UNIVERSITY OF HAWAI‘I SYSTEM REPORT

REPORT TO THE 2010 LEGISLATURE

**FINAL REPORT BY THE
UNIVERSITY OF HAWAI‘I AT MĀNOA
THE JOHN A. BURNS SCHOOL OF MEDICINE
ON THE CURRENT PRACTICES OF
HAWAI‘I TELEMEDICINE SYSTEM FOR 2010**

HCR 138 H.D. 2, S.D. 1 (2008)

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Report to the 2010 Legislature

Final Report by the University of Hawai‘i at Mānoa
John A. Burns School of Medicine
On a Hawai‘i Strategic Plan for Telehealth

HCR 138 H.D. 2, S.D. 1 (2008)

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Executive Summary

Hawai‘i’s isolated yet populous archipelago requires innovative solutions to stave off expansion of the state’s growing healthcare crisis. Telehealth technology has the potential to revolutionize Hawai‘i’s healthcare system by expanding service capacity and increasing access to services amid worsening provider shortages across the state. Applied appropriately, telehealth can play a vital role in leveraging available resources to fill healthcare needs of underserved populations while improving health outcomes and containing rising costs. Timely access to appropriate levels of care facilitated by telehealth will promote early intervention and the prevention of medical complications that drive up healthcare expenditures.

In 2008 legislative session, the Hawai‘i State Legislature passed a resolution, HCR 138 HD2 SD1, requesting the University of Hawai‘i at Mānoa, John A. Burns School of Medicine, Telehealth Research Institute (TRI) form a task force **to explore the feasibility of further implementation of telemedicine systems to benefit Hawai‘i’s citizens**.

This final report of the Telehealth Task Force includes:

1. Overview of telehealth initiatives in Hawai‘i.
2. Current state of telehealth in Hawai‘i.
3. Desired state and telehealth benefits, including health information technologies and supporting infrastructure.
4. Key Stakeholders.
5. Assumptions and Challenges, including organizational and human factors, social values and leadership, policy and regulatory factors, business climate, technology and technical infrastructure, and evaluation.
6. Critical issues to be addressed, including organizational and human factors, e.g., improving coordination and collaboration, policy and regulatory factors, e.g., developing political will and institutional leadership, malpractice issues, and telehealth legislation, and business climate, i.e., developing sustainable business models, improving reimbursement and funding, and providing added value and incentives.

This final report does not address issues covered in the Telehealth Task Force Preliminary Report submitted to the State of Hawai‘i Legislature in January 2009, including its comprehensive review of past telehealth projects in the State. It also does not address issues covered by the Technology and Broadband Task Force and issues with respect to electronic medical/health records (EMRs/EHRs).

Recommendations for the advancement of telehealth in Hawai‘i are presented. In recognition of the current fiscal crisis in the State of Hawai‘i, it is acknowledged that some of the recommendations may be cost prohibitive in the near future. There are recommendations; however, that the Legislature should consider that are costs neutral. Specifically:

- Pass statutes that explicitly prohibit malpractice insurance carriers from excluding telehealth coverage or assessing extra fees for telehealth inclusion.
- The Hawai‘i State Legislative Reference Bureau should review all existing statutes and administrative rules relating to telehealth, focusing on inconsistencies or conflicts in the

existing statues and an analysis of existing statutes as they may relate or impact telehealth.

- Form a Clinical Informatics Task Force to examine issues with respect to electronic medical/health records (EMRs/EHRs).

While telehealth in Hawai‘i has made positive strides in the past decade, several remaining barriers and issues need to be addressed to achieve vigorous and broad integration into the healthcare delivery system. Failure to garner a unified effort will prolong system inefficiencies and concomitantly exacerbate an already serious trend in provider shortages. It is time to set forth a bold new vision for greater efficiency in the state's healthcare system through innovative and forward thinking models of healthcare delivery.

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1. Overview of Telehealth in Hawai‘i

Throughout history, as new technologies have emerged and afforded people the ability to send information across distances, it was not long before these capabilities were applied to the most basic need of all: maintaining health. Since the inception of telecommunications technologies within the medical and healthcare milieu, the interface between provider and patient has undergone a revolutionary transformation as exemplified in patient referral services, consumer medical education, patient consultations, and remote patient monitoring.

By definition, telehealth relies on implementation of technology solutions to deliver healthcare. Telehealth has the potential to reduce geographic, social and time barriers. It is not a medical specialty in and of itself. Telehealth is a tool for the delivery and receipt of healthcare services. The terms “telemedicine” and “telehealth” are often used interchangeably, although a distinction is made between the two terms by the American Telemedicine Association:

> “Telemedicine” is the use of medical information exchanged from one site to another via electronic communications to improve patients’ health status. Closely associated with telemedicine is the term “telehealth” which is often used to encompass a broader definition of remote healthcare that does not always involve clinical services. Videoconferencing, transmission of still images, e-health including patient portals, remote monitoring of vital signs, continuing medical education and nursing call centers are all considered part of telemedicine and telehealth. (www.americantelemed.org)

For the purposes of this report, the term “telehealth” will be used.

The timing for implementation of telehealth solutions in America has never been more fortuitous. On a national level the healthcare reform movement in 2009 is expected to extend healthcare coverage to an estimated 36 million more Americans, provide affordable healthcare insurance, and require coverage of pre-existing conditions. Healthcare reform legislation will encourage and impact change to include the use of new technologies. Additionally, with the graying of America’s baby boomers, the number of people becoming seniors and requiring care is increasing exponentially. At the same time, the country is dealing with one of the most tenuous financial crises since the great depression.

Telehealth provides a valuable alternative to building additional long term care facilities by allowing the aged and chronically ill to remain in their homes longer, using remote monitoring to deliver healthcare services in the home. As well, telehealth offers high-tech solutions to expand provider capacity amid a worsening shortage of specialists. Through interactive audio-visual telecommunication critical care providers are able to deliver specialty services to multiple sites from a single hub.

Telehealth also provides a vital means to supplement healthcare services in underserved areas. The disparity in access to healthcare services is especially worrisome on the neighbor islands. AARP Hawai‘i reports:

> "Over a third of self-reported registered voters age 18+ say that they have traveled off island to receive health care services because such services were not available in their community. Respondents in Hawai'i County-Kona and Hawai'i County-Hilo, Maui County and Kaua'i County are much more likely to have traveled off island for medical care than those from the City and County of Honolulu." (2008 Hawai'i Health and Long-Term Care Survey, AARP, March 2008)

The urgency to improve access to essential healthcare services on the neighbor islands extends beyond the inherent benefits of maintaining a healthy resident population. Access to quality healthcare services impacts a community's economic health as well. Meeting basic healthcare needs affects each county's ability to attract and retain top talent. On the Big Island, for example, availability of healthcare services has not kept pace with planned and anticipated growth in the state's notable astronomy program and the presence of world class scientists. There is a critical need to expedite design and implementation of suitable healthcare delivery models for Hawai'i's unique social, cultural and geographic features.

Telehealth does not function in a vacuum. It is a multifaceted system involving an array of components, such as technical capabilities, healthcare provider involvement, and service reimbursement. Each of these areas has dependencies upon other components to efficiently function as a system of healthcare delivery. Overcoming resistance to change and other human factors are the biggest challenges to telehealth acceptance and integration on a broad scale as it is with implementation of all new technologies.

2. Current State of Telehealth in Hawai'i

In November 2008, the Telehealth Task Force Preliminary Report documented 44 telehealth projects in various stages of development in our state's healthcare or educational systems. Detailed summaries of these projects can be found on the Hawai'i Telehealth Collaborative website (www.hawaiitelehealth.net). Over $74.4 million 'hard dollars' were spent for 24 of those projects; an undetermined amount of in-kind expenditures is also associated with these projects. Virtually all of the funds paying for telehealth delivery have been through grants or a redirection of existing resources. Reimbursement for telehealth delivery is negligible in Hawai'i, despite the availability of coverage codes and quantitative proof that delivering healthcare services via telehealth saves time and money.

The more than 40 telehealth startups over the last ten or so years, albeit with varying levels of success, represents a genuine interest in the local community to leverage emerging technologies to fill population needs. Just recently, the Hawai'i Tribune-Herald (November 8, 2009) reported:

> "OHA grant supports Hui Mālama Ola Nā 'Ōiwi: $98K will boost rural health care via telemedicine links...to support expansion of health care services through telemedicine to rural locations. The OHA funding will be used for infrastructure and equipment to build a telemedicine network connecting the Hui Mālama Ola Nā 'Ōiwi Primary Care Clinic with each of its existing satellite sites in Hilo, Pāhoa, Na'alehu, Captain Cook and Waimea…Accessibility to health care on the island remains a huge disparity for the island's Native Hawaiian population."

There have been a variety of successful and deployable models and protocols for telehealth in Hawai‘i. Telehealth technologies have been utilized in Hawai‘i to provide health care services in genetics, fetal monitoring, orthopedics, dermatology, chronic disease management (e.g., diabetes and heart disease), psychiatry, and nutrition. Telehealth has been successfully used for follow-up visits, triage, care coordination, and specialist consultations. Several projects that exemplify the current state of telehealth in Hawai‘i are detailed below.

Project #1: In-Person and Telehealth Outreach Genetics Consultations

Provider/Champions: Sylvia M. Au, M.S., CGC, State Genetics Coordinator, Hawai‘i Department of Health
Timeframe: November 2005 to current
Summary: In-person and telehealth outreach activities reached 303 patients on seven island locations through one-one-one telehealth connections and through 42 clinics. Reasons for the referrals to the project were varied and included chromosome abnormality, single gene disorders, metabolic conditions, and dysmorphology.
Results: In post project evaluations, patients overwhelmingly agreed that this method of outreach allowed them access to care in a convenient manner, i.e., avoiding costly travel, child care, and loss of income from missing work. The families were pleased and felt confident with the information and advice they had received through the project.

Project #2: Shriners Telemedicine Program

Provider/Champions: Shriners Hospital: Dr. Craig Ono, Assistant Chief of Staff and Jana Lindsey, Telemedicine Coordinator, Shriners Hospitals for Children, Honolulu.
Timeframe: 1998 to current
Summary: To increase patient care access, enhance care coordination and provide healthcare education and training. Also, to improve efficiency and efficacy for the patients it serves, the community, the hospital and the Shriners organization.
Results: Telemedicine Program has advanced from a Harry and Jeanette Weinberg Foundation grant funded program to a fully budgeted program at Shriners. The program includes two clinics per month with up to 15 patients per clinic. Clinics are held at the following locations: Child & Family Services sites on Maui, Hilo, Kona, and Kaua‘i; Na Pu‘uwai sites on Moloka‘i and Lāna‘i; Hawai‘i Health Systems Corporation (HHSC): Hilo Medical Center and Moloka‘i General Hospital; American Samoa: LBJ Tropical Medical Center; Guam: University of Guam/PEACESAT, Guam Public Health, Guam National Guard; Federated States of Micronesia: Chuuk, Yap, Kosrae, and Pohnpei; Republic of the Marshall Islands: Ebeye; Commonwealth of the Northern Mariana Islands: Saipan Community Clinic; Shriners Hospitals in Northern California via UC Davis.

Project #3: Tele-Monitoring Home Health and Remote Patient Monitoring for Medically Fragile Patients

Provider/Champions: Dr. Daniel C. Davis, Jr., Clinical Associate Professor, John A. Burns School of Medicine, University of Hawai‘i at Mānoa, Queen’s Medical Center, and Interactive Care Technologies

Timeframe: Early 2000s to current
Summary: Uses easy and effective one button telemedicine for the medically fragile patient in the private home, foster home, nursing home, or any location outside of the hospital. Unlike hardware-centric video conferencing, iCare Video HousecallTM, care management application, creates a turn-key telehealth system that will able clinicians to examine, manage, monitor, and coach high risk patients and care givers in any remote care site. The clinician uses a PC to remotely control the entire patient monitoring devices and records and communicates the data, voice and video results via the web.
Results: More accurate assessment of remote patients, earlier and safer discharge of complex patients, increased confidence in ability to participate in self-care and self-improvement, enhanced patient safety with "just-in-time" coaching, reduction in hospital days for high risk populations, consistent quality of care across populations and providers, reduced absenteeism from family illness burden, and lower health care costs.

Project #4 Tele-psychiatry

Provider/Champions: Department of Psychiatry, John A. Burns School of Medicine, University of Hawai'i at Mānoa, Queen's Medical Center, Hawai'i Department of Health, and Hawai'i Department of Human Services
Timeframe: January 2009 to current
Summary: The Department of Psychiatry provides behavioral health services in partnership with rural primary care and behavioral health providers. Psychiatrist and researchers from the department, together with state and private partners developed service and research models allowing improved access to behavioral health care, while providing work force development (training of psychiatric residents through service-learning) to encourage future psychiatrist to practice in rural areas.
Results: The Department of Psychiatry in collaboration with its partners developed service-learning programs on the islands of Hawai'i, Maui and Moloka'i. Approximately 450 behavioral health visits have been provided through the partnership with the DOH Child and Adolescent Mental Health Division and DHS. Future partnerships include the new University of Hawai'i Family Medicine Clinic located in Hilo. Tele-psychiatry is being added to the resident curriculum.

Project #5 HMSA Online Care

Provider/Champions: Hawai'i Medical Service Association (HMSA) in conjunction with American Well
Timeframe: January 2009 to current
Summary: HMSA Online is a telehealth program designed to improve access to care for patients in Hawai'i, especially those who reside in rural or isolated areas of the state. Using a computer or telephone, patients can have access almost immediately to a physician. Physician through a web based program that allows video conferencing, telephone consultation and on online chat.
Results: To date, HMSA Online has had several thousand patient encounters focused primarily on acute care problems. The program is expanding into chronic care follow up and specialty care.

Telehealth activities gain coordination in Hawai‘i through organizations, such as, the Pacific Island Chapter of the American Telemedicine Association (PICATA) and the Hawai‘i Telehealth Collaborative. PICATA has paved the way for telehealth adoption and expansion in Hawai‘i and throughout the Pacific Basin and Pacific Islands. With its diverse and unique membership, as well as, its large constituency base on local, national, and international levels, this alliance of medical, technological, educational, and healthcare professionals has led, facilitated, educated, advocated, and supported the initiatives of telehealth since 2000.

The Hawai‘i Telehealth Collaborative was formed in the spring of 2007 with the support of the HMSA Foundation. Membership is composed of representatives from the University of Hawai‘i at Mānoa Telehealth Research Institute (TRI), University of Hawai‘i Telecommunications and Information Policy Group (TIPG), Hawai‘i Medical Service Association (HMSA), Queen’s Medical Center, Hawai‘i Pacific Health, Shriners Hospitals for Children, PICATA, MedQuest, Hawai‘i Health System Corporation (HHSC), State of Hawai‘i Department of Health (DOH), Hawai‘i Primary Care Association, and MauiAgeWave. Its mission has been to form a collaborative organization that can provide synergy, assist in seeking funding, address issues related to policy, legislation and re-imbursement, and provide some assurance of sustainability of telehealth programs.

When key stakeholders are brought together meaningful dialogue can occur regarding the supportive infrastructure, legislation and financial incentives needed for telehealth to flourish. For Hawai‘i’s telehealth delivery to become meaningful, lawmakers, physicians, third-party payers, and health care institutions must work together to address the barriers to telehealth adoption. Telehealth can decrease health disparities by improving healthcare access, containing cost, and enhancing quality of care. Telehealth must become a priority in healthcare reform. It is time to move past pilot projects and embrace the value of telehealth in terms of dollars saved and improved care.

Health Information Technologies and Supporting Infrastructure

The Telehealth Task Force recognizes and supports the importance of broader health information technology (HIT) initiatives occurring simultaneously. Although telehealth applications integrate health practices, services, and business with technology, it is impossible to delineate telehealth from HIT efforts such as electronic medical records, data warehouses, disease registries, and electronic prescribing. HIT provides information sharing between providers and patients regardless of location. HIT may be coupled with video-conferencing, e-mail, photographs, or other communication modalities. With a focus on the future, this report addresses the policy and clinical issues that arise from adoption of technologies and looks for ways to advance telehealth in a complimentary and seamless way with other HIT initiatives.

The Task Force acknowledges that without the infrastructure for sharing medical information, patient records, and billing information between providers, telehealth services will not be widely adopted nor sustained. Developing scalable and interoperable electronic health records, personal health records, and health information exchange systems is a major challenge and necessary for realizing the full potential of telehealth in improving quality of health care.

The telecommunication network infrastructure is an essential foundation that supports other HIT applications. Although HIT encompasses a broad range of varying technologies and services, it may be compartmentalized in the following applications and systems: financial and management information systems (e.g., general ledger, billing, remuneration); clinical information systems (e.g., chart management, case management, prescriptions, and laboratories); clinical telemedicine systems and technologies (e.g., primary care, tele-radiology, tele-cardiology); health and medical education (e.g., continuing medical education, grand rounds); and patient and community information (e.g., public health information).

Recent developments with respect to HIT and of relevance to Hawai‘i are:

- In 1999 and 2004, studies by the Institute of Medicine call for electronic health records and health information sharing to reduce medical errors and improve health care services.
- In 2004, President Bush issues an Executive Order for interoperable electronic health records by 2014.
- In 2009, the American Reinvestment and Recovery Act (ARRA) was enacted, including the Health Information Technology for Economic and Clinical Health (HITECH) Act to advance health information technology, improve quality of care, and establish a foundation for health care reform. HITECH provides for development of standards for nationwide health information exchange. It provides $20 billion in HIT infrastructure and incentives for HIT adoption by health care providers. It also strengthens federal privacy and security law protecting health information. “As a result of this legislation the Congressional Budget Office estimates that approximately 90 percent of doctors and 70 percent of hospitals will be using comprehensive electronic health records within the next decade.[i]”
- The Office of the National Coordinator for Health Information Technology (ONC) under the US Department of Health and Human Services is charged with coordinating the overall effort to implement a nationwide health information technology infrastructure for health information exchange. HITECH authorizes the Centers for Medicare and Medicaid Services (CMS) to administer incentives to eligible health care providers for meaningful use of electronic health records. It also authorizes several new grant programs to support and facilitate the adoption and use of electronic health records, health information exchanges, and workforce development.
- The Hawai‘i Health Information Exchange (HHIE) was designated in September 2009 as Hawai‘i’s State Designated Entity (SDE) for Health Information Exchange (HIE). Although Hawai‘i has a strong interest in HIE, the state does not yet have a comprehensive health information exchange plan in place. HHIE is finalizing the state HIE strategic and operational plans and seeking federal funds to accomplish this important first step. Despite independent initiatives in telehealth and electronic health record (EHR) implementation, very little electronic health data are exchanged in Hawai‘i. These independent e-health activities and efforts result in lack of coordination among providers (even for those with EHRs), duplication of effort, diminished continuity of care, and increased healthcare cost.

Despite the challenges since the inception of telehealth, solid HIT and telecommunications infrastructure has been developed and there are organizations and people committed to supporting the advancement of telehealth in Hawai‘i. The state’s telehealth and

telecommunications infrastructure, however, must be improved to support and sustain projects after initial startup which is often funded through grants.

3. Desired Condition and Telehealth Benefits

Telehealth, while not a panacea for all of the challenges facing modern health care systems, has a substantial and ever-expanding potential to revolutionize the ways in which people receive medical care. In addition, telehealth can contain costs, manage chronic diseases, and prevent secondary complications**.** Harnessing telehealth technologies to decrease health disparities by increasing healthcare access, containing cost, and enhancing quality of care must become the priority in healthcare reform.

Through the implementation of a variety of technological systems; electronic medical record, point of care devices, telehealth, telephony and e-learning the State of Hawai‘i can improve health outcomes, as well as, our economy by embracing and encouraging the use of telehealth technologies. Innovative solutions are available and ready for a broader adoption. Medical reimbursement at the national, state, and local levels must be improved for telehealth to become an integral part of healthcare delivery. The future of successful telehealth in Hawai‘i rests in creating and sustaining an infrastructure that supports mainstream delivery of home telehealth and remote monitoring, e-health and patient portal applications, personal health records, interactive internet technologies, wellness, and monitoring devices.

A major goal of telehealth is to overcome time and distance barriers, delivering health services and education to patients in their communities. Ideally, the increased adoption and use of telehealth applications will benefit Hawai‘i by:

- Increasing patient access to all types of care, including primary, specialty and subspecialty care.
- Ameliorating the shortage of healthcare providers in certain geographic areas.
- Providing opportunities for frequent or rapid intervention (when necessary) as a result of more timely monitoring of the patient’s health.
- Avoiding unnecessary hospital admissions and physician office visits and avoiding or delaying nursing home admissions.
- Recruiting and retaining healthcare providers to work in rural areas by making subspecialty decision support readily available to primary care providers who would otherwise lack it
- Reducing or eliminating travel costs and other associated expenses, including childcare and time off work, for patients; Reducing or eliminating travel costs for providers
- Improving productivity and quality of care delivery by providing a conduit for clinicians to share skills and expertise, including supervising other health care providers remotely
- Reducing healthcare disparities between urban and rural areas.
- Creating revenue streams for care delivery organizations (CDOs) which can offer new medical services.
- Promoting patient centric care that is culturally sensitive by taking the care to the patient and increasing the availability of language translators.
- Increasing the use of remote monitoring and home care.

4. Key Stakeholders

Stakeholder buy-in, as well as continual commitment and support is extremely important to the success of any program/project. Telehealth is no different in this aspect. However, a successful telehealth program cannot function in a vacuum or be a silo. Rather than functioning within a single organization, it involves processes which are integrated within the entire healthcare system and involves many categories of stakeholders, such as:

Service Recipients
- Patients & Families
- Healthcare Providers

Service Providers
- Healthcare providers (e.g. private physicians, allied healthcare providers, etc.)
- CDOs, e.g., community health organizations, medical executives, individual/small hospitals, home health agencies, etc.

Payers
- 3rd party payers (e.g. HMSA, Kaiser, HMAA, Evercare, etc.)
- CMS (e.g. Medicaid & Medicare)
- Tax Payers
- Funders (e.g. Foundations, HRSA, RUS, USDA, etc)

Organizations
- Healthcare Associations (e.g. AAP, HMA, Native Hawaiian Health Systems, etc.)
- Telehealth and Health Informatics Associations (e.g. ATA, HIMSS, etc.)

Policy and Regulatory Infrastructure
- Government agencies at the county, state, and national level (e.g., State of Hawai‘i, DHHS, etc.)
- Licensing Board
- Accrediting Organizations (e.g. The Joint Commission, DOH, etc.)

Technical Infrastructure
- Technology Vendors (e.g. Tandberg, Hawaiian Telcom, etc.)
- Telecommunication Networks (e.g. State Telehealth Access Network, Oceanic, etc.)
- Universities (e.g. University of Hawai‘i at Mānoa John A. Burns School of Medicine, University of Hawai‘i at Manoa School of Nursing and Dental Hygiene, etc.)

Telehealth is a multifaceted system which requires an array of components (i.e. technical capabilities, healthcare provider involvement, service reimbursement, etc) to be functional and sustainable. It also requires the knowledge and expertise (e.g. technical, clinical, administrative, financial, regulatory, etc.) from multiple professions.

For Hawai‘i’s telehealth delivery to advance, key stakeholders must address the barriers. Currently, Hawai’i does not have a neutral platform for these stakeholders. Since many of these are competitors, developing a working relationship based on trust is a challenge. There is, however, a strong interest among the various stakeholders to identify a solution to the worsening problem of the healthcare provider shortages, healthcare disparities/inequities, and increasing cost. This crisis has facilitated meaningful dialogue among key stakeholders regarding what needs to be done to create an environment in which telehealth efforts can flourish. More

collaboration, however, is needed to move forward and optimize the full potential of telehealth in addressing Hawai‘i’s healthcare needs.

5. Assumptions and Challenges

The State of Hawai‘i Strategic Plan for Telehealth sets outcome oriented near- and long-term goals based on the assumptions that have been identified through findings from the November 2007 Telehealth Symposium, subsequent Task Force and Collaborative meetings, surveys and input from stakeholders. The current state of telehealth activities in Hawai‘i continues to prevail because of interrelated social and technical challenges as outlined in this report. The Strategic Plan is based on these fundamental assumptions. To assure relevance of the plan, in this constantly changing environment for telehealth, we must continue ongoing reviews of these assumptions in relation to our goals.

Technologies and processes must be reliable, enhance efficiency, and be cost-effective. Benefits (to individual patients, physicians and systems) in terms of patient care, process efficiency, and financial return must be large enough to overcome the risks and hassles of new technology adoption. In the words of technology consultant Gartner, Inc.:

> “CDOs [care delivery organizations] must view telemedicine as a potential opportunity and threat and must review each telemedicine application in terms of its relevance to their core business. They should stop piloting and start deploying telemedicine applications when the quality of care is equal to face-to-face care, cost savings can be expected, and there is a clear business need.” (Edwards, et al, 2009).

Several challenges hold back the widespread adoption of telehealth applications. The following are gathered from Gartner recommendations as well as stakeholder input and lessons learned from past and present telehealth projects in Hawai‘i. (Report to the 2009 Legislature, 2008).

Organizational and Human Factors

- At the individual level, human factors to be overcome include general fear, resistance to change, and workflow issues, as well as economic factors such as increased workload, lack of increased compensation and/or uncertain reimbursement.
- At the organizational level, there is need for institutional support, alignment with organizational strategy, and incorporating pilot policies, procedures, and protocols into existing organizational processes. Prior to implementation of telehealth applications an assessment of the clinic workflow is often overlooked. Success of telehealth applications may require new models of staffing, scheduling, and care coordination.
- There is need for dedicated support staff to coordinate activities at both hub and spoke sites to enable telehealth encounters run smoothly. Success is hindered by inadequate staffing (clinical, support, and technical) and workflow (inconveniently located or poorly integrated with normal workflows). Within health care organizations and systems, telehealth will be truly successful when it becomes a routine part of standard operations and not a novel arrangement or special service.

- Telehealth involves a combination of clinical, technical, and administrative resources and support. At all three levels, the current workforce lack sufficient knowledge, skills and abilities in telehealth applications, health information technology (HIT), and clinical informatics. Steep learning curves must be overcome with flexible and user-friendly processes, technology, and equipment to encourage use in busy schedules; acceptance and comfort with new technology; and proper training of staff at both hub and spoke sites to include technology, equipment, workflow, and administration.
- Changes in consumer behavior are anticipated as more telehealth services in mainstream medicine demonstrate improved access with appropriate security and privacy.

Social Values and Leadership

- Individual telehealth programs have a critical need for physician champions and other project champions, and sustained support by administration and support staff. In turn, this requires strong stakeholder communication, participation, and engagement, and addressing of their needs and concerns during development and implementation.
- There is need to develop and sustain a systematic means to collect data on the measurable value of telehealth to all stakeholders (patients, physicians, organizations, payers, policy makers, educators). Such data are needed to increase stakeholder awareness of the overarching potential benefits, required investments, and policy structure for the transformation of telehealth and health care in Hawai‘i. For widespread adoption to occur, policy makers and program planners must address human factors, such as, provider resistance to change and market factors, such as, lack of incentives that promote adoption of telehealth technology and practice.
- There is need to sustain a critical mass of telehealth and HIT stakeholders working together toward common goals of mutual benefit. Such a critical mass is now organizing through partnerships such as the Hawai‘i Telehealth Collaborative, Hawai‘i Health Information Exchange, Hawai‘i State Telehealth Access Network, PICATA, and others.

Policy and Regulatory Factors

- Legislation is needed to address national and state laws and policies to revise the definition of medicine to include telehealth activities, and to clarify intents, eliminate discrepancies, consolidate existing telehealth related laws.
- Liability, licensing, accreditation, reimbursement, privacy, and data protection policies, regulations, and statutes often interfere with the use of telehealth applications, particularly when services cross jurisdictional boundaries.

Business Climate

- Many grant funded telehealth initiatives have not continued beyond their initial grant periods. Lacking well-articulated, sustainable business models, reliance on grant funding has often ended with cessation, reduction, or lack of expansion of valuable telehealth services. Telehealth projects require sustainable business models within viable healthcare business strategies that will mainstream telehealth services by demonstrating improved or at least

comparable access, quality and continuity of care, health outcomes, and operational efficiencies.

- Rules for reimbursement and funding need to be clarified, improved and disseminated. Reimbursement for preventive care is limited or non-existent. Many private and public healthcare payers are reluctant to provide adequate reimbursement for telehealth services.
- Primary care and specialty care providers must develop business and clinical relationships, protocols, and procedures to support telehealth consultations and continuity of patient care. There is need for attractive incentives or "added value" beyond break-even reimbursement to encourage uptake on both ends (hub and spoke), with a clear understanding of "what's in it for me". There is need to tackle the difficulty of gathering evidence of positive impacts, such as workload capture for proper credit/revenue, in order to support the business case for telehealth services.

Technology and Technical Infrastructure

- In some past and present projects, the chosen or available technology lacked critical capability for the intended purpose, i.e., limited bandwidth, capacity, reliability, or resolution, or for future or expanded use, i.e., inadequate security. Backup contingencies are needed to meet service needs if telehealth technologies fail. Additionally, telehealth technology, equipment, and processes must be flexible, easy, and convenient for clinicians to use, or it will not be used. Stakeholders identify technical know-how and support as a major barrier.
- In Hawai‘i there are telecommunication networks that support health care providers and could be better utilized for telehealth services. Telecommunication costs in rural areas, however, are disproportionately higher that urban areas; some rural health care providers are taking advantage of federal programs that support equalizing access for rural health care providers. Some areas lack of sufficient bandwidth or internet connectivity.
- Telehealth services require robust and well integrated technical infrastructures in both telecommunication and health information technologies, such as, electronic health records and health information exchanges, in both primary and institutional systems. The health care community will become increasingly versed in the integration of health information technology with the impending HITECH Act authorizing several new grant programs to support applications, such as, electronic health records and health information exchange.

Evaluations

- It is often difficult to quantify the value of a telehealth application. Evaluations of telehealth applications are frequently too subjective, e.g., the participants liked their experience, do not provide usable information to identify the source(s) of problems or guide modifications of the application, or are entirely non-existent.
- All telehealth programs should include a rigorous evaluation plan with measurable outcomes.

6. Critical Issues to be Addressed

In recognition of the need to take full advantage of the potential of telehealth, the Hawai‘i Telehealth Symposium, held on November 15, 2007 and funded by the HMSA Foundation,

provided a forum for major stakeholders in healthcare and healthcare information technology to identify critical needs, explore common interests and mutual benefits, and lay the foundation for a working community collaborative. The Symposium brought together a broad representation of stakeholders in the community, including the State Department of Health, University of Hawai‘i at Mānoa John A. Burns School of Medicine, Tripler Army Medical Center, Hawai‘i’s leading hospitals and community health centers, Hawai‘i Health Systems Corporation, insurance companies, medical associations, University of Hawai‘i at Mānoa Telecommunications & Information Policy Group, Shriners Hospital for Children, the American Telemedicine Association (ATA), Pacific Islands Chapter of the American Telemedicine Association (PICATA), and many more health and community organizations, There was a clear mandate from the participants of the symposium that Hawai‘i needs better structured coordination of telehealth activities to provide the required scalability and sustainability of telehealth services. The participants of the symposium reached a consensus identifying the five priorities that need to be addressed with respect to telehealth in Hawai‘i, as follows:

1. Develop sustainable business models;
2. Improve reimbursement and funding, including malpractice;
    2a. Sub-issue: Malpractice issues
3. Provide added value and incentives;
4. Increase coordination and collaboration;
5. Develop political will and institutional leadership.
    5a. Sub-issue: Telehealth legislation

These five critical issues and two sub-issues can be regrouped into three of the six categories identified in the prior Section 5: Assumptions and Challenges, as follows:

A. Organizational and Human Factors
    1. Improve coordination and collaboration
B. Policy and Regulatory Factors
    1. Develop political will and institutional leadership
    2. Malpractice issues
    3. Telehealth legislation
C. Business Climate
    1. Develop sustainable business models
    2. Improve reimbursement and funding
    3. Provide added value and incentives

A. <u>Organizational and Human Factors</u>

1. <u>Improve Coordination and Collaboration</u>

In Hawai‘i, improved coordination and collaboration among major telehealth stakeholders is required for successful integration of services, sharing knowledge, best practices and innovations. In states such as Washington, Alaska, Utah and California, telehealth centers of excellence were created, such as, the Center for Health and Technology, University of California Davis Health System, that play a central role in the implementation of successful telehealth

programs in their region. Many of these organizations address 1) technical issues related to infrastructure, 2) clinical needs of the community and health institutions, and 3) monitor federal and state policies that facilitate progress. Hawai‘i has a need and opportunity to develop such a unified structure to fully and effectively integrate telehealth into existing health systems, develop enabling policies and support sustainability through practical and applicable business models.

A key component will be the engagement of stakeholders, at all levels, in the process of developing a strong alliance and strategic plan. Telehealth involves a broad range of stakeholders, including patients (service recipients), health professionals and administrators (service providers), health insurance companies (reimbursement payers), academia (research), technologists (technical infrastructure), policy makers (policy infrastructure), liability insurance companies (legal support services), and others.

There are existing resources and organizations available at the national, regional and state levels. These organizations provide venues for health professionals to share information for the advancement of telehealth. Nationally, there are organizations and resource centers such as the American Telemedicine Association (ATA), the Health Resources Services Association's (HRSA) Office for the Advancement of Telehealth (OAT), and the Association of Telehealth Service Providers (ATSP). Regionally, the Northwest Regional Telehealth Resource Center (NRTRC) is made up of 33 telehealth networks, including those in Hawai‘i and the Pacific territories.

Here in Hawai‘i, there is the Pacific Island Chapter of the American Telemedicine Association (PICATA) and the Hawai‘i Telehealth Collaborative. These local organizations are primarily comprised of health care and technology professionals experienced in managing telemedicine programs across the Pacific who volunteer their time to advance telehealth. However, it should be noted that physician representation, particularly medical specialists, needed to champion telemedicine consultations are in the minority and involvement in these organizations has been sporadic. A local resource committed to assisting provider telehealth champions to set up telehealth programs and navigate liability, reimbursement, and HIPAA issues is imperative to telehealth's success in Hawai‘i.

During the groundbreaking 2007 Hawai‘i Telehealth Collaborative Symposium, participants offered practical ways of improving cooperation and collaboration in the state:

- Increase awareness and advocacy of stakeholders via a multi-system and a multi-level approach.
- Define a leadership group with a clear mandate and authority to move forward a broad outline and long-term plan.
- Seek funding and resources in collaborative ways for shared goal.
- Develop a broad telehealth strategic plan that addresses the healthcare and human service needs of the State.
- Improve communication among stakeholders (via a collaborative, web site, on-going meetings, etc.)

There are many telehealth initiatives in Hawai‘i that have demonstrated value by improving access to health services, reducing costs to deliver those services, and improving patient care. However, many of these initiatives fall short of widespread adoption and sustainability. It is clear that a concerted effort and focus on the many interrelated factors and critical issues is imperative for Hawai‘i to build successful telehealth programs. Taking the Symposium recommendation into consideration, the Task Force will investigate the most practical and efficient structure for strengthening telehealth partnerships and coordination in Hawai‘i.

As part of the Report to the 2009 Legislature (2008), the Task Force compiled project summaries of 44 former and current telehealth projects in Hawai‘i. The identified critical success factors, critical barriers, and lessons learned were analyzed to define potential barriers and issues to future telehealth projects. Many of these overlap the critical issues previously identified during the Telehealth Symposium held in November 2007. One category corresponds to the critical issue of Coordination & Collaboration, as follows:

Support and Collaboration: Issues in this category were identified by approximately 68% of the projects. The critical need for physician champions was mentioned by numerous projects, as well as other project champions or other strong support among administration and support staff. Several projects identified the need for stakeholder communication, participation, and engagement, and addressing of their needs and concerns during development and implementation. Also mentioned was the need for institutional support, alignment with organizational strategy, coordination of new and existing processes, and addressing “frontier” policies, procedures, and protocols.

B. Policy and Regulatory Factors

1. Develop Political Will and Institutional Leadership

For healthcare system changes to efficiently and effectively have impact on the health situation of our community, policy directives must occur at the state and national levels. Many times, federal policies will ignite the change in state policies and national organizations such as the American Telemedicine Association (ATA), Health Information Management Systems Society (HIMSS), American Medical Informatics Association (AMIA), and the Center for Telehealth Law (CTel) are working to change policy at the national level. However, this takes a long concerted effort as each state is unique in its needs and challenges. Therefore, Hawai‘i must have a voice in facilitating policy changes to meet the needs of our state.

Political will and institutional leadership was identified during the 2007 Telehealth Symposium as being one of the top 5 critical issues that needs to be addressed to facilitate the adoption and advancement of Telehealth in the State of Hawai‘i. During a luncheon meeting/discussion on political will and institution leadership held on May 30th, the participants noted that:

- Telehealth activities in Hawai‘i are fragmented.
- The current leader for telehealth in Hawai‘i has been an individual (Senator Inouye) and is not systemic/institutional.
- There is no succession plan in place for telehealth issues.

- There is a lack in understanding of telehealth.

The participants also commented on the importance of:

- Identifying advocates with a similar mission and engaging leaders from the community.
- Educating healthcare providers, patients, legislators on the obstacles of reimbursement, liability, institutional sharing of information, HIPAA, etc. and offer solutions.
- Identifying and supporting bills that fit with telehealth.
- Collecting data on the value/benefits of telehealth to the patient, payer, and the physician.

Recommendations from the participants included:

- Formally establish an advocacy group that has government support to bring together multiple organizations that will work on specified objectives toward a goal of improving patient care and efficiency.
- Collaborate and gain support of different organizations and associations,
- Identify, monitor, and support currently proposed legislation that pertains to telehealth and/or issues that telehealth can address (e.g. physician/healthcare provider shortages, healthcare disparities, medical referrals, continuing education, patient centric care, etc.).
- Educate institutional leaders, healthcare providers/organizations, healthcare association, payers, the community, and the legislature.
- Draft policies to be submitted to the legislature.
- Be a resource and expert advisor to the legislative body.

2. Malpractice Issues

Risks and mitigation: Telehealth is a relatively new concept and both federal administrative rules and the current legal standards are based on aging laws that do not directly relate to the current environment. Using any new technology exposes practitioners to new risk. Telehealth initially focused on distant video-enabled consultations and selected store-and-forward technology exemplified by "teleradiology". The future applications use traditional telehealth and newer applications taking advantage of the Internet and cell phones to provide secure email, remote monitoring, integration with electronic health records, and instant messaging.

Recently, the Center for Telehealth and E-Health Law (http://www.telehealthlawcenter.org/) provided a review of telehealth malpractice issues, with particular focus on risk reduction at a provider level. There are few actual cases where the application of existing laws has been defined by court decisions related to telehealth. Clearly state statutes and administrative rules related to the practice of medicine lag behind the technology. Beyond the issues related to malpractice, there is liability in product failure and general liability.

Malpractice: Malpractice coverage includes activities that meet the definition of the practice of medicine as defined by state statutes and administrative rules. When telehealth is practiced within a state, particularly when there is a defined doctor-patient relationship, current malpractice coverage includes the use of telehealth. As with any aspect of the practice of

medicine, telehealth is required to meet standards of good medical practice and that includes appropriate privileging and credentialing within hospitals and other institutions.

There is a greater liability when telehealth involves interstate care. State statutes defining the practice of medicine are established in the state where the patient resides. Many states require providers to be licensed in the state to practice telemedicine in a state, but the regulations vary from one state to the next. In addition, the provider needs to be aware of any unique aspects in that states regulations particularly as it may relate to telehealth.

At least one malpractice carrier specifically contracts to cover malpractice for providers providing telehealth services in multiple states. They cover the telehealth component as part of the overall malpractice coverage and do not attempt to define or cover the component of the practice involving telehealth. They also provide risk management by assessing the telemedicine practice, the states where the provider practices and the state statues that may increase risk for claims.

Product Liability: Telehealth relies on technology to connect provider and patient. Health care progressively depends on the technology to be available and function properly. Adverse outcomes may occur when equipment fails. Providers and institutions have responsibility to purchase reliable equipment. The liability is share with the vendors and product failure may extend across the telehealth network with a number of product and vendors. Product selection must take into account reliability and functionality. Informed decision making related to purchase and maintenance of equipment reduces the risk for providers of care.

General Liability: General liability covers events that are associated with increased dependency on technology. The events cover the potential of employees getting shocked from equipment to data loss and identity theft.

Mitigation: Since malpractice coverage and the definition of the practice of medicine resides with each state, updating statutes and administrative rules to address issues related to the evolving technology is essential to reduce risk and expand the use of telehealth. Evolving an increased level of conformity among states is a second step in simplifying telehealth practice for providers.

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3. Telehealth Legislation

The taskforce recommends that the Hawai‘i State Legislative Reference Bureau review all existing statutes and administrative rules that relate to telehealth. The review should involve analysis and review of the existing regulations and a report back to the legislature. The review should focus on inconsistencies or conflicts in the existing statues and an analysis of existing statutes as they may relate or impact telehealth.

C. Business Climate

1. Develop Sustainable Business Models

Business models must include viable plans for implementation and long-term sustainability, not just an optimistic hope that "build it and they will come". A business plan is critical for the success of any telehealth initiative, to lay out the need for a telehealth program and a strategy to start and sustain the program. AMD Global Telemedicine, Inc., is a leading supplier of telemedicine equipment and devices with over 5000 installations in 74 countries. (http://www.amdtelemedicine.com) This vendor provides a planning outline with common objectives and recommended success measures for three standard telehealth business models:

Improve Access: Many telemedicine programs seek to improve access to health care services, either by making services readily available for the first time (e.g. rural or markets with new delivery system infrastructure), or by improving access to specialty services without the need for the patient to travel a considerable distance to a facility where those services have been traditionally provided. Quite often, the Access Model seeks to respond to a particular set of health care issues in a local market. Ultimately, development of a successful program requires identification of the particular medical problems to be addressed, the potential telemedicine applications which provide the solution, and an analysis of the costs and benefits of the telemedicine application relative to other alternatives. The Access Model is intended to improve access to health care services using telemedicine as a cost effective alternative. Parties implementing a telemedicine program to improve access must be committed to a long-term plan to operate the program and to assess success. The following are suggested steps which can be undertaken to measure success:

- Identify the populations intended to benefit from each telemedicine application, including specific medical conditions;
- Document the suspected incidence of the targeted medical condition prior to introduction of telemedicine;
- Document the treatment history and pattern prior to introduction of telemedicine;
- Measure the number of consults or services rendered to each targeted population;
- Longitudinally measure the changing service utilization; and
- Assess the effect on outcomes.

Reduce Cost: In many markets, a health care delivery infrastructure exists, but telemedicine is being used to deliver health care services of comparable or higher quality at a lower cost. Examples include: Home care providers are using telemedicine to reduce home visit rates, continuously monitor chronic medical conditions, and thus reduce costly hospital utilization. Tertiary care providers are using telemedicine to monitor changes in medical condition without the need of the patient to physically appear at the office of the consulting professional. Successful implementation requires a careful examination of all costs, direct and indirect, and the medical outcomes, over time, as well as all benefits received from introduction of a telemedicine program, an identification of the parties who benefit from the program, and how parties contribute to program funding. It is not uncommon for telemedicine to achieve cost savings in multiple departments of an organization, or to benefit multiple parties (e.g., insurer, patient, employer, etc.). Thus a program sponsor should seek to monitor all savings produced by the telemedicine program, not just medical benefits, to assess the cost effectiveness of the telemedicine solution. Often the most difficult task in measuring success is obtaining access to information to document all cost savings. In certain instances, cost savings may benefit multiple

parties, and those parties may be in possession of information relevant to the cost-savings analysis. Measuring success often requires the commitment of the program sponsor and affected parties for several years to determine the likely cost savings of the program. The following are suggested steps which can be taken to measure success:

- Document the present method of care delivery and its cost;
- Monitor the costs of delivery of care using telemedicine;
- Assess all savings achieved by each party after introduction of the telemedicine program;
- Document savings to affected parties.

Enhance Competitive Position: A telemedicine program sponsor may desire to expand the sponsor's market zone to increase business opportunities. Traditionally, the market zone of a health care provider has been limited to the distance a patient is willing to travel to receive services. Telemedicine permits the export of medical expertise to any location in the world where the requisite telecommunications infrastructure exists. Academic medical centers use telemedicine to support local health care professionals by making consultative professional services available in the local market. The telemedicine sponsor receives income for the consultative services and establishes valuable professional relationships that lead to increased referrals for facility-based care. In the Competition Model, the telemedicine program sponsor supports community-based caregivers in the management of medical care, and serves as the consulting expert whenever the medical condition of patients requires consultative support. The development of Measures of Success is a much easier task. An institution can monitor its consults outside of the primary service area and compare the growth and number of referrals and revenue over time from markets where the program sponsor has established a telemedicine relationship. Progressive institutions may structure bonuses or incentive programs for physicians who participate in the development of telemedicine programs recognizing that the early years of the program may involve a significant investment of their time when program revenue is lowest. That investment, however, often leads to long-term program success.

The American Telemedicine Association has an excellent resource, entitled, “Business Plan Template: a document to assist in the business and strategic planning of telehealth programs.” It lists well-organized components of a business planning process including: Needs and Demand Assessment; Internal and External Assessment; Services Plan; Marketing Plan; Technical Plan; Management Plan; Regulatory Environment; Financial Plan; Presentation to Stakeholders; Training and Testing; Operations Plan; and Evaluation, Feedback and Refinement .

For the state of Hawai‘i as a whole, a successful business model for an integrated telehealth system has been identified as a critical issue. A business plan is needed to sustain the collaboration among institutions going forward. Many states, including Arizona, Maine, and California, have created state telemedicine business plans that have been implemented successfully. Arizona’s statewide infrastructure success focused on core telemedicine network services that recovered costs from site memberships and other centralized mechanisms. The Maine Telehealth Network has an open architecture, which allows easy connectivity between sites statewide, collaborative network and it leverages lower costs of many value chain activities, such as technical support. California’s telehealth success is based largely on a collaborative network, a university-based system, and supportive state legislation.

The Hawai‘i State Telehealth Collaborative will need to create a business plan that addresses areas of opportunity and a strategy for financial success. Basic considerations for areas of opportunity include:

- Identify telehealth administrative and clinical leadership capability to ensure success.
- Assess the current telehealth programs and look for applications that are in high demand.
- Determine the value to users of the telehealth system and set program objectives accordingly.
- Examine how telehealth programs can be integrated into ongoing program delivery and daily clinical workflow.
- Determine how current technology and infrastructure can be leveraged.

Considerations for strategies for financial success include:

- Understand how revenue can be generated whether it be through contracts, grants, clinical revenue, reimbursements, membership dues, program charges, legislation seed money, or philanthropy.
- Determine the benefits of the telehealth system and how it contributes to cost savings.
- Promote the telehealth system as an economic benefit.
- Investigate the integration of the telehealth system into a “parent” organization to obtain support.

Participants at the Telehealth Collaborative Symposium in November of 2007 identified some priority actions:

- Develop and sustain a high quality, integrated infrastructure that would include rural broadband so more areas of the state have access.
- Change how telehealth is reimbursed.
- Maintain Act 221, which would enable more investment of high-tech companies in Hawai‘i.

In its preliminary report (November 2008), the Telehealth Task Force compiled project summaries of 44 former and current telehealth projects in Hawai‘i. Identified critical success factors, critical barriers, and lessons learned were analyzed to define potential barriers and issues to future telehealth projects. Many of these overlap the critical issues previously identified during the Telehealth Symposium held in November 2007.

Staffing and work flows issues were mentioned by about 72% of the projects. In particular, inadequate staffing (clinical, support, and technical) and poor workflow (telehealth technology inconveniently located or poorly integrated with normal workflows) were often cited. Often mentioned was the need for dedicated support staff to coordinate multiple activities at both hub and spoke sites to enable the telehealth encounters to run smoothly.

Technology issues were mentioned by about 40% of the projects, in three general themes: technology success, technology failure, and technology inconvenience. In some cases, the chosen technology was clearly successful for the intended purpose and newer technologies are being explored for further improvement. In other projects, the chosen or available technology

lacked critical capability for the intended purpose (e.g., limited bandwidth, capacity, reliability, or resolution) or for future or expanded use (e.g., inadequate security). Backup contingencies are needed to meet service needs if telehealth technologies fail. Additionally, telehealth technology, equipment, and processes must be flexible, easy, and convenient for clinicians to use, or it will not be used.

Training and learning issues were reported by about 25% of the projects. Issues included: steep learning curves for technology and equipment; value of outreach and education; need for flexible and easy processes, technology, and equipment to encourage use in busy schedules; acceptance and comfort with new technology; properly trained staff at both hub and spoke sites; training to include technology, equipment, workflow, and administration; and training prior to launch.

2. Improve Reimbursement and Funding

We must explore critical barriers and potential solutions regarding reimbursement and funding from the viewpoints of both providers and payers.

Convenience and compensation are primary considerations for physicians. For some, there is marginal benefit in substituting telehealth services in place of travel; clinicians sometimes find that the cost of travel for a visit to a neighbor island is amply offset by a long day of back-to-back office visits. There are also drawbacks to some telehealth applications: it is taxing to do back-to-back VTC consultations, and it is inefficient to do sporadic VTC consultations if they cannot be done from their own offices. Current workflows and physical set-ups in many practices do not support convenient and cost-effective use of telehealth. Many physicians are unclear on how to apply for reimbursement, implying the need for a telehealth reimbursement billing guide, such as is available in Utah.

HMSA has a payment policy for telehealth services. However, there is a low volume of submissions for reimbursement. HMSA needs to determine what telehealth services are being performed that are not reimbursed and why. As a managed care organization, Kaiser does not deal with reimbursement per se, but does track telehealth services by CPT code. An important consideration for payers is whether actual cost savings can be realized by using telehealth, i.e., Are telehealth services substitutive or additive to face-to-face services? How can the services and any cost savings be properly documented? And, if there are cost savings, what or who should realize that value through reimbursement?

Currently, HMSA and other insurers cover telehealth cognitive services using standard "E&M" coding. For example, HMSA pays a $20 facility fee to the origin site (i.e., where the patient is) then pays a regular E&M fee to the consulting physician at the distant site. Medicare covers services to neighbor islands, but the rules are more restrictive. Payment is also available for store-and-forward consultations, such as, tele-radiology and tele-dermatology. Other smaller health plans generally have programs based on Medicare or HMSA.

A paradigm shift is needed to address the psychological barriers of both providers and payers, probably through collaboration and financial incentives for both parties. New delivery models beyond VTC, new administrative models to improve efficiency in current practice, ways to

improve convenience and cost-effectiveness for providers, and ways to document cost avoidance for payers are needed. Successful programs using telehealth need to be evaluated to determine why they work and how they can be translated to widespread use in Hawai‘i.

Recommended next steps for the collaborative to explore include the following:

- Examine different modalities and determine how each modality works.
- Report what practitioners are billing and what payers are reimbursing and where the challenges are; develop a statewide telehealth reimbursement billing guide that meets state and federal regulations, such as, the one in Utah.
- Form small collaborative groups including representatives from each of the following stakeholders: providers, risk management, and telehealth services to further define business case and telehealth success in Hawai‘i.
- Determine the evidence that payers need and develop a proposed reimbursement model.

3. Provide Added Value and Incentives

Despite known benefits and successes of telehealth programs across the country, resistance to widespread adoption in Hawai‘i continues. For widespread adoption to occur, state policymakers and program planners need to address provider resistance to change and lack of *market driven* incentives that promote adoption of telehealth technology and practice.

With physician shortages expected to continue in the future, the state must restructure Hawai‘i’s healthcare delivery system, from the current system that favors traditional in-person doctor-patient office visits, towards a technologically advanced and less restrictive forward-looking model. Sufficient technical support and user training, financial incentives for telehealth providers, and carefully planned strategies that do not substantially increase provider workload will help bring about a needed paradigm shift in Hawai‘i’s healthcare marketplace.

Possible incentives to reward early adopters of telehealth services with an emphasis on improving access for underserved populations (e.g., provider shortage areas, areas with health disparities, institutional populations such as prisons) include:

- Establish a student loan repayment program for telehealth specialists who serve underserved populations.
- Institute telehealth reimbursement incentives for healthcare providers who serve underserved populations.
- Design tax benefits for providers who invest in telehealth equipment and infrastructure.
- Create incentives for the John A. Burns School of Medicine, University of Hawai‘i at Manoa, to expand telehealth outreach to underserved areas. Many successful telehealth programs are affiliated with medical schools.
- Advocate *market driven* reimbursement incentives to support in-home telehealth services designed to keep the aged and chronically ill in their homes longer.

Additional research will be conducted to determine which of these or other incentives have proven results.

Summary

Telehealth technology has the potential to revolutionize Hawai‘i’s healthcare system by expanding service capacity and increasing access to services amid worsening provider shortages across the state. Applied appropriately, telehealth can play a vital role in leveraging available resources to fill healthcare needs of underserved populations while improving health outcomes and containing rising costs.

In recognition of the current fiscal crisis in the State of Hawai‘i, it is acknowledged that some of the recommendations may be cost prohibitive in the near future. There are a number of recommendations; however, that the Legislature should consider that are cost neutral. Specifically:

- Pass statutes that explicitly prohibit malpractice insurance carriers from excluding telehealth coverage or assessing extra fees for telehealth inclusion.
- The Hawai‘i State Legislative Reference Bureau should review all existing statutes and administrative rules relating to telehealth, focusing on inconsistencies or conflicts in the existing statues and an analysis of existing statutes as they may relate or impact telehealth.
- Form a Clinical Informatics Task Force to examine issues with respect to electronic medical/health records (EMRs/EHRs).

While telehealth in Hawai‘i has made positive strides in the past decade, several remaining barriers and issues need to be addressed to achieve vigorous and broad integration into the healthcare delivery system. Failure to garner a unified effort will prolong system inefficiencies and concomitantly exacerbate an already serious trend in provider shortages. It is time to set forth a bold new vision for greater efficiency in the state’s healthcare system through innovative and forward thinking models of healthcare delivery.

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