Consumer-Facing Interoperability and Data Exchange
A Provider Perspective

Session INT3, February 19, 2017

Steven Lane, MD, MPH, Clinical Informatics Director, Sutter Health
Lygeia Ricciardi, EdM, President, Clear Voice Consulting LLC
Speaker Introduction

Steven Lane, MD, MPH
Clinical Informatics Director, Privacy, Information Security & Interoperability
Sutter Health
Lygeia Ricciardi, EdM
President
Clear Voice Consulting LLC
Conflict of Interest

Steven Lane, MD, MPH has no real or apparent conflicts of interest to report. Lygeia Ricciardi, EdM has no real or apparent conflicts of interest to report.
Problem

• The sources of patient generated health data are expanding, as is the opportunity to use these data to improve patient outcomes.

• Determining which data are useful, architecting a pathway to collect the data, pairing it to the right patient, incorporating it into the provider’s decision making process, and having it offer utility back to the patient, is no small task.
Learning Objectives

• Describe the key role patient use and exchange of health information plays in their health
• List challenges delivering patient-generated health data to the provider
• Describe solutions that effectively and digitally connect patients and their providers
• Summarize patient stories of effective patient-provider exchanges that impacted the patient’s care experience
The role of patient use and exchange of health information in healthcare

- Historical perspective
  - Paper records > EMRs > PHRs > Interoperable EHRs and other HIT systems
  - Exchange/communication between providers and consumers of healthcare
  - Consumer-generated data

- Regulatory requirements
  - Meaningful Use
Challenges delivering patient-generated health data to the provider

• Identifying most useful data types, items
• Standardization
  – Data definitions
  – Methods of collection
  – Accuracy of devices
  – Normalization
  – Transmission
• Multiple sources
  – Digital health apps
  – Wearables
  – Medical devices
Solutions that digitally connect patients and their providers

- Patient portals
- EHR connectivity and integration
- Clinical messaging
- Online forms
  - Medical history
  - Structured e-visits
  - Condition management
- Patient generated health data
  - Manual entry vs automated capture
  - Provider-provisioned devices vs. consumer BYOD
Patient-provider exchanges that impact the patient’s care experience

- Patient **view** of provider-generated information
  - Encounters, Instructions, Results, Biometrics, Reminders, Open Notes
- Patient-provider **communication**
  - Administrative: Scheduling, demographic/insurance changes, billing/payments
  - Clinical: Free text
- Patient submission of **discrete data** to provider
- **Clinical programs** leveraging digital patient engagement
Discrete data submission

- Record updates – problems, allergies, medications, immunizations (PAMI)
- Biometrics – blood pressure, weight, pulse oxymetry
- Lab results – blood glucose, anticoagulant monitoring (INR)
- Images (rashes, skin lesions, wounds, ear drum, etc.)
- Questionnaires – patient history, condition-specific, standardized
- Behavior – diet, medication use
- Activity – movement/fitness, sleep
- Emergency alerts – falls, etc.
- Environmental, Social, Financial,…
EASI-PRO

• EHR Access to Seamless Integration of PROMIS
• PROMIS = Patient Reported Outcomes Measurement Information System
  – Computerized survey tool with branching logic
  – Integrates with patient information in the EHR
  – Piloted at Northwestern University
• $6.3M NIH Grant to integrate with Cerner and Epic EHRs at 8 other organizations
Clinical programs

• **EMPOWER-H** – Engaging and Motivating Patients Online with Enhanced Resources - Hypertension
  
  – Sutter Health Palo Alto Medical Foundation pilot study, helping patients with uncontrolled hypertension regain control of their blood pressure
  – Aim: improve outcomes by targeting health behaviors and encouraging patients to use tracked data to proactively change their own behavior
  – Patients equipped with a blood pressure monitor, pedometer, scale, iPhone, and Bluetooth device for transmitting blood pressure readings
  – EHR integrated dashboard to track patients and identify patient needs
  – Patients receive real-time online and telephonic feedback, education and support from care team without the need for doctor visits
View, download, transmit (VDT)

- Patient-directed transmission of clinical data from one provider to another
  - Encounter documentation
  - Care plans
  - Medication changes
  - Images
  - Lab results – routine, genomics, etc.
  - Care continuum – behavioral and dental health, therapies, complementary providers, fitness professionals
Provider perspective

• So much data, so little time
  – Importance – e.g., Calories vs. steps
  – Meaning – signal vs. noise, variability of patient data in the wild
  – Summarization – average, range, outliers
  – Timing / frequency of data delivery
  – Involve the right member(s) of the healthcare team
  – Automated analysis – trends, alerts
  – AI and machine learning

• Integration into the clinical workflow
  – View all data sources together with attribution

• Provider customization, control
• Liability concerns
Provider challenges

- Infrastructure
- Privacy and security
- Maturing technologies – Desire make the right investments
  - e.g., FHIR can pull data better than push it and not yet focused on PGHD
- Analytical capabilities
- Change management
- Prioritization
  - Patient interest / demand
  - Value proposition – fee for service vs. value-based care
  - Regulatory requirements
CMS EHR incentive program

• Meaningful Use – New Stage 3 Measure (11/2016)
  – Patient generated health data or data from a non-clinical setting is incorporated into the EHR for > 5% of all unique patients seen

• Satisfied by:
  – Patient record updates – Problems, meds, allergies, demographics
  – Questionnaires, e-visits, online check-in
  – Received documents scanned into record, e.g., advance directives
  – Data uploaded from home monitoring devices or fitness trackers
Patient challenges

• Onboarding patients with the greatest need – elderly, disabled
• User interface design
• Home/personal infrastructure – Bluetooth, wireless
• Family / caregiver engagement
• Incentivizing manual data collection
• Support – 24x7
• Who pays for the technology and clinical programs?
Patient Stories
Questions

• Steven Lane, MD, MPH
  • lanes@sutterhealth.org
  • @emrdoc1
  • https://www.linkedin.com/in/steven-lane-md-mph-faafp-9b56661

• Please complete online session evaluation