



# CVS Health & the Healthcare Industry

**PRESENTED BY: TEAM 17**

Daryn Imashev, Gillis Wang, Isabella Chen,  
Nikita Suryawanshi, Jackson Sui

# Agenda



Exploring why Bayesian AI is the most relevant approach for CVS

Key benefits CVS can leverage and the challenges it must overcome

Real-world applications of Bayesian AI across CVS's core business areas

# Bayesian AI: Revolutionizing Healthcare at CVS Through Probabilistic Intelligence

## Handling Uncertainty

Through probabilistic modeling, Bayesian AI can quantify uncertainty, providing a more comprehensive risk assessment for medical decision-making.

## Dynamic Updates

As new data is input, Bayesian models can update predictions in real-time, adapting to changing healthcare environments.

## Uncertainty Interpretability

Models generated by Bayesian methods typically have high interpretability, which is crucial for decision-makers in the healthcare field.

## Personalized Support

Ability to provide customized medical recommendations and treatment plans based on individual patient data.



# Benefits and Challenges of AI Adoption

## PROS



### Improved Healthcare Decision Making

Enables dynamic risk assessment models that are updated regularly.



### Enhanced Customer Personalization

Bayesian AI personalizes health recommendations based on customer activity



### Real-Time Decision-Making

Predictive analytics for operations and customer insights.

## CONS



### Complexity of Integration Across Divisions

Coordinating AI solutions for retail, pharmacy, and insurance can be technically and operationally complex.



### Resistance to Automation

Customers & employee may prefer human interactions over automated tools like chatbots or reminders.



### Scalability and Maintenance

Maintaining performance and scaling across multiple divisions can be difficult.

# Bayesians AI tribe tailored to Retail



## Subscription-Based Preventative Health Offerings

- Predict customer health needs and offer tailored monthly subscription boxes with vitamins, supplements, or common OTC meds.



## Adverse Reaction Alerts in OTC Products

- AI models can detect adverse reactions based on past consumer behavior and alert pharmacists or customers if a purchase is risky.



## AI-Driven Store Layout Optimization

- Bayesian reinforcement learning could help optimize store layouts by analyzing foot traffic, purchase patterns, and customer dwell times.

# Bayesians AI tribe tailored to Pharmacy



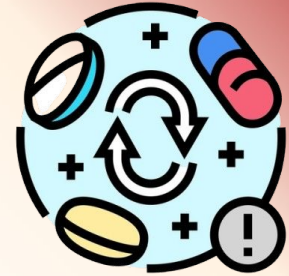
**Predictive Inventory Management**

- During flu season, AI predicts a 50% increase in flu antiviral demand and stocks stores to prevent shortages.



**AI-Enhanced Telepharmacy**

- Virtual assistants powered by Bayesian AI answer common patient queries and escalate complex cases to pharmacists.

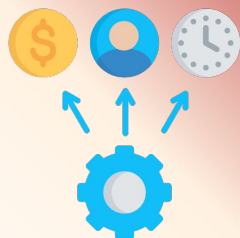


**Drug Compatibility Warnings**

- A prescription for blood thinners triggers an alert if the patient is already taking NSAIDs, with a suggested alternative.

# Bayesians AI tribe tailored to Insurance

*Aetna is using AI to improve and automate operations. -- CVS health CEO, Karen Lynch*



## Resource Optimization

Streamline allocation across departments and processes.



## Customer Service Enhancement

Predict call volumes and needs to optimize operations.



## Target Marketing

Improve effectiveness by focusing on high-potential beneficiaries.

## **CVS Health maintains a positive attitude towards the impact of AI technology on the company.**

*"We believe that AI and generative AI will transform healthcare," said Lynch. "We're applying technology, data and analytics to every single aspect of our business. The effects will be positive and profound."*

