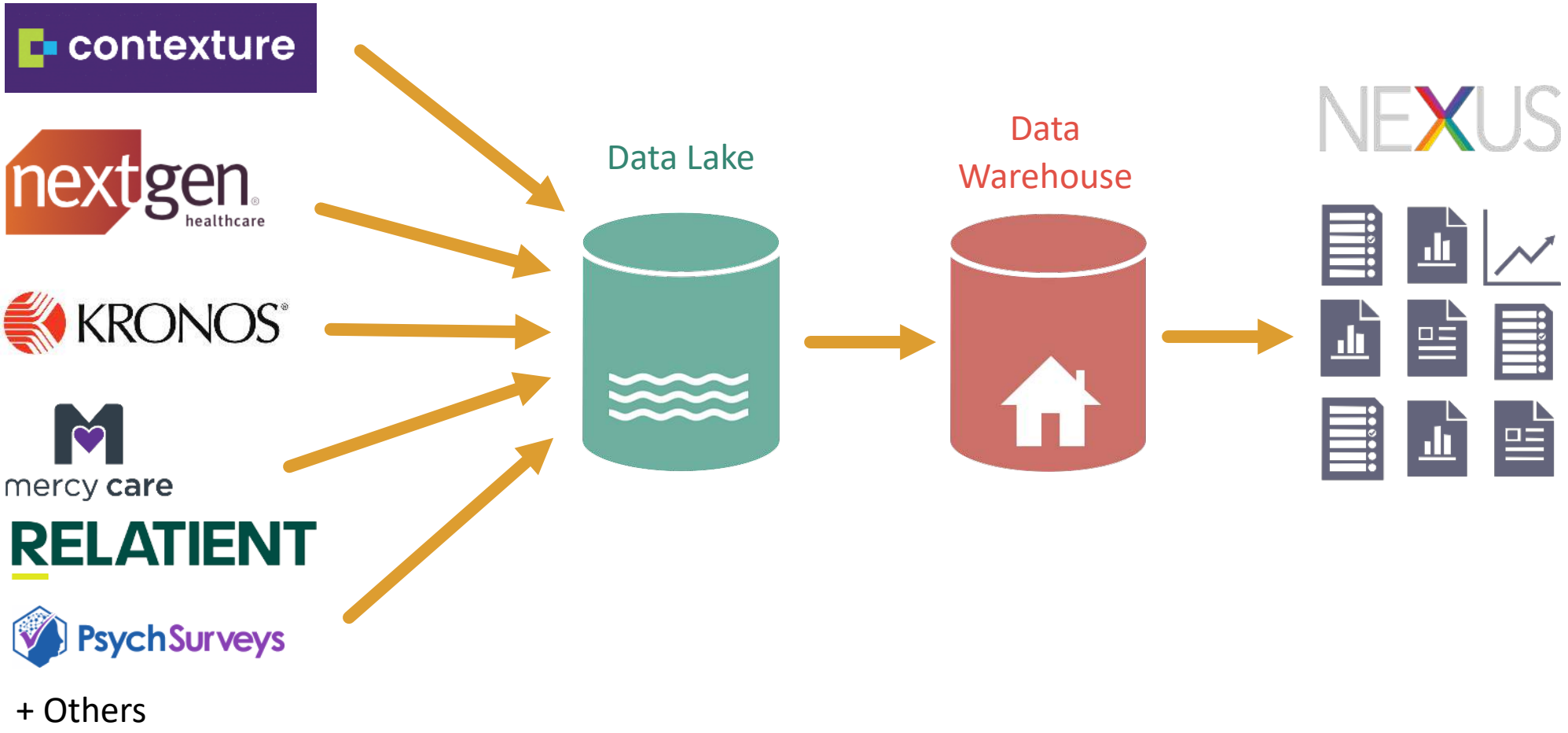


Analysis

Measure

Review, Renew, Expand

DATA FLOWS:
FROM DATA SOURCE TO REPORT



A1C DATA FLOW

Data Sources

Labs Ordered by Copa Health Providers

3rd-Party Lab Results (Contexture HIE)

NextGen

Copa Health-originated labs are native to NextGen

3rd-party results are Imported from HIE

Data exported daily into Analytics App

Analytics App

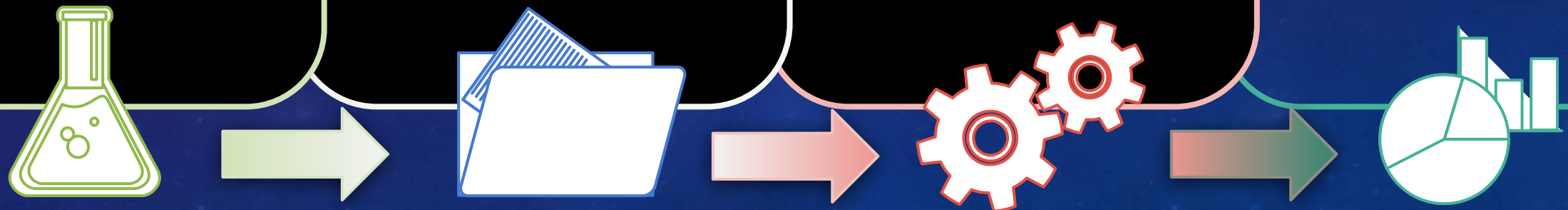
Calculations:

- Cohort members
- Last lab date
- Next lab due date
- Days till lab is due
- Appt. no-show rates
- Total completion rates by Clinic

Dashboard

Lab completion stats by clinic and member category (PCP, BH)

List of members with upcoming and due labs, with last lab date, days till lab due, and no-show rate



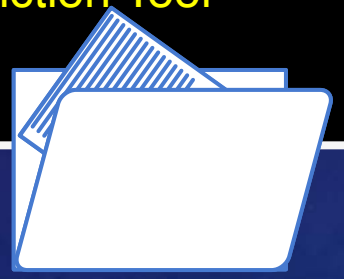
"NO-SHOW" DATA FLOW

NextGen

NextGen-based Appointment Scheduling and Tracking

Appointment event, details, and status

Data exported daily into Analytics App and Prediction Tool



Analytics App

Calculations:

- Appt. no-show rates
- Aggregate counts & distributions
- Analysis by dimensions

(provider, location, appt. type, etc.)

Prediction Tool

Data used for Training, Validation, and Prediction

Output: Likelihood of member keeping next-scheduled appointment

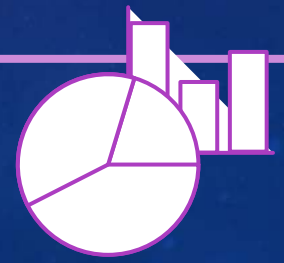
Dashboard

Monitoring of no-show trends and aggregates

Drill-through investigation of outliers and areas of opportunity

Enrichment

Resource for use in various dashboards, reports, processes, and decision-making scenarios of clinical staff



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Actionable Intelligence

Collection → Organization → Analysis → Measure

Review, Renew, Expand

PROBLEM SOLVING STEPS

1. Specify details of the problem
2. Develop hypotheses of possible cause
3. Test hypotheses for logical consistency with specification
4. Verify for true cause

	Is..	Is Not…
What	• What is the problem, concern or complaint? • What types of behavior are we observing?	• What process is most like the one involved? • What similar type of problem could we be experiencing but we're not?
Where	• Where is the problem observed to occur?	• What similar places would we expect to see, but are not?
When	• When, in clock and calendar time, was the problem first observed? • When, in clock and calendar time, since then?	• When, in clock and calendar time, might we have expected to see the problem? • At what other times might this problem have been observed but was not?
Extent	• How often does the problem occur? • How serious is the problem? • Is it getting worse or better?	• How many situations in which the problem could occur but is not? • What other trends might there be?

TEST HYPOTHESES FOR LOGICAL CONSISTENCY WITH SPECIFICATION

If (name the hypothesis) is the true cause, how does it explain both the IS and the IS NOT?

List assumptions needed if the hypothesis is to explain the details specified; or list doubts, unanswered questions, or reasons for rejecting the hypothesis.

Select Most Probable Cause on basis of current evidence (Specification).

DATA MANAGEMENT » IMPROVED OUTCOMES

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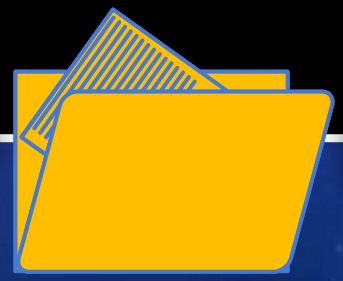

Analysis

Measure

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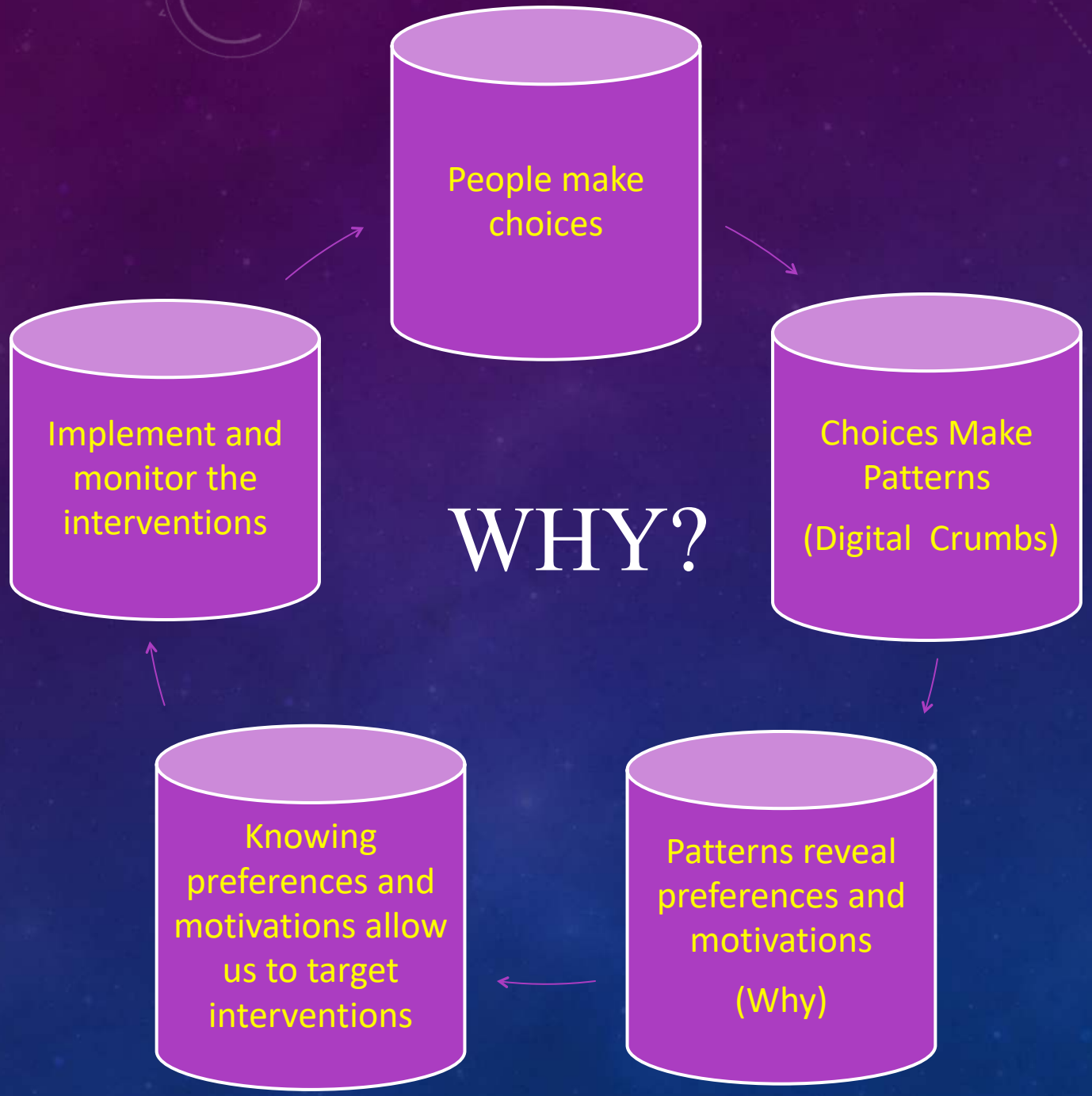
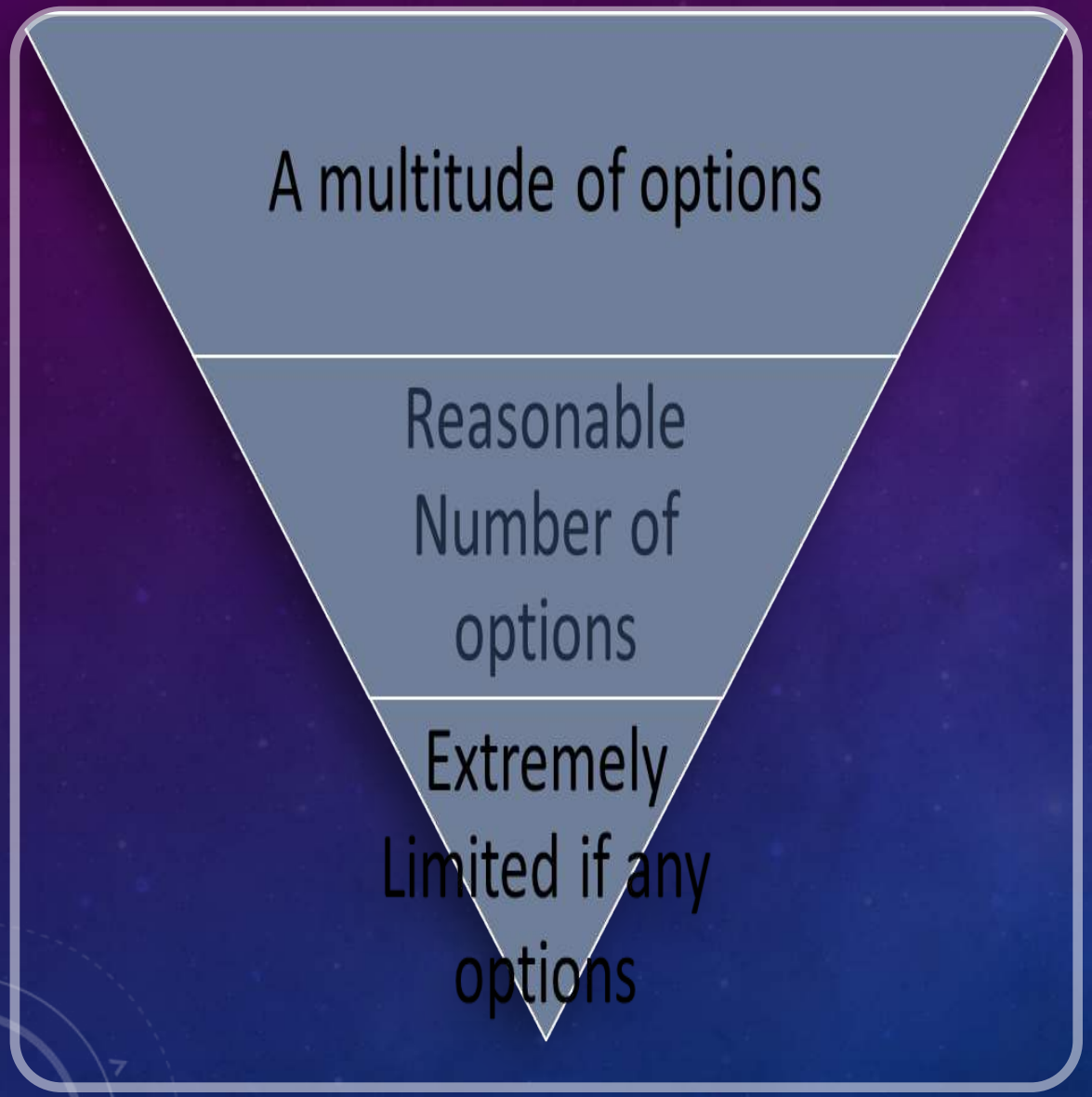

People make choices
Choices Make Patterns
(Digital Crumbs)
Patterns reveal preferences and motivations
(Why)
Knowing preferences and motivations allow us to target interventions
Implement and monitor the interventions
WHY?

MASLOW'S HIERARCHY AND THE OPTIONS AVAILABLE TO MEET NEEDS



What choices do the individuals we serve have?

What would you do?

- Implement the Plan

- Teach positive *(or less negative)* alternative behaviors that will serve the same purpose(s) as the undesirable behaviors and promote their use.

- Modify events/circumstances associated with problem behaviors so that inappropriate behaviors are no longer necessary.

- Measure outcomes and adjust as necessary.