

Clinical Lab 2.0 Committees in Action

Pathology Informatics/Artificial Intelligence

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CONVERGENCE

Pathology, Laboratory Diagnostics and Population Health

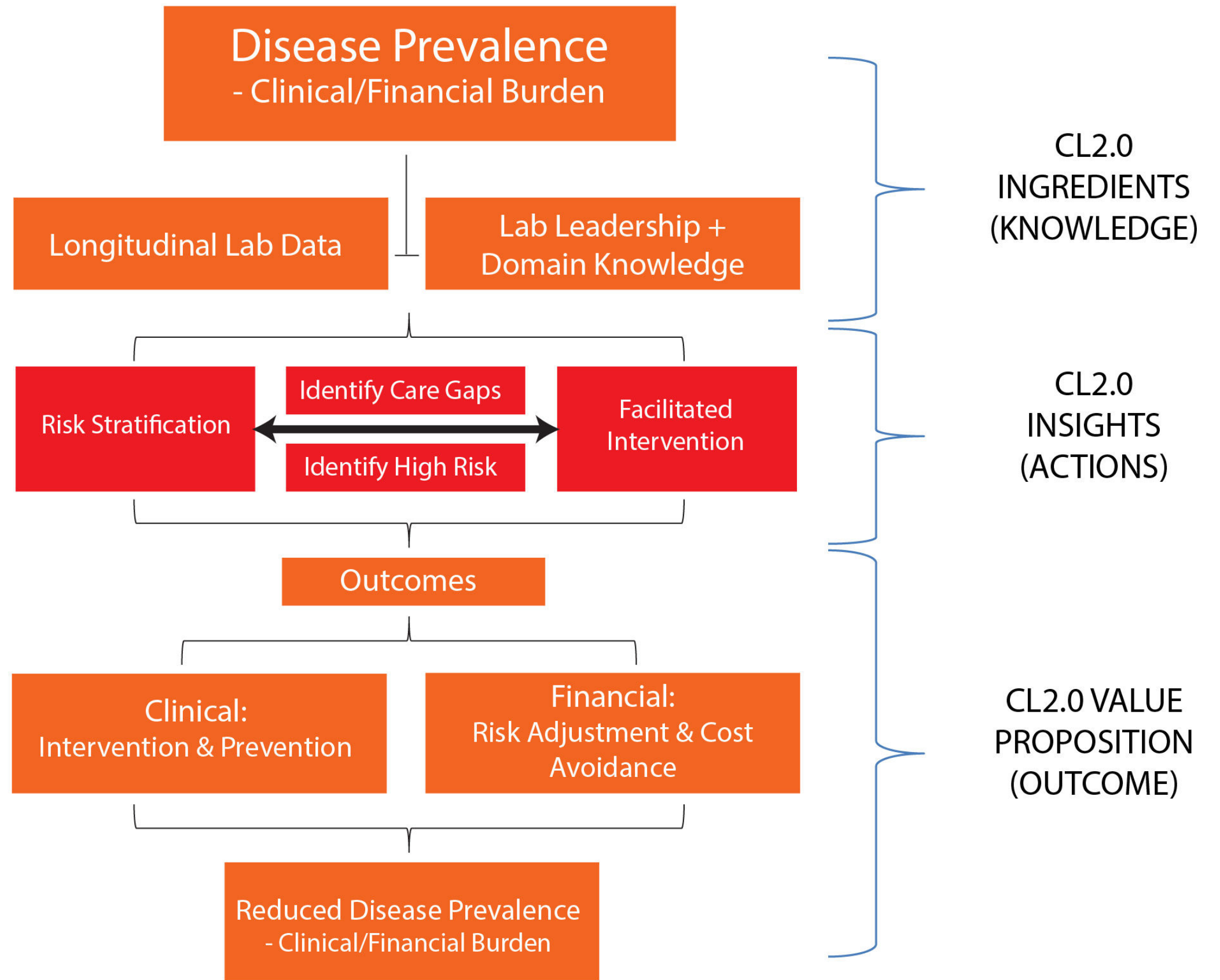
 **CLINICAL LAB 2.0**
A PROJECT SANTA FE FOUNDATION INITIATIVE



Pathology Informatics-Artificial Intelligence Committee

Committee Co-Chairs: Amjad Azizi, Ulysses Balis
PSFF Board Liaison: Myra Wilkerson

CL2.0 Pathway:



Pathology Informatics-AI Committee Mission Statement:

Enhance public health outcomes and confidence in laboratory services by leveraging artificial intelligence (AI) for proactive healthcare interventions and integrated diagnostic support.

Create a unified public health infrastructure that uses predictive analytics, early detection, and personalized health interventions to improve population health and reduce costs, while maintaining a strong emphasis on diagnostic stewardship.

Pathology Informatic-AI Committee: 9 step Business Canvas

<p>Partnerships</p> <ul style="list-style-type: none"> • Health Economist • Public Health Agencies • Medical and Diagnostic Laboratories • Payers • Educational Institutions • Integrated Health Systems • Association for Pathology Informatics • Australasian Institute of Digital Health 	<p>Activities</p> <ul style="list-style-type: none"> • Public Awareness Campaigns • Development and validation of AI Models • Integration of Laboratory and Diagnostic Systems • Development of Curriculum and Training Programs in use of Lab-based AI • Identify Public Health Gaps 	<p>Value Propositions</p> <ul style="list-style-type: none"> • Real-Time Data and Predictive Analytics • Early Detection and Diagnostics Support • Enhanced Stewardship • Risk Stratification and Targeted Interventions • Actionable Intelligence • Creation of strategically identified public health repositories of primary Lab data needed for AI-based algorithm development and continued stewardship 	<p>Customer Relationships</p> <ul style="list-style-type: none"> • Healthcare Systems & Labs • Government and Community Organizations • Payers and Health Networks • Training and Support • Public-at-large ombudsmen 	<p>Customer Segments</p> <ul style="list-style-type: none"> • Public Health Systems • Healthcare Networks • Medical Laboratory Professionals • Educational Institutions • Payers • AI-Centric Lab Instrument Vendors
<p>Key Resources</p> <ul style="list-style-type: none"> • Data Science Expertise • Clinical Knowledge • Integrated Health IT Systems • Public Health Knowledge Base • AI Infrastructure 			<p>Channels</p> <ul style="list-style-type: none"> • Government Healthcare Channels • Academic Outreach • Payers • Healthcare Conferences and Public Demonstrations 	
<p>Cost Structure</p> <ul style="list-style-type: none"> • Development and Integration Costs • Training and Education • Data Stewardship • Pilot Programs • Outreach and Communication 			<p>Revenue Stream</p> <ul style="list-style-type: none"> • Public Health Funding • Insurance Reimbursements • Subscription-Based AI Tools • Education and Training Programs • Collaborative Research Grants 	

- ✓ **Real-Time Data and Predictive Analytics**
- ✓ **Early Detection and Diagnostics Support**
- ✓ **Enhanced Stewardship**
- ✓ **Risk Stratification and Targeted Interventions**
- ✓ **Actionable Intelligence**
- ✓ **Creation of strategically identified public health repositories of primary Lab data needed for AI-based algorithm development and continued stewardship**

Key Points:

- **Early Disease Detection Reduces Long-Term Costs**
 - AI-enhanced diagnostics enable earlier identification of diseases, reducing late-stage treatment costs.
 - Predictive analytics improve population health management by preemptively addressing high-risk patients.
- **Optimized Resource Utilization**
 - AI automates manual processes, reducing unnecessary testing and reallocating pathologists' time to complex cases.
 - More precise diagnoses reduce the costs associated with misdiagnoses and redundant testing.
- **Financial Forecasting & Reimbursement Optimization**
 - AI-driven payment forecasting helps laboratories optimize financial planning and reimbursement strategies.
 - Helps justify the economic value of pathology services in outcome-based reimbursement models.
- **Reduction in Unnecessary Hospitalizations & Readmissions**
 - AI-driven risk stratification identifies patients who would benefit from early intervention, reducing hospital admissions.
 - Predictive models assist in medication adherence, ensuring patients remain compliant with prescribed treatments.
- **Public Health Cost Savings**
 - AI-supported Lab 2.0 initiatives enhance epidemiological surveillance, preventing large-scale outbreaks.
 - Data-driven insights inform policy and funding decisions to allocate resources where they are most impactful.

- **Regulatory Uncertainty**
 - Current FDA, CAP, and CLIA guidelines lack clarity on AI-assisted pathology, slowing adoption.
 - Need for a framework on AI validation, standardization, and interoperability.
- **Ethical & Data Governance Issues**
 - Standardization of patient data privacy regulations across global health systems.
 - Addressing biases in AI training datasets to prevent disparities in healthcare outcomes.
- **Reimbursement & Economic Models**
 - AI-driven diagnostics and predictive analytics lack standardized reimbursement pathways.
 - Need for reimbursement policies that recognize AI as a key decision-support tool.
- **Integration with Existing Healthcare Systems**
 - Many health systems lack the infrastructure to support AI-driven decision-making.
 - Policies must ensure seamless EHR interoperability and data-sharing across institutions.

- **AI as the Backbone of Precision Medicine**
 - The future of pathology is predictive, personalized, and data-driven.
 - AI will move from diagnostic support to active disease prevention.
- **Global Data Networks for Collaborative Discovery**
 - Lab 2.0 will break down geographic barriers, allowing real-time insights into global health trends.
 - AI-powered platforms will create federated learning models to enable privacy-preserving cross-institutional research
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- **Seamless AI-Human Collaboration**
 - Pathologists will work alongside AI as augmented decision-makers.
 - The focus will shift from volume-based pathology to value-based diagnostics.
- **Ethical AI & Trustworthy Automation**
 - Ensuring transparency, explainability, and fairness in AI-driven pathology.
 - AI models will be continuously validated with real-world evidence for safety and efficacy.