

DRAFT of 12/7/2016

LHS Summit 2016: Lightning Slides summary/actions

□□SENTIMENT CLUSTERS

DISSEMINATE LHS CULTURE - PROMOTION

Showcase LHS

Promote LHS

Champion understanding and use (and technical standards)

Raise/Maintain awareness

Demonstrate how steps toward LHS contribute to Triple Aim

Demonstrate how steps toward LHS fit business models

LHS imperative occurring in policy and practice

Cultivate understanding of health for individuals, family, community

Understand public policy and legal implications for interoperability

Champion understanding and use of information-sharing

Promote secure electronic exchange of health information

Getting the word out about LHS

LHS focus on “Healthcare Activism and YOU”

ORGANIZATIONAL CULTURE - ORGANIZATIONAL INFRASTRUCTURE

Connect the dots of the work and the goal

Strategic planning

Gain institutional support in organizations

Capacity to engage and contribute to LHS initiatives

Identify and build coalitions in organizations to progress LHS

Prepare organizations for operational LHS

Inform organizations on strategies

Create org culture that cultivates learning

Create org culture that harnesses data, information, analytics

Commitment to continuous improvement

Cultural alignment of leadership in research, education, and clinical operations

Active, nuanced approach to differentiating LHS activities from traditional clinical investigations

Learning and Clinical Integration team (formerly med ed and research grants)

Support learning initiatives that accelerate awareness and application of evidence-based medicine

Adapt toward a philosophy of improving care experience through systems-based lifelong learning

Create greater awareness of LHS within healthcare orgs

BUILD APPS

Innovate

Support incremental progress
Develop the LHS
Implement the LHS
Translate best practices into practice
Move data into action
Keystone component is Knowledge Grid
Build apps on SMART-on-FHIR related to LHS
Foster distribution of ADT message content
Quality improvement programs informed by patient care data
Visual analytics tool (EventFlow)
Public health agencies and researchers can rapidly learn, develop, and deliver cutting edge treatments.

BUILD COMPONENTS

Develop data and transport standards
House curated electronic library of standards
Build components of essential scalable infrastructure of LHS
Develop Standards
Developing tools and standards for specific domains
Inform the development and evolution of a nimble, reusable infrastructure
Contribute to standards (e.g. FHIR interoperability for data sharing) for LHS
Automate processes to accelerate the feedback loop
Develop frameworks that enable rapid testing/deployment of interventions (scrap, scale, or maintain)
Trust community focused on enabling infrastructure
Realize a real time interpreted ecosystem
LHS development and proof-of-concept testing
Facilitate data cleaning and exploration for pattern discovery in EHRs
Consumer controls and makes available to any site of care or research
Individual's health information is not limited to what is stored in electronic health records and portrays a longitudinal picture of their health, not just episodes of care

ECOSYSTEM - SCALE

Engage Communities
Collaborate
Endorse Core Values
Strengthen ecosystem
Embrace the ecosystem
LHS will require orgs to support/facilitate others (research)
Link literature, experts, clinicians, patients, policy makers
Highlight benefits and challenges of LHS to each stakeholder group
Reduce research silos
hands-on collaboration with gov, com, org

Open data, open science, participatory medicine
Create a vital, inclusive, health ecosystem
Commercial organizations reframe the “business purpose” of efforts that are aligned with the tenets of LHS
large diverse scale enables perspective to inform evolution of LHS
Be available and part of the process
Identify opportunities to participate and offer (data) expertise
Stakeholder input, lays out a clear path to catalyze the collaboration of stakeholders

SOCIAL ISSUES

Improve social determinants of health
Equitably serve learning needs of all
Evangelize that LHS is anchored in patient needs and perspectives (including provider perspective on same)
Ensure that ethical issues motivate, stimulate and guide LHS evolution
Achieve Patient Centered Focus with Population Management and CPC+
Advance social determinants of health across systems
Recognize health happens outside brick and mortar facility
Revolutionize how people get and stay healthy

CONSUMER FOCUS

Consumer partnership
Incorporate consumer perspectives
Hear diverse voices
Consumer-mediated health information ecosystem
Evangelize for new science of patient engagement (rigorous, formal, scientific, evidence-based practice)
Action will emerge when everyone at the table
Communicate about the patient viewpoint for representation
Provide patients with real-time convenient access to their health data in usable and actionable forms
Enable consumers to access their health information (Blue Button for Consumers, TrustHarbor enabling API transactions)
Collection of health data (personal and clinical) in one place
Study health data sharing preferences of consumers
Inclusion of consumer voice in data governance and consent management mechanisms
Lead the emerging science of patient centric engagement and empowerment in care, research, and development
Advocate inclusion of the patient perspective throughout health ecosystem
Make science accessible to everyone
Improve capability, comfort, and calm of those in care
Every consumer can have a secure, lifetime health record
Individuals are at the center of their care

PROFESSIONAL CONTRIBUTORS TO LHS

Thought Leadership

Research

Advocacy

Comparative benchmarking to discover opportunities

Share best practices

Educate workforce

Healthcare Analytics Competency Model defines skills, knowledge, and abilities a healthcare organization needs

Model alignment to others' who support the analytics life cycle (e.g. product managers and business analysts)

Senior leaders and innovators work collaboratively

Advance progress toward LHS

Feedback quality metrics

Rapidly translate research into practice □ Working to drive the implementation of best practices

Champion LHS to educational stakeholders

P2D

Aggregate identified data

Identify sustainable economic incentives to collect data and make it available (not enough to digitize EMRs)

Create and capture new knowledge as part of patient care

Structure measurement and reporting to facilitate ongoing innovation and learning

Ways HIT can support the generation and application of evidence (e.g. successful use of patient-reported outcomes)

Monitor safe use of HIT (e.g. correct medication orders)

Accrue data from many clinical settings

Advance the value of patient reported and generated data

PRO integral to achieving the promise of LHS

Providers have a seamless ability to securely access and use health information from different sources

D2K

Use rigorous implementation science framework

Support rapid deployment and evaluation of interventions

Drive discovery

Produce evidence to make health safe, high quality, accessible, equitable, affordable

Extract new insights

Design pragmatic clinical trials

K2P

Build in clinical trials, decision support and data provenance

Develop and rigorously test interventions aimed at healthcare delivery
Support “knowledge to practice” side of learning cycle
Use of evidence to drive improvement in the health care system
Support the discovery, socialization, operationalization and impact of data-driven insights
Context and person-specific decision support tools that incorporate the latest knowledge to optimize for each patient
Accelerate research results into care decisions
Embed shared decision making in every encounter
Efficient integration of evidence into practice

DOMAIN SPECIFIC LHS

Establish practice-based research/quality network
Improve population health
Predictive analytics to identify high-risk patients
Commit “3 - 4 Aims”, NQS, Pop Health
Apply registry data (e.g. polycystic kidney) to develop and validate biomarkers for use in trials
Telehealth data is in health record
Telehealth consultants have access to past health info
Nonprofit research consortium (depression)
Mood Outcomes Program transform care through measurement-based tools
Demonstration project of an LHS (for Multiple Sclerosis)
Academics can design, implement, experiment with LHS prototypes
Small subset domains addressed as theses and group projects

FUND LHS - POLICY/GOVERNMENT - SUSTAINABILITY

Early adopter of LHS
Commit institutional pilot funds
Develop a framework and approach to phased LHS implementation
Call on CMS to use value-based payment approaches
Fund HIT research that support measurement of LHS
Fund increased institutional cost of new interventions
Fellows encouraged to pursue data-driven informatics interventions
Explicit state mandate to improve health and measure outcomes that matter
Consider contractual terms that could accelerate LHS in large employment and government healthcare service purchases
Organizations should engage purchasers, educating the value of electronic data exchange, quality improvement with actionable data
LHS Policy and Governance Workgroup
Work with large payers to mold the natural healthcare environment into a reliable system for real-world evidence development
Shared Nationwide Interoperability Roadmap v.1.0.

STEERING COMMITTEE CATEGORY IDEAS

Every patient experience is available for learning

Best practice knowledge is immediately available to support decisions

Improvement is continuous

Infrastructure enables routine learning at scale

LHS is part of culture

□□People

Process

Policy

Technology

□□Legacy assumptions

Time invariance (Evidence is eternal)

Isolation (specialization scales)

Homogeneity

Barriers

Data fragmentation

Fear of disclosure

Workforce capacity and capability

Innovation Technologies

Network effect

Long Tail

Crowdsourcing

Data Analytics

Architectures

Bidirectional evidence pipelines

Distributed sense-making

Connected decision-making

□□Person-focused

Privacy

Inclusiveness

Transparency

Accessibility

Adaptability

Governance

Cooperative and Participatory Leadership

Scientific Integrity

Value

□□An LHS trusted and valued by all stakeholders

An economically sustainable and governable LHS

An adaptable, self-improving, stable, certifiable, and responsive LHS
An LHS capable of engendering a virtuous cycle of health improvement.□□

Policy

Governance/organizational infrastructure

Promotion

Ecosystem - scale, social, patient-facing

D2K, K2P, P2D

Infrastructure

Standards and interoperability (social aspects)

Sustainability□□Organizational Infrastructure

□□Direct versus Indirect stakeholders□□

Pharma

Patients

Tech industry

Universities

Government and public health

Research institutes

Care delivery networks

Payers

(Philanthropy)

(Professional associations)

□□Information Infrastructure

Needs Assessment (of all participants in the healthcare work system)

Information discovery

Translation of information into improved practice (e.g., decision support)

Provision of information in user-appropriate language

Support evolving data science.

Social determinants of health

Standard terminologies/ontologies

Information provenance

Information-exchange standards□□Support use of the infrastructure

Disseminate understanding of the LHS and infrastructure throughout the healthcare work system (e.g., including boards of care-delivery organizations)

Improve social determinants of health

□□LIGHTNING SLIDE SUMMARIES

□□HIMSS: Strategic planning

HIMSS: Interoperability showcase

HIMSS: Innovation Center
HIMSS: Communities
HIMSS: Thought Leadership □□ NCHICA: Early endorser

NCHICA: Promote the vision of an operational LHS to member orgs □□ Stewards of Change:
Thought leadership

Stewards of Change: Collaboration
Stewards of Change: Champion understanding and use
Stewards of Change: Advance the social determinants of health □□

Health Information Technology, Exchange, and Transformation: Maintain awareness
Health Information Technology, Exchange, and Transformation: Support incremental progress
Health Information Technology, Exchange, and Transformation: Connect dots of the work and the goal

□□ ANA: Promoting health, wellness, quality, safety, standards
ANA: Healthcare consumer partnership
ANA: Professional contributors to LHS □□

AAFA: Improve lives of asthma and allergy sufferers
AAFA: Advocacy
AAFA: Research
AAFA: Education
AAFA: Support the incorporation of patient perspectives, values, and outcomes in patient care, research, policy, innovation and discovery, and information dissemination
AAFA: Support the conversion and translation of information to usable language □□

Bridges LLC: Strong ecosystem
Bridges LLC: Efficiently and equitably serve learning needs of all participants
Bridges LLC: Diverse voices heard
Bridges LLC: Diverse voices values and needs acted upon

□□ Kanter Health: Developing and implementing a LHS
Kanter Health: Aggregate decedent data from multiple healthcare institutions
Kanter Health: Consumer-mediated health information ecosystem
Kanter Health: Provide patients with real-time convenient access to their health data in usable and actionable forms □□

Harvard (Pop Med): Embrace that LHS will require organizations to facilitate and support research of others □□

Mindspring: Obstacle to LHS is lack of sustainable economic incentives to collect research-quality, person-centered data and make it available to learners (digitization of EMRs is not the solution to date)

□□NYU (CHIDS): Rapidly translate research into practice
NYU (CHIDS): Use rigorous implementation science framework□□

AMGA: Improve population health
AMGA: Comparative benchmarking to discover opportunities
AMGA: Predictive analytics to identify high-risk patients
AMGA: Drive discovery
AMGA: Share best practices
AMGA: Translate best practices into practice
AMGA: Move data into action

□□NIH (NLM): Champion standards for Health IT

□□Lilly: Raise awareness
Lilly: Gain institutional support in organizations
Lilly: Capacity to engage and contribute to LHS initiatives
Lilly: Identify and build coalitions in organizations to progress LHS
Lilly: Inform organizations on strategies
Lilly: Prepare organizations for operational LHS

□□King's College London: Early adopter of LHS (including EU TRANSForRm)
King's College London: Building in clinical trials, decision support and data provenance
King's College London: Developing tools and standards for specific domains

□□Duke (CPHS): Commit institutional pilot funds
Duke (CPHS): Develop and rigorously test interventions aimed at healthcare delivery
Duke (CPHS): Inform the development and evolution of a nimble, reusable infrastructure
Duke (CPHS): Support rapid deployment and evaluation of interventions

□□Society for Participatory Medicine (e-Patient): Evangelize that LHS is anchored in patient needs and perspectives (including provider perspective on same)
Society for Participatory Medicine (e-Patient): Evangelize for new science of patient engagement (rigorous, formal, scientific, evidence-based practice)

□□QHC: Develop a framework and approach to phased LHS implementation
QHC: Commit "3 - 4 Aims", NQS, Pop Health□□

AHA: Committed to supporting resuscitation LHS to save lives
AHA: Working to drive the implementation of best practices

AHA: Create and capture new knowledge as part of patient care□□

Learning Health Care Project: Link literature, experts, clinicians, patients, policy makers
Learning Health Care Project: Highlight benefits and challenges of LHS to each stakeholder group□□

ACP: Call on CMS to use value-based payment approaches
ACP: Structure measurement and reporting to facilitate ongoing innovation and learning

□□Dental: Establish practice-based research/quality network (thousand offices since 2005)□□

UMich (DLHS): Build components of essential scalable infrastructure of LHS

UMich (DLHS): Keystone component is Knowledge Grid

UMich (DLHS): Support “knowledge to practice” side of learning cycle

UMich (DLHS): LHS Journal□□

AHRQ: Fund HIT research that support measurement of LHS

AHRQ: Monitor safe use of HIT (e.g. correct medication orders)

AHRQ: Ways HIT can support the generation and application of evidence (e.g. successful use of patient-reported outcomes)

AHRQ: Produce evidence to make health safe, high quality, accessible, equitable, affordable

AHRQ: Use of evidence to drive improvement in the health care system□□

NAM: Senior leaders and innovators work collaboratively

NAM: Advance progress toward LHS□□

UMiami (Bioethics and Health Policy): Ensure that ethical issues motivate, stimulate and guide LHS evolution

□□HL7: Contribute to standards (e.g. FHIR interoperability for data sharing) for LHS□□

Duke: Build apps on SMART-on-FHIR related to LHS

□□The Walking Gallery: Action will emerge when everyone at the table

The Walking Gallery: Communicate about the patient viewpoint for representation

□□ThatWave: Healthcare Analytics Competency Model defines skills, knowledge, and abilities a healthcare organization needs

ThatWave: Support the discovery, socialization, operationalization and impact of data-driven insights

ThatWave: Model alignment to others’ who support the analytics life cycle (e.g. product managers and business analysts)□□

UPenn: Achieve Patient Centered Focus with Population Management and CPC+□□

Critical Path Institute: Apply registry data (e.g. polycystic kidney) to develop and validate biomarkers for use in trials□□

Intermountain: Demonstrate how steps toward LHS contribute to Triple Aim

Intermountain: Demonstrate how steps toward LHS fit business models□□

Vitel Net: Telehealth companies ensure associated interactions and data are part of each person's total health record

Vitel Net: With patient permission, telehealth consultants have access to appropriate past health information

Vitel Net: Telehealth consultants have context and person-specific decision support tools that incorporate the latest knowledge to optimize for each patient□□

CDISC: Develop data and transport standards

CDISC: House curated electronic library of standards

CDISC: Automate processes to accelerate the feedback loop

CDISC: Accelerate research results into care decisions

CDISC: Reduce research silos□□

ASCO: Accrue data from many clinical settings

ASCO: Feed back quality metrics

ASCO: Extract new insights□□

Billings: Create org culture that cultivates learning

Billings: Create org culture that harnesses data, information, analytics

□□Cincinnati Children's: Develop frameworks that enable rapid testing/deployment of interventions (scrap, scale, or maintain)

Cincinnati Children's: Fund increased institutional cost of new interventions

□□VA: Commitment to continuous improvement

VA: LHS imperative occurring in policy and practice

VA: Cultural alignment of leadership in research, education, and clinical operations□□

NATE: Trust community focused on enabling infrastructure

NATE: Enable consumers to access their health information (Blue Button for Consumers, TrustHarbor enabling API transactions)

□□Diary: Collection of health data (personal and clinical) in one place

Diary: Cultivate understanding of health for individuals, family, community

□□UMinn (Nursing): Study health data sharing preferences of consumers
UMinn (Nursing): Understand public policy and legal implications for interoperability
UMinn (Nursing): Inclusion of consumer voice in data governance and consent management mechanisms□□

PLM: Advance the value of patient reported and generated data
PLM: PRO integral to achieving the promise of LHS
PLM: Lead the emerging science of patient centric engagement and empowerment in care, research, and development

□□Stanford Children's: Active, nuanced approach to differentiating LHS activities from traditional clinical investigations
Stanford Children's: Fellows encouraged to pursue data-driven informatics interventions
Stanford Children's: Improve care quality
Stanford Children's: Publish results□□

Stewards of Change: Thought leadership
Stewards of Change: hands-on collaboration with gov, com, org
Stewards of Change: Champion understanding and use of information-sharing
Stewards of Change: Advance social determinants of health across systems
Stewards of Change: Create greater receptivity to LHS□□

MiHIN: Foster distribution of ADT message content statewide (99%)
MiHIN: Promote secure electronic exchange of health information
MiHIN: Improve quality, efficiency, patient safety

□□MCM: Open data, open science, participatory medicine
MCM: Advocate inclusion of the patient perspective throughout health ecosystem
MCM: Embed shared decision making in every encounter
MCM: Make science accessible to everyone□□Interpreta: Realize a real time interpreted ecosystem

□□NNDC: Nonprofit research consortium (depression)
NNDC: Transform treatment (mood disorders)
NNDC: LHS development and proof-of-concept testing
NNDC: Mood Outcomes Program transform care through measurement-based tools
NNDC: Quality improvement programs informed by patient care data

□□Texas: Explicit state mandate to improve health and measure outcomes that matter
Texas: Improve capability, comfort, and calm of those in care
Texas: Recognize health happens outside brick and mortar facility
Texas: Revolutionize how people get and stay healthy
Texas: Create a vital, inclusive, health ecosystem□□

CedarBridge: Consider contractual terms that could accelerate LHS in large employment and government healthcare service purchases

CedarBridge: Organizations should engage purchasers, educating the value of electronic data exchange, quality improvement with actionable data

□□Genentech: Commercial organizations reframe the “business purpose” of efforts that are aligned with the tenets of LHS

□□HIMSS: nonprofit focused on improved health through IT

HIMSS: optimize health engagements and care outcomes using HIT

HIMSS: thought leadership via education, events, market research, advocacy

HIMSS: large diverse scale enables perspective to inform evolution of LHS

□□Biogen: Demonstration project of an LHS (for Multiple Sclerosis)

□□Genentech: Learning and Clinical Integration team (formerly med ed and research grants)

Genentech: Support learning initiatives that accelerate awareness and application of evidence-based medicine

Genentech: Adapt toward a philosophy of improving care experience through systems-based lifelong learning

Genentech: Efficient integration of evidence into practice

Genentech: Learn more about LHS and champion it to educational stakeholders

□□Maryland: Visual analytics tool (EventFlow)

Maryland: Facilitate data cleaning and exploration for pattern discovery in EHRs□□

TMFloyd: Active member in LHS Policy and Governance Workgroup

TMFloyd: Create greater awareness of LHS within healthcare orgs

TMFloyd: Help strategize and integrate technology and data for active LHS participation□□

Sterling: Getting the word out about LHS

Sterling: LHS focus on “Healthcare Activism and YOU”□□

Optum: Be available and part of the process

Optum: Identify opportunities to participate and offer (data) expertise

□□CMU: Academics can design, implement, experiment with LHS prototypes

CMU: Small subset domains addressed as theses and group projects□□

HealthCore: Work with large payers to mold the natural healthcare environment into a reliable system for real-world evidence development

HealthCore: Design pragmatic clinical trials□□

HRBA: Every consumer can have a secure, lifetime health record

HRBA: Consumer controls and makes available to any site of care or research

HRBA: Faster, better, cheaper with improved consumer experience and greater security

□□ONC: Shared Nationwide Interoperability Roadmap v.1.0.

ONC: Stakeholder input, lays out a clear path to catalyze the collaboration of stakeholders

ONC: Individuals are at the center of their care

ONC: Providers have a seamless ability to securely access and use health information from different sources

ONC: Individual's health information is not limited to what is stored in electronic health records and portrays a longitudinal picture of their health, not just episodes of care

ONC: Public health agencies and researchers can rapidly learn, develop, and deliver cutting edge treatments.