Case Study: Physician and Patient-Facing Medical Education APPs

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Quality IME – Collaborating for Patient Care

- Commercial Supporter
- @Point of Care Provider
- Medical Education Provider
- Needs Assessments
- Learning Objectives
- Grant Proposal
- Supported Educational Activity
- Funding
- Faculty
- Program Design and Implementation
- Outcomes
- Testing
- Learner
Identified need for HCP’s and Patients

The Healthcare Provider

•Clinical information readily available has exploded
•Physician time is limited and increasingly they need to have this information available at the point of care.
•Physicians spend little time with patients

The Patient

•Low health literacy among patients hinders optimal patient care and can lead to poor adherence to prescribed regimens
•Increasing complexity of information available to patients (online)
  o Need to have physician guided patient education
•Rise of always available internet access via mobile devices (Smartphones)
Get patients engaged in their own care

• The DHHS National Quality Strategy – 6 priorities
  o Ensuring that each person and family are engaged as partners in their care

• Important to get physicians and patients to increase communication

• Must increase patient engagement in their own care, through monitoring of S/Sx of disease, as well as medication adherence
One identified solution

Projects in Knowledge is a Medical Education Company specializing in physician and patient engagement in health care learning

At Point of Care (@POC)
- Website access – atpointofcare.com
- Mobile Apps (available on iOS; Android coming soon)

Continued evolution of @POC
Companion Apps

Clinicians

On demand sync by patient

Patients

PATIENT APP

Access HIPAA-compliant patient information
Key Features

- Cognitive discovery using natural language processing using IBM Watson
- Clinician/patient collaboration
- Real-time content management system (CMS)
- Built-in real-time surveys
- Built-in assessment via pre/post testing capabilities
- Category 1 CME
- User level analytics
Current Content Areas

- Asthma*
- Breast Cancer*
- Chronic Obstructive Pulmonary Disease (COPD)*
- Chronic Lymphocytic Lymphoma (CLL)*
- Cystic Fibrosis (CF)*
- Diabetes*
- Gynecologic Cancers
- Heavy Menstrual Bleeding (HMB)*
- Hepatitis*
- Hypoparathyroidism
- Idiopathic Pulmonary Fibrosis (IPF)*
- ImmunoOncology*
- Major Depressive Disorder (MDD)*
- Multiple Myeloma (MM)*
- Multiple Sclerosis (MS)*
- Myelodysplastic Syndromes and Acute Myeloid Leukemia (MDS and AML)
- Non-Small-Cell Lung Cancer*
- Osteoporosis*
- Parkinson’s Disease (PD)*
- Prostate Cancer*
- Psoriasis and Psoriatic Arthritis*
- Rheumatoid Arthritis (RA)*

*Watson enabled
Key Features

- Imbed dynamic content
- Custom Content
- Content Updates
- Imbed Audio/Video content
- Interactive real-time Survey
- Ask Watson
Dedicated Watson Corpus

Traditional search function...
**Dedicated Watson Corpus**

1) Evidence based CME content
2) Update and maintain
Natural language processing to provide rapid accurate answers
Sample user analytics

User activity

Utilization analysis

Geographic User data

User analysis

Question analysis

Performance analysis
Patient Generated Data
MANAGE TREATMENTS
DIGITAL PATIENT DIARY
IN-APP VISUALIZATION OF PATIENT REPORTED OUTCOMES

This data can be shared with care team directly via apps or via EMR
Clinician Dashboard of Patient Reported Data
Insights into clinician/patient usage

Use of the Multiple Sclerosis @Point of Care IBM Watson Cognitive Learning Tool

- 79% of the IBM Watson users posing questions on demand were neurologists, internists, general practitioners, and family practitioners treating patients with MS.

CLINICIANS

PATIENTS

Are Clinicians More Aware of the Impact of Fatigue on Their Patients’ Daily Lives as a Result of Discusson with Patients About the Fatigue Scale Results from the App?

How Frequently Do Patients Use the My MS Manager Patient App?

Does the Patient App Help Patients Better Track How They Are Doing?

After Discussing the Patient App Records/Charts with Their Clinicians, the Following Changes Were Made

- Changes to medications: 14%
- Changes to other parts of treatment plan: 10%
- Suggestion for lifestyle changes: 9%
- Requested more tests: 1%
- No changes were made; doctor felt treatment plan was on track: 69%
Some real outcomes provided to BMS
Level 1 – Participation
Hepatitis C @Point of Care (as of 3/31/2016)

Hepatitis C Clinician Engagement

Average Time Spent
6:47 minutes
7,895 Total Unique Users
63.56% repeat learners

February 2016 iOS App Units by Platform (based on iOS 8.0, opt-in only)

Top 10 U.S. States - Geographic Distribution of Learners

- New York: 16%
- Georgia: 12%
- New Jersey: 12%
- Illinois: 12%
- California: 12%
- Texas: 12%
- Ohio: 12%
- Pennsylvania: 12%
- North Carolina: 12%
- Other: 12%
Level 2 – Satisfaction
Hepatitis C @Point of Care

How effective was the activity in meeting the identified learning objectives?

- Excellent: 48%
- Very Good: 11%
- Good: 40%
- Satisfactory: 1%
- Poor: 0%

The information in this activity was presented objectively and free of commercial bias

- Agree: 99.52%
- Disagree: 0.48%

Level of the content and course material presented

- Just Right: 84%
- Too Advanced: 11%
- Too Basic: 5%

N=436
N=419
N=389
Q: What is the sustained virologic response rate associated with sofosbuvir plus daclatasvir for treatment-naive patients with HCV genotype 3?

Answer: 89%
Level 4 – Change in Competence
Level 5 – Change in Performance
Hepatitis C @Point of Care

Currently, how often do you consider the pathophysiology of chronic HCV infection and the development of cirrhosis and hepatocellular carcinoma when deciding to start therapy? 

Based on your participation in this CME/CE activity, how often do you now plan to consider the pathophysiology of chronic HCV infection and the development of cirrhosis and hepatocellular carcinoma when deciding to start therapy? 

Since completing this CME/CE activity, how often have you been considering the pathophysiology of chronic HCV infection and the development of cirrhosis and hepatocellular carcinoma when deciding to start therapy?

% Participants responding "Always" and "Very Often":

- Current: 70% (n=60)
- Immediate Post: 84% (n=61)
- Follow-up Survey: 100% (n=6)
Level 6 – Change in Patient Health
Hepatitis C @Point of Care

Clinicians describe patient outcomes they have observed as a result of the education:

- Patient agreed to start retreatment of her CHC with a new oral antiviral medication once the mechanism of action was explained to her
- Patient opted for a regimen not containing simeprevir when she tested (+) for Q80K resistance
- Patient with Geno 2 HCV was successfully treated with daily combination of 400mg
- sofosbuvir plus 1000 mg RBV for 12 weeks with excellent SVR/12
- Patient with Geno 6 was also successfully treated with daily sofo 400mg + RBV
- 1000mg + weekly PEG for 12 weeks
- Achieved sustained viral response on interferon free regimen
- Less side effects and higher patient satisfaction
- Patient cessation of alcohol use
- Patient decision to undergo liver biopsy
- 55-year-old male resolved with Geno Type 1B
- One new patient on HCV therapy
- Good outcome on newer therapies
- This education confirmed what I do in practice
- Now I have SVRs in my patients
- I appreciate the ease in which I can now treat my HCV patients
Why CME Matters...3 Lives Saved!

• Write in responses on patient outcomes

“For my RA patients I now know to look closely for signs of infection-viral or fungal-if they are on any TNF inhibitors prescribed by their rheumatologist. I do this by monitoring for any acute or chronic changes in their pain that do not fit the patients previous presenting pain condition. Or anything that could be a malignancy. In less than 2 months I have found 2 separate patients, both presented with several months of increase sharp mid back pain with radiation to the left or right abdomen. Thoracic MIR with follow up abdomen CT showed renal mass >6 cm. As I see my pain patients monthly I get to see small changes and put together the pieces, whereas most rheumatologists will see the same patient at 3 months intervals. (I just saw an RA patient on Friday and sent her to the emergency room with a collapsed lung. She called her primary and he told her he doesn’t treat her pain anymore!) your CME saved 3 patients lives in less than 2 months.”
How do I treat HCV GT 1b infection for treatment naive patient with UC?
How do I treat GT 4 infection for a treatment naive patient?
How do I treat treatment failures due to viral resistance?
How do I treat HCV GT 1a in a 67-year-old patient with compensated cirrhosis?
If only Sofosbuvir, Ledipasvir & Daclatasvir are available among the DAAs, what is the optimal treatment for GT 3 infection?
How do I treat refractory to Peg-riba GT 1a?
Clinical trial information for anticipated therapies?
Efficacy of short-term treatments using 3 antivirals?
What are the drug interactions between select DAAs AND HIV meds vs statins etc?
Summary

- IBM Watson integration has made the content more available
- Engaged learners spend **more than 12:08 minutes** per access during the practice day @Point of Care in the treatment sections
- **Significant impact** on learning, competence, and performance identified
- **64 – 77% of learners come back** to @POC
Questions