A perspective on data integration and the emerging ACH context

ACH Development Council Webinar

Public Health
Seattle & King County

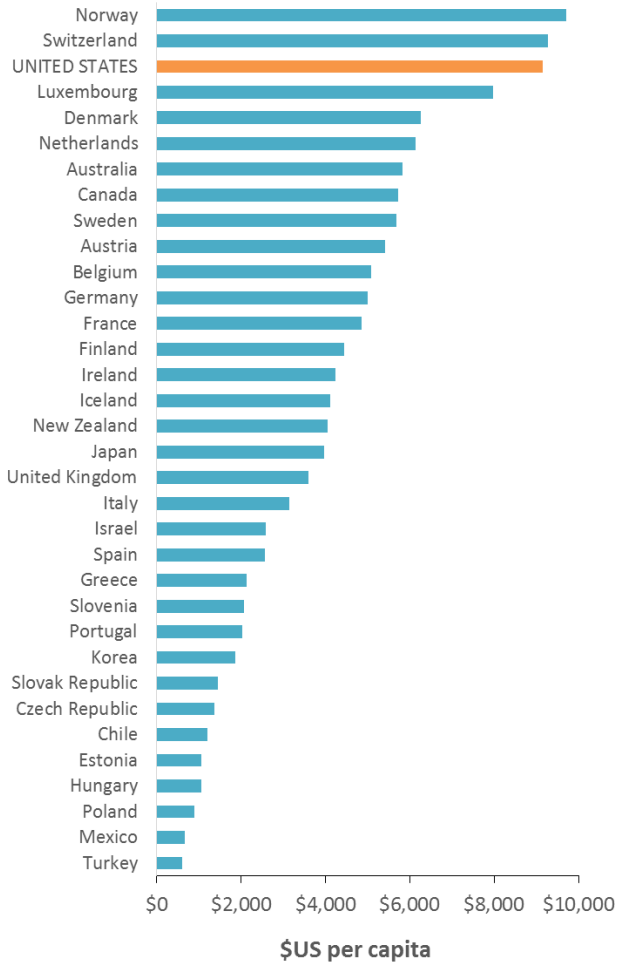
Outline

1. Why we need to share data across sectors, agencies, and communities
2. Importance of shared data and integrated data in the ACH context
3. Public Health Systems & Services grant– a timely evaluation opportunity
4. Preliminary landscape of data sharing in King County
5. Core concepts of integrated data
6. Potential next steps

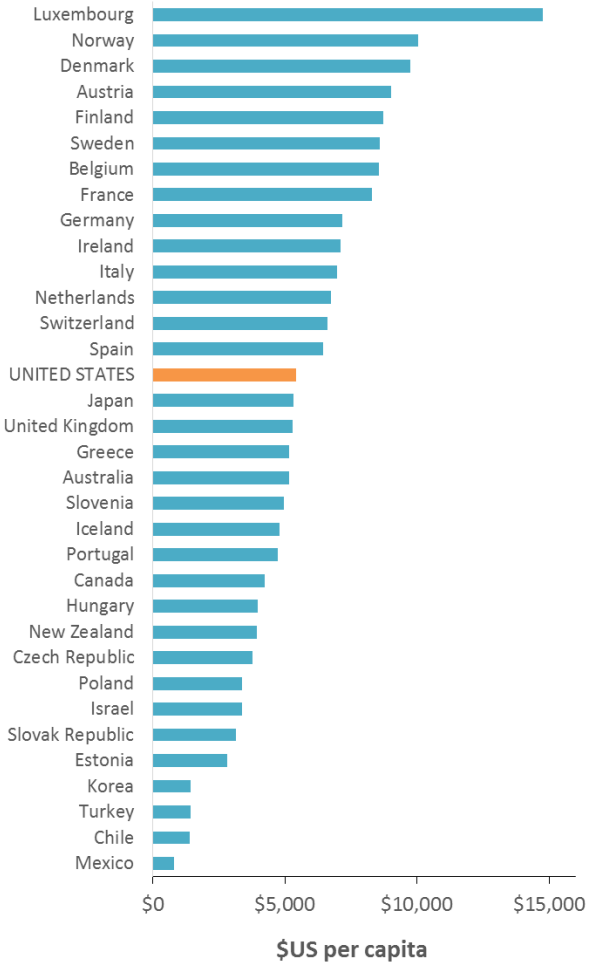
In the United States, our investments do not match our health needs

The United States compared to its economic peers

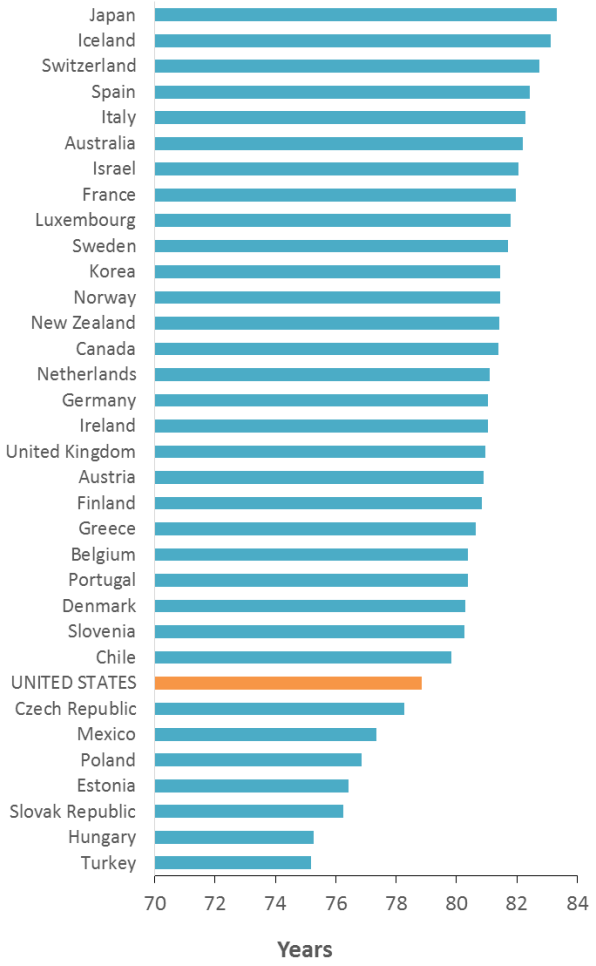
Top spender on health care



Moderate spender on social services



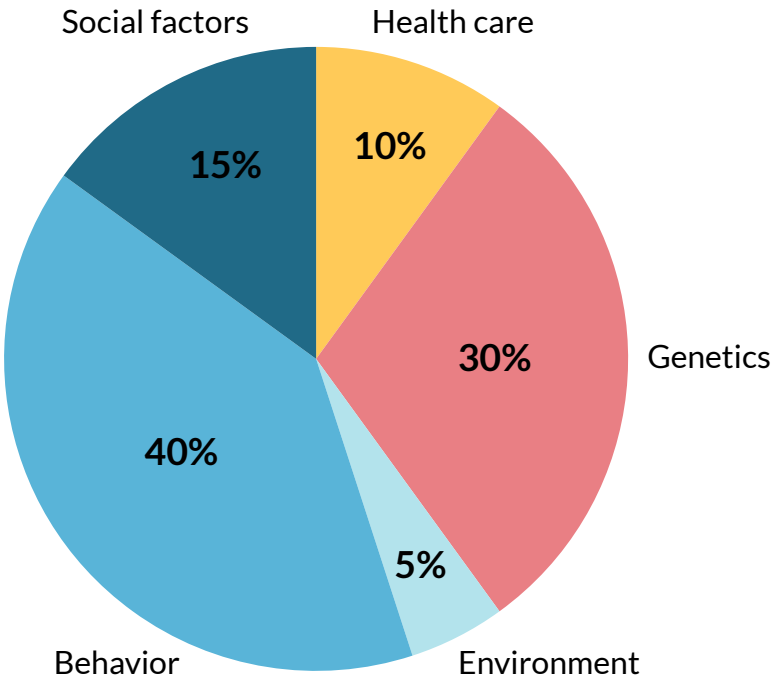
Low performer on life expectancy



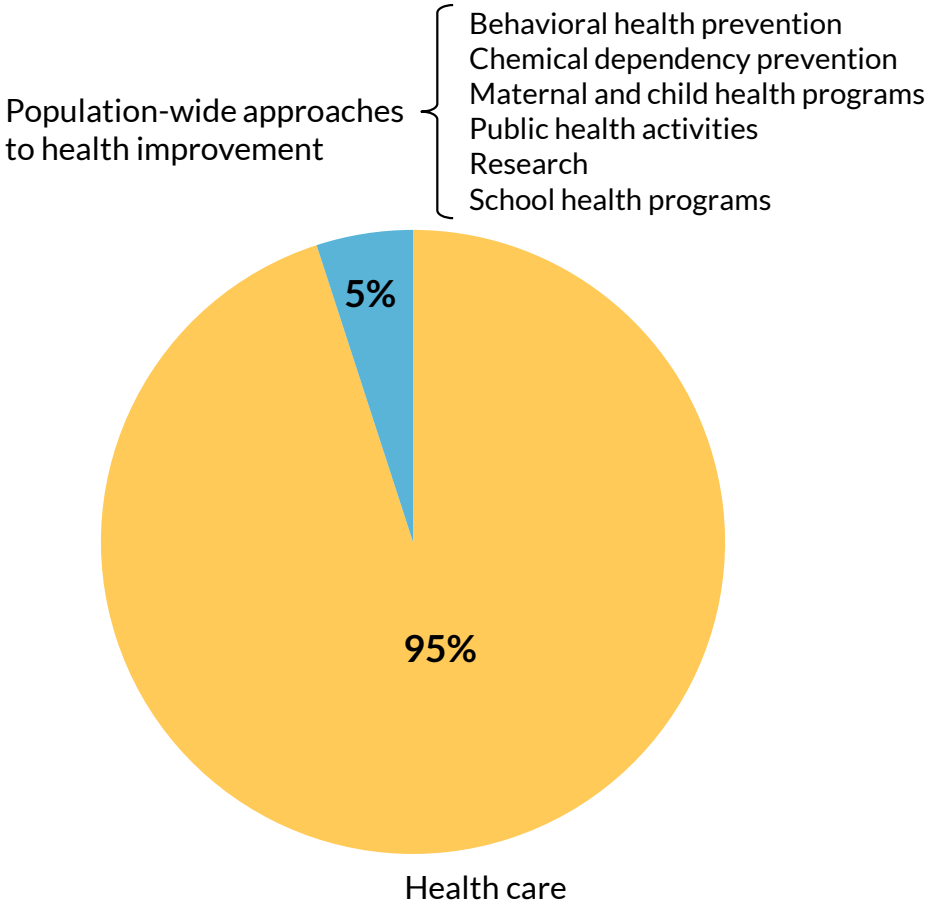
Sources: Health expenditures per capita, 2013 and life expectancy at birth, 2013 (World Bank); Social expenditures per capita, 2011 (OECD)

We only spend 5% of our health dollars to address what causes 60% of our avoidable deaths

Causes of avoidable death in the United States[1]



United States health expenditures in 2013[2]

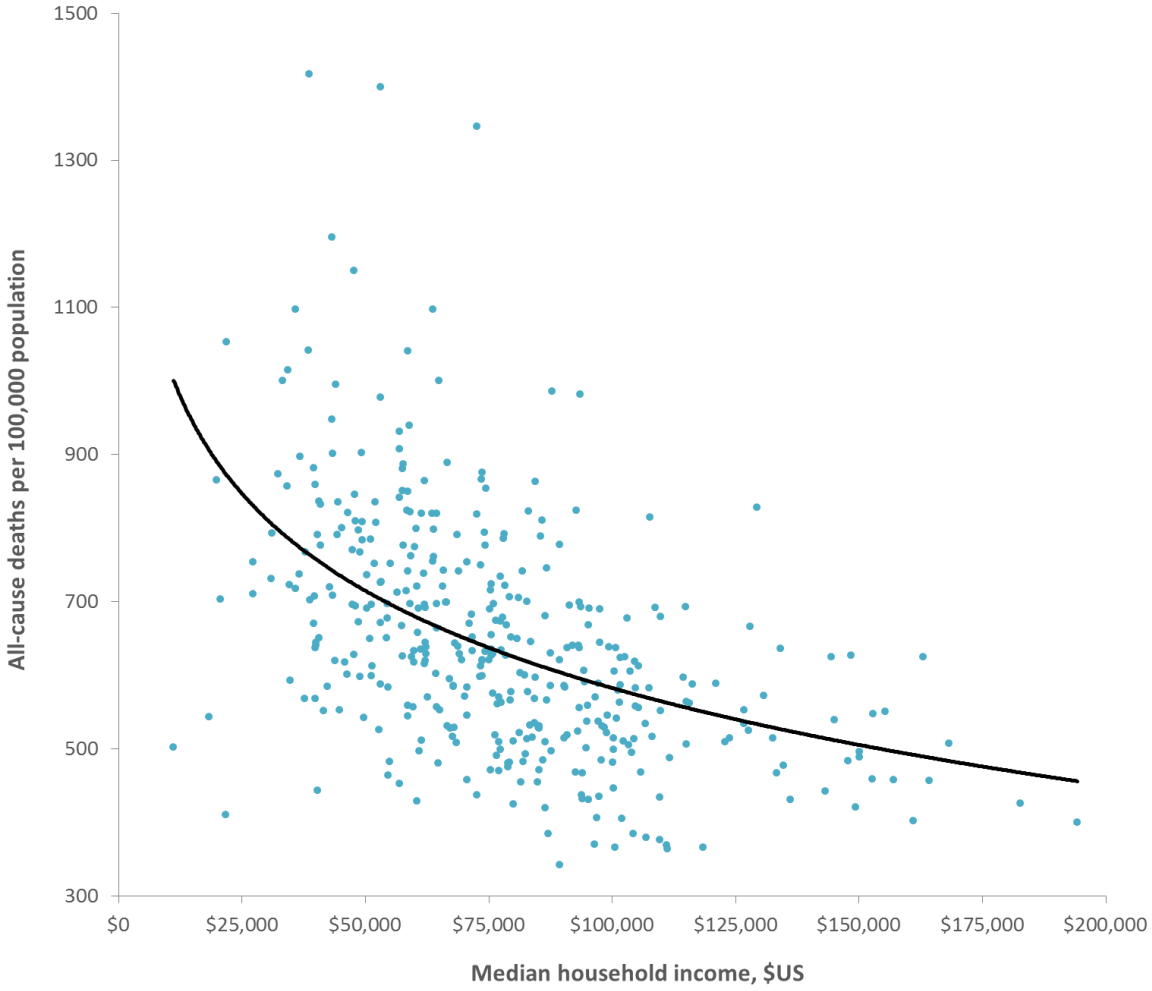


[1] McGinnis et al., The case for more active policy attention to health promotion. Health Affairs 2002; 21(2):78-93.
[2] Centers for Medicare & Medicaid Services, Office of the Actuary. National health expenditures, by source of funds and type of expenditure. 2013.

Health follows wealth, and the US suffers from extreme income inequality

Income inequality

Income and all-cause mortality by census tract in King County, 2009-2013



Sources: Income inequality, 2011 (OECD); mortality, 2009-2013 (WA Department of Health, death records); household income, 2009-2013 (American Community Survey)

In King County, there is a broad understanding that health begins where we live, learn, work and play.

This is embodied in the Accountable Community of Health.

King County Accountable Community of Health (ACH)

AWARENESS

Due to the complex nature of the upstream drivers of poor health and disparities (i.e. where we live, learn, work and play), we must work across sectors, agencies and communities in order to improve heath and promote equity

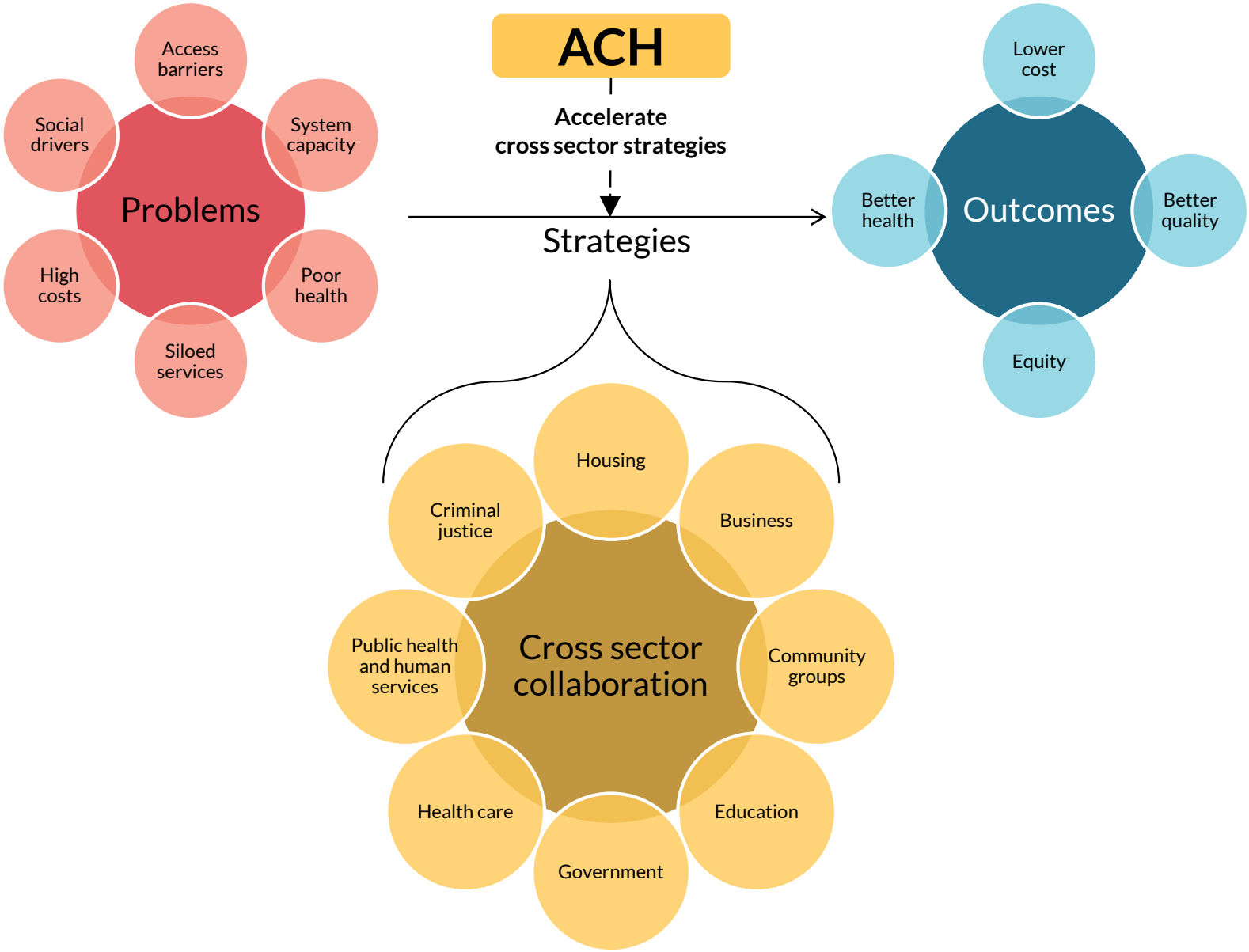
VISION

Building healthier communities through a collaborative regional approach focusing on social determinants of health, clinical-community linkages, and whole person care

GOAL

Better health and better quality of care at a lower cost = the Triple Aim

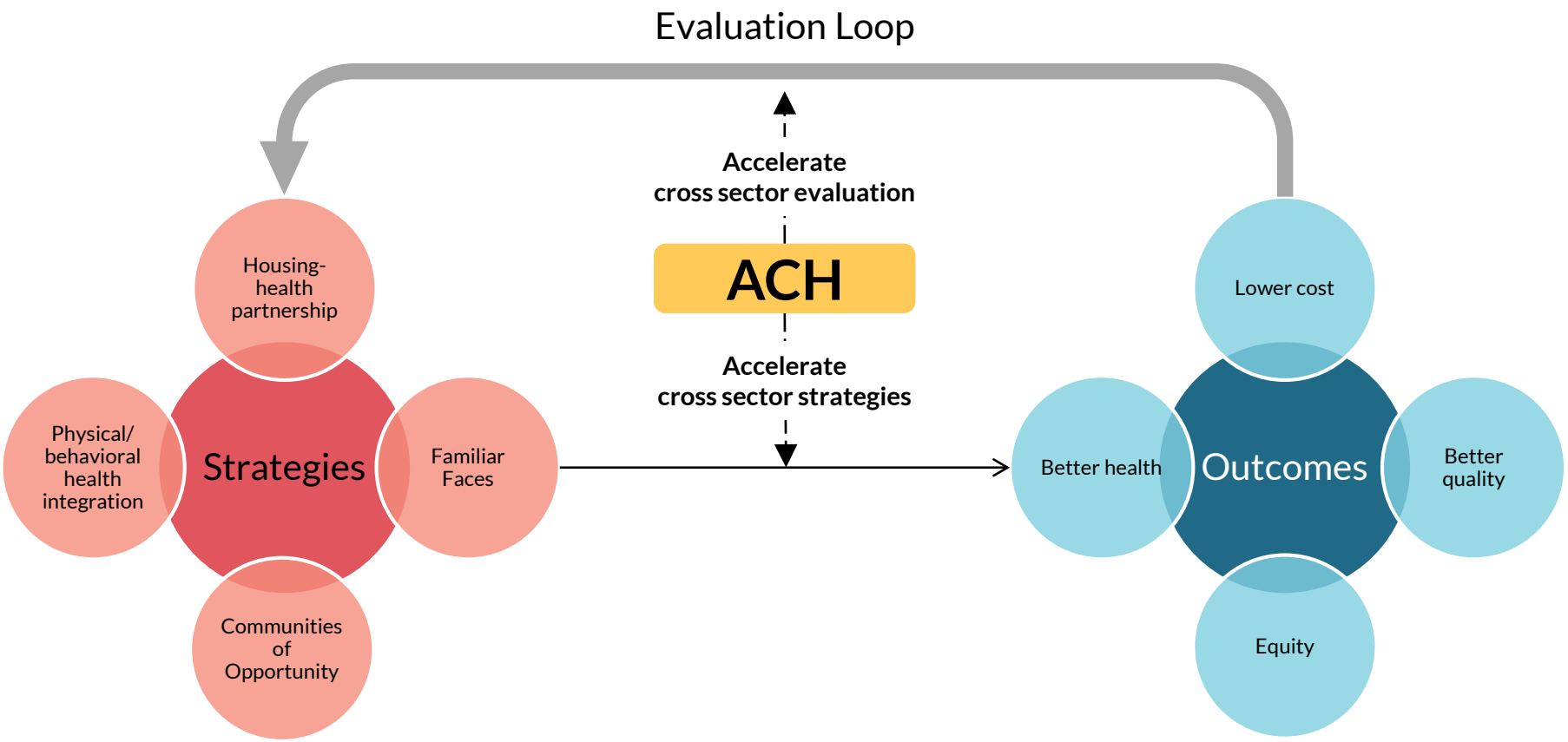
Complex problems require a complex strategy



There is great promise in this growing collaborative approach to better understand and serve the whole person.

But, how will we know if we are making progress towards the Triple Aim?

Complex strategies require a complex evaluation



Public Health Systems & Services Research grant – A timely opportunity

OPPORTUNITY

PHSKC received a 2-year PHSSR grant from the Robert Wood Johnson Foundation, which began on February 1, 2015

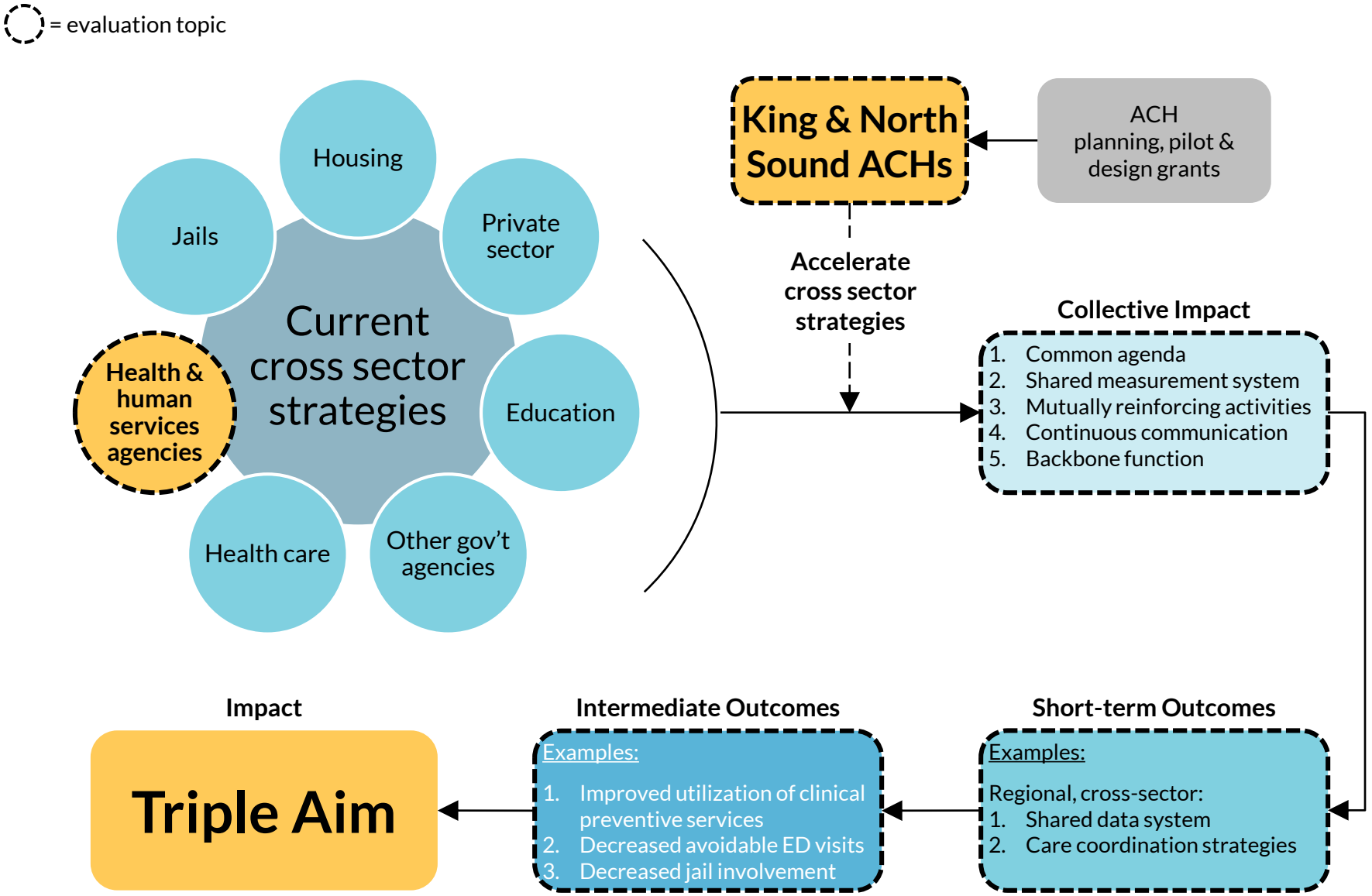
PURPOSE

Understand how ACHs influence local health and human services departments' (LHHSDs) ability to develop shared data and care coordination strategies to support the Triple Aim (King County ACH – North Sound ACH partnership)

QUESTIONS

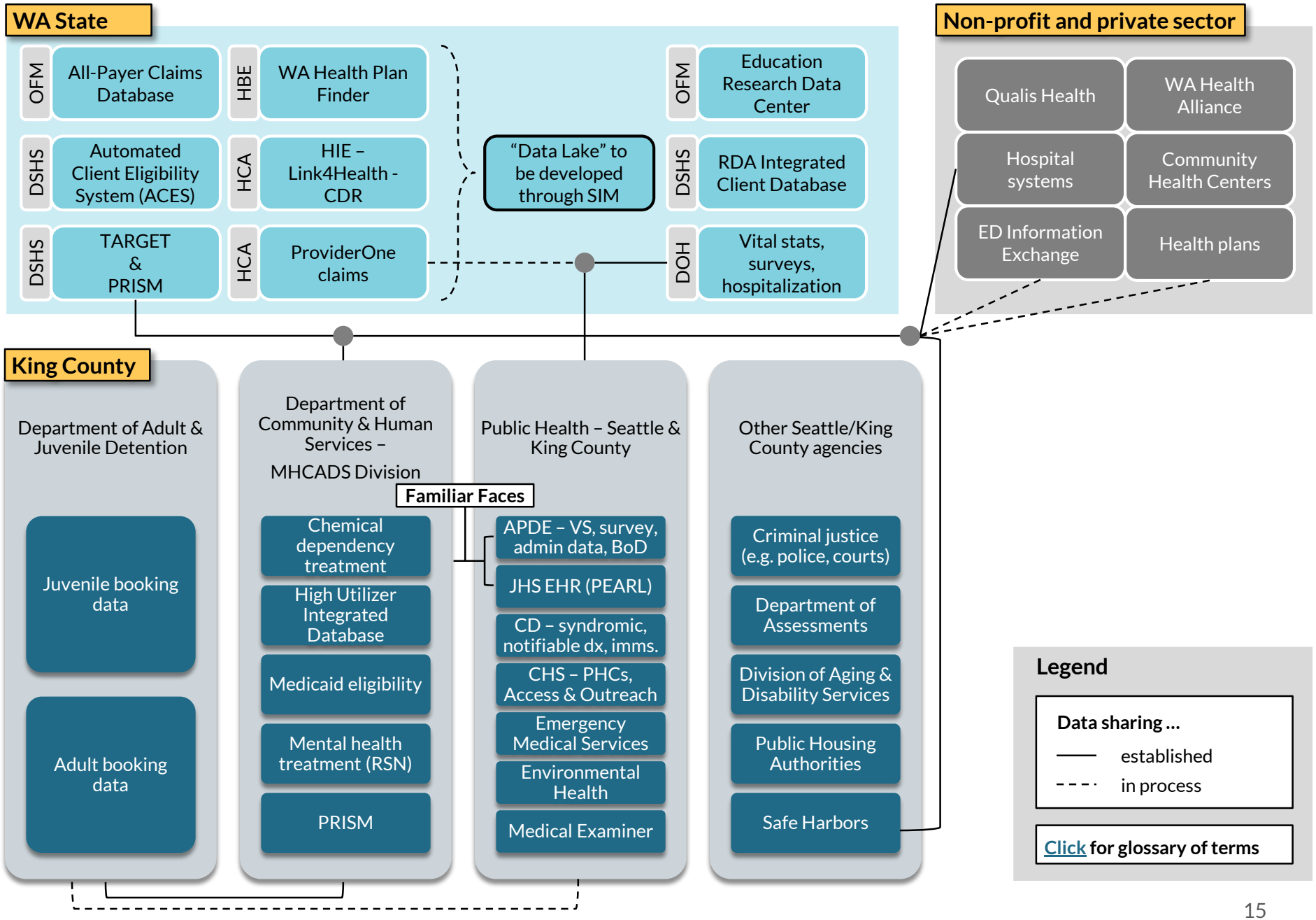
1. What factors support or inhibit LHHSD's ability to develop shared data?
2. Role of LHHSDs in building shared data through ACH context?
3. Is novel care coordination (King- Familiar Faces, Whatcom – Intensive Case Management) associated with better health care and jail outcomes?

Multi-ACH evaluation of building shared data and care coordination strategies



We need data integration to coordinate care across sectors and measure progress towards the Triple Aim, but what we have in King County is data fragmentation.

Landscape of King County data assets to measure progress towards the Triple Aim



Impact of data fragmentation

Data systems are program specific and largely do not talk with each other = data fragmentation

Health and human services providers struggle to:

- Provide whole person care
- Avoid care gaps and overlaps
- Quickly and easily report significant events to other providers

Analysts struggle to:

- Provide policymakers and program managers with actionable and timely information
- Accurately and rigorously measure progress

One solution to data fragmentation is to build an Integrated Data System

Shared, integrated, interoperable, open data – what's the difference?

Shared data[1]	• Sharing of individual or aggregate data between 2 or more entities • Often supported by a data sharing agreement, a formal contract documenting how data will be shared, used, and protected
Integrated data[2]	• "Integrated Data Systems link individual level data from different agencies to improve programs and practices through evidence-based collaboration"
Interoperability[3]	• Ability to interoperate - or mix - different datasets
Open data[3]	• Data that can be freely used, re-used and redistributed by anyone - subject only, at most, to the requirement to attribute and share

[1] iHRIS, "Creating a data sharing agreement". http://www.ihris.org/toolkit-new/pilot/presentation-creating-a-data-sharing-agreement/
[2] Actionable Intelligence for Social Policy. University of Pennsylvania, 2015. http://www.aisp.upenn.edu/
[3] Open Data Handbook, "What is open data?" http://opendatahandbook.org/guide/en/what-is-open-data/

Integrated Data Systems (IDS) used for care coordination and population-level analysis

IDS uses for health & human services providers

Learn	Gain deeper understanding of events and risk factors that shape a client's outcomes
Coordinate	Coordinate care with other providers to minimize care gaps and overlaps (whole person care)
Alert	Notify other providers of significant events

IDS uses for analysts

Plan	Gain deeper understanding of clients and service patterns to identify new policy initiatives
Do	Develop and refine programs and practices, and guide allocation of resources
Check	Evaluate the impact and cost-effectiveness of policies and programs

Adapted from Prashant, Kumar (2011). An overview of architectures and techniques for integrated data systems implementation. Actionable Intelligence for Social Policy, University of Pennsylvania.

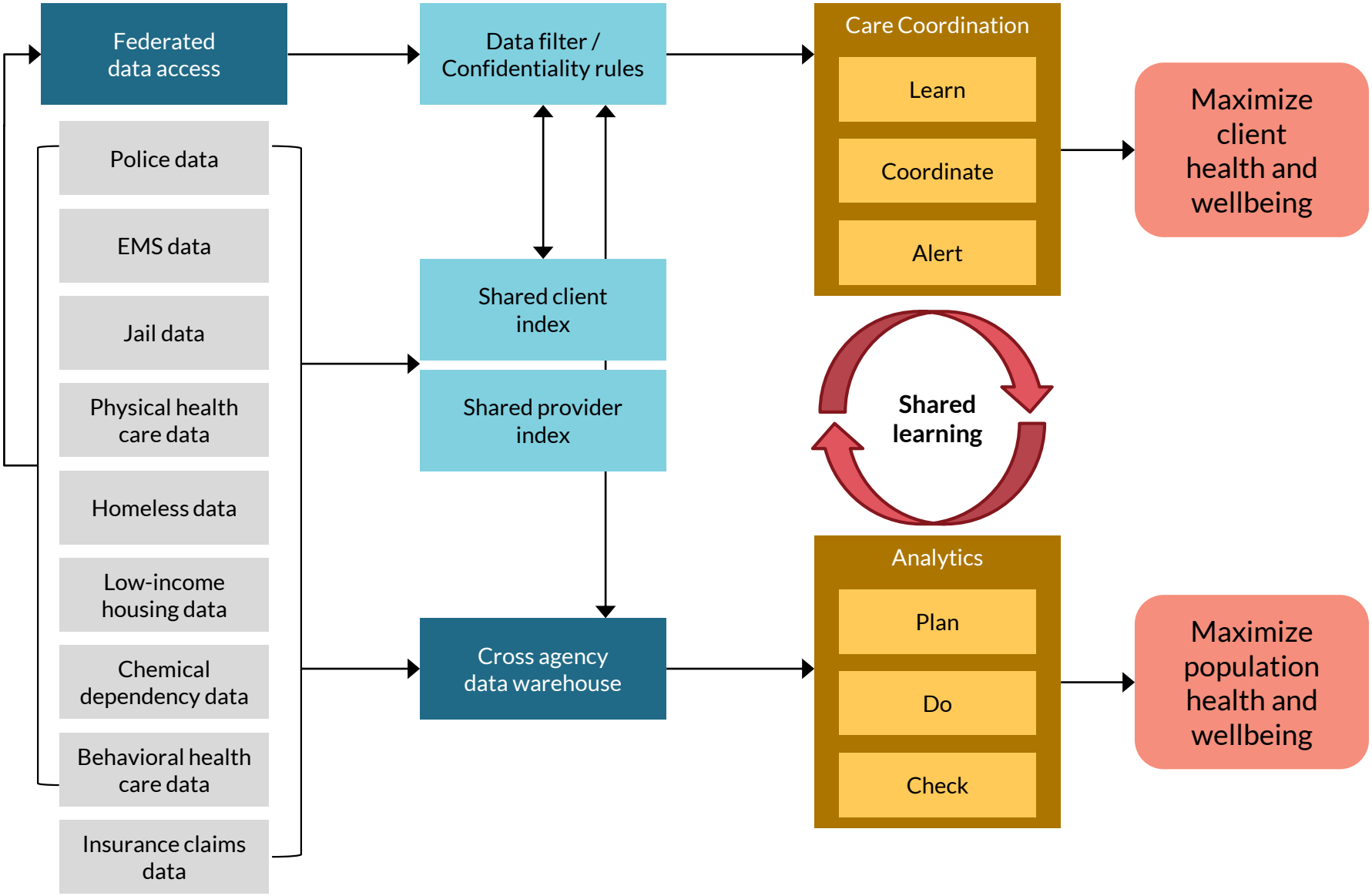
Three types of IDS

Increasing complexity and utility

Types of IDS		Local examples
Need based	Manual or automated linkage of cross agency data to address a specific program need	1. Familiar Faces 2. Integrated Client Database (DSHS)
Periodic	Periodic and routine linkage of cross agency data to address a class of program needs	Linked Birth-Hospitalization files (DOH)
Continuous	Continuous, automated linkage of cross agency data to allow real-time care coordination and analysis	High Utilizer Integrated Database (DCHS)

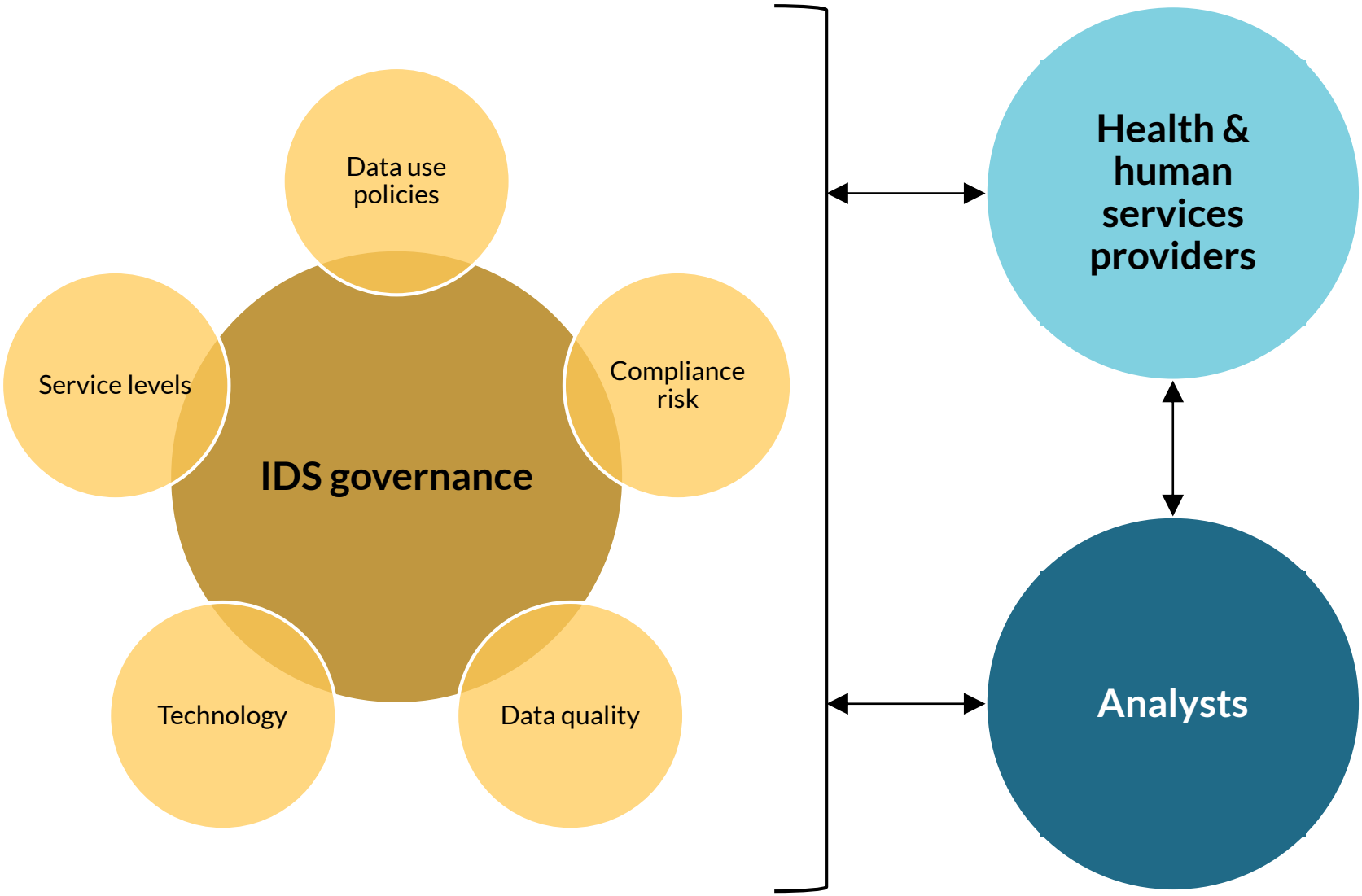
Adapted from Prashant, Kumar (2011). An overview of architectures and techniques for integrated data systems implementation. Actionable Intelligence for Social Policy, University of Pennsylvania.

Architecture of an IDS prototype



Adapted from Prashant, Kumar (2011). An overview of architectures and techniques for integrated data systems implementation. Actionable Intelligence for Social Policy, University of Pennsylvania.

IDS governance



Adapted from Prashant, Kumar (2011). An overview of architectures and techniques for integrated data systems implementation. Actionable Intelligence for Social Policy, University of Pennsylvania.

Towards integrated data in King County

Potential ideas (not yet vetted) for moving forward in King County

1. Build common understanding of data integration requirements, needs & priorities
2. Demonstrate how data integration can promote equity and social justice
3. Leverage existing initiatives to explore/test opportunities for data integration
4. Build on existing infrastructure, and align with the state and other ACHs
5. Identify costs and logistics for different approaches to data integration
6. Use a phased, continuous improvement approach to break down data siloes one by one

APPENDIX

FOR MORE INFORMATION, CONTACT:

Eli Kern MPH RN | Epidemiologist
Assessment, Policy Development & Evaluation
Public Health - Seattle and King County
Phone: 206.263.8727 | Email: eli.kern@kingcounty.gov

Glossary of Terms

ACH – Accountable Community of Health

AIMS - Advancing Integrated Mental Health Solutions, University of Washington

APDE – Assessment, Policy Development & Evaluation, PHSKC

BoD – Burden of Disease

CD – Communicable disease

CDR – Clinical Data Repository, Link4Health

CHS – Community Health Services, PHSKC

DAJD – King County Department of Adult and Juvenile Detention

DCHS – King County Department of Community and Human Services

DSHS – WA State Department of Social and Health Services

ED – Emergency department

EHR – Electronic health record

ERDC – WA State Education Research & Data Center

HBE – WA Health Benefit Exchange

HCA – WA State Health Care Authority

HHC – King County Hospitals for a Healthier Community

HIE – Health Information Exchange

HWC – Healthy Washington Coalition

IHME – Institute for Health Metrics and Evaluation

KCIT – King County Information Technology

MHCADSD – King County Mental Health, Chemical Abuse and Dependency Services Division

NSACH – North Sound Accountable Community of Health

OFM – WA State Office of Financial Management

OIC – WA State Office of Insurance Commissioner

PHC – Public Health Center

PHSKC – Public Health – Seattle & King County

PMW – Performance Measurement Workgroup, King County ACH

PRISM – Predictive Risk Intelligence System, DSHS

PSB – King County Office of Performance, Strategy, and Budget

RDA – Research & Data Analysis Division, DSHS

RSN – Regional Support Network

SIM – State Innovation Model

SWOB – Strengths, weaknesses, opportunities, and barriers

TARGET – Treatment & Assessment Report Generation Tool, DSHS

VS – Vital statistics

WAHA – Whatcom Alliance for Health Advancement

WHA – WA Health Alliance

Click to return to data landscape

Definitions

Accountable Communities of Health: In WA and in several other states around the nation, there is increasing recognition that local, community-level partnerships are powerful factors in the work to improve people's health and well-being. Regionally-based models to support collaboration, which go by different names in different states, are actively being developed and tested. Here in WA, the proposed structure is called "Accountable Communities of Health" (ACH) and is described in the state's health innovation plan, Healthier Washington. Washington defines an ACH as "a regionally governed, public-private collaborative or structure tailored by the region to align actions and initiatives of a diverse coalition of participants in order to achieve healthy communities and populations." The current King County ACH proposed path forward for 2015 has identified 5 existing cross-sector initiatives that could be supported by the ACH over the next year (Communities of Opportunity, Health-Housing Partnership Planning Group, Physical/Behavioral Health Integration, Familiar Faces, Medicare-Medicaid Dual Eligibles Demonstration), all of which have needs related to cross sector data access and analysis.

All-Payer Claims Database: In 2013, the Office of Financial Management was awarded a $3.4 million grant by the Center for Medicare and Medicaid Services to support increased health care price transparency by establishing a statewide all-payer health claims database (APCD). State House Bill 2572 called for the creation of the APCD, though with some significant restrictions. This bill describes what would be more accurately called a "Some-Payer Claims Database" in that only Medicaid and Public Employee Benefits Board program claims are mandatory, and commercial carriers and self-funded employers may contribute claims data on a voluntary basis. Additionally, the bill states that no individual data supplier (e.g. a commercial health plan) comprises more than 25% of the claims data used in any report or analysis generated from the APCD. If the APCD is strengthened to include *all* claims and access to data by government agencies and research teams is not cost prohibitive, the APCD would likely provide the state, issuers, providers, and consumers the information necessary to compare quality and cost of health care services and support progress towards a more equitable and cost-effective healthcare system.

Clinical Data Repository: See *Link4Health*.

Communities Count: A public-private partnership that provides data to monitor the health and well-being of King County communities, inform funding decisions, engage citizens, and complement existing civic, economic, and environmental indicators.

Department of Health "Informatics Roadmap": As informaticians, Bryant Karras and Frank Westrum of the WA State Department of Health will be developing and "Informatics Roadmap" for the state in 2015, in the context of the State Health Care Innovation Plan. The initial vision is to support exchange of data with the healthcare system, integrating data systems within and outside of public health, and making these data assets readily available to public health partners, including Accountable Communities of Health.

Department of Social and Health Services Integrated Client Database: The Research and Data Analysis (RDA) Division within DSHS have built the Integrated Client Database (ICDB) to support answering policy, program, and evaluation questions that require linked cross-sector data on an individual-level. The ICDB rests upon data sharing agreements that pull information from over 30 data systems across and outside of DSHS, including education, criminal justice, employment, claims, vital statistics, housing, child welfare, developmental disabilities, behavioral health, and economic services. The IDCB lives in a *potential state*, implying that a linked database can be constructed to answer a given evaluation or research question. External requests can be costly, beginning around $45,000+ per project.

Familiar Faces: One of the first HHTSP individual-level strategies, the goal of Familiar Faces is to improve the health, housing stability, justice system involvement, and costs of providing services to individuals who frequently use the King County jail and have behavioral health concerns. This is an ongoing partnership between PHSKC and DCHS facilitated by LEAN consultants. The project team is currently mapping the current states of jail, housing, and health processes for Familiar Faces in order to propose an ideal future state, which will be used in 2015 Q1 to identify potential interventions. In order to both assess current needs of Familiar Faces, and monitor impact of interventions over time, cross agency, cross sector data infrastructure is needed.

Health Information Exchange: The 2009 American Recovery and Reinvestment Act (ARRA) included the Health Information Technology for Economic and Clinical Health (HITECH) Act, designed to support state-level Health Information Exchange (HIE) infrastructure and encourage use of Electronic Health Records by providers through Meaningful Use incentives. In 12/2010, WA was awarded $11.3 million by the Office of the National Coordination for Health Information Technology to begin building an HIE. The Governor designated the Health Care Authority as the lead implementation agency, with the HIE Lead Organization as OneHealthPort, and the Foundation for Health Care Quality to oversee the work of OneHealthPort in pricing, privacy, and access policies. The HIE went live in 6/2011. Healthcare organizations that join the HIE are called "trading partners", and are currently able to share continuity of care documents, admit discharge notifications, community referrals and consult reports, Health Level 7 (HL7) messages including Admission, Discharge, Transfer and lab/procedure/clinical results, eligibility and benefits, immunizations, and ePrescribing. The annual subscription fee to join the HIE is proportional to annual revenue, and ranges from $600 - $48,000. As of 12/16/2014, the OneHealthPort website reported 133 healthcare organizations were participating across WA state.

More definitions…

Health Reform Evaluation Synergy: In 2013, PHSKC and the University of Washington Department of Health Services partnered to design a framework, based on national and local guidance, as well as key local priorities, to monitor the implementation and impact of the Affordable Care Act (ACA) in King County by proposing key quality assurance and evaluation questions based on existing and potential data sources. With the goal of developing a practical and transparent evaluation framework, the project team engaged with over 25 local, state and national public and private organizations to identify the framework's scope and metrics. During the course of this stakeholder engagement process, it became clear that there was a need for increased collaboration and synergy among local and state efforts to evaluate the impacts of health reform on health care and health outcomes in WA. This notion planted a seed that grew into a call for a meeting of government agencies, professional organizations, non-profits and evaluators to assess the current landscape of health reform evaluation efforts, clarify common barriers to conducting practical and rigorous evaluation, and identify opportunities for collaboration and synergy across agencies, sectors, and jurisdictional boundaries. Over the past 2 months, a group of 14 organizations have met to discuss these issues, and is currently working to identify priority ACA evaluation questions that are relevant to all stakeholder groups, clarify data access barriers and potential solutions, and propose a governance structure for moving this work forward.

Healthier Washington: Washington state's plan for how to transform its health care system and achieve the Triple Aim, submitted to the Center for Medicare and Medicaid Services as a proposal for a 4-year State Innovation Models Initiative Round Two Model Test Award. WA state was awarded a $65 million Model Test Award on December 16, 2014. Healthier Washington has proposed a substantial investment in improved analytics, interoperability and measurement of health system performance to support care delivery, clinical-community linkages, and improved health outcomes. Specifically, the plan proposes three major areas of investment. First, enhance the state's Health Information Exchange to improve interoperability of clinical records between sectors (e.g. physical, behavioral health) and health care organizations. Second, build a dedicated research and analytics partnership between RDA and the Department of Health informatics unit to integrate real-time client and population data sets across multiple sectors (with evaluation of Healthier Washington being led by the University of Washington Department of Health Services). Third, the Institute for Health Metrics and Evaluation will support Healthier Washington by mapping community health to better understand regional health, burden of disease, and potential barriers and behaviors that impact health. There is also some language around the intent to build **regional** data capacity through the ACH, but no specific approaches are identified in Healthier Washington.

Housing-Health Partnership Planning Group: A partnership of housing authorities, low-income housers, the Health Care Authority, Department of Health, and other organizations, led by Mercy Housing (one of the nation's largest non-profit low-income housers), to develop a sustainable business model for improving the health of multifamily affordable housing residents by using affordable housing as a platform for housing-health partnerships. This work is coordinated by leadership consultant Betsy Lieberman, founding director of Building Changes. Currently, Betsy is engaging with the King County Housing Authority and Partners for our Children, to explore the possibility of the latter building an integrated database and data portal to facilitate storage, analysis, and dissemination of housing data (Public Housing Authorities, Mercy Housing) and other datasets including Medicaid claims, vital statistics, and hospitalization data.

King County Affordable Care Act Quality Assurance and Evaluation Framework: A framework, developed through a partnership between PHSKC and the University of Washington, to monitor the implementation and impact of the ACA in King County. The Framework links fundamental goals of the ACA, key topic areas and indicators, an equity lens, and secondary and primary data sources. An initial report describing the Framework and baseline health outcomes and disparities in King County was disseminated in October 2014. Moving forward, PHSKC will strive to link this work with the Health Reform Evaluation Synergy effort.

King County Burden of Disease Assessment Tool: One traditional role of local health departments is to act as primary provider of community wide health information, stemming from the core public health function of assessment. Local health departments face major challenges in producing burden of disease information, including a lack of common methods, metrics, and infrastructure to quantify and visualize burden. To meet local information needs and address these challenges, PHSKC, in partnership with the University of Washington's Institute for Health Metrics and Evaluation (IHME), has received a $200,000 18-month grant from the de Beaumont Foundation to develop a King County Burden of Disease Assessment Tool, which began in January 2015.

King County Community Health Indicators: A set of indicators measuring the health of King County residents. It was developed to provide a broad array of comprehensive, population-based data to community-based organizations, community health centers, public agencies, policymakers and the general public. Community Health Indicators were conceived as a follow-up to the 2002 Institute of Medicine report, The Future of the Public's Health in the 21st Century, which emphasizes relying on data about the entire community to look at multiple determinants of health. The website will soon be updated to contain indicators used in the King County Hospitals for a Healthier Community's Community Health Needs Assessment.

King County Health and Human Services Transformation Plan (HHSTP): The HHSTP calls for a local shift from a "costly, crisis-oriented response to health and social problems, to one that focuses on prevention, embraces recovery, and eliminates disparities". It is in direct alignment with the Triple Aim of concurrently achieving better health, better care, and reduced costs. The HHSTP was accepted by the King County Council in 7/2013, received $1 million to jumpstart implementation in 11/2013, and convened a cross sector Advising Partners group in early 2014. The plan's has two initial strategies: 1) an individual-focused, whole person strategy designed to improve health and social wellbeing among "Familiar Faces", or adults with complex health and social needs that frequently utilize health and social services, and 2) a place-based strategy to improve health and social wellbeing in the neighborhoods that experience the greatest burden of ill health and disparities. The place-based strategy is supported by the Seattle Foundation through the Communities of Opportunity initiative (funded in 3/2014), and a Living Cities planning grant (funded in 5/2014).

And some more…

King County Hospitals for a Healthier Community (HHC): King County HHC is a collaborative of all 12 non-profit hospitals and health systems in King County and PHSKC. HHC members have joined forces to identify the most important health needs and assets in the communities they serve. The collaborative report will soon be available online. In addition to the indicators presented in the report, supplemental indicators will all be available on the King County Community Health Indicators website.

Link4Health: A multi-year initiative of the Health Care Authority to enable real time medical, dental, social service support and behavioral health care information to follow the patient across care settings and over time. A partnership with the WA's Health Information Exchange (OneHealthPort), Link4Health's first statewide service will be the Clinical Data Repository (CDR), which will provide authorized access to an integrated clinical record for Apple Health enrollees. The CDR will be launched in mid-to-late 2015 and staged over 3-plus years.

OneHealthPort: A private organization designated by the Health Care Authority as the Lead Organization in WA state for implementing the Health Information Exchange (see *Health Information Exchange*). In addition to the HIE, OneHealthPort also provides the provider credentialing service ProviderSource (vendor Medversant), as appointed by the Office of the Insurance Commissioner through State Senate Bill 5346 in 2009. Providers must regularly complete the credentialing process in order to obtain hospital/facility privileges and enroll in health plans as a participating provider. Providers enrolled in ProviderSource must attest to the accuracy of their data at least once every 150 days. The intent is that ProviderSource is the standard credentialing service for all health plans and hospitals in WA state.

Performance Measures Coordinating Committee: In 2014, the Washington State Legislature passed ESHB 2572, a law relating to improving the effectiveness of health care purchasing and transforming the health care delivery system. A portion of this legislation (Section 6) relates to the development of a statewide core measure set for health care quality and cost. In response, Governor Inslee appointed a 34-member Performance Measurement Coordinating Committee (PMCC) that was charged with recommending standard statewide measures of health performance by January 1, 2015. It is intended that use of these measures will enable a common way of tracking health and health care performance as well as inform public and private health care purchasers. Use of the measures is expected to start with the State as "first mover;" Healthier Washington calls for eventual alignment of measurement across public and private payers, using the core measure set as the basic set to which other measures may be added. The PMCC presented a final "starter set" of 54 population, clinical and health care cost measures on December 17, 2014.

Physical/Behavioral Health Integration: A statewide initiative driven by Healthier Washington with the goal of designing and implementing a fully integrated care and financing model for physical and behavioral health services.

Prevention Framework: As a key deliverable of the State Health Care Innovation Plan, DOH and HCA formed a public-private, multi-sector partnership to develop a comprehensive Prevention Framework as a blueprint for state and community partners to drive population health improvement. Among other things, the Prevention Framework proposes how the State, regional and local communities could measure their success, in alignment with the statewide core measure set. As Healthier Washington is implemented, DOH and HCA will work together to lead and govern the state's continued work on a Plan for Improving Population Health, to be completed in January 2016.

Robert Wood Johnson Foundation (RWJF) Public Health Services and Systems Research grant: Washington state's developing ACH, regional health collaborations of public health, clinical care delivery and human services with greater focus on prevention, intend to improve health and quality of care and ultimately reduce costs. PHSKC has received a grant from RWJF to support a study to assess the association of ACH activities, including shared data systems and care coordination strategies, with improved health and criminal justice outcomes for adults with complex medical and social needs. The project will assess ACH development processes in King and Whatcom Counties to assess factors that facilitate or inhibit the local human and health services departments' (LHHSD) ability to build regional shared data measurement and care coordination systems. This 2-year project began in February 2015.

State Health Care Innovation Plan**:** The final deliverable of the $1 million State Innovation Models Initiative Round One Model Pre-Testing Award, which was used to develop Healthier Washington.