LEE MEMORIAL HEALTH SYSTEM

Telestroke and Telehealth Programs at Lee Memorial Health System

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AGENDA

- **Background**
  - **LMHS**
  - **Telehealth**
  - **Stroke**
- TeleStroke
  - Solution
  - Outcomes
- Tele-bilities

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BACKGROUND

- Located in Southwest Florida
- Over 10,500 employees, 1,300 physicians and 3,680 volunteers
- $1.2B annual budget
- Fifth largest public (governmental) health system in nation
- Largest public health system in nation operating without benefit of local tax support
- 170,000 ED visits
- 83,000 Admissions

Lee Memorial Hospital (LMH)

Gulf Coast Medical Center (GCMC)

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BACKGROUND

- 1.3 million Outpatient and Physician visits
- 40,000 Surgeries
- 8,000 Births
- 11,000 Trauma visits
- 95% inpatient beds in county

Cape Coral Hospital (CCH)

Health Park Medical Center (HPMC)

Golisano Children's Hospital (GCH)

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BACKGROUND – TELEHEALTH

Telehealth encompasses a broad variety of technologies and tactics to deliver virtual medical, health, and education services.

- Provider to patient
- Provider to provider
- Remote Patient Monitoring
- Other healthcare professionals to patier
  - Pharmacist
  - Counselor/Life Coach
  - Nutritionist
  - Care Managers
  - Social Work
  - Virtual Sitter

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BACKGROUND – FINANCIAL

- **Risk-based contracting creates opportunity for TeleHealth to cut costs and improve outcomes**
- Fee for service does not incentivize cutting costs, so Telehealth would only create additional visits & this does not make paying for TeleHealth attractive to payers
- Medicare Advantage: CMS does not categorize TeleHealth as a basic benefit so providing Telehealth coverage would worsen Medicare Loss Ratio (MLR) when submitting bids, so unlikely to be covered unless CMS changes stance
- Chronic Care Management CPT 99490 does not cover costs and can be done by phone, so not worth it unless another motive
- Many organizations in Florida not charging for TeleHealth except new problem urgent care visits

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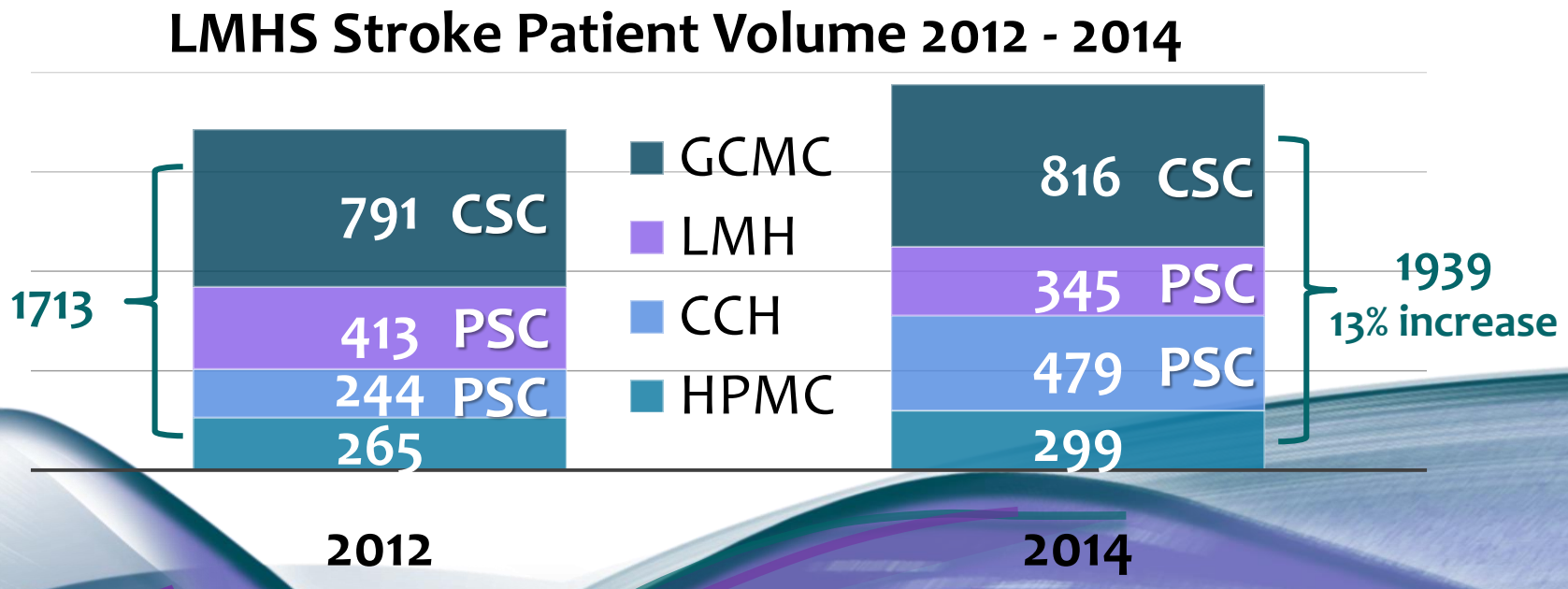
BACKGROUND - STROKE PROGRAM INCIDENCE

- 5+ strokes per day in system
- 1 Comprehensive Stroke Center (CSC)
- 2 Primary Stroke Centers (PSC)



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BACKGROUND - STROKE PROGRAM CONSTANTS

- Solitary contracted independent neurology hospitalist group
- One neurologist per **each** hospital on **day** coverage
- One neurologist per **two** hospitals on **weekend** coverage
- One neurologist per **four** hospitals on **evening** coverage
- Daytime Door-to-Needle (DTN) shorter than evening DTN due to windshield time

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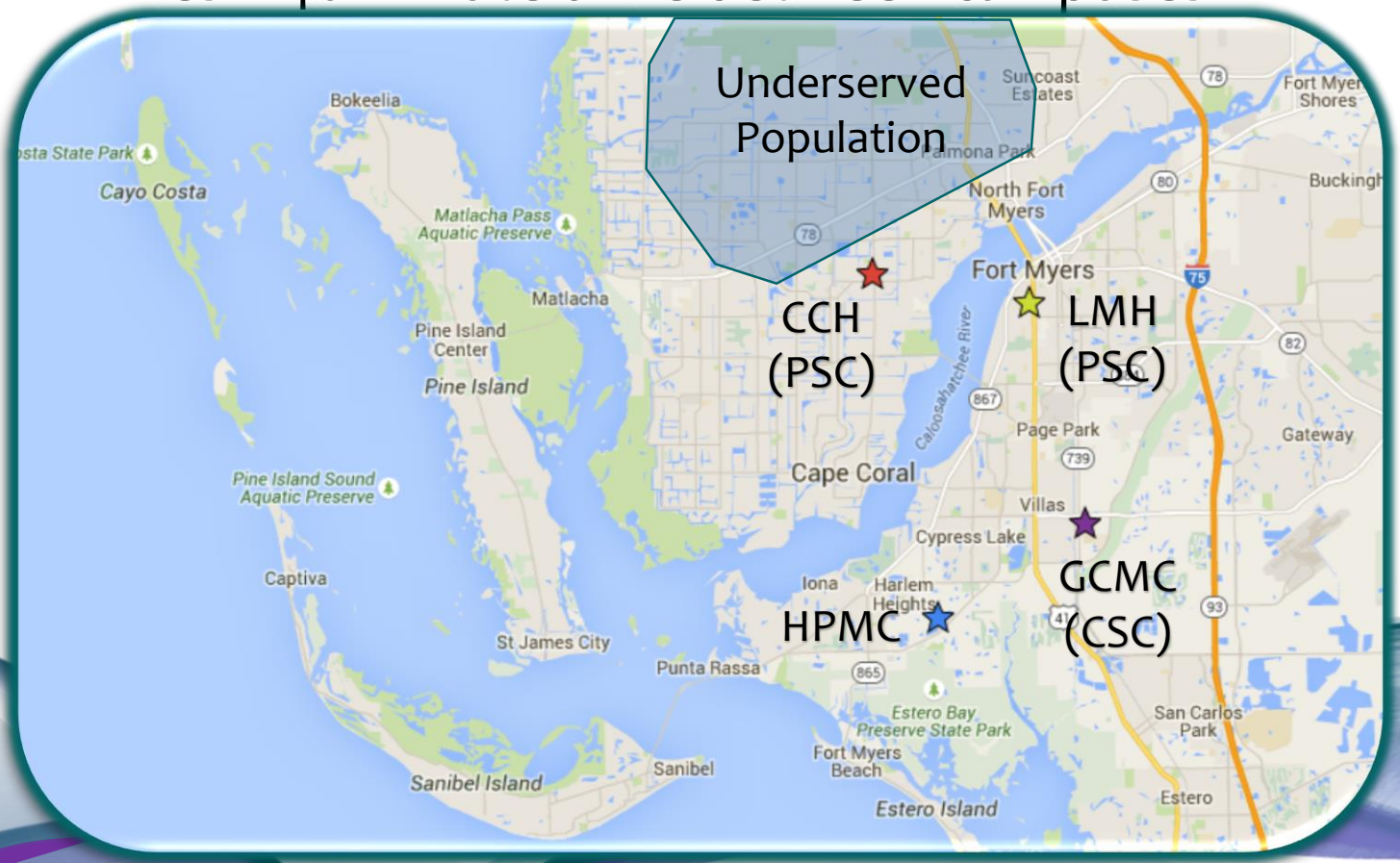
BACKGROUND – GEOGRAPHY

- 12 miles = 40 minute drive between campuses



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- **TeleStroke**
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TELESTROKE – GOALS

- Support Comprehensive Stroke program (CSC)
- Faster, more focused patient care
- Augment additional Primary Stroke Center (PSC) to support underserved population
- Broad coverage with limited resources

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TELESTROKE – ORGANIZATIONAL SUPPORT

- Leadership Support
  - CMO & COO locked arms w/ CMIO
- Financial Support
  - Funds allocated prior to project
- Physician Support
  - Single group of physicians
- Technical Support
  - Infrastructure, resources, and relationships in place
- Clinical Support
  - Stroke Program Facilitator

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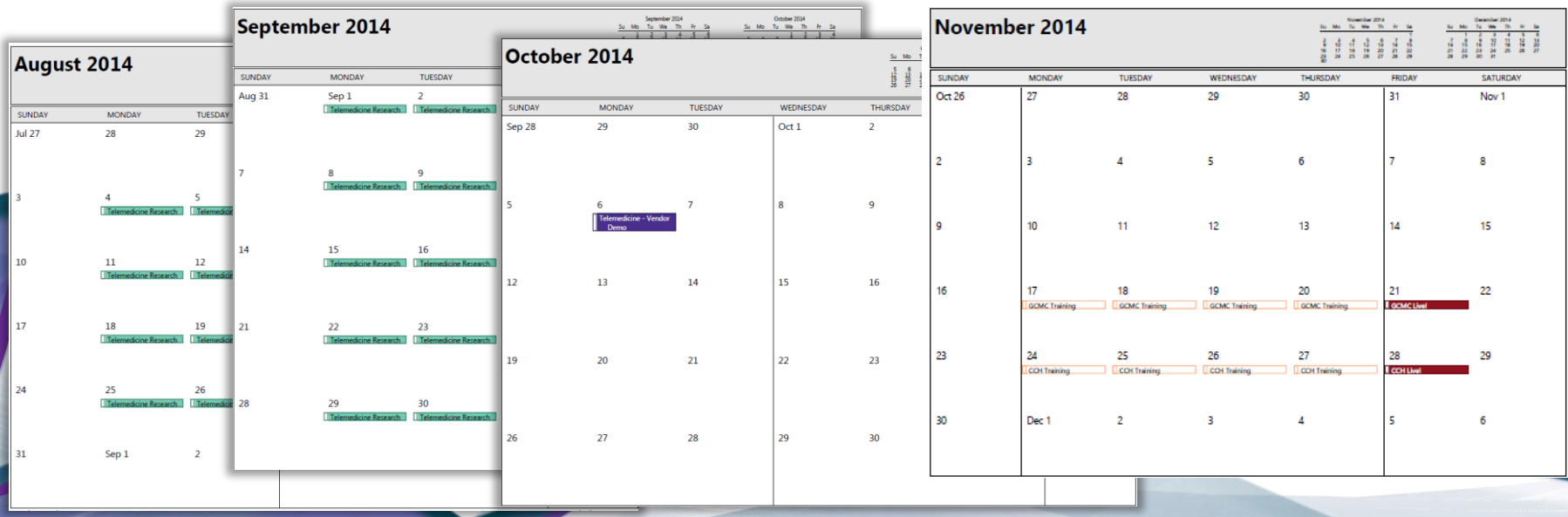
TELESTROKE - COMPRESSED TIMELINE

- IT/Medical Informatics accepted project
  - Research - August – September
  - Vendor Demo - October
  - Go Lives – November-December



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TELESTROKE – RESEARCH

- Onsite visit with partner health care system
- Consultation with Epic
- Calls with various health care systems
- Collaboration with business partner (Dimension Data)
- Vendor demonstrations

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TELESTROKE - VENDOR DEMOS

- Technical, clinical, and physician stakeholders present
- Simulated stroke scenario
- **Expandable to future clinical service lines**

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TELESTROKE – PROGRAMMATIC NEEDS

- Requirements
  - Two-way, high resolution, secure, audio-video interaction
  - Remote Provider controlling camera (Pan, Tilt, Zoom)
  - External, non-system supported physician devices (iPad, laptops, desktops)
  - Random room assignments (mobile patient endpoint)
    - 116 ED rooms

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TELESTROKE - SOLUTION

- Cisco Collaboration team & business partner Dimension Data
- Cisco TelePresence
- Video conferencing solution featuring:
  - 1080p HD video (30 FPS)
  - High quality audio stream (48 kHz)
  - 12X optical zoom, far end camera control

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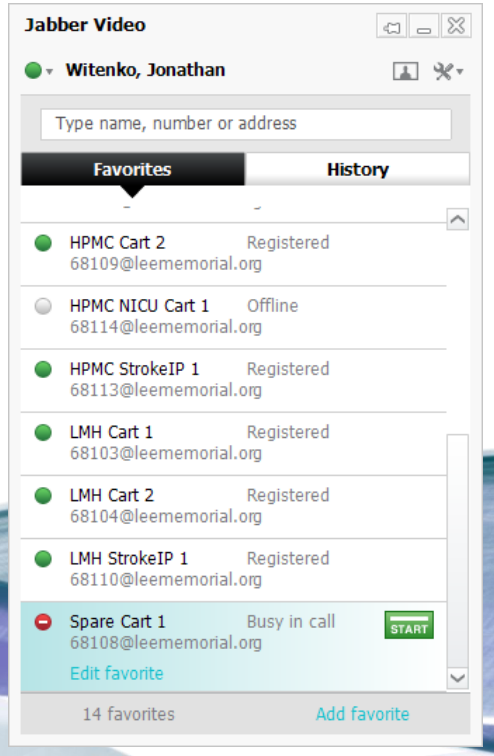
TELESTROKE – SOLUTION

- Cisco Jabber Video
  - Leverage existing system projects
    - Jabber
    - Video Conferencing
    - Webex
  - Endpoint hardware agnostic

Cisco Jabber Video
for TelePresence



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TELESTROKE - INFRASTRUCTURE

Neurologist

Internet

WAN Router

Firewall

Cisco VCS-E

Firewall

Cisco TMS

Cisco VCS

Cisco TelePresence server

Patient

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TELESTROKE – HARDWARE

- Avizia Cart
  - Designed for Telemedicine
  - Native use of external peripherals
- Ergotron Cart
  - System standard cart
  - Customized & supported in-house
  - Development required to utilize external peripherals

Avizia

Ergotron

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TELESTROKE – HARDWARE

- Ergotron Cart
  - Battery powered cart
  - Cisco SX20 codec
  - 12X optical camera with remote PTZ
  - 24” LED 2.3M monitor
  - High performance microphone
  - High quality speakers
  - Cisco Wireless Access Point
  - Two carts per ED (primary and hot spare)

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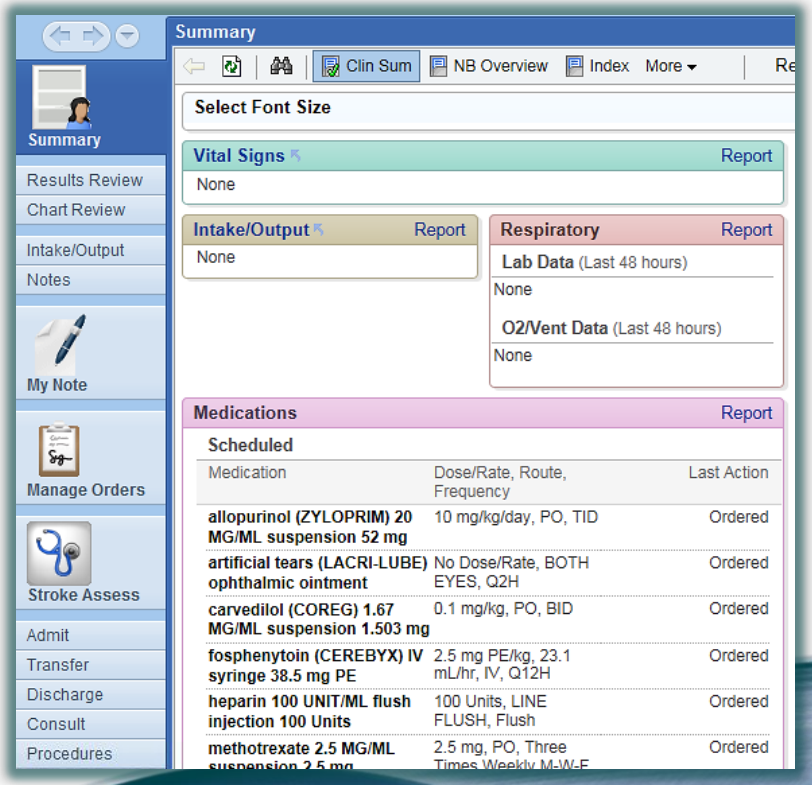
TELESTROKE – IMPLEMENTATION

- Administrative
  - System policies
  - Disclosures
- Clinical
  - Build EHR Navigators
  - Training
    - Physicians
    - Tele-presenters



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TELESTROKE - CLINICAL WORKFLOW

- ED Physician notifies Neurologist of potential stroke
- Patient Care Technician brings Telemedicine cart into room
- Neurologist calls appropriate cart
- Clinician answers call
- Neurologist performs consult with Tele-examiner (NIHSS certified nurse)

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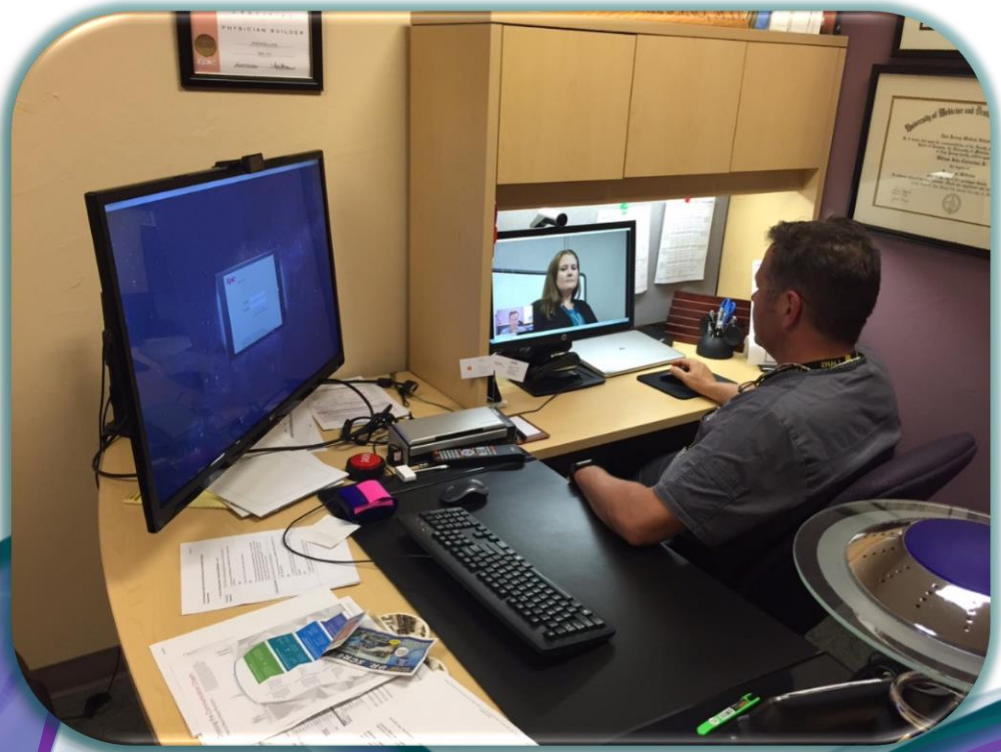
TELESTROKE - SIMULATION

Neurologist



Patient

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TELESTROKE – ROLLOUT

- Live in Emergency Departments
  - Gulf Coast Medical Center live - 11/24/14 - **CSC**
  - Health Park Medical Center live - 12/1/14
  - Cape Coral Hospital live – 12/8/14 - **PSC**
  - Lee Memorial Hospital live – 12/17/14 - **PSC**
- Expanded to Inpatient - 2/1/15

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TELESTROKE METRICS - HYPOTHESIS

- Large gap between telemedicine DTN and standard DTN
- High physician adoption
- Demand from other clinical departments for telemedicine programs

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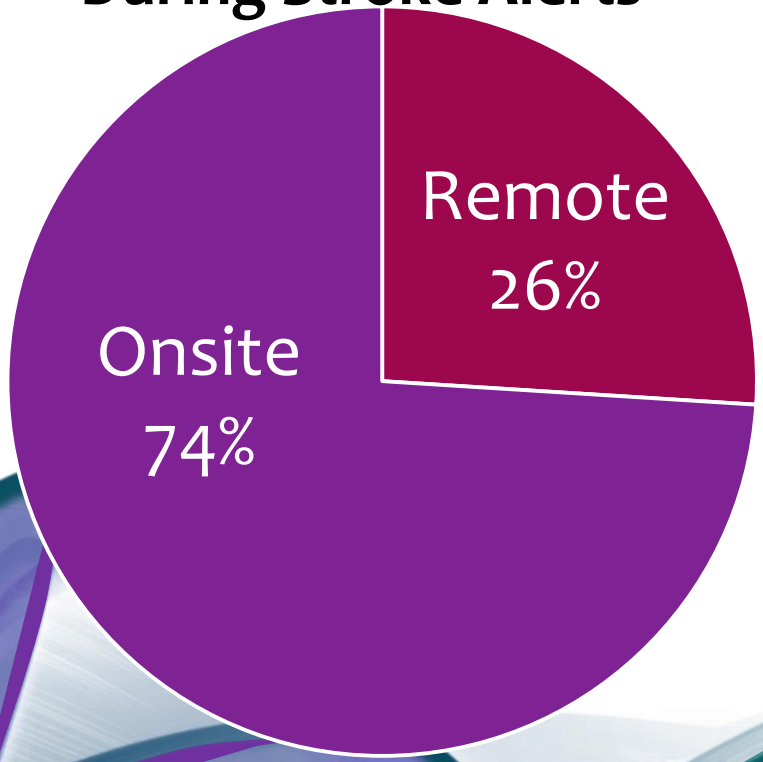
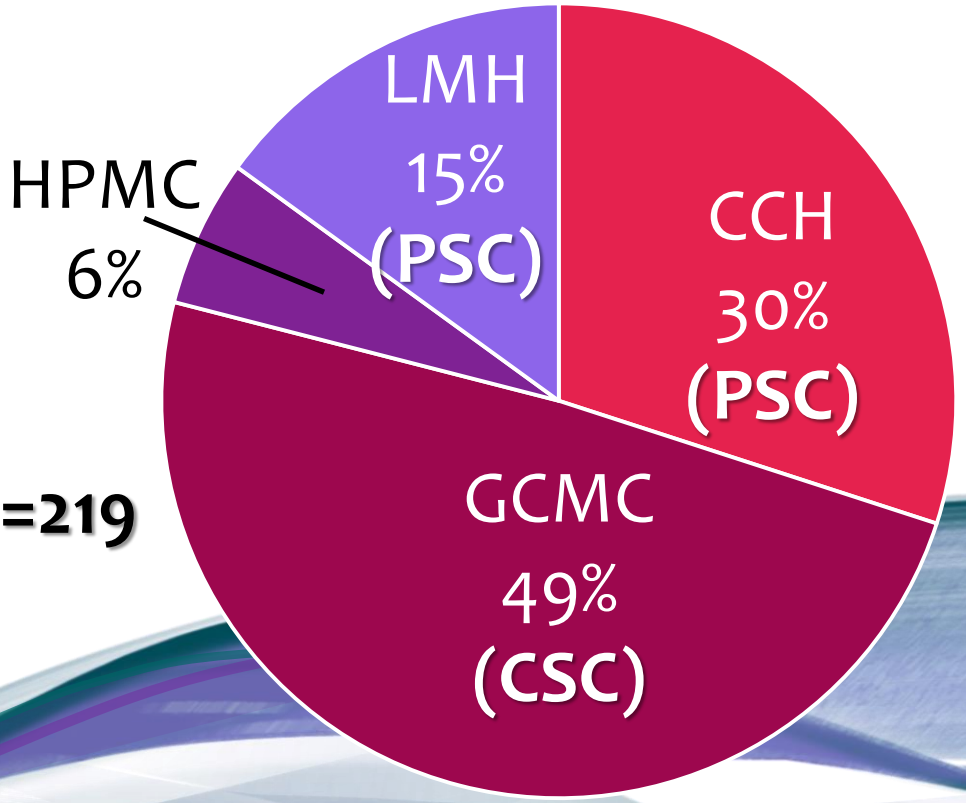
TELESTROKE – METRICS

(JANUARY – DECEMBER 2015)

Neurologist Presence During Stroke Alerts



TeleStroke Utilization by Campus



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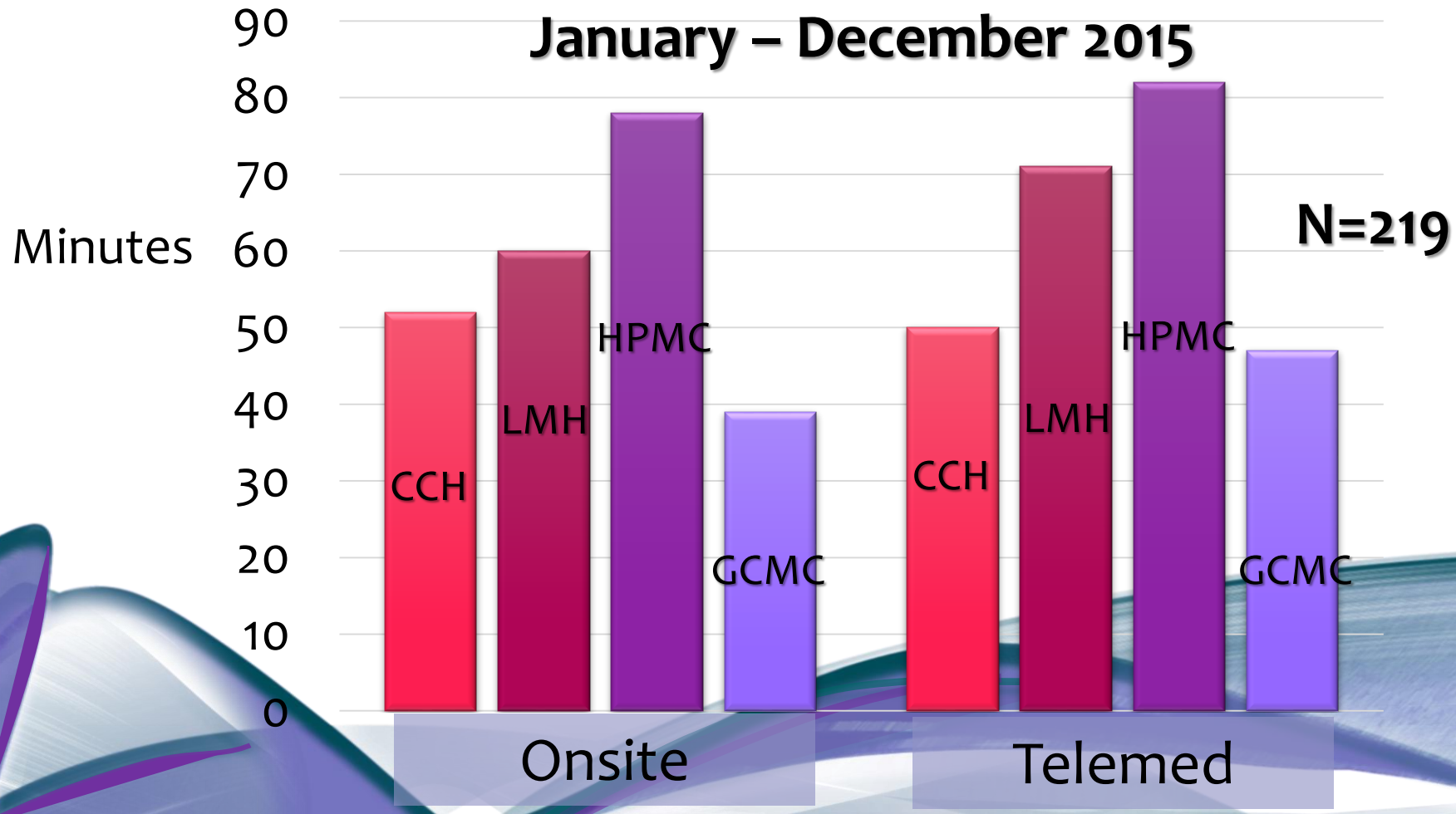
TELESTROKE - METRICS
DOOR TO NEEDLE (DTN)



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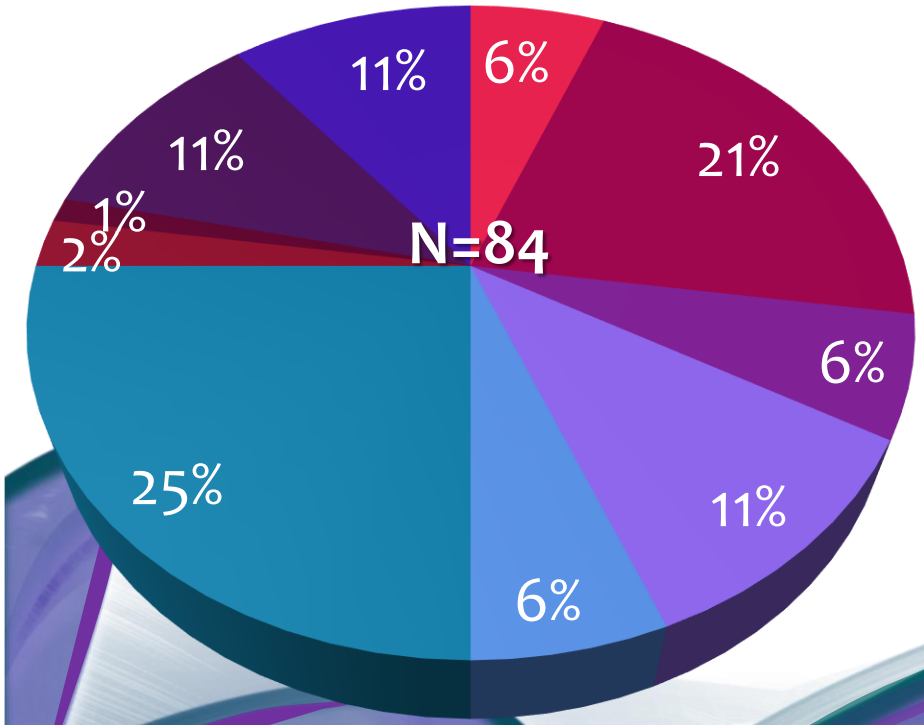
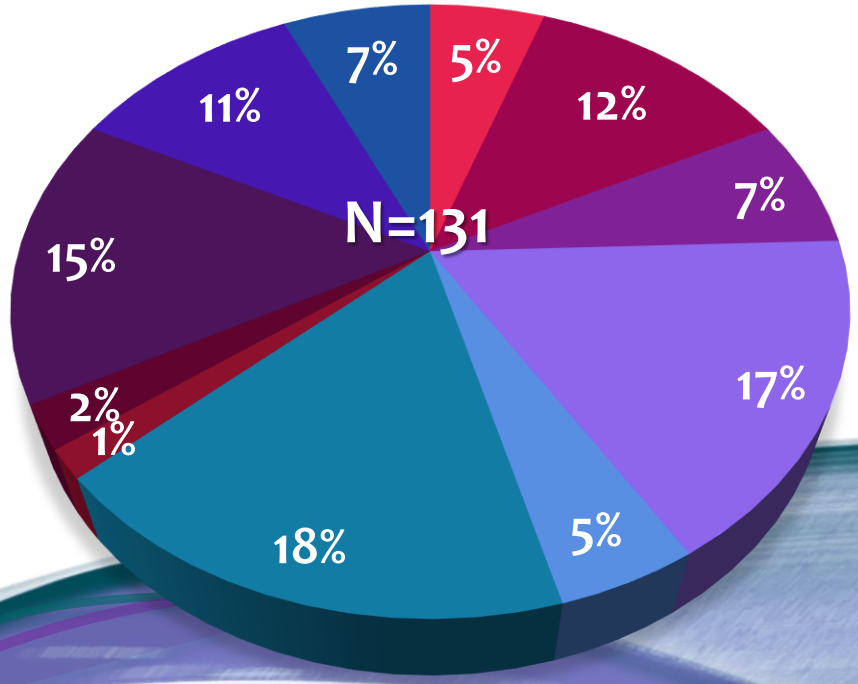
TELESTROKE - METRICS - (UTILIZATION BY PHYSICIAN)

January – June 2015



June – December 2015



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TELESTROKE – OUTCOMES

- Specific achievements
  - Fastest tPA administration – 15 minutes
  - Extended program onto inpatient floors
  - 4 stroke alerts at 4 campuses in 15 minutes
- Challenges
  - Physician adoption
  - Metrics – Build Navigators right away

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TELESTROKE – LESSONS LEARNED

- Inconsistent nomenclature of program (Telestroke, Telemedicine, Telehealth)
- Environmental limitations
  - Allocate space for cart storage
  - Label telemedicine carts to provide additional clarity to staff
- Spare Cart – used as training/preparation cart

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TELESTROKE – PROGRAM SUCCESS

- Successful program due to following factors:
  - Physician (Neurologist) engagement
  - Well defined, focused plan in place
  - Clearly defined goals
  - Investment and collaboration from all departments
  - ED Physician, Nurses, technicians direct involvement
  - Technical teams acumen

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TELESTROKE – SUCCESS STORY

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- **Tele-bilities**

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TELE-BILITIES - NEXT STEPS

- Formed Telemedicine Steering Committee
- Create Telemedicine Questionnaire/Needs Assessment
- Expanded to additional service lines

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TELE-BILITIES – TELE-GENETICS

Provide Genetic consult between Nicklaus Children's Hospital physicians and GCH Neonatologists

Articulating arm designed and developed by LMHS

Live 10/2015

Nicklaus Children's Hospital
MIAMI CHILDREN'S HEALTH SYSTEM

Golisano Children's Hospital of Southwest Florida
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TELE-BILITIES - NEXT STEPS

Represent Clinical Cross Section of Possibilities	
Neurosurgery Consults	Office → ICU
ED Psychiatric Consults	ED←→ED
LCH Behavioral Health Consults	Office → Office
Reducing Readmits (COPD)	Patient Home → Office for savings
Palliative Care	Patient Home → Office for comfort
Healthy Lifestyle Center	Retail Office → Office for revenue

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TELE-BILITIES (UNDER CONSIDERATION)

Represent projects that have been socialized but not vetted

- ED to Nursing home
- Home Health
- Hospice care
- New campus
  - ED Specialists
  - Retail center visits
- CHF Readmits
- Urgent Care
- Wound Care
- Post Op Checks
- TeleSitter
- Discharge planning

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TELE-BILITIES – COOL STUFF AHEAD

- **External Scopes**
  - **Consumer grade**
    - Otoscope
    - Dermascope
  - **Healthcare grade**
    - Otoscope
    - Stethoscope
    - Dermascope

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TELE-BILITIES – COOL STUFF AHEAD

- **Peripheral Integration**
  - Blood pressure
  - Scale
  - Pulse oximeter
  - Thermometer
  - Activity monitor
  - Sleep monitor
  - Glucometer

HealthKit

Withings
Inspire health

fitbit

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Questions?