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
Collaboration
Champion understanding and use
Advance the social determinants of health

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

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

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

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

Kanter Health: Developing and implementing a LHS
Aggregate decedent data from multiple healthcare institutions
Consumer-mediated health information ecosystem
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

ThotWave: Healthcare Analytics Competency Model defines skills, knowledge, and abilities a healthcare organization needs
ThotWave: Support the discovery, socialization, operationalization and impact of data-driven insights
ThotWave: 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

Interpeta: 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

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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.