UNIVERSITY OF CALIFORNIA UC Health

Center For Health Quality And Innovation

UNIVERSITY OF CALIFORNIA OFFICE OF THE PRESIDENT

REPORT:
UC CENTER FOR HEALTH QUALITY AND INNOVATION
CHQI Impact and Evaluation 2010-2016

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The Center for Health Quality and Innovation

SECTIONS

I. EXECUTIVE SUMMARY

The purpose of this report is to quantify and understand the overall impact of the UC Center for Health Quality and Innovation (CHQI) programs and projects since its launch in 2010. From 2011 to 2015, CHQI initiated a total of 53 grants to develop, implement, and spread innovative evidence-based programs at UC Health. CHQI also supported convenings of collaborators across UC Health's 6 health systems to share best practices, implement performance improvement initiatives, and develop system-wide standards of practice policies, procedures and processes. Additionally, CHQI initiated and supported collaboration with key partners (both internal and external to UC Health) to develop new, innovative UC Health clinical offerings.

Benefits: Projects and programs funded by CHQI have produced multiple types of benefits to the UC Health systems, particularly clinical quality improvements, such as decreased lengths of stay (LOS), complication rates and readmissions. As of 2016, we estimate that CHQI-funded projects and efforts at the UC health systems have added more than $65 million in benefits throughout UC Health, resulted in multiple publications, contributed to increases to the contribution margin, and secured innovative contracts for clinical services.

Barriers and Recommendations: Centralized coordination and support, as well as leadership commitment and endorsement are important to foster and monitor progress of initiatives during their growth phase before they become integrated at all UC health systems. Key barriers include variation in alignment of clinical priorities across health systems, lack of common infrastructure between individual UC health systems, lack of resources, need for early integration with existing health system initiatives to enhance sustainability, identifying appropriate project champions, and need for engagement with multiple stakeholders, such as non-clinical entities and outside vendors/stakeholders.

To facilitate ongoing innovation and quality improvement efforts, and sustain the improvement gains, a central entity is critical to focus on system-wide advancement of performance excellence and innovative practices—ensuring that improvement strategies are aligned with clinical and institutional priorities. CHQI is now well positioned to serve as that central platform for UC Health's focus on clinical and quality excellence and innovation in collaboration with the UC health systems.

II. INTRODUCTION

About CHQI

Successful improvement of healthcare quality and fostering innovation at an Academic Health system is a multi-pronged, multi-disciplinary effort that requires leadership endorsement, alignment with institutional priorities, funds and incentives, willingness to champion a project, and the engagement of colleagues and peers across the system. In 2010, the CEOs at the five UC Medical Centers (UC San Diego, UC Irvine, UC Los Angeles, UC San Francisco, and UC Davis), in collaboration with the senior vice president of UC Health at the UC Office of the President, funded and launched the Center for Heath Quality and Innovation (CHQI) to support UC Health's goal of driving healthcare value by ensuring better health outcomes, better population health and lowering healthcare costs.

Evolution of a system-wide approach to quality & innovation

CHQI embodies UC Health's evolution of a system-wide approach to improving healthcare quality and innovation. Prior to its inception, health care quality initiatives within UC Health were focused at the individual health system level. However, the national healthcare discussions that led to the Patient Protection and Affordable Care Act highlighted the need for additional approaches that could more rapidly transform UC Health to address the marketplace focus on healthcare value. Although each UC health system individually provided outstanding quality of care and fostered innovations to further improve quality of care, UC Health as a whole had not been able to leverage its scale to realize even greater value from its ongoing activities. As a result, UC Health leadership created CHQI to help foster this rapid transformation. The center was tasked with employing outreach efforts to identify and support innovative, transformative healthcare interventions and practices at UC Health that would improve the health of all Californians and influence healthcare nationally and globally.

UC Health operations encompass California's fourth-largest health care delivery system and the nation's largest health sciences training program. UC Health includes six academic health systems, 10 hospitals and 18 health professional schools and programs. UC staffs five trauma centers, provides half of all transplants and one-fourth of extensive burn care in the state.

CHQI is governed by a Board of Directors composed of the six UC medical school deans, the five UC health system chief executive officers, and chaired by the UC executive vice president for UC Health. CHQI is based at UC Health in the UC Office of the President in Oakland and is comprised of the executive director and a small coordinating staff.

CHQI received $15 million in funding from the five medical centers to support a series of grants that were initiated each year between 2011 and 2015. In 2013, the Office of Risk Services and CHQI created

a $10 million joint venture known as The Center for Quality and Innovation Quality Enterprise Risk Management (CHQI/QERM). All grants are scheduled to be completed no later than December 2017. The total funds allocation for the 53 grants is $15 million ($7.3 million from the medical center funding; $7.7 million from the Office of risk services funding). The remaining funds are used to support performance improvement efforts of multi-disciplinary collaboratives such as the UC Cardiac Surgery Consortium (see below), development of key partnerships, development of new, innovative UC Health clinical offerings, salaries and benefits, convenings (e.g., the CHQI colloquium), consultants, and expenses.

Overview of benefits and impact

Of the more than 50 grants awarded to UC Health practitioners to support the development and spread of best-practice initiatives, most were successful in improving outcomes. CHQI-funded programs have generated multiple types of benefits to the UC Health systems, particularly clinical quality improvements, such as decreased lengths of stay (LOS), complication rates and readmissions; financial benefits in realized annual savings, an increase in annual revenues, and subsequent external award funding. Other benefits include increases to the contribution margin, new types of patient revenue, and innovative contracts for UC Health clinical services.

During this same time, it became apparent that non-grantee providers and clinical leaders were interested in meeting with their colleagues across the system to share and compare various quality improvement efforts within their specialty areas and to learn from each other. Thus, a number of clinical collaboratives developed. The earliest collaboratives, cardiac surgery and primary care, both continue to convene and address quality issues. We have found some collaboratives are short-lived. Some stop after achieving identified objectives; some dissipate due to changes in resources, interest or priorities. Others tend to remain in place and continue to identify and address new opportunities and goals.

Conservatively, we estimate that CHQI-supported grants and collaboratives at the UC health systems have resulted in a more than 2.5:1 ROI in annual benefits throughout UC Health, from annual cost-savings and enhanced revenues. This does not include gains achieved through securing additional external funds such as new grant dollars. In addition, the projects have resulted in 58 peer-reviewed publications and numerous national presentations.

In Summary

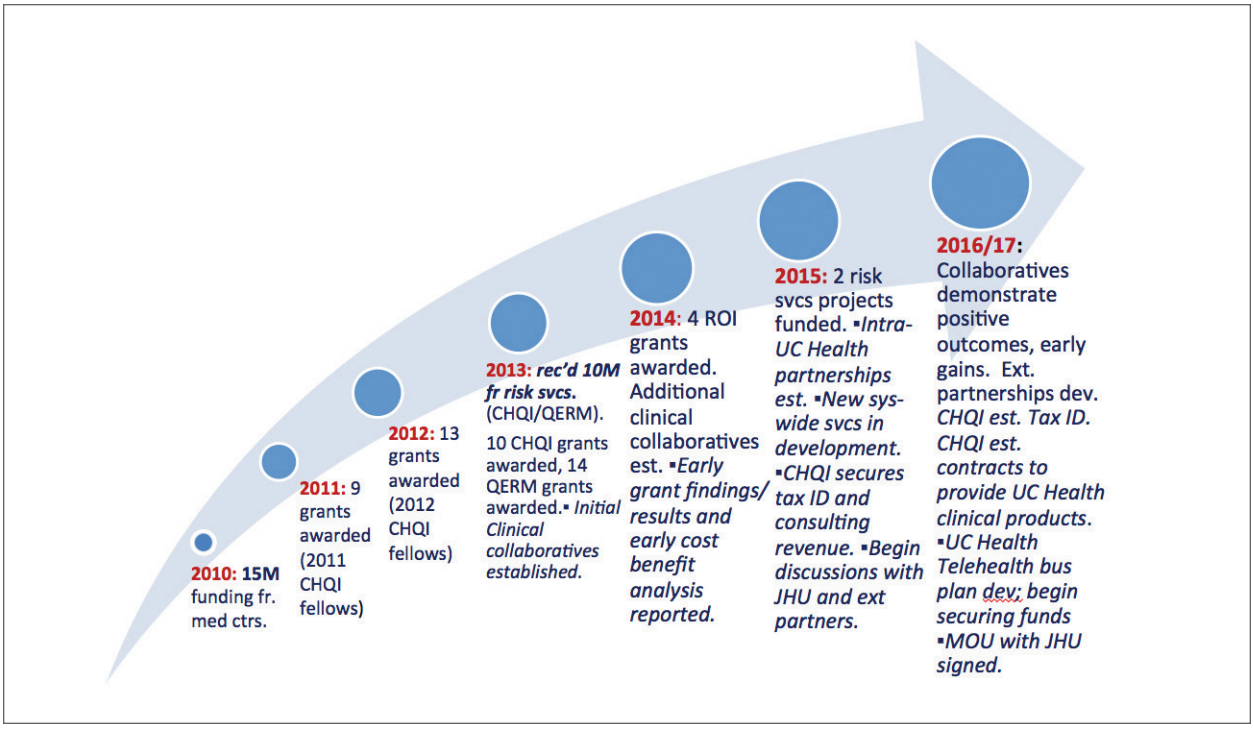
Initially, it was intended that CHQI would operate for 5-6 years and would be re-evaluated for impact in 2015. Due to a decrease in staffing and expenses, CHQI was able to extend operations until mid-2017 and is scheduled to sunset at that time. As an evolving experiment conceived to identify and implement scalable performance improvement initiatives and support innovation, CHQI has demonstrated great success. These successes have propelled CHQI to become in effect, the central entity by which collaborators across the system convene to develop, share, learn and implement performance improvement strategies and interventions on a system-wide scale. As stated by one grantee:

"At all campuses, this [CHQI] project has had a profound positive effect on the standardization of processes across campuses, and have locally enhanced the collaboration between healthcare departments and providers with the one specific goal of improving the safety and the quality of care of our patients."

We have learned that to successfully support and sustain robust system-wide clinical performance and quality improvement across a broad geographical expanse, *and* provide a vehicle to encourage and foster innovation, centralized focus and coordination is needed to nurture system-wide advancement of clinical and quality excellence and innovative practices. It is important to recognize that each collaborative is different—how system-wide groups address their objectives is contingent on specialty, resources, motivation and hierarchy within the group and the individual medical centers. There is no "one size fits all." It is essential that the organizing entity recognize the organic nature of the group development, the inherent difficulties in collaborating across an expansive geography, and that collaborative members come from differing healthcare cultures. We have learned to be flexible and open to a variety of collaborative structures as the members wrestle with how to best come together across a large system.

See **Figure 1** for an outline of CHQI activities and growth since its inception in 2010, to the end of phase 1 in June, 2017.

Figure 1. Timeline Summary



III. CHQI GRANTS

A key strength of UC Health is the innovation that happens at the individual campus and health systems. As a result, the initial focus for CHQI fostered further development of the most promising ideas from within the individual UC health systems. Project grants were awarded to groups within UC Health to further develop scalable innovations, with a preference towards multi-campus participation in developing and implementing system-wide interventions that improve outcomes. A second set of awards focused on providing fellowships to promising individuals to provide them protected time and leadership training to develop new projects at the individual UC health system, with subsequent awards made to locally successful projects to scale up for broader implementation across UC Health. All grants were designed as single and/or multi-campus projects.

Clinical quality improvements

As noted, CHQI awarded 53 grants from 2011-2015. Many have demonstrated improved clinical outcomes. Analysis of the grants indicates that many of the clinical quality improvement projects are associated with cost savings and revenue enhancement (see the following sections). To date, some notable projects include:

Surgical Enhanced Recovery Programs

- **Reduced median length of stay** for targeted procedures by 1 to 7 days.

Episode of Care Bundled Payments for Total Joint Arthroplasty Project

- **Readmission rate** for patients to UCSF **declined** from 4.3% to 0.7%
- Excluding outliers, **direct costs declined** by 4-5% per case.

Post-Operative Delirium in high-risk patients

- **Reduced** the **postoperative delirium rate** from a historical rate of 40% to <8%.

Surgical Site Infections

- **Reduced the UC Health standardized infection ratio** from 0.857 to 0.672 (less than 1 is better than the national baseline) for neurosurgery, orthopedic, and colorectal cases.

eConsults and eReferrals

- **Over 3000 eConsults** in 16 months among fourteen specialties at the 4 health systems after adoption of UCSF eConsult program
- eConsult site adoption rates of 40 to 85% for UC Health primary care providers
- eConsult **specialty clinic decompression**: 12% reduction at intervention clinics compared to 10% increase in control clinics in specialty referrals at one site

- eConsult **improved access** to specialty care: median times to specialty access in some clinics reduced from >40 days to 5 days.

Smoking Cessation

- **More than 5000 eReferrals** to the California Smokers' Helpline from UC Health.
- All UC Health sites are >87% for tobacco assessment of outpatient populations.

DVT Prevention

- **Reduced hospital associated pulmonary embolisms** and leg deep vein thromboses by 20% across UC Health.

Fall Prevention

- Sites experienced up to a **53% reduction in risk** of patient falls in the hospital.

Standardization/Optimization of CT Patient Radiation Doses

- **Substantial lowering of effective CT doses**, including an approximate 33% reduction in head CT dose, a 26% reduction in chest CT dose, and a 23% reduction in abdomen/pelvis CT dose across sites

Additional Quality of Care Improvements: CHQI projects have led to many improvements within the system, many of which are sustainable through information technology or changes to the electronic health record (EHR) system. Several highlights include:

- The 2011 project on radiation safety created the UCDOSE Virtual Symposium on Radiation Safety in Computed Tomography, an online medical conference made free to UC technologists that features over 100 lectures and 36 hours of continuing medical education.
- The 2011 project on fall prevention developed an education program and training videos to facilitate the 5P method of reducing falls.
- The 2013 UCD fellow /2014 ROI project on smoking cessation developed the first two-way referral system between an electronic health record system and the California Smokers' Helpline, now implemented throughout UC Health.
- The 2013 QERM project on improving neurosurgery quality has implemented a UC system-wide rollout of providing EMMI patient education materials pre-operatively to neurosurgical patients.
- The 2015 project on mitigation of hospital acquired pressure ulcers (PU) has resulted in an improved risk algorithm for assessing PU risk scores, and development of a low-cost pressure sensitive sensor which is currently in the pilot testing phase.

Project spread within UC Health

CHQI has provided an avenue to foster and spread innovations through the UC system. Some spread occurred organically, while others were spread with additional support from CHQI. Eight projects, mostly single site CHQI fellowship projects, were spread to other campuses through 2013 QERM and 2014 ROI initiatives. For example:

- The 2012 fellow project on antibiotic stewardship spread naturalistically from UCLA to UC Davis.
- The 2012 fellow / 2013 QERM project on palliative care in the ICU, started at UCSF and spread through all five campuses, training over 400 nurses
- The 2013 fellow / 2014 ROI project on eConsult and SmartReferrals, started at UCSF and spread through all five campuses.

Grant-Related Projected cost savings / revenues, project-related awards

CHQI projects have produced several types of benefits to the UC Health systems, including: clinical quality improvements such as a decrease in length of stay (LOS), complication rates and readmissions; financial benefits in realized annual savings ($6.8 million in 2015); and an increase in annual revenues (an additional $4 million in 2015). As more projects are sustained, scaled and spread across the system, an increase in improved outcomes, cost savings, and revenues should be expected in the coming years. Four single-campus projects that had a demonstrated cost-savings have been spread through additional CHQI funding initiatives.

See **Table 1** for a summary of grant-related financial impact.

Table 1: Summary Grant-Related Cost Benefits: 2014 to 2016 (Millions)

COST BENEFITS ($M)	2014	2015	2016	Total
Cost Savings	$3.5	$6.8	$7.6	$17.9
Increased Revenue	$4.0	$4.0	$26.5	$34.6
Additional External Grant Funding				$13.4
Total				$65.9

Cost-Savings: Annual savings to the UC system: approximately $6.8 million annually. Several projects demonstrated reductions in health care utilization, including two from the 2011 project cohort, two from the 2012 fellow project cohort, and three from the 2013 fellow cohort. Examples include (but are not limited to):

- The 2011 five campus venous thromboembolism (VTE) reduction project has estimated they prevented 140 VTE occurrences in 2013, which translates into annual savings of $1.9 million.
- The 2013 UCD /2014 ROI smoking cessation referral program generated nearly $880,000 in savings from reduced inpatient and outpatient health care use.
- The 2013 UCSF electronic consult program resulted in projected annual savings of $434,000 primarily through reduction in outpatient consultation costs plus averted emergency room and hospital visits.
- The 2011 two campus (UCLA/UCSF) fall prevention project estimates an additional annual savings of $3.30 million at Santa Monica UCLA Medical Center ($1.06 million) and UCSF Medical Center (Parnassus, $2.24 million). Most of these savings are from declines in nursing time spent on fall-related activities than from direct medical savings from prevented falls.

Increased Revenues: The savings to date likely have also led to similar amounts of increased revenues as they are nearly all due to reductions in hospital utilization, and subsequently were backfilled by other patients. Three 2012 fellow projects also increased revenues to the health care system, resulting in over $4 million in annual revenues to the UC system. Additionally, the pharmacy initiative added another $24.5 million to net revenues in 2016, which is not accounted in annual revenue projections. Examples include (but are not limited to):

- The 2012 UCD specialty pharmacy initiative initially led to contracts which generated $1.36 million in revenues during the fellowship, which projected annually resulted in an additional $2.1 million in revenues. This program has since grown to generate a net revenue of $24.5 million for FY 16 at UCD.
- The 2012 UCLA elective surgery discharge program increased net revenues through a discharge pharmacy program for surgical services by $639,000 during the fellowship, which projected annually would result in $1.29 million in revenues.

The 2012 UCSD emergency room throughput program reduced the total number of patients who left without being seen by nearly 800 patients, which projected annually resulted in an additional $674,000 in revenue.

Additional External Grant Funding: Four project teams have received an additional $13.4M (approx.)in external funding based on their CHQI work. These projects are largely from the 2011 project cohort and

the 2012 fellowship projects, which suggest that this number will grow over time. These awards include (but are not limited to):

- $7,900,000 from the National Institutes of Health (NIH), $1,881,000 from the Patient Centered Outcomes Research Institute, and $1,500,000 from the Centers for Disease Control to the 2011 radiation safety project
- $900,000 from NIH and $750,000 from the American Stroke Association/Bugher Foundation to the 2011 wearable sensor project
- $750,000 from the Health Resources and Services Administration and $54,000 the Children's Partnership to the 2013 UCD pediatric telehealth project.
- $400,000 from the Betty and Gordon Moore Foundation to the 2011 VTE reduction project
- $180,000 from the Cambia Health Foundation to the 2012 UCSF palliative care intervention.
- $150,000 from the California Health Care Foundation to the 2012 UCSF orthopedic bundled payment project.

Other Projected Savings and Revenues: We anticipate that many of the CHQI projects will generate additional savings and revenues long after the expiration of the projects, or have provided key support that will lead to additional system savings and revenues. For example, the 2012 fellowship / 2013 QERM project on palliative care in the ICU enabled the formation of a UC-wide inpatient palliative care service consortium. Recent estimates have found that this consortium UC medical center inpatient palliative care services generated over $27 million in direct cost savings for UC Health in 2015.

See **Appendix A** for a summary of combined grant-related projected cost benefits: savings / revenues, project-related awards to date

Dissemination and External Peer-Review Recognition

More than 55 papers have been published based on work funded by CHQI, including papers in PLOS ONE, Pediatrics, American Journal of Critical Care, JAMA journals, and five papers in Journal of Hospital Medicine. This number will grow over time as there are several more papers which have been accepted and pending publication, other manuscripts in preparation, and numerous presentations at national and local meetings. See **Appendix B** for a listing of all publications to date.

CHQI sponsored projects have been gaining additional recognition. The 2011 five campus venous thromboembolism (VTE) reduction project was recognized in 2015 by the US Centers for Disease Control as one of eight national Healthcare Acquired Venous Thromboembolism (HA-VTE) Prevention Challenge Champions.

IV. SYSTEM-WIDE COLLABORATION/ NEW APPROACHES TO HEALTHCARE DELIVERY

Although UC Health leadership meets regularly, prior to CHQI there was no similar formal mechanism to convene leaders at the individual health system level within service lines or functional areas to exchange learning and collectively work on improving quality. In addition to the system-wide collaborations developed through grant awards, system-wide collaboratives in key strategic areas such as cardiac surgery, primary care, and maternal fetal medicine were convened. Many of the collaboratives that were also initially supported through awards have continued to be active even after the end of the award.

Additionally, CHQI has sponsored system-wide colloquiums to encourage even broader exchange between its sponsored projects and collaboratives, UC Health leadership, and other interested members of the UC Health community. Between 2012 and 2015, the CHQI colloquiums brought together over 800 medical center executive leaders, fellows, professional school faculty, and outside experts in healthcare quality and innovation. These colloquiums have been well attended, with the largest colloquium comprising nearly 350 participants.

CHQI Collaboratives

CHQI collaboratives aim to be system-wide catalysts to improve performance by leveraging the scale inherent within a multi-billion dollar health system, thus enabling UC Health to provide high-value, system-wide services beneficial to both the individual medical centers and to UC Health overall. In particular, collaboratives aim to:

1. Improve system-wide efficiencies and performance
2. Support development of system-wide standards
3. Facilitate sharing, adoption, and dissemination of best practices
4. Assist in system-level and individual medical center performance improvement
5. Reduce variability in costs and quality
6. Support system-wide contracting

Since 2012, there have been numerous CHQI-supported collaboratives across UC Health. Examples of the most recent collaboratives (initiated in 2016) include:

UC Health Sepsis Collaborative

- Physician and nursing champions at all UC health systems collaborate to share best practices, solutions to common barriers/obstacles, methodologies for pulling data required for core measure reporting. Goal: positively impact patient safety and clinical performance at each site.

UC Health Bundled Payment Collaborative

- UCSF's Office of Population Health has been a champion in the Bundled Payments for Care Improvement Initiative total hip/knee joint bundles and is sharing the lessons learned with UC campuses involved in the mandatory Comprehensive Care for Joint Replacement program; CMS continues to mandate more bundled payment and Alternative Payment Model (APM) development for various services lines.

Population Health Collaborative

- Multi-disciplinary system-wide collaborative that includes Health services researchers, providers, CMIOs to develop a pilot program demonstrating a system-wide population health approach.

Interventional Neuroradiology Collaborative (in development)

- Partnering with procurement for a system–wide clinical quality/physician-led procurement initiative for focused performance improvement. Goal: reduce variability in care across UC Health, become a nationally recognized body to develop guidelines and recommendations, develop value-based models of care and APMs (e.g., bundled stroke payment models) to take advantage of MACRA incentives.

Pediatrics/ ACHIEVE collaborative (in development)

- New, system-wide collaborative focused on developing pediatric telehealth services to reduce costs and improve child healthcare. May impact/complement PRIME, MACRA, and UC's Childrens' Medi-Cal efforts.

The two longest running collaboratives, Cardiac Surgery and Primary Care, are discussed below. See **Appendix C** for an in-depth review and detailed descriptions of both collaboratives.

About the UC Cardiac Surgery Consortium

- This CHQI consortium, formed in 2012, is comprised of the department chairs for cardiac surgery and Society of Thoracic Surgery nurse coordinators and nurse champions from cardiac surgery at the 5 UC health systems. The consortium committed to developing and implementing a cardiac surgery performance dashboard to identify quality improvement opportunities, monitor ongoing performance and outcomes, and create an open forum to share ideas and best practices for implementing and standardizing evidence-based interventions.

The objectives of this consortium are to support system-wide and individual performance improvement initiatives that will be measured by 3 key metrics: 1) improving outcomes, 2) reducing practice and outcome variability within and among the five UC medical centers, and 3) reducing costs and cost variability within and among the five UC medical centers.

Successes include:

- Readmissions reduction over the past four rolling quarters.
- Consistent improvement toward better blood utilization.
- Improved preoperative instructions and discharge protocols.
- Demonstrated decrease in overall service costs of care and increases in profit margins.

The dashboard gives the consortium the flexibility to address specific areas of focus on a deeper level, continue reporting and monitoring other clinical quality and cost drivers, and identify new opportunities. As the group moves forward, new improvement opportunities, become apparent—most recently, length of stay, ICU delay and CABG bundled payments.

About the UC Primary Care Collaborative

- The UC Health Primary Care Collaborative began in March 2013 and is comprised of primary care leadership from all health systems to shape the future of primary care at UC Health. At the initial meeting collaborative participants identified five areas of focus: 1) understand how primary care is organized at each campus, 2) understand the local market forces, 3) detail how transformation is being approached, 4) define successes and challenges, 5)determine what can be accomplished at a UC system-wide level.

  As the participants discussed their challenges and ideas regarding advanced primary care, themes began to develop: throughput, access, better discharge planning, complex care management, appropriate panel size adjusted for risk and complexity, and various clinical measures such as statin compliance.

  By engaging a multi-disciplinary group, the collaborative has successfully shared and implemented best practices that have led to improved patient care across the medical centers.

  Successes include:

  - Sharing and adoption of a care coordination/patient navigator model that resulted in increased patient and provider satisfaction, improved outcomes and cost savings.
  - The development of a common conceptual framework and the identification of key parameters for successfully operationalizing empanelment. A comprehensive whitepaper addressing key questions about empanelment and panel size was generated from this effort.

Developing internal and external partnerships

CHQI has developed partnerships with other internal UC and external entities to continue to foster improvements in quality, increase and disseminate quality efforts, and spur innovation—thus positioning UC Health nationally. An early partnership with UC Office of Risk Services to reduce UC medico-legal risk led to the development of a joint initiative, the Center for Quality and Innovation Quality Enterprise Risk Management (CHQI/QERM), to provide project grants to improve perioperative quality of care to reduce subsequent surgical complications.

CHQI has also developed a memorandum of understanding (MOU) with the Armstrong Institute for Patient Safety and Quality at Johns Hopkins Medicine to develop joint bi-coastal quality improvement initiatives in our respective health systems to impact population health, create a joint venture to engage physicians in supply chain and procurement to positively impact outcomes, and explore opportunities to create a consortium of academic medical centers to demonstrate the value of academic healthcare in research, education and care delivery.

In addition, the Athena Breast Network, which is a separate network of UC Health providers and researchers across all UC medical centers, has partnered with CHQI to provide personalized breast health services for Athena's *WISDOM Trial* to a growing number of California-based employers, Blue Shield of California, and Anthem/UC Care patients *(WISDOM: Women Informed to Screen Depending on Measures of Risk).*

About the Athena Breast Health Network/ WISDOM Trial

- Created and led by Dr. Laura Esserman at UCSF, The Athena Breast Health Network is a collaboration among the five UC medical centers, the Graduate School of Public Health at UC Berkeley, the Sanford Health system based in Sioux Falls, SD, and many other public and private partners. The Network takes an interdisciplinary approach by design, and its participants work together across fields including: epidemiology, genetics, molecular biology, psychology and social and behavioral sciences, primary care, radiology, pathology, oncology, surgery and health services research.

  The WISDOM Study is designed to test an approach to breast cancer screening – optimizing breast cancer detection for higher-risk women while reducing the unintended consequences of current screening practices for lower-risk women. The trial aims to prove that personalized screening makes better use of available resources, screens women at intervals appropriate to their risk, improves compliance and decreases patient anxiety.

  CHQI has partnered with the Athena Breast Health Network with the goal of enabling UC Health to provide personalized breath health care via its health systems—initially to all UC Care enrollees and eventually to enrollees in other health insurance plans (e.g., Anthem, Health Net, CMS/Medi-Cal) and self-ensured employers.

- Athena was awarded a PCORI grant to implement the WISDOM Trial as a "Pragmatic Trial". The requirement for this type of grant is that the clinical services must be covered by a payor. Grant funds cannot be used to pay for the services.
- Initially, Blue Shield agreed to cover the Athena's personalized breast health services as "Coverage with Evidence Development" (CED).
- CHQI has obtained a tax ID number to operate as a "virtual office" for Athena and worked with UCOP Office of General Counsel and contracting personnel to contract directly with Blue Shield and Anthem as the entity "housing" Athena. This enabled Athena to provide the WISDOM Trial services through UC Health.
- CHQI is partnering with Athena and *Salesforce Healthcare*, which provides Athena's IT platform to manage work and patient flow. This platform provides the services required for capturing, downloading and batching the billing codes, and sending them to the 3rd party billing entity on behalf of CHQI/Athena.

New system-wide offerings

As UC Health has assumed a greater role and presence, CHQI, has transitioned from individual grant making and monitoring to a proactive center for clinical integration across UC Health. It has expanded its scope to create and implement system-wide strategies aimed at developing new clinical services and approaches at UC Health that will lead to better outcomes, improved value, new revenue, and increase patient volume. CHQI is developing services that can leverage the quality and expertise of UC providers on a much broader scale not limited by geography. Development is underway for service lines in areas such as tele-psychiatry, and workers' compensation services.

CHQI Tax ID: CHQI is exploring opportunities to develop new policies and processes for UC Health to contract directly with payors to offer system-wide services by creating an umbrella approach to provide high quality services from providers across the UC health systems. As described in the Athena/WISDOM Trial above, through the creation of a separate tax ID, CHQI is now able to serve as a virtual office for providers from the five UC health systems to provide services rather than requiring separate contracts to be created with each individual UC health system. The first agreement was signed in 2016, as CHQI entered into an agreement with Blue Shield so that UC Health can support the provision of Athena Breast Health services virtually. This is the first time a commercial payor has recognized a virtual entity for health care services. This is ground-breaking and enables UC Health to develop new types of contracts that will attract new patients and drive new revenue to all of the health systems.

UC Health Telehealth: At the end of 2015, CHQI spearheaded efforts to create a system-wide UC Health Telehealth program that integrates medical expertise on all campuses and will be available to patients, referring providers and payers using telemedicine and complementary technologies. The vision is to combine the world-class expertise of University of California from all health sciences campuses

to make them conveniently available to those seeking health care advice through the seamless use of telehealth technology.

Partnering with UCOP's CIO and the telehealth physician champion, CHQI hosted several all-campus convenings of telehealth experts and interested individuals from the UC system. Those events reinforced the enthusiasm to move forward to develop a UC Health Telehealth Plan. We also engaged a consulting group with Silicon Valley experience to develop a preliminary business plan. One of the main out-puts of business plan development was the need to stay focused and rapidly expand once established. To that end, we decided to focus on operationalizing one initial clinical service line to start. A scan of the external healthcare environment indicated that Tele-Mental Health would be the best fit and received unanimous support among campuses. The UC Health Telehealth concept was endorsed by campus CEOs, and we are now in the process of securing the funds needed to properly launch this new entity.

Our advisors and telehealth experts agree that the collective power of all campuses could surpass the power of any campus individually and allow the leveraging of deep content expertise with innovation, efficient customer service and cost effectiveness. This type of service, which will offer patients the ability to virtually access providers in any of the UC health systems has never been developed or offered before at UC. To date, we have had many promising and productive conversations with the commercial payers for UC self-funded health plans and with other potential partners, and are confident we will secure the initial funds needed for launch.

Workers' compensation: In 2015 a personal services agreement (PSA) was executed between Randall and Quilter Health Interests (a property and casualty insurance holding company, focused on workers' compensation) and UCOP/CHQI to develop workers' compensation services for eligible patients. CHQI received a monthly, non-refundable consulting fee to develop services—specifically to address opioid dependency as a result of work-related injuries.

The initial service line contract is with the Center for Behavioral and Addiction Medicine (CBAM) at UCLA. Subsequently, an agreement for services was executed with the assistance of UC Health's contracting office with all health systems to manage eligible patients for agreed-upon fees.

While it has taken much longer than anticipated to launch this program, as a result of this effort, from the end of 2016 to date, 43 unique patients are currently in treatment at UCLA/CBAM. New patients are referred weekly.

V. LESSONS LEARNED

Through the CHQI experience, several factors have been identified that affect the ability to rapidly develop, implement, and sustain performance improvement initiatives that can ensure we are delivering high-value care throughout the system. These include:

- **Variation in prioritization of system-wide projects.** Variation in prioritization by individual UC health systems naturally exists due to specific health system priorities and readiness for adoption. To increase the likelihood of success and sustainability, there must be engagement with individual UC health system leadership to align priorities and secure endorsement of system-wide future projects to ensure that both individual and system-level goals are addressed.

- **Lack of common infrastructure between individual UC Health systems.** Despite substantial progress, further development will ensure rapid adoption, adaptation, and implementation of programs throughout UC Health. Many of the CHQI-funded projects can act as platforms to build the common infrastructure needed between systems for other endeavors.

- **Measurability and evidence of success.** The development of any initiative (either through collaboration, grant, or partnership) must have measurable goals, metrics and processes to monitor progress and determine whether or not an initiative is successful. System-wide efforts without agreed-upon goals that inform the development of common process measures and activities designed to achieve identified goals will not be successful.

- **Sustainability of projects.** Early integration with individual existing UC health system initiatives can lead to natural sustainability. Future projects can work earlier with individual UC health system leadership so they can be integrated for sustainability. Additionally, many projects have built in protocols/order sets into the electronic health record system that enhances sustainability.

- **Project champion selection.** Some project champions have been too junior to effect needed change. Although giving future leaders experience is also important, pairing these individuals with senior individuals who are willing to step in as needed can minimize these issues.

- **Multi-faceted engagement.** Every collaborative has its own "chemistry", however, in order to successfully scale/spread an evidence-based initiative, engagement with non-clinical entities such as IT, procurement, and outside vendors/stakeholders at the medical center level and/ or system-level is key.

Centralized coordination and support is important to foster and monitor progress of initiatives during their growth phase before they become integrated at all UC health systems. While these barriers are not easy to overcome, increased recognition and focused action to minimize the effects of these barriers will allow for more rapid adoption of programs that will improve the quality and value UC Health provides.

VI. FUTURE DIRECTIONS

Healthcare and business leaders recognize the profound quality implications of an integrated enterprise to ensure sustainability and growth in a value-based environment. CHQI is well positioned to serve as the central platform for UC Health's focus on system-wide advancement of clinical and quality excellence and innovation in collaboration with the UC health systems. CHQI's strategy is to provide an infrastructure that fosters the engagement and collaboration of key stakeholders and multi-disciplinary domain experts in developing sustainable and scalable programs that promote systematizing the development and rapid spread of high-value healthcare practices that result in the best possible outcomes at the lowest cost. Improved patient outcomes, access, and decreased healthcare costs (revenue enhancement) will be achieved through the development and spread of innovative research, products and practices; establishing cross-institutional processes and policies; and creating a culture of adoption and standardization of best practices across all UC Health entities. Planned future efforts for CHQI should include:

- Development of internal and external strategic partnerships that will improve the value of our care delivery model through innovations in leveraging patient data, expanding access, reducing costs, and enhancing quality.
- Development of partnerships with payors and key stakeholders to fund efforts and share gains.
- Expansion of partnerships with internal leveraging-scale-for-value initiatives to improve the value of our care delivery model through reducing costs.
- Spearheading the development of system-wide health services that can offer new revenue streams.
- Expansion of platforms for collaboration among UC health system clinical service lines to focus on improving the value of our care delivery model, and collaboration across UC health system clinical service lines on broad issues, such as bundled payment and palliative care.
- Identification and support for innovative efforts that align with collective priorities of UC Health and specific priorities of the UC health systems.

VII. CONCLUSION

During the early phases of establishing UC Health as a significant entity, CHQI was a grant making organization, intended to distribute and manage funds provided by the health systems that would support (siloed) quality improvement projects at one or more health systems. However, as UC Health continues to mature and assumes a greater role in the in the strategies, growth and integration of the 6 independent UC health systems (e.g., the development of ACOs), CHQI has begun to transition from a grant-making entity to establishing itself as a center for system-wide integration of multi-campus clinical, and clinically related, (e.g., IT, procurement, telehealth) efforts.

As described in this report, the impact of the efforts initiated by CHQI grantees, collaborators, and partners has been great, yielding a wide range of gains. These include; improvements in patient outcomes, cost savings and revenue enhancements, leadership development, new / innovative product development, new patient volume, patient and other stakeholder engagement, and partnership creation.

Throughout the UC Health enterprise there is increasing receptivity to a system-wide focus of various initiatives. However, clinical care and quality (the core business of healthcare) has yet to be standardized from a market and outcome perspective. To date, there is no centralized, clinically-focused organizing entity at UC Health. CHQI has, by default, become that entity—convening policy makers and key stakeholders to develop and actualize system-level clinical strategies.

It has been agreed upon by UC senior leaders that one of the objectives of the 6 individual UC health systems is to learn from one another in order to efficiently and rapidly standardize and monetize clinically-integrated efforts. CHQI has demonstrated success in fostering collaboration among and between the 6 UC systems. Emphasis on the integration of clinical/non-clinical efforts throughout the UC Health enterprise (for example, the integration of procurement with provider preference) would result in 4 areas of gains:

1) Monetization of integrated efforts (new sources of revenue and revenue enhancement)
2) Improved access and outcomes across the systems
3) Reduced costs and greater gain sharing across the systems
4) Culture shift and change (e.g., recognition of UC Health as a fully integrated entity)

Given CHQI's unique relationship with the health systems and UC Health, CHQI is well-positioned to bridge UC Health and the health systems, as a central entity accelerating learnings and best practices, improving efficiencies, and driving value throughout the UC Health enterprise. Furthermore, CHQI, with its history of forging connections between systems and providers can fill the non-clinical-to-clinical gap by integrating clinical quality with non-clinical initiatives, thereby increasing the benefits of all enterprise-wide efforts.

VIII. APPENDICES

Appendix A: Summary of Grant-Related Projected Cost Benefits: (Combined Savings, Revenue Enhancement, and Grants between 2014 to 2016, in $Millions)

COST BENEFITS ($M)	2014	2015	2016	Total
Cost Savings	$3.5	$6.8	$7.6	$17.9
Increased Revenue	$4.0	$4.0	$26.5	$34.6
Additional External Grant Funding				$13.4
Total				$65.9

Cost Savings

- The 2011 five campus venous thromboembolism (VTE) reduction project has estimated they prevented 140 VTE occurrences in 2013, which translates into annual savings of $1.9 million.
- The 2013 UCD /2014 ROI smoking cessation referral program generated nearly $880,000 in savings from reduced inpatient and outpatient health care use, with projected savings added in 2016.
- The 2013 UCSF electronic consult program resulted in projected annual savings of $434,000 primarily through reduction in outpatient consultation costs plus averted emergency room and hospital visits.
- The 2011 two campus (UCLA/UCSF) fall prevention project estimates an additional annual savings of $3.30 million at Santa Monica UCLA Medical Center ($1.06 million) and UCSF Medical Center (Parnassus, $2.24 million). Most of these savings are from declines in nursing time spent on fall-related activities than from direct medical savings from prevented falls, projected savings were added in 2015.
- The 2011 UCSD emergency room psychiatric intervention resulted in approximately $146,000 in savings from reduced ED length of stay over two years, or an annual savings of $73,000.
- The 2012 UCSF palliative care intervention resulted in 45 additional palliative care consults in the ICU, which resulted in $167,000 in annual savings from reduced ICU bed-days.

- The 2012 UCSD colorectal postoperative program reduced length of stay by 4.5 days for high risk segmental hemicolectomy patients and 0.9 days for moderate risk segmental hemicolectomy patients, which resulted in projected annual savings of $553,000.
- The 2013 UCI enhanced recovery after surgery program reduced length of stay by 2 days for abdominal surgery patients, which resulted in projected annual savings of $816,000.
- The 2013 fellow project on the Urology Surgical Home found its protocols are reducing approximately $10,000 to $20,000 per case for urologic procedures.

Increased Revenue

- The 2012 UCD specialty pharmacy initiative initially led to contracts which generated $1.36 million in revenues during the fellowship, which projected annually resulted in an additional $2.1 million in revenues. This program has since grown to generate a net revenue of $24.5 million for FY 16 at UCD.
- The 2012 UCLA elective surgery discharge program increased net revenues through a discharge pharmacy program for surgical services by $639,000 during the fellowship, which projected annually would result in $1.29 million in revenues.
- The 2012 UCSD emergency room throughput program reduced the total number of patients who left without being seen by nearly 800 patients, which projected annually resulted in an additional $674,000 in revenue.

Additional External Grant Funds

- The 2011 radiation safety project generated $7,900,000 from the National Institutes of Health (NIH), $1,881,000 from the Patient Centered Outcomes Research Institute, and $1,500,000 from the Centers for Disease Control
- The 2011 wearable sensor project generated $900,000 from NIH and $750,000 from the American Stroke Association/Bugher Foundation
- The 2013 UCD pediatric telehealth project generated $750,000 from the Health Resources and Services Administration and $54,000 the Children's Partnership
- The 2011 VTE reduction project generated $400,000 from the Betty and Gordon Moore Foundation
- The 2012 UCSF palliative care intervention generated $180,000 from the Cambia Health Foundation.
- The 2012 UCSF orthopedic bundled payment project generated $150,000 from the California Health Care Foundation

Appendix B: CHQI-Supported Grant Publications

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Appendix C: UC Cardiac Surgery Consortium and UC Health Primary Care Collaborative

UC Cardiac Surgery Consortium

Background

The department chairs of the UC Health Cardiac Surgery Programs launched the UC Cardiac Surgery Consortium in 2012 with support from UC medical center leadership and CHQI. The consortium is comprised of the department chairs and Society of Thoracic Surgery (STS) nurse coordinators and nurse champions from cardiac surgery at the five UC medical centers. The consortium committed to developing and implementing a cardiac surgery performance dashboard to identify quality improvement opportunities, monitor ongoing performance and outcomes, and create an open forum to share ideas and best practices for implementing and standardizing evidence-based interventions.

The objectives of the consortium are to support system-wide and individual performance improvement initiatives that will be measured by 3 key metrics: 1) improving outcomes, 2) reducing practice and outcome variability within and among the five UC medical centers, and 3) reducing costs and cost variability within and among the five UC medical centers. To achieve these goals and objectives, CHQI and the consortium members committed to a strategy that would ensure high-value cardiac surgery services. To fulfill this commitment each medical center designated a nurse coordinator and/or data manager with full support of the cardiac surgery department chair.

Through a model of consistent communication and documentation, the consortium has been able to monitor and present outcomes and status reports that analyze the UC Health cardiac surgery clinical and cost data (at each medical center and system-wide) to identify best performers and areas of opportunity in five key measures: 1) readmissions, 2) incidence of post-op atrial fibrillation (POAF), 3) blood utilization, 4) ventilator time, and 5) non-clinical drivers of ICU length of stay (LOS). (This last measure was added at a later date).

Data Integrity

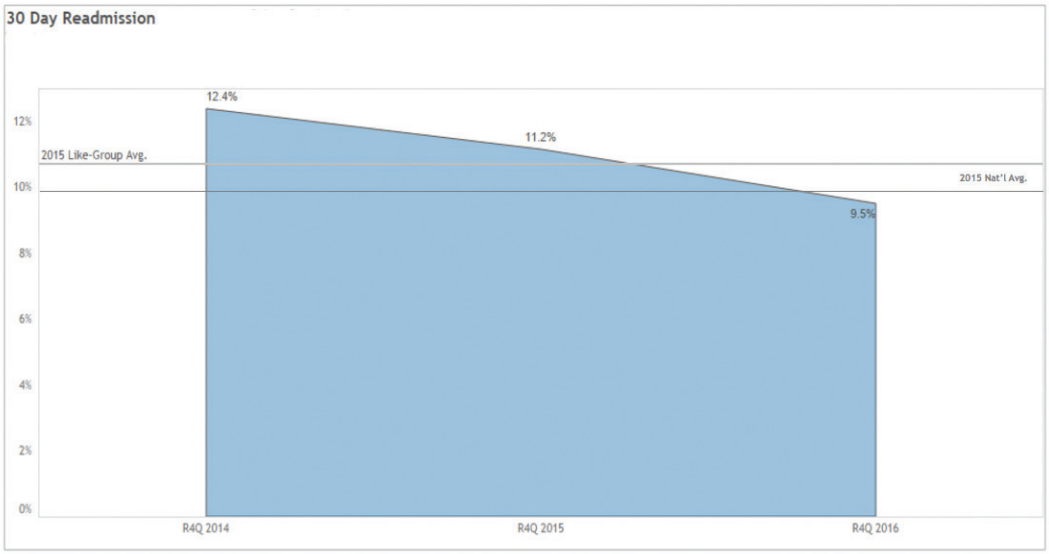
The first challenge was to develop a dashboard that contained accurate clinical and cost data from all five medical centers for comparison and opportunity identification. As an initiative for quality improvement and patient safety, the Society of Thoracic Surgeons (STS) created the STS National Adult Cardiac Surgery Database (ACSD), a standardized format for data collection to assess the care of adult patients undergoing cardiac procedures. Through aggregation of the data, each participant is able to obtain quarterly performance outcomes reports in a risk-adjusted format that allows comparison of local outcomes to regional benchmarks and national standards. With the existence of ACSD and all UC medical centers historically and currently reporting data to STS, there is readily available clinical data with standard definitions. The next hurdle was obtaining the cost/financial data that corresponded

with the cardiac surgery clinical data. Working with the decision support analysts at each UC medical center to submit and evaluate cost codes, product and procedure descriptions proved to be difficult, as each medical center had their own definitions of direct and in-direct costs and codes. Sophisticated data analytics were required to 1) translate cost data into meaningful reports and graphs—without normalizing the data, but reporting it in a way that was comparable across the medical centers. In this way, both the financial and clinical stakeholders had a clear understanding of what their *own, real-costs* were in comparison to the other UC health systems; and 2) validate the cost data with the STS clinical data so that accuracy at the individual patient level, was ensured. Using a series of comparison analytics, Biome Analytics has the ability to integrate both the clinical and cost data into comprehensive reports and analyses for the consortium's dashboard. These analyses inform the performance improvement activities each medical center should undertake.

Sharing/scaling best practices

After the development and design of the dashboard was completed and implemented, each campus reviewed their data and shared current practices for each clinical measure. We reviewed clinical and cost retrospectively to 2013, to identify top performers in each area. The consortium discussed the practices behind the top performers and the possibility of the other campuses adopting protocols. An example is readmission reduction. One med center had a significantly lower readmission rate than the others. They shared that they had a dedicated RN case coordinator in their cardiac surgery department who worked with the patients from the time of admission, communicating discharge plans and follow up care. She monitored the patients after discharge via telephone and triaged urgent follow up appointments as needed, thus preventing unnecessary ED visits. While not all of the UC health systems were able to implement a dedicated, full-time discharge coordinator, they were able to implement elements of her discharge process and protocols, thereby reducing readmissions across all UC health systems. Readmission rates decreased by 16.5% over the last four quarters for adult CABG, valves, and CABG/ valve procedures combined. The readmission rate for adult Isolated CABG procedures decreased 23.5% since R4Q14, and now falls below "like group" benchmarks and national benchmarks (see Table 1).

Table 1
30 Day Readmission rate for CABG (R4Q 2014-2016)



As the consortium progresses, the participants continue to discuss in- depth findings and analyses, and gain consensus and compromise on certain methods, protocols and interventions to implement. Depending on resources and processes at each med center, adoption and compliance varies, however, all campuses are able to focus on identified measures, and continue to share practices and data.

Currently, two areas of system-wide in-depth focus and priority have emerged: readmissions continue to be a concern at all the medical centers, as is LOS, which has been identified as a system-wide reduction goal across the entire acute care enterprise. The dashboard gives the consortium the flexibility to address re-admissions and LOS on a deeper level, while still reporting and monitoring other clinical quality and cost drivers, and identify new opportunities. As the group moves forward, other areas of focus have become apparent, such as length of stay, ICU delay and CABG bundled payments. Biome can assess medical center specific, system-wide, and national benchmark data for the group to examine—thus highlighting individual as well as system-wide performance opportunities.

In addition to clinical performance, we have also identified operational opportunities. One example is quantifying the cost of inefficient throughput due to the lack of available beds. For a rolling 8 quarter period (R4Q 2015 and 2016), we have estimated $2M in lost opportunities, due to a lack of non-ICU beds, and could have accommodated more than 75 additional patients (see Table 2). That does not estimate downstream opportunities from those 75 patients such as referrals and other specialties that may have also benefitted from those patients.

Table 2
ICU Delay: Opportunity Costs

	UC SYSTEM
Total ICU Delay Days (R4Q 15 & 16)	336 **(Range: 22.6 – 201.8 days)**
Average ICU LOS (CABG, Valve, CABG + Valve: R4Q 15 &16)	4.3 Days **(Range: 2.3– 5.1)**
# New CABG, Valve or CABG + Valve Patients opportunity loss	**78**
System Average Contribution Margin (CABG, Valve, CABG + Valve: R4Q 15 &16)	$25.5K
Opportunity Loss (Total Contribution)	**$2.0MM**

Summary

Along with the gains, the consortium has opened up conversations at the local campuses for cardiac providers to discuss improvement strategies, such as improved pre-op instructions and better discharge protocols. Cost-wise there has been a demonstrated decrease in overall costs of care to the service as well as an increase in the profit margins.

There is still work to be done to improve quality, access and costs. However continuing to provide the forum for this collaborative work has proven valuable. The nurse coordinators and department chairs have stated that a consistent connection through weekly calls and biannual in person meetings have benefitted them in interpreting new STS policies and in sharing experiences and lessons learned. Feedback from an impact survey to the consortium members when asked to rate the effect that participation has had on their functional area (1= none and/or negative effect; 10 = very positive effect) was 8-10. They also cite the power of support from UCOP in advancing internal initiatives within their own institutions.

Recommendations for further exploration from consortium members includes (but is not limited to): establishing product standards across the system, creating a bundled pricing scheme, measuring interventions with the same rigor as a research trial, and identifying opportunities for greater value creation. As noted by one department chair, "*Despite the dissimilarities and the distance between our institutions, there is enthusiasm to unite and motivation to work together as a single unit to the extent possible. CT surgery can and should be a role model for other services across the UC system.*"

UC Health Primary Care Collaborative

Background

The UC Health Primary Care Collaborative began in March 2013 with a system-wide meeting led CHQI as well as leadership from all UC health systems to discuss the future of primary care at UC Health. At the initial meeting, collaborative participants identified five areas of focus: 1) understand how primary care is organized at each campus, 2) understand the local market forces, 3) detail how transformation is being approached, 4) define successes and challenges, and 5) determine what we can do at a UC system-wide level.

After the initial meeting the collaborative committed to monthly conference calls and bi-annual in-person meetings. Participants at the meetings are comprised of 60-80 primary care leaders, providers and staff across UC Health that includes physicians, nurses, administrators, directors, quality and safety officers, and information technologists. By engaging a multi-disciplinary group, the collaborative has successfully shared and implemented best practices that have led to improved patient care across the medical centers.

From Sharing to Practice: Scaling Efforts

The CHQI collaborative structure has been the sole platform for convening the five medical centers. As the participants discussed challenges and ideas regarding advanced primary care, themes began to develop: throughput, access, better discharge planning, complex care management, appropriate panel size adjusted for risk and complexity, and various clinical measures such as statin compliance. There was great enthusiasm to better understand variation across the UC health systems, obstacles, and lessons learned.

Care Coordination model: Early in the collaborative, UCLA shared their Comprehensive Care Coordinator model from their multifaceted Primary Care Innovation Model (PCIM) or "toolkit" which began in 2012. This model trains and employs non-licensed staff to focus on coordination of services based on clinical care plans directed by an MD, RN or LCSW. UCSF successfully adopted UCLA's model which is still ongoing. Through UCLA's Primary Care Coordination System in the electronic medical record (EMR) patients are linked and tracked to a Care Coordinator ensuring transparency between all the patient's providers. UCLA reported in May 2016 that there was a 20% reduction in ED visits; statistically significant difference in post-acute event follow-up visits with the PCP. When surveyed 94% of physicians felt that the program was effective, and 80% felt the patients were enthusiastic about augmented service. The primary care physicians reported the Comprehensive Care Coordinators saved them an average of 30 minutes a day. Adapted from the UCLA PCIM, UCSF began their version of the Care Coordinator model as the Health Navigator program in multiple areas of the Office of Population Health (OPH).

EMR Technologies: Other efforts include UCLA's adoption of UCSD's EMR protocols for improved provider ordering and chart documentation, and UCD's recognition of UCSD's success with Healthy Planet and the corresponding technology tool which has maximized outreach and care planning. Based on the success at UCSD, UCD has integrated Healthy Planet in their EMR as well.

Panel Size/ Panel Complexity: Determining the ideal primary care panel size and mix of patients has been a difficult issue for practices across the nation, with no easy answers or formulas. Dr. Coleen Kivlahan at UCSF, assumed the role as the physician champion to lead the Primary Care Collaborative to address this issue. She spearheaded the formation of a subgroup that was charged with reviewing current UC medical center methodologies, available literature, and gained insights from subject matter experts—in order to produce a comprehensive whitepaper addressing key questions about empanelment and panel size. As stated in the paper, the collaboration focused on identifying best practices to meet primary care access needs of the future. The paper further notes: *"This paper addresses the foundation of primary care: linking patients to a health care home, a process known as empanelment. Recognizing that new payment models incorporate panel attribution as a way to measure access and the health of a defined population, the UC collaborative recognized that there was no national standard to guide the process of empaneling patients".*

The paper identified some areas of panel size, risk consensus, and some variability, and was presented at the December 2016 UC Health Primary Care Collaborative meeting in Oakland. It was met with high praise and renewed interest in continuing both system-wide and local discussions about panel size and complexity. It also generated questions about appropriate physician compensation, an area with little literature and many different structures.

The leadership of the collaborative *"agreed that there must be a clearly defined process for attributing patients to a primary care clinician, continuous assessment of the number of active patients, an articulated standard for targeted panel size per primary care clinician FTE, adjustment of the measured panel size to account for variation in patient complexity and work load, and active management of panels to align actual panel size with the targeted size. While there was consensus on the core questions and some key elements of empanelment, each system tailored their specific method of operationalizing the core elements based on the unique local history and context of the system's primary care service line...the participating UC primary care systems each benefited from this collaborative effort to develop a common conceptual framework and identify the key parameters for successfully operationalizing empanelment."*

Challenges

This collaborative has not been without challenges. Although the primary care groups have found common areas of focus there are differences including varied demographic and socioeconomic populations, varied community, county, city, and hospital resources, and competing priorities. For example, primary care leaders at UCLA shared their efforts to measure appropriate statin use for

patients at risk for cardio-vascular disease. The primary care leadership designated representatives from each campus and formed a dedicated subgroup and identified their statin benefit groups within the five medical centers. Although this data was convincing it was challenging for the subgroup to agree upon a scalable system-wide protocol to implement. The group determined that they would continue doing their own population management and measures of compliance of these higher risk patients, without adopting practices across the system.

Summary and Recommendations

Many of the UC Health Primary Care Collaborative leaders have emphasized the value of convening and learning from each other. In general, having the support from UCOP, combined with the sharing practices and data across the system, has enabled the adoption and spread of best practices, and in many cases has fostered a systems approach to patient management. As stated by one provider, *"care team redesign takes upper health system leadership endorsement."* The existence of the UC Health Primary Care Collaborative has created a well-established, knowledgeable network of UC Health providers (both new and existing) to connect, learn and share. The UC Health Primary Care Collaborative is committed to continuous process improvements with ongoing re-evaluation and re-design based upon the inevitable changes and new learnings in healthcare.

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