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Limitations of Online Medical Care: Interpersonal Resistance and Cultural Hurdles in the Face of Technological Advances

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In 2009, a health care service organization in Hawaii launched a online medical consultation program intent to serve the needs of clients in rural Oahu and the neighboring islands, which faced increasing shortages of primary care clinicians. Patients could go online for medical advice from on-call Hawaii based clinicians. However, physicians and statewide medical agencies were critical of the program due to ethical concerns, medical licensure and insurance coverage, and deviation from socio-cultural practices specific to Hawaii. This empirical paper traces and examines the legal and medical ethics of telemedicine in the face of Hawaii's socio-cultural orthodoxy of interpersonal engagement and obligation called the ohana (Native Hawaiian for "family"), and the implications for telemedicine as a medical care resource for the state and nationally.

In mid January 2009, Hawaii Medical Service Association (HMSA) launched the nation's first statewide real-time online care system with on-call physicians selected by patients. This program was a cost-cutting measure to minimize expensive medical services, such as emergency room visits, while also reaching underserved patients in neighboring islands and rural areas of Oahu. Residents in these areas face an increasing shortage of primary care clinicians while patients on the other four major neighboring islands have access to only a few or no medical specialists, such as oncologists and cardiologists. For neighboring island residents, an interisland flight to Oahu is the only mode of transportation for specialized care. Meanwhile, physicians are unable to buttress the cost of maintaining a rural medical practice in a state with the unfortunate combination of high malpractice insurance premiums and one of the nation's highest costs of living. HMSA's Online Program was initiated to resolve these tensions.

However, HMSA's version of telemedicine deviates from conventional modes of practice elsewhere. In the United States telemedicine ranges from sourcing electronic medical records to real-time follow-up videoconferencing consultations between physicians and patients to providing delayed off-site analysis of medical laboratory results, such as radiology scans. However, HMSA's Online Care program provides real-time electronically mediated medical consultations for patients who may have had no prior contact with the doctor he or she selects from a list of available on-call physicians. Regardless if they are covered by HMSA or not, anyone in Hawaii with a credit card and computer access can secure medical advice or evaluation by email, videoconference, instant message, or telephone, if the first three modes are unsuccessful. Consultations last up to ten minutes for an initial flat fee with the option of three additional minutes, if the doctor deems it necessary and the patient consents to the additional charge. Unfortunately, operational, legal, medical ethics, and socio-cultural hurdles plagued the program's initial launch. These hurdles reveal important lessons about telemedicine in Hawaii and the United States.

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Hence, this paper is an empirical study of the significance of HMSA's Online Care program to the field of telemedicine, in practice and theory. In particular, this empirical paper traces and examines the legal and medical ethics of telemedicine in the face of Hawaii's socio-cultural orthodoxy of interpersonal engagement and obligation called the *ohana* (Native Hawaiian for "family"); the impact of an ohana worldview on patient-physician relationships; and the implications for telemedicine as a medical care option for the state and nationally. In this way, this paper deviates from the other papers featured in this year's EPIC proceedings compilation. For example, rather than a discussion of an objective generalizable usability function or protocol deliverables, this paper reveals the tension between technological advances, ethics, and both provider and customer reception from competing socio-cultural expectations.

As a cultural anthropologist and career academic with consulting experience, I was hired by a non-profit healthcare research organization to study the initial client reception of this web service. HMSA's statewide launch of a web based medical care program was the first in the nation, and closely watched by other entities interested in gauging the feasibility of such an endeavor in other states and regions in the United States. The hiring organization hoped to trouble-shoot any problems that arose from HMSA's efforts in preparation for its own Fall 2009 launch of a region wide online physician patient consultation program in the continental United States.

Yet, they wanted to remain anonymous and preferred that I not directly approach HMSA's administrators, which meant I had to develop creative ways to find, solicit and convince physicians to be respondents. However, several unforeseen factors – explained later in this paper – required a shift in research focus from clients' perceptions of online medical care and their technological navigation experience to a research focus on physicians' receptiveness of online medical care, statewide medical institutional response, and HMSA's telemedicine launch.

Fieldwork entailed interviews of physicians (five enrolled in the program and three non-enrolled critics) and the Medical Director of the online care program. A two month online monitoring of twenty-five additional on call physicians was conducted alongside the monitoring of the program's statewide publicity on television, print and radio advertisements and morning shows, as well as local, state and national coverage of the program. HMSA's publicly accessible online and print materials for physicians and patient members were reviewed for commentary or revisions to policies and practices resulting from statewide government and medical entities' concerns about the legal and ethical issues specific to telemedicine and HMSA. Lastly, patient-clients were sought through HMSA affiliated physicians, community centers, and health clinics.

What is HMSA? An independent licensee of the Blue Cross and Blue Shield Association, this organization is the state's largest health care provider, covering over half of Hawaii's population, with a roster of nearly 90-95% of the state's physicians as affiliate members.[1] This combination of client needs and physician availability in the face of burgeoning health care costs compelled HMSA in 2008

[1] HMSA promotional materials cite these percentages. However, these numbers most likely do not include physicians affiliated with other large health care provider institutions in the state of Hawaii, such as Kaiser Permanente and the US military.

to plan an online preventative care program as a cost efficient measure for both physicians and HMSA. The program would not require physicians to file burdensome insurance claims for payment. Patients would pay for services rendered by credit card through a third party provider, which transfers a percentage of the patient's payment of completed services to the physician's bank account on a weekly basis instead of the typical months long wait for conventional payments. Besides the financial benefits to physicians, fewer emergency room visits for preventative care by patients using the Online Care program would diminish HMSA's overhead and personnel costs. The resulting personnel salary and overtime cost savings of caring for patients not in need of emergency care would benefit this nonprofit by cutting the costs of reimbursing hospitals and medical professionals, as well as claims processing personnel.

The decision to launch the Online Care program coincided with promising statistics on technological access and infrastructure in the state. In 2007, Hawaii was among the top six states in the country with the highest broadband access at 64% or 423,00 of households with in-home internet access. Of those with internet, 6% had dial-up while 58% had broadband (Census 2007). In 2008 and 2009, HMSA donated computers to a few community centers in neighboring islands to ensure technological access to potential clients, like the elderly, who may not have home computers. The decision to implement online care seemed sound since the state's technological infrastructure worked in tandem with a potentially large population receptive to technology. In this way, the rise of telemedicine in Hawaii differs from other states where much of the initial infrastructural funding for telehealth access came from federal sources (Grisby 2002).

The online program utilizes the technological web template and online support services of American Well, a for-profit company founded by two physicians. This for-profit company adapted their template to HMSA's needs. However, in the rush to launch the program, neither HMSA nor American Well sought prior approval of the Hawaii Board of Medical Examiners (HBME), which issues, certifies and revokes medical licenses of in-state physicians. American Well and HMSA's oversight did not ingratiate HBME, which threatened to suspend the medical licenses of any physician providing medical consultation through the online program while HBME negotiated with HMSA to ensure sound medical compliance. One particularly difficult conflict of interest was the HBME policy requiring physical examinations for all medical consultations, which would prove difficult for the doctors assessing patients through the Online Care program. Hawaii Medical Association (HMA, a social networking organization of and for physicians) and HAPI (physician owned medical malpractice cooperative) matched HBME's strong opposition to HMSA's Online Care program.

This threat coincided with rumors among physicians of no medical malpractice coverage for telemedical consultations on HMSA's Online Care, despite American Well securement of AIG as an insurer. This rumor may have been influenced by a December 2008 letter sent by the HAPI Executive Vice-President to it's 550 physician members, which led doctors to believe their enrollment in HMSA's online program would result in the termination of their individual participation in the cooperative's medical malpractice policy. Around the same time, another medical malpractice insurance carrier (MIEC) threatened to terminate coverage to doctors offering online medical consultations. HMSA and America Well's oversight in securing HAPI and MEIC's approval and cooperation prior to the

program's launch was critical because 90% of the state's doctors received malpractice insurance coverage from these two insurance providers.

While statewide medical institutional and insurance carrier resistance to HMSA's online program is undeniable, this sentiment cannot be generalized to institutional resistance to telemedicine, per se. This distinction between telemedicine in general and HMSA's Online Care program was raised by several physician respondents, who stated their positive experience with telemedicine in the years prior to the program's launch. The most popular client service telemedicine option was Physician Exchange, an Oahu based phone/pager service enabling patients to reach their own physicians after-hours and on weekends. Patients would call the service and a phone operator would ask the caller for the name of his or her physician and a brief description or explanation of the medical question or concern. The operator would page the physician and connect the patient to the doctor. If the doctor does not respond immediately to the page, then the patient would end the call knowing the operator would continue paging the physician until the physician directly calls the patient within fifteen minutes. It is not unusual for the operator to follow-up with the patient within 15-30 minutes to confirm whether the physician had responded to the patient. Not only did this service make physicians available to their patients 24/7, but it was also a free service for patients. Physicians incurred the costs associated with this service as an optional extension of their medical practice.

One physician critic stated his consternation that HMSA no longer partially reimbursed doctors for the cost of this paging/phone service upon the implementation of the Online Care program. He felt the no cost to patients and immediate availability of trusted physicians for patients seeking ongoing preventative care or emergency consultation should take precedence to a fee driven online service provided by physicians unknown to their patients. Therefore, I contend physician animosity was directed not at telemedicine, per se, but at HMSA's failure to respect and secure physician and statewide medical establishment involvement and inclusion prior to the Online program's launch. Ultimately, the problem lies in HMSA's disregard of physician autonomy and the state's orthodoxy about the ohana. Originally a Native Hawaiian term for "family", ohana and its meaning were adapted into the local vernacular, which is called Hawaiian Creole English (HCE).

A socio-cultural system of mutual obligation among filial and fictive kin, ohana is a local multicultural Hawaiian cultural normative amalgamation developed through a century and a half of Native Hawaiian, American, Chinese, and Japanese miscegenation, spirituality, and worldview. In terms of interpersonal relationships, this philosophical worldview draws from Confucian filial piety and Native Hawaiian inclusive extension of the familial from those of solely shared descent to include those of shared affinity, as well. A person is deemed an integral member of a large extended family with obligations and privileges bestowed upon them by others within a generational hierarchical framework. When applied to medical care, this generalized inclusive term can be extended to caretakers, whether they are family, friends, or medical professionals. In this way, the physician-patient relationship can evolve into a shared affinity of care, trust, and well-being mediated by a fictive kin relationship. Therefore, Physican Exchange is not only an indication of physician commitment to quality patient healthcare through the means of telemedicine, but also a reflection of their commitment to the ohana.

The familial sentiment is heightened by the generations long familiarity shared among the local population of this mid-sized city. In Hawaii, a local is generally considered an individual born and raised in the islands with family members who can trace their ancestry to plantation era (circa early 19th to mid-20th century) Chinese and Japanese laborers and/or Native Hawaiian ancestors (Okamura 1994). Upon first meeting an adult who is ethno-racially marked as local the person would be asked which island and neighborhood one was raised. This question would be followed by which high school one attended to place the person in the relationship constellation of the state. Conversations usually reveal overlapping extensive locally based ohana relationships usually within one degree of separation, but no more than three degrees of separation. Therefore, a person not already part of the ohana has the potential of being included in the ohana by association.

The pervasiveness of the ohana relationship and its potential impact on physician participation in HMSA's Online Care program is revealing when considering how all the physician critics interviewed for the study were local, while the surveyed physicians most regularly on call at HMSA's Online Care website were not local. Furthermore, my research found only 6% (approximately 125) of affiliated physicians volunteered to participate and undergo technology training despite HMSA's yearlong push to enlist physicians in the program. Of this number, only an average of 1.75% of the 6% were regularly online at any one time throughout the day. This resistance is in sharp contrast to the greater telemedicine receptiveness of rural physicians in parts of the United States and both urban and rural Australia (Grisby 2002; Rees and Haythornthwaite 2004, White, Sheedy Lawrence 2002; Wakeman & Humphreys 2011).

Hence, the ohana is both a source of familiarity and surveillance for both local physicians and patients. Medical peers and non-medical ohana monitor local doctors bound by the Hippocratic Oath and ethical medical practices to provide sound medical advice and care. Whereas patients can trust physicians to provide great care, locals expect their ohana medical practitioners to be compassionate and filial, as well. Foucault's theory of the medical gaze would seem apt, as suggested by Arushi Singha (2000) on her assessment of telemedicine. However, Foucault's medical gaze is not directly applicable to the local Hawaii context because the visually driven diagnostic practice of a hegemonic Western medicine (medical gaze) is strongly influenced by the surveillance and expectations of the ohana gaze. In other words, surveillance is not driven solely by elites as a means of controlling the masses in the Foucauldian conception of the medical gaze (Foucault 1994). Rather, the medical gaze is almost democratized where the participants, regardless of social status surveil each other for different purposes, ranging from dictating the parameters of what constitutes a healthy citizen/patient to expectations of medical accountability by ohana physicians. Therefore, medical science does not trump, but is mediated by culture and the (inter)personal selves of the locally situated or local ohana doctor and patient.

For these reasons the necessity of physician accountability to patient care is an expectation. Although none of the physicians interviewed for this study explicitly stated the ohana as a compelling reason for their criticisms of HMSA's online care, their use of familial metaphors and references to a sense of personal and professional obligation to their patients' care revealed the pervasiveness of the ohana orthodoxy in their medical care worldview. Therefore, patients are ohana, not clients or objectified embodied symptoms or pathologies.

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Physician critics repeatedly stated their perception of HMSA's Online Care program's objectification of patient care. Recruitment materials and sessions stressed the efficient transactional benefits of the Online program wherein physicians would receive hassle free medical consultation payments by patients whom physicians may not have had prior face-to-face contact. While effectively addressing a real concern for medical professionals about prompt compensation for services rendered, HMSA ignored the potential dangers for doctors providing medical consultations to patients with whom there was no prior contact. After all, patients chose which online physician to contact from a list of available doctors and could provide false medical information if they were not HMSA patients. On call physicians only had access to HMSA patients' electronic medical records. However, any person with access to a computer with internet access and a credit card could use the Online program.

Interviewed physicians (both critics and participants) repeatedly stated the medical liability of providing medical advice to strangers, especially non-HMSA members, without an in-person evaluation. Interviewed physicians also stated how diagnosis is not solely dependent upon seeing just the patient's face on the video screen, reading an email or text message, or hearing a voice on the telephone. Body language; seeing the whole patient to determine if other bodily conditions overlooked by the patient should come under consideration; and taking standard diagnostic measurements like temperature and blood pressure was impossible through Online Care. The physician has to place immense trust in the patient to provide truthful data. Interviewed affiliated physicians stated either waiting for or directly requesting HMSA to provide online managed care protocols, which were not forthcoming.[2] This response worried some of the physicians and led a few to terminate their affiliation with the Online program.

Therefore, the HMSA's Online Care program provides medical care under a capitalist model in which patients are clients with objectified embodied symptoms or pathologies that are formulaically diagnosed.[3] However, this perspective is diametrically opposed to local physicians' consideration of patients as ohana. The incompatible perspectives on patient care only heightens the tension between physicians and HMSA, which is peculiar since this organization has been the state's major healthcare provider for nearly seventy years. They should have known the importance of the ohana dynamic and the importance of securing stakeholder consent prior to the Online program's launch. When asked to comment on physician and insurance carrier resistance, the Medical Director of the Online Care program bristled and stated HMSA's ongoing efforts to redress the problem in consultation with HBME.

Understandably, HMSA's oversight or negligent consideration of medical ethics & practice compliance (HBME & HMA) & insurance coverage (HAPI & MIEC) fueled physician critics' frustration with HMSA. This frustration is most likely an extension of another dimension of the ohana worldview. Collaboration and consultation amongst familial stakeholders in search of solutions or resolutions are strongly desirable for the ways such a strategy would minimize angst and disharmony in

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[2] HMSA's lack of thorough standardized guidelines for ethical managed medical care for affiliated physicians is an ethical breach not considered in Stanberry's (2000) informative call for ethical considerations in health telematics.
[3] Arushi Sinha (2000) warns how medical informatics (health information, personal medical histories, etc.) can also potentially cast patients as client consumers.

the community. A generational hierarchy of community elders and similarly high status individuals from within the community must vet and endorse decisions. Expertise and credentials are secondary to the cohesiveness and compliance of the ohana community to changes. Therefore, HMSA and American Well's launch of the Online program without consulting physician stakeholders (institutional and individual) faced much resistance and consternation.

Physician displeasure at HMSA's lack of larger physician input prior to the launch and throughout the program's rollout period further exacerbated these problems. Interviewed physician critics of the Online program had serious misgivings based on their perception of the ways high quality patient care was compromised. In contrast, these critics upheld the medical home model of quality care, which is a holistic approach emphasizing engaged patient participation and collaboration with physicians on a mutually desirable individualized medical care program. This tension is not limited to Hawaii, however. A qualitative study conducted in the continental United States found patients and physicians questioning the compatibility of the whole (overall medical history & prior physician data for diagnosis) or segmented (symptomatic diagnostics of just the presenting cause) telemedicine approach to medical care (Finch et. al. 2007).

Additional physician critics' concerns included suspicion of HMSA's on call physicians as marginal care providers driven more by convenience and financial incentives than ethical patient care. Not surprisingly, promotional materials soliciting affiliated physicians for the Online program reinforced this bias. In the 2009 Online Care web tour soliciting physician participation, one of the first webpage visuals is a male dressed in scrubs sitting beachside next to a palm tree and surf board with an opened laptop. The words, "Anytime, Anywhere," entitle the page. The resulting impression leaves the viewer to consider the convenience and user-friendly option of such a service (HMSA's intent) that critics disparage as undermining physicians' professionalism as medical care providers. Local physicians are not slackers. Rather, physician critics rest their professionalism on a combination of valuing the medical home model of quality care, familiarizing if not mastering effective current medical practices and treatments, complying with medical ethics and meeting ohana expectations and obligations.

Unfortunately for HMSA, physicians' lukewarm reception in the initial months of the program was coupled with minimal patient usage. During a four week period in February and March, no online consultations were recorded during select one to ten hour long blocks over 16 randomly selected days. Surveyed physician participants in the program confirmed low patient numbers. Several stated how their disappointment in low to no contacts led to their eventual non-participation in the program. The lack of patient contact only heightened their concerns about the program's medical ethics, such as the lack of protocols for prescribing medications and ordering online medical laboratory tests.

From the patients' perspective, the Online program's web navigation works only on Firefox and explorer browsers, but this information was not initially mentioned on the website. The online registration process could take up to an hour to complete, which stymies any immediate medical needs for patients who do not pre-register. Video chats are not readily available for all client users since not all computers have a built in camera nor do all computer owners without this feature own external camera hook-ups. For those without computers, those choosing to use video chat on public

computers at community centers and libraries may compromise their medical privacy when within earshot of fellow computer users. Furthermore, online consultations are limited to the first ten minutes with the option of an additional few minutes (for an additional small fee), but only per physician recommendation. The time limit may not be conducive for patients unable to clearly articulate their ailment without physician supplementing care through somatic diagnostic measures, like taking blood pressure measurements. The software program would also occasionally freeze, disconnecting the medical consultation, which was a source of concern for interviewed affiliated physicians. These problems only add to the pre-existing resistance from the state's medical establishment.

Hence, this case study highlights the themes of this year's conference about the disjunctions between evolution and revolution when considering the American Well designed technological impediments to patient-client web access and usability, the Hawaii state's socio-cultural orthodoxy of the ohana, and the medical institutional and individual physician resistance to HMSA's telemedicine efforts. In particular, physician critics deem the necessity of interpersonal trust for effective medical consultations is critical to ethical medical diagnosis and treatment. Face-to-face interaction over multiple consultation sessions, or an evolution of conventional medical practices, ensures sound medical treatment for ohana patients. Yet, HMSA's Online Care program reflects the potential revolutionary future of medical care. The increasing number of published studies expounding the initial and conclusive benefits of telemedicine for managed care in the United States and internationally, especially Australia, provide supporting evidence for HMSA's expectations (McLean et al. 2010 and 2011, Martin et al. 2011, Polisena et al. 2009, Reger and Gahm 2009, Richardson et al. 2009). Although only one version of telemedicine, HMSA's capitalist model of telemedicine objectifies patients as embodied symptoms and pathologies paying doctors under a wage system based on the number of patients seen in fifteen minute increments. This objectification of patients and physician labor is offensive to physician critics, whose participation as on call physicians is critical to the success of the Online program.

A missed opportunity, the potential for a more personalized and less regimented Fordist telemedicine model could have been developed in Hawaii had HMSA and American Well been cognizant of the importance of the ohana in local Hawaiian medical practice during the development and launch of the Online Care program. Such a model would address the concerns raised by international critics who decry telemedicine's tendency to objectify patients and commodify patient care at the expense of an accountable and humane managed care system. As mentioned earlier, the state's medical establishment was not resistant to telemedicine, per se, but to HMSA, the ways in which the organization ignored local stakeholders and socio-cultural expectations, and their version of telemedicine.

Fortunately, HMSA has the chance to develop a more inclusive model because it was forced to engage in protracted discussions with the state's medical establishment to ensure sufficient number of physicians would participate as service providers. After all, their version of telemedicine cannot succeed without sufficient numbers of on call physicians. A promising recent development arose during an online search of updated HMSA publicity materials. The medical home model of managed care is now part of HMSA's approach, which suggests greater input from physician critics. Since my

study centered on the initial launch of the Online program, further research would reveal the ways HMSA may have resolved some of the other vexing problems plaguing the successful launch of the Online Care program.

A lesson learned from this case study for other statewide and region wide telemedicine efforts is the importance of securing the approval and endorsement of the site specific medical establishment, especially the individual state's board of medical examiners and the primary malpractice insurance carriers for those geographical areas. HMSA and American Well erroneously assumed the national board of medical examiners' receptiveness to telemedicine constituted automatic acceptance by the Hawaii chapter. This oversight exacerbated their assumption that securing a third party malpractice insurance carrier (AIG) would be an incentive for physician participation. Despite their capitalist driven telemedicine model, HMSA and American Well ironically had not accounted for Hawaii's dominant insurance carriers' resistance to AIG's infringement on their market share.

Their inability or unwillingness to think holistically and broadly highlights another important lesson. Telemedicine organizations and companies need to consider site specific socio-cultural dynamics, which can invariably impact telemedicine's success or failure, regardless of software and hardware innovations, technology infrastructural readiness, and available funding for such initiatives. Capital and technology may provide the means for telemedicine's existence and continuity. However, telemedicine would not function without patients and medical practitioners' interest, compliance or demand of such technological intervention. Yet, people do not exist in a social vacuum in the absence of cultural influences. As my research reveals, the purposeful exclusion or ignorance of the ohana worldview undermined the initial success of HMSA's online care program. As trained cultural anthropologists, we not only offer qualitative research expertise, but also a sensitivity to understanding cultural markers of diversity, which can only benefit the companies or clients who employ us. For this reason applied anthropologists can become invaluable to the telemedicine industry because we have the training to determine what are relevant socio-cultural factors that would impact telemedicine, and offer recommendations for less acrimonious implementation of site specific telemedicine initiatives.

NOTES

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