Possible Futures: Virtual Care after the Pandemic

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The Queen’s Health Systems

Associate Professor of Medicine
University of Hawaii John A Burns School of Medicine
Virtual Care

Clinic-to-Clinic

Hospital Based

Virtual Home Visit
Virtual Care

Clinic-to-Clinic

Hospital Based

Virtual Home Visit
TOTAL Teleconsults for FY23 = 1,852
Why is treatment of stroke so time-dependent? Why is telemedicine so important for stroke?

After blockage of blood flow, brain cell death begins at a rate of 1.9 neurons/min
Golden time to treatment: 90 min from symptom onset
Golden time to treatment: 90 min from symptom onset
Golden time to treatment: 90 min from symptom onset
Golden time to treatment:
90 min from symptom onset
Stroke Treatments

Most strokes 20% of strokes with large vessel occlusion (LVO)
Stroke in Hawaii: What’s the Problem to Solve?

- 3,000 strokes per year in Hawaii
- Very low thrombolytic (clot buster) treatment rate in Hawaii in 2009 (~2% of strokes)
- High variability in tPA utilization among Hawaii hospitals due to poor neurology coverage
- Long delays in treatment time due to poor systems of care
Current Telestroke Network

- Kuakini Medical Center
- Wahiawa General Hospital
- Hilo Medical Center
- Kona Community Hospital
- Molokai General Hospital
- QMC West
- North Hawaii Community Hospital
- Kahuku Medical Center
- QMC Punchbowl
- 2021
- 2021
- 2022
Impact of Statewide Telestroke Network on Acute Stroke Treatment in Hawai‘i

Hally M. Chaffin BA; Kazuma Nakagawa MD, FAAN, FAHA; and Matthew A. Koenig MD, FNCS
Increase in thrombolytic therapies 2009-2023

<table>
<thead>
<tr>
<th>Benchmark Group</th>
<th>Time Period</th>
<th>IV alteplase initiated at this hospital for ED patients</th>
<th>IV alteplase initiated at this hospital for Inpatients</th>
<th>IV alteplase initiated at outside hospital and not initiated at this hospital</th>
<th>IA catheter-based reperfusion at this hospital for ED patients</th>
<th>IA catheter-based reperfusion at this hospital for Inpatients</th>
<th>IA catheter-based reperfusion at outside hospital</th>
<th>Any thrombolytic therapy</th>
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<td>9 (0.8%)</td>
<td>13 (1.2%)</td>
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<td>2010</td>
<td>79 (5%)</td>
<td>2 (0.1%)</td>
<td>23 (1.3%)</td>
<td>14 (0.9%)</td>
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<td>0 (0%)</td>
<td>113 (7.1%)</td>
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<td>3 (0.2%)</td>
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<td>0 (0%)</td>
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<td>10 (0.6%)</td>
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<td>155 (9.0%)</td>
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<td>98 (3.4%)</td>
<td>107 (3.8%)</td>
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<td>82 (3.2%)</td>
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<td>71 (2.6%)</td>
<td>152 (5.6%)</td>
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<td>12 (0.4%)</td>
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<td>88 (3.7%)</td>
<td>186 (6.1%)</td>
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<td>14 (0.6%)</td>
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Faster Treatment Times Statewide

Annual proportion of ischemic stroke patients receiving intravenous thrombolytic therapy within 30 minutes of arrival, Hawaii vs. U.S., 2014 - 11/2021

QMC 88% from 2020-2022
Stroke Death Rate

State: Hawaii

37.5

deaths/100,000 population

Source: Hawaii State Department of Health, VITAL Statistics

Measurement period: 2020
Maintained by: Hawaii Department of Health
Last update: September 2022

Graph Selections

INDICATOR VALUES
- Change over Time

VIEW BY SUBGROUP
- Age
- Race/Ethnicity
- Sex

Technical Note: Values are not shown where the number of events is between 1 and 9.
Stroke Treatments

Most strokes

20% of strokes with large vessel occlusion (LVO)
EMS bypass for suspected LVO stroke

Started October 2019

~50% false positive rate
Telemedicine in the ambulance

PULSARA + STROKE

Time is Brain.
If you don’t have a process that’s effective every time, you are falling below the standard of care. Pulsara helps you build regional systems of care to achieve the best possible patient outcomes for your stroke patients.
With Pulsara, it’s simple.

Live Video Calling
Communicate Face-to-Face, Even from Miles Away.
Using Pulsara’s HIPAA-compliant live video capabilities, medics and specialists can connect in real time with the app to ensure appropriate destination hospital selection and resource mobilization. Clinicians can even consult with other hospitals and facilitate a transfer via live video communication.
Using Pulsara PATIENT you can connect directly with the patient. Send patients a text inviting them to a secure video consultation. That way, you can meet the patient wherever they are.
Project Goals

• Avoid unnecessary EMS bypass / diversion

• Ensure non-LVO patients who just need TNK treatment are transported to the nearest hospital for faster treatment

• Ensure LVO patients bypass the nearest hospital and are transported to the Comprehensive Stroke Center for faster thrombectomy

• Speed up inter-hospital transfer and treatment times by starting telestroke evaluation earlier in the prehospital setting

• Faster treatment by shifting history and examination to the prehospital setting

• Enable secure EMS-hospital and inter-hospital communications
Patient example (Pre-hospital activation)

- 58 year old man with speech problems, right sided weakness, and left gaze deviation
- Neurologist examined the patient by video, took history, reviewed medications, talked to witnesses, and obtained consent for treatment through Pulsara prior to arrival
- He was transported directly to QMC with pre-activation of the stroke team
- Treated with TNK quickly after arrival
- Taken to mechanical thrombectomy for left middle cerebral artery (MCA) occlusion
He had returned to normal by hospital day 2.
How can Hawaii support more robust EMS-to-hospital and hospital-to-hospital collaboration?

• Emergency Management and Mass Casualty Incident patient tracking
• Mental health emergencies / MH4
• EMS treat-not-transport or transport to alternate destination
• Community paramedicine
• Telemedicine consults on the ambulance
Virtual Care

- Clinic-to-Clinic
- Hospital Based
- Virtual Home Visit
Virtual Care

- Clinic-to-Clinic
- Hospital Based
- Virtual Home Visit
Overall Virtual Visits Since Covid-19 Pandemic

Total Virtual Visits in FY23 = 189,000
15-20% of visits done virtually
Prior Barriers to Virtual Care Pre-Pandemic

MEDICARE RESTRICTIONS
Lack of reimbursement for telehealth visits for patients in the home

CONSUMER DEMAND
Limited public knowledge about telehealth

PROVIDER ADOPTION
Small pilots of early adopter clinics and providers

TECHNOLOGY BARRIERS
Lack of integration with Epic and multiple video platforms in use

CLINICAL WORKFLOWS
Integration with in-person practice and clinic operations
COVID Pandemic: Perfect Storm for Virtual Care
Transitioning to the New Normal or Waiting for Return to Business as Usual?
When Josh Emdur, DO, announced in 2017 that he was leaving hospital practice to join a startup telemedicine company, though telemedicine wasn’t the model that had been proposed, he believed in the idea of having more impact in a more permissive environment. For those who otherwise might not have access to high-quality care, telemedicine offers hope.

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<th>Characteristic</th>
<th>Unweighted frequency, No.</th>
<th>Preference, weighted %</th>
<th>In-person visit</th>
<th>Video visit</th>
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<td>22.9</td>
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<td>High school diploma to associate’s degree</td>
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<td>27.3</td>
<td>1.4</td>
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Lessons Learned / Investing in Success

PATIENT SELECTION
Clinical appropriateness, patient readiness, geographic considerations

PRE-VISIT PREPARATION
Help Desk support, patient education materials, support for clinic staff

PROVIDER AND PATIENT EXPERIENCE
Telehealth visit must be adequate to replace the in-person visit, high return rate

PLATFORM EASE OF USE
EMR integration, back-up plan outside of the patient portal, telehealth app or webRTC

CLINIC WORKFLOWS
Integration with in-person practice and clinic operations
Perceptions of Telehealth Pre-Pandemic

• Convenience
• Travel time / cost
• Mobility challenges
• Timeliness of care
• Access to care in rural communities
• Duplicative care or adequate to replace an in-person visit?
• Fragmentation of care?
• Impact on cost of care?
• Equivalence to in-person care?
Is this convenience?
Telehealth: Adding Value to In-Person Care

- Convenience
- Travel time / cost
- Mobility challenges
- Timeliness of care
- Access to care in rural and urban communities
- Access to subspecialty care in austere communities
- Remote family presence
- Language interpretation services
- Multi-provider collaboration
- Device integration for remote patient monitoring
- Patient portal adoption and electronic medical record integration
Integrated Telehealth Platform
Adoption of MyChart is the **easiest way** to provide a seamless Virtual Home Visit experience for patients.

Encourage patients to sign up for MyChart after initial appointments!

**Patients Can**
- REQUEST med refills, appts, provider input
- REVIEW their records and medical history patients and providers and staff
- PAY their bills
- MANAGE child or parent healthcare
- JOIN a video visit
Transitioning to the New Normal or Waiting for Return to Business as Usual?
On the Horizon

Announcing DAX™ Express
Fully AI-automated notes—available in seconds.
Impact on Clinical Care and Practice

• Consumer preferences will play a greater role in the transition from the pandemic (“you have to do virtual care”) to post-pandemic (“here’s an option for you”).

• Virtual care must transition from a temporary solution during the pandemic to a professional-grade patient experience.

• We need to harness the power of computers without worsening access for people with limited computer proficiency or poor broadband coverage.

• For many practices, virtual care will transform the clinic staff, workflows, and physical layout.
Discussion Points

• How invested are we in maintaining robust virtual care programs after the pandemic?
• What statutory, regulatory, and budgetary changes are needed to support virtual care?
• How do we leverage virtual care to improve access to care without worsening the digital divide for vulnerable populations?
• What data and analytics are needed to ensure virtual care services add value to patient care?
HOUSE OF REPRESENTATIVES
THIRTY-SECOND LEGISLATURE, 2023
STATE OF HAWAII

H.C.R. NO. 49

HOUSE CONCURRENT RESOLUTION

REQUESTING THE ESTABLISHMENT OF A TELEHEALTH WORKING GROUP TO
EXAMINE THE IMPACT OF WIDESPREAD TELEHEALTH ADOPTION DURING
THE COVID-19 PANDEMIC AND IDENTIFY PUBLIC POLICY
INITIATIVES AT THE FEDERAL AND STATE LEVEL TO OPTIMIZE
TELEHEALTH UTILIZATION AS THE STATE TRANSITIONS OUT OF THE
COVID-19 PANDEMIC.

WHEREAS, the State experienced an increase in the use of
telehealth during the COVID-19 pandemic by a factor of sixty-five and has remained at that level, which is well above the pre-COVID-19 pandemic usage; and

WHEREAS, telehealth adoption was most significant with direct-to-consumer video visits on personal devices and audio-only telephone visits, often without important elements of the physical exam or vital signs being obtained during the visit; and

WHEREAS, although there is some data to support the safety, efficacy, timeliness, access, and cost effectiveness of telehealth, the impact of widespread telehealth adoption in the State is largely unknown; and
Mahalo