Synchronous vs. Asynchronous Communications in Virtual Care

Robert Smith, MD, FAAFP
Co-Founder, NowDox
Synchronous & Asynchronous Communications In Virtual Care

Robert L. Smith, MD, FAAFP
October 16th, 2012
Disclaimer

- Robert L. Smith, MD, FAAFP
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    - NCQA Level 3 Medical Home
    - Charter Member, Rochester Medical Home Initiative
  - Co-Founder, Apractis Solutions, LLC
    - Healthcare Workflow Consultant
Objectives

• Explain *Asynchronous* and *Synchronous* methods of communication and how it relates to *Telemedicine*.

• Illustrate the benefits of *Care Collaboration*.

• Examples of *Re-Designed Workflow*. 
The origin of modern telemedicine applications in Europe can be traced to a Dutch physician, Willem Einthoven, who via long distance, transferred electrocardiograms in 1905.

The first clinical application in telemedicine was in cardiology, not radiology as some might have contended.

This was followed by radio consultations from medical centers in Norway, Italy, and France in the 1920s, 1930s, and 1940s for patients aboard ships at sea and on remote islands.
The transmission of radiographic images began in the early 1950s in the United States, followed shortly thereafter by similar experimentation in Canada.

The first wave of organized telemedicine programs in the United States began in the late 1950s. It lasted nearly two decades and then came to a halt shortly after extramural funding was terminated.

This was followed by a hiatus that lasted nearly a decade, until a new wave of telemedicine projects and programs developed at a much larger scale than its forerunner.
By: Mhd Alaa Al Khourdajie

Sources: 1 - Wikipedia - History of Telecommunication
         2 - Book: Mobile Marketing: By: Alex Michael & Ben Salter
Getting to The Holy Grail of Telemedicine

- Asynchronous
- Synchronous
- Tele-Medicine
Asynchronous

**asynchronous**

*adjective  /əˈsinɡkrənəs/*

1. Of or requiring a form of computer control timing protocol in which a specific operation begins upon receipt of an indication (signal) that the preceding operation has been completed

2. Not going at the same rate and exactly together with something else, in particular

3. (of a machine or motor) Not working in time with the alternations of current

4. (of a satellite) Revolving around the parent planet at a different rate from that at which the planet rotates

5. (of an orbit) Such that a satellite in it is asynchronous

6. (of two or more objects or events) Not existing or happening at the same time
Synchronous

**syn·chro·nous**

adjective  /ˈsiNGkrənəs/

1. Existing or occurring at the same time
   - glaciations were approximately synchronous in both hemispheres

2. (of a satellite or its orbit) Making or denoting an orbit around the earth or another celestial body in which one revolution is completed in the period taken for the body to rotate about its axis
Synchronous Communication

- Chat
- White Boarding
- Instant Messaging
- Audio Conferencing
- Web Conferencing
- Application Sharing
It’s Time To Get On The Same Page
The Current Problem in Healthcare

- Clinicians
- Payers
- Allied Health Professionals
- Patients
- Family Caregivers
- Portals
- Amb. Care
- EHR
MedPAC estimates that the Medicare program spends $12 billion a year on potentially preventable hospital readmission. Among Medicare beneficiaries who are readmitted to the hospital within 30 days of a discharge, half will not have had any contact with a physician between their first hospitalization and their readmission, suggesting a lack of care transition management.”

Health Affairs Brief, the Robert Wood Johnson Foundation, 2012
• In 49% of referrals, the *receiving physician* was given no information.

• In 55% of referrals the *ordering physician* got no information back from the receiving physician.

• 28% of *ordering physicians* and 43% of *receiving physicians* were dissatisfied with the quality of the information they received from the other.

NEJM, Statistics on Care Coordination, 2012

• 60.9% of respondents cited communications as the most challenging root cause to poor patient flow.

AHAs Pursuit of Excellence
Patient Flow Challenges Assessment, 2012
Nursing Care Coordination

- 86% of respondents estimated wasting up to two hours per shift, “chasing other people to get answers”.
- 60% of nurses estimated working up to 10 hours of overtime per week due to time wasted or lost trying to communicate with other staff.

National Survey of Hospital Nurses
Key findings from 253 nurses – Cisco 2009

- Significant gaps in communications skills and systems-based practice: providing cost-conscious, effective care and coordinating with other providers.

American Hospital Association, Physician Leadership Forum Findings
Your specialist did not receive basic medical information from your primary care doctor.
Your primary care doctor did not receive a report back from a specialist.
Test results/medical records were not available at the time of appointment.
No one contacted you about test results, or you had to call repeatedly to get results.

Commonwealth Fund Survey of Public Views of the US Health Care System
Technology is no Longer a Barrier, It is at Our Fingertips!
Care Collaboration: A New Approach

- Makes collaboration easy, efficient, non-intrusive or disruptive.
- Reduces the burden & costs of Care Coordination on Primary Care & Specialty Providers.
- Achieves satisfaction among staff that they are delivering quality care in a culture that supports them and improved care.
- Shrinks time between primary care events and specialty support.
- Simplifies complex clinical interventions and shared decision-making.
A New Approach …

- Provides for a more effective physician outreach and affinity program
- Enables real world patient engagement & satisfaction
- Reduce hospital readmissions and emergency visits – improving utilization
- Eliminates unnecessary appointments, tests & procedures
- Lowers cost of IT infrastructure
- Strengthens relationships: HCP to HCP, HCP to patient and HCP to HCO
Online Collaboration Platforms
Get Google Drive everywhere

Desktop
Get Drive for your PC or Mac.
Download

Android
Get Drive for your Android.
Download

iPhone/iPad
Get Drive for your iOS.
Download

To get the most of Drive on the web, download the Chrome browser.
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- Preston Kiser, Customer Service Representative

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WebEx WebOffice
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- **Online Calendar**: Schedule group meetings and events.
- **Web Meetings**: Conduct powerful online meetings easily.
- **Task Manager**: Manage tasks and activities for your group.
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- **Expense Reports**: Manage your travel and expense reports online.
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Help reduce costs while maximizing productivity

Healthcare organizations around the world are turning to Polycom video collaboration solutions to improve care and reduce cost. Collaborative healthcare solutions from Polycom enable patient-centered care, multi-disciplinary team support, reduction of unnecessary re-hospitalizations, and collaboration across the entire healthcare team independent of physical barriers. There are many reasons why eight of the top 10 hospitals and the top ten pharmaceutical companies worldwide are Polycom customers. Polycom’s collaborative healthcare solutions:

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Secure.
Convenient.
Private.
Reliable.

Overcoming the barriers that constrain our ability to work together. Sounds like mission impossible— and yet, we’ve figured out how to collaborate across all the traditional boundaries to enable the right care from the right people at the right time.

Focus on the people and the tasks, not the technology. It’s about the stories of how practical, real-world collaboration changes the experience of care. Our mission is to empower, inform and assist all participants in the care continuum.

We ease the complexity of collaborating at any point of care. Healthcare professionals, patients and family caregivers can now work together in a secure, private and convenient manner as conditions and needs change during the course of a chronic or acute health-related event. We call it Care Collaboration.

Respect for the time of busy healthcare professionals and everyone’s health and well-being. We’re dedicated to creating, supporting and sustaining a world in which everyone— including doctors, allied health professionals, nurses, support staff, care navigators, patients and family members— is engaged in working together.
Integrated Care Collaboration Platform

Clinical Expertise

Expert Support Service

Best of Breed Technology

Vidyo

webex weboffice

updox
**Profesional Networks**

- Physicians
- Nurses
- Allied Health Prof.
- Patients
- Family Caregivers
- Payers
- Researchers

**Information Sharing**

- Messages
- Files
- Video Conferencing
- Tasks
- Schedules
- Drag, Drop, Annotate

**Work From Any Device**

- Providers, Patients, and Family Caregivers can record & post anything (*i.e.* questions, symptoms)
- Notifies everyone appropriately.
- No appointments or overbookings.
- Primary care providers can call Specialist or Patient at their discretion.

**Custom Workflows**

- Sign Out
- Notify
- Task
- Schedule
Case Studies in Virtual Care

- “A Virtual Delivery”
- “Triplets in Trouble”
- “It’s The Worst Headache Of My Life”
- Transitions of Care and Inpatient Tracking
- “ICU Care Collaboration”
- “Secure Messaging and Sign-Out Workflow”
- “Web-forms into Workflow”
The Old (or Current) Way

• Assessment based on what intracranial process is occurring. *practicing defensive medicine*
• PCP reluctantly sends his patient to the ED.
• Patient receives a CT scan and is kept under observation for 6 hours until an intracranial aneurysm is ruled out.
• The total bill for her care comes to $1500.
A New Standard of “Collaborative” Care

• From a virtual private workspace, PCP sets up virtual meeting with a neurologist that is available for online consults.

• “Live” in the exam room, the neurologist conducts a complete neurological exam.

• Neurologist ascertains that the patient was not having an emergent headache.

• She is treated with pain meds and observed in the office.

• After 20 minutes her pain scale drops from 10/10 to 2/10.

• No ED visit or additional CT or MRI.

• Patient’s insurance company was spared the expense of an ED visit, imaging studies, consult fees in the hospital, etc.

• Patient’s bill came to $150 for a moderate level outpatient visit.
Mrs. C. Jones

Facility location: Outpatient office

Robert L. Smith, MD, FAAFP, Sep 16, 2012

Patient Name
Mrs. C. Jones

Age and Gender
42 year old female

Facility location
Outpatient office

For review by
Andrew Barbash, MD
Neurologist and Co-Founder of NowDox

Files
- F0039160-Normal_brain_MRI_scans-SP... 88 KB
- CP Migraine note.htm 8 KB
Transitions of Care Opportunities

- Admission to the hospital.
- Visit to the ER for something requiring near term follow-up.
- 24 hour stay in Observation unit for condition that might be evolving or needing input.
- A change in inpatient clinical status for which PCP notification could assist with care planning or family communication.
- A significant intensive care transfer involving multiple care provider input.
- A transition to another facility for care in which the involvement of the PCP in the discharge or transfer process will assist with follow-up continuity in that other facility.
“Lack of communication between a hospital and the patient’s regular outpatient provider is a major factor causing poor Transitions in Care”

Health Affairs Brief, Robert Wood Johnson Foundation, 2012
### Finger Lakes Family Care

#### FLFC Staff

- FLFC Admin
- FLFC Advisors
- FLFC Financial
- FLFC Medical Neighborhood
- FLFC Staff
- NowDox Help
- RLSMD Family
- RMHI
- Smith Family Geneology

#### NowDox-Groups and Teams

- Employee Network
- Apractis Solutions Management
- Apractis-NowDox Marketing and Media
- Apractis/NowDox-Clinician Advisory Board
- Ctdox-NowDox Healthcare Team
- FFTH Virtual Care Leadership
- Health 2.0 Workspace
- Support Team-NowDox
- Testing playground

#### More Workspaces You Can Join

- WORKSPACES YOU CAN JOIN
- Create a workspace

#### NowDox Demo Site

- Case-85 yo with headache-demo

### Care Transitions

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<th>Patient DOB</th>
<th>Patient Status</th>
<th>Admission Date</th>
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<tr>
<td></td>
<td></td>
<td>Inpatient</td>
<td>09/23/2012</td>
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<td>09/15/2012</td>
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<tr>
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### Filters

- My filters
  - 4 in FLJ needed x
- Others' filters
  - 4 in 3 saved by
  - 4 in 1 saved by
  - 3 inpatient
  - 3 into be see

### Patient DOB

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</table>
• Clinician arranges a virtual consult with a neurologist, a hospitalist and the sister.

• The consult suggests an unusual presentation of what might be an infection or autoimmune disorder. Everyone agreed that a second opinion is needed.

• Images & records were placed in a virtual private workspace for neuroscience experts from a local academic medical center to review and a virtual consult to discuss the images and lab tests. On the advice of these experts, specific tests on the spinal fluid and a treatment plan were initiated.

• With the patient showing a marked improvement, an outpatient evaluation at the AMC after a short-term rehab program was arranged — avoiding an urgent inpatient transfer.

• The family and treating physicians were delighted with the timely intervention of the experts thereby avoiding an inpatient transfer.

• When time came for the follow-up at the AMC, the family and the experts had the records and images they needed in their virtual private workspace.
### Mr Johnson

**Location of patient-case**: HCH SICU Bed 2

- **Patient admitted to ICU**
- **Daughter is physician**
- **Case workspace setup within minutes of admission**
- **Nurse gets EMAIL address of family caregiver**
- **Collaboration begins**
- **Meeting arranged with specific room link**
- **Caregiver joins from iPad**

**Age and Gender**: 77 male

**Initial summary**: Presented with transient stroke symptoms, dramatically improved and then worsened the following day. Unsuspected left carotid occlusion, recent dental procedures.

Will post comments related to most update scans.
My clinical cases, co-managed with the NowDox support team. Daughter of patient and her neurologist invited in. Sample images with comments grabbed and she was notified.

The CT is very stable.

Will plan to slowly reduce the 3% saline to left sodiums drift to normal range over 48 hrs.

BP have held in reasonable range, can liberalize those as well.

TODAY SUNDAY STABLE

Daughter—Mary Smith
• Real-time documentation of on-call notes in a communication platform that can be readily transferred into an EMR system.

• Documentation of dermatological skin lesions prior to excision that can be saved into the chart or instantly collaborated with a referring consultant if needed.

• Workflow designed for the physician, not for the system!
Text details and comments
Left post auricular lesion. Schedule an excision.

Category
Clinical patient...

Picture-record or attach

For review by
Carol Shephard
carol.shephard@fingerl...
Web-forms Into Workflow

- Web-form embedded into our practice website.
- Rx Request forms that are submitted do not go via email but rather stay on the secure server.
- Results instantly see by our office staff.
Finger Lakes Family Care Rx Request

Patient Name *

Date *

MM/DD/YYYY 00:00 AM

Medication Name *

Dosage *

Frequency *

Once Daily

Amount *

☐ 30 Day Supply
☐ 90 Day Supply

Type of Rx *

☐ Pick-up
☐ Electronic Prescription
Healthcare is broken, and **WE** need to fix it!

Workflow efficiencies between individuals and systems is the answer, rather than a single, nation-wide system.

Antiquated communication standards need to be retired: mail, pagers, fax, phone!

Newer models of communications within the context of care collaboration is the answer.

Asynchronous leading to synchronous communication is the most efficient process of communicating.
Thank You!

- Robert L. Smith, MD, FAAFP
- rlsmithmd@nowdox.net
Majestic

3:30pm – 4:00pm

Closing Remarks and Door Prize Drawing

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