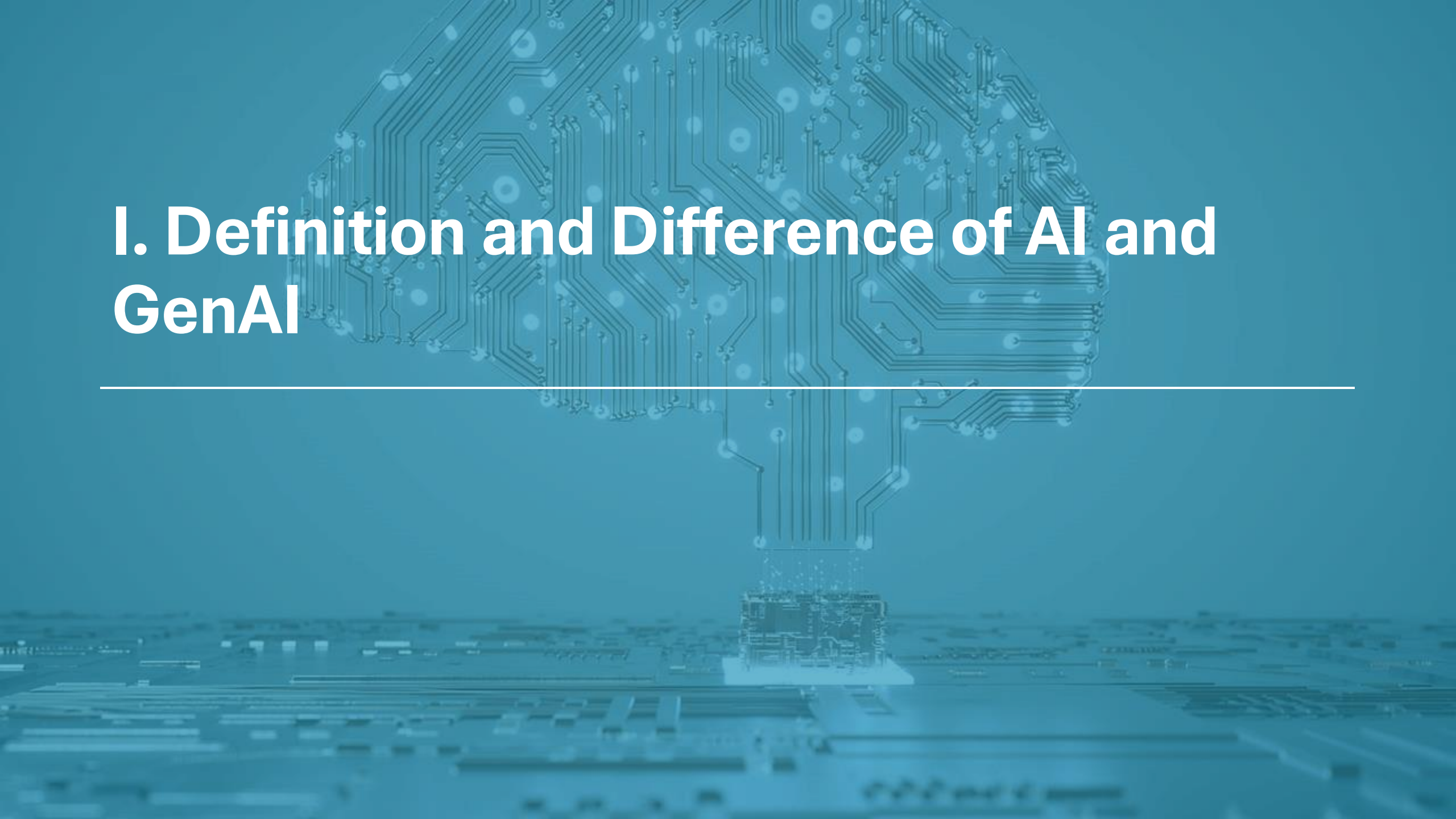# Human Services - Personalization and Policy Goals with AI

Secretaries' Innovation Group 2024

Professor Stephen Goldsmith

Harvard Bloomberg Center on Cities

# Agenda: Using AI and GenAI for Better Outcomes

I. What is GenAI

II. Operating With More Precision

III. More Effective Case Management

IV. Listening and Communicating Better

V. Helping in the Right Way: Improving Eligibility Verification and Coordination

VI. Opportunities and Risks

# I. Definition and Difference of AI and GenAI

# Generative AI



Source: GAO (analysis and illustrations). | GAO-23-106782
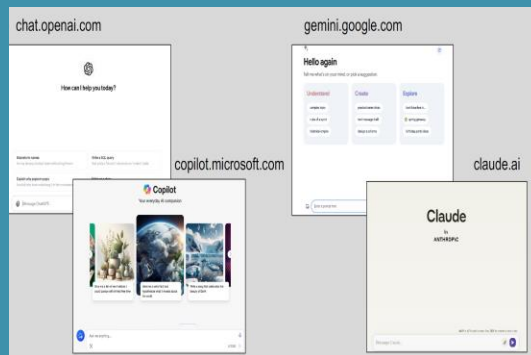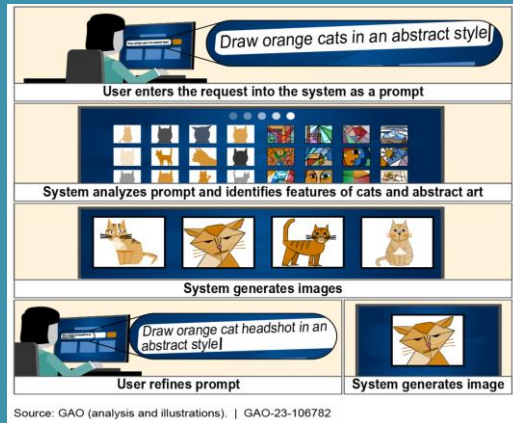




1. Large language models (LLMs) built on a large amounts of all types of historical data
   - Can encode knowledge through word prediction, since correct answers typically involve more probable sequences of words than incorrect answers
   - Can analyze and produce nonstructured data like images
2. GenAI creates artificially generated content rather than just analyzing existing data
3. Public use requires enterprise tools:
   - ChatGPT Enterprise
   - Microsoft Copilot
   - Google Workspace

# II. Operating With More Precision

1. Automate routine administrative tasks

2. Generates performance Reporting

3. Data Integration and Analysis

4. Predictive Analytics identifies places and  clients at risk

5. Impact Measurement greatly improved

# Applications that Produce Precision

AI utilizes pattern recognition capabilities from administrative data and from photographic and video data in order to focus efforts, resources and interventions where they will do the most good.

## Application Strategies

| Content Synthesis | Pattern Recognition | Coding | Data Visualizations | Content Generation |
|---|---|---|---|---|
| • Extract insights<br>• Unstructured data sources | • Supersion insight | • Interpret and generate code | • Personalize communications<br>• Quickly visualize presentation | • , Case Report everything more quickly |

# Prediction and Precision: Focused Attention on Risk

**Philadelphia – Parole Violations**
A risk-forecasting tool helps save the city time and money, while also reducing the likelihood of violent recidivism, by identifying high-risk probationers before release.



**NYC – Targeted Fire Inspections**
The new predictive model synthesizes 60 factors that are correlated with deadly fires, including the age of a building, electrical issues, and the number of sprinklers, and builds an algorithm that assigns each building with a risk score.

# Allegheny County Evictions Questions

- We may not be reaching those people most at risk for homelessness
- We are relying on referrals, which may be missing people
- We are waiting for people to come to us
- We want to be fair and equitable in how we serve people
- We don't know if there are sub-groups for which this money is more effective at preventing homelessness
- We don't know how much rental assistance is 'enough' to reduce likelihood of homelessness

# Use Administrative Data Already Collected To Identify People Who May Benefit

**For people who are currently going through an eviction...**

**(Have an eviction filing or disposition in the last 4 months and not currently homeless)**

→

**Who might become homeless in the next 12 months?**

**(Predicting interacting with emergency shelters, street outreach, transitional housing)**

# Use a Person's History Of Service Interactions To Identify Who May Benefit

| Domain | Predictor Examples |
|---|---|
| Past eviction cases | Number of eviction cases, days since last case, monthly rent amounts for past cases |
| Past homelessness (hl) service interaction | Days since last hl spell, number of hl spells, number of days spent hl |
| Past public housing usage | Number of times in public housing, days since last usage, average length of stay in public housing |
| Past mental, behavioral, and physical health service usage | Number of days since each type of event, average event duration, average gap between consecutive events of the same type |
| Past state & county program involvement | Number of times interacted with each service, average service utilization period, days since last utilization of each service |
| Demographics | Gender, race, age at time of analysis |
| Residential address history | Count of distinct recorded addresses, number of zip codes recorded |
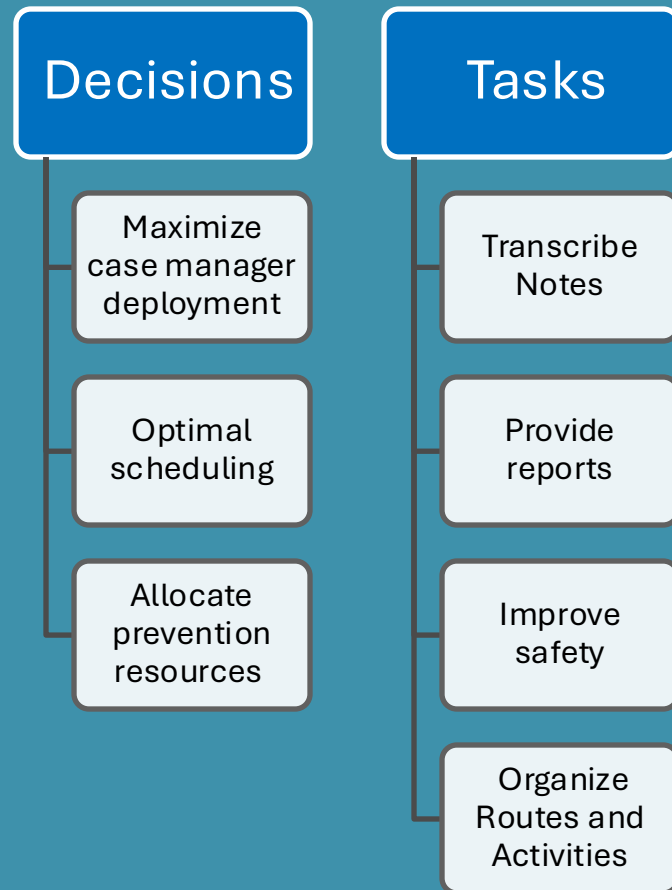
# Precision Requires Making More Sense from Data

1. **Reduce time needed for document searching**. These tools can automatically search against predefined fields and can support custom queries across multiple cases.

2. **Provide insights across cases**.

3. **Facilitate objective investigations**. These tools can aid in the elimination of human factors, biases, and subjectivity allowing investigators to be more objective and less influenced by non-critical or non-relevant information.

4. **Supervisors** --Tools assist reviews for who needs training, or skills for hiring

# III. More Effective Case Management

AI-powered recommendation systems, like those used by e-commerce platforms, can be tailored for social services to suggest the best resources and support for each client
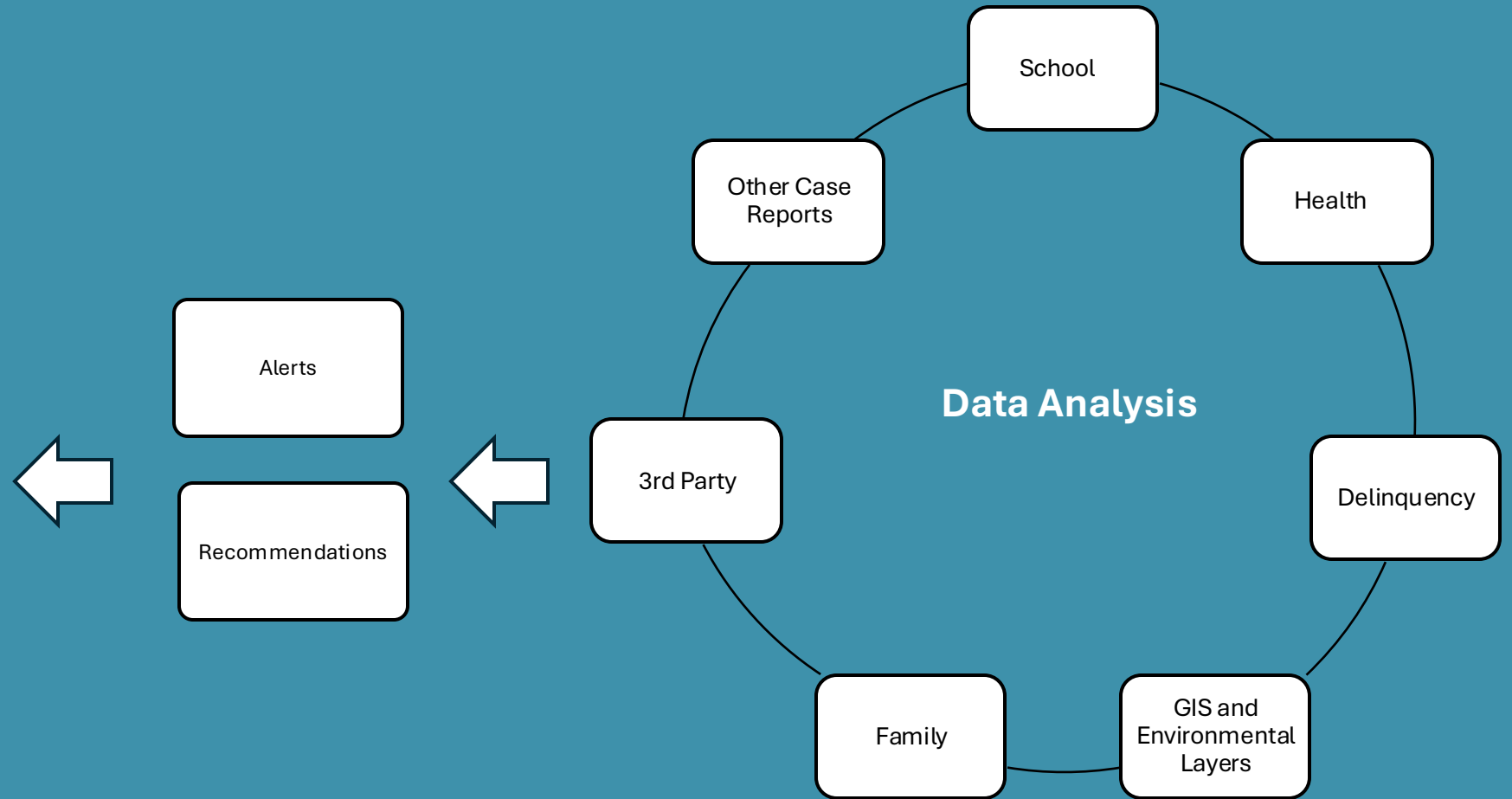
# Optimizing Delivery of Services

1. AI helps optimize delivery of social services by predicting individuals or families at risk of needing support

2. AI can predict care needs and trends for efficient allocation of resources and proactive management of health services

3. AI can analyze individual health data

# AI as a Case Management Tool: Enhancing Decision-Making

1. AI Provides Decision Support
   - Highlights critical information
   - Suggests best practices
   - Identifies potential issues early

2. Clinical Workflow Optimization
   - Automates routine tasks such as documentation, order entry, and scheduling
   - Transcribes and analyze clinical notes
   - Reduces administrative burden on healthcare providers
   - Allows for more focus on care

# AI as a Case Management Tool: Remote Monitoring and Telehealth

1. AI-powered systems support home-based care

2. Beneficial for managing chronic conditions

3. Provides care in rural or underserved areas

# AI as a Case Management Tool: Supervision and Evaluation

1. AI tracks and evaluates the effectiveness of interventions over time

2. AI tracks service delivery and outcomes across multiple entities

3. Identifies approaches by individual case workers that succeed or fail disproportionately

4. Identifies language, sentiment and attitude in need of training

# III. Listening and Communicating Better

- AI chatbots and virtual assistants provide 24/7 support

- Real-time assistance and support

- Community and official presentations—GenAI prepared

- Listening to sentiment, evaluating the affect of language

# Broader  Public Consultation And Participatory Governance

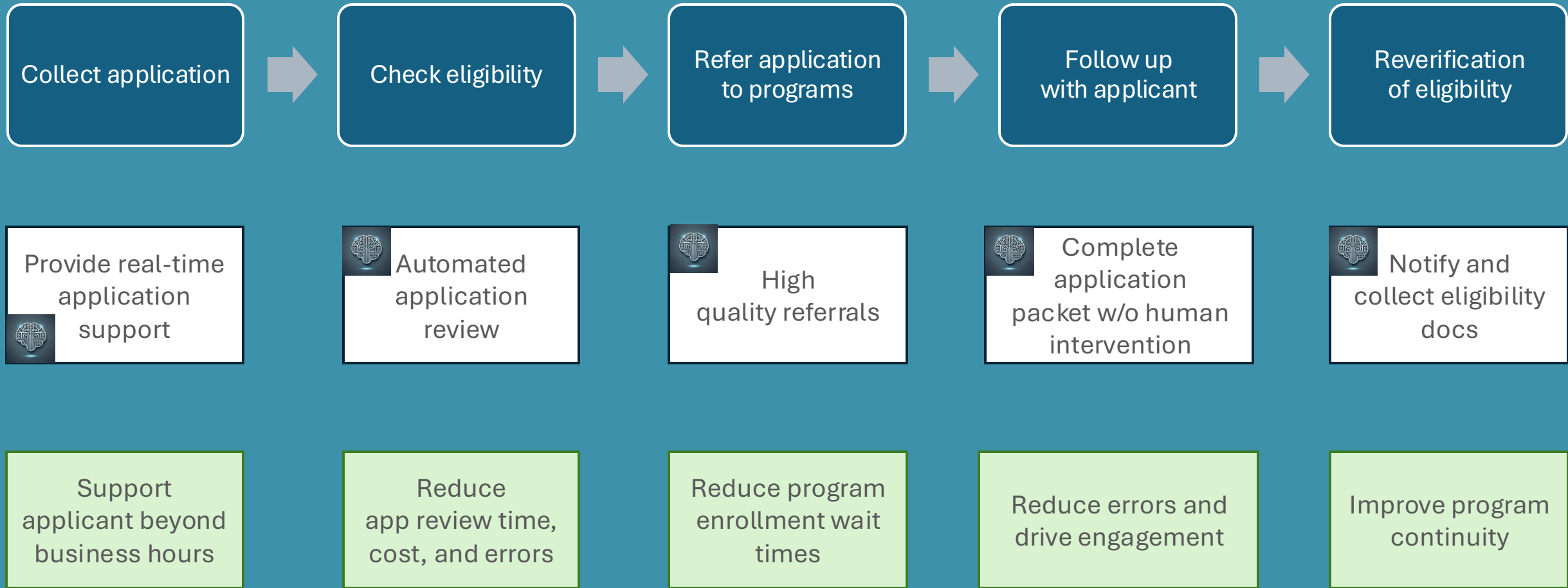1.  GenAI can ingest  thousands of submissions, summarize and categorize suggestions, create heatmaps to identify areas of alignment and divergence, identify consensus views and unique perspectives.

2.  Facilitates the drafting of summaries and recommendations.

3.  Makes it possible to capture wider range of perspectives.

4.  Enables constituent and stakeholder engagement to occur more frequently, iteratively.

# IV. Helping in the Right Way: Improving Eligibility Verification and Coordination

1. AI-powered software assistants provide personalized support to beneficiaries

2. Improves the efficiency and accessibility of services

3. Assist in navigating complex application procedures for benefits

# AI Can Improve Applicant Experience In Every Phase

| Collect application | → | Check eligibility | → | Refer application to programs | → | Follow up with applicant | → | Reverification of eligibility |
|---|---|---|---|---|---|---|---|---|

| Provide real-time application support | Automated application review | High quality referrals | Complete application packet w/o human intervention | Notify and collect eligibility docs |
|---|---|---|---|---|

| Support applicant beyond business hours | Reduce app review time, cost, and errors | Reduce program enrollment wait times | Reduce errors and drive engagement | Improve program continuity |
|---|---|---|---|---|

AI-driven enhancement          Benefit generated

# Using AI to Personalize Programs that Support Work

Streamlined Process for Eligibility and Benefits

- Quick analysis of applicant's data against various criteria
- Simultaneous determination of eligibility for multiple programs
- Quicker and more accurate benefit distribution

# Improving Accountability: Fraud Detection
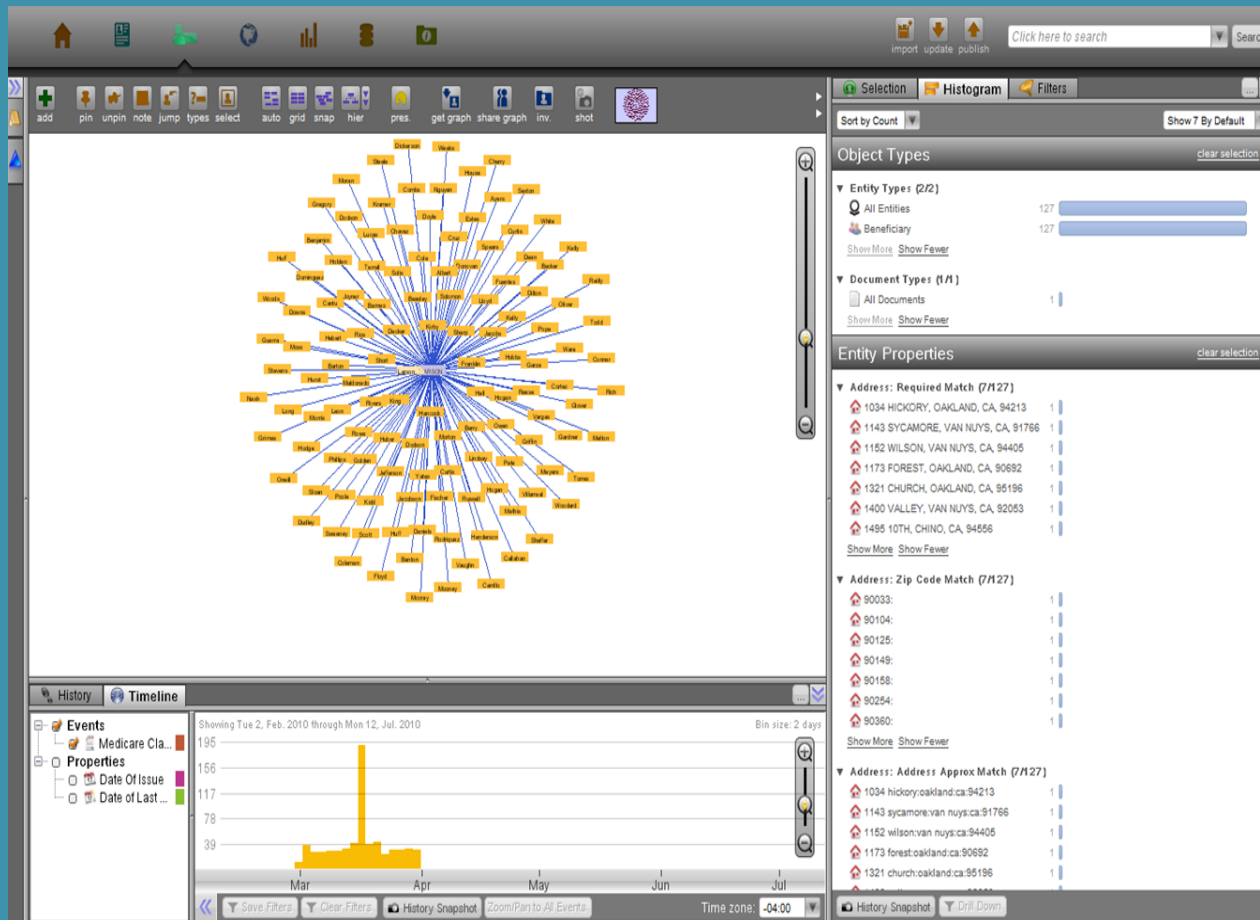


AI can analyze patterns and detect anomalies

Indicates fraudulent claims

# VI. Risks and Opportunities

## Get Started

1. **Create a Governance Framework**
   - •Policy Creation: Document and implement data governance policies.
   - •Role Assignment: Assign data stewards and governance roles.
   - •Manage the lawyers
   - •Enhance data literacy
2. **Assess Data** sources and quality.
3. **Prepare Data**
4. **Create Security Procedures**
   - • Verify all data handling complies with local and national laws.
5. **Start with Pilots**

## Be Careful

1. Privacy and security issues are real
2. Many groups working on how to regulate—but awkwardly
   - • White house AI bill of rights
   - • NIST AI risk management framework
   - • Many academic and think tanks