Massive Open Online Course (MOOC) as a Tool to Orient and Train Clinical Research Nurse (RN) Coordinators

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Joseph Cosico | Gerry Yumul | Rachel Olson
Speakers

Joseph Cosico
Director of Clinical Research Operations
Cedars-Sinai Heart Institute

Gerry Yumul | @workingattheheart
Digital Strategist and eLearning Advisor
Minneapolis Heart Institute Foundation (MHIF)

Rachel Olson, RN, CCRC
Senior Clinical Research Content Consultant
Joseph Cosico
Director of Clinical Research Operations
Cedar-Sinai Heart Institute
Speaker Background

• **Joseph Cosico**
  - Training grant Project Director
  - Previous VP of Research Operations at MHIF (2007-2013)
  - Currently Director of Clinical Research Operations, Cedars-Sinai Heart Institute

• **Rachel Olson**
  - Very experienced Research Nurse Coordinator in Cardiovascular Stem Cells
  - Faculty
  - RC at MHIF (2000-2015); currently at Duke University
  - Consultant to MNCCCT

• **Gerry Yumul**
  - Digital communications
  - Resident technology advisor
  - Currently at MHIF
Background

- Competitive renewal for a cooperative grant agreement, Cardiovascular Cell Therapy Research Network (CCTRN)*

- Two accompanying training grants were awarded in 2012 to Minneapolis Heart Institute Foundation (MHIF) and Texas Heart Institute (THI) as part of CCTRN. MHIF’s training grant is called the Coordinator Core Curriculum Training (CCCT)

- The CCTRN supports 14 PIs and Co-Is, in addition to 20+ coordinators and over 10+ fellows and trainees

- Each site has its own orientation process for its research coordinators

*Funded By NHLBI Grant Numbers: UM1HL087394 & UM1HL087365
About CCTRN

• The Network
  – CCTRN is a network of physicians, scientists, and support staff dedicated to studying stem cell therapy for treating heart disease. The goals of the Network are to complete research studies that will potentially lead to more effective treatments for patients with cardiovascular disease, and to share knowledge quickly with the healthcare community.

• Mission Statement
  – The mission of the CCTRN is to achieve public health advances for the treatment of cardiovascular diseases, through the conduct and dissemination of collaborative research leading to evidence-based treatment options and improved outcome for patients with heart disease.
CCTRN Organizational Chart
CCTRN Organizational Chart

NHLBI

PRC

SC Chair

DSMB

Publications

Protocol Development

Steering Committee
Research Coordinator Training Programs

- Research nurse coordinators at Minneapolis Heart Institute Foundation with plan to expand to collaborating MN research sites
- Up to 4 trainees simultaneously
- Web based and in-person training

- Registered nurses without prior clinical trial experience
- One trainee at a time
- Hands-on, 16-18 month training program
Goals & Specific Aims of MHIF CCCT

• **Goals:**
  – Primary: Clinical Nurse Research Coordinator Core Curriculum Training (CCCT) is to encourage the development of nurses with varying skills into successful Clinical Nurse Research Coordinators (CNRCs) in cardiovascular cell therapy.
  – Secondary: To provide background and training in both clinical research coordination and cardiovascular cell therapy to encourage nursing participation in clinical research.

• **Specific Aim 1:** To develop a core curriculum consisting of didactic, hands-on training, **multi-media/virtual support** and most importantly mentoring program during the first 12 months of the grant period.

• **Specific Aim 2:** To train 4-5 research nurse coordinators yearly in conjunction with the CCTRN clinical research activities during the grant award period.
Minneapolis Heart Institute Foundation (MHIF)

- Independent 501(c)(3) Research and Education foundation.
- Serves to support the research and education mission of Minneapolis Heart Institute at Abbott Northwestern Hospital
- Nationally-ranked, high volume cardiovascular clinical & research institute
- One of the largest experienced clinical research centers in cardiovascular cell therapy
- More than 36 research staff, most are clinical research nurse coordinators
Orientation and Training Curriculum Outline

- **Human Research Subject Protection**
  - Institutional Review Board and Institutional Biosafety Committee
  - National Institutes of Health & Food and Drug Administration Regulations
  - Informed Consent Process
  - Health Insurance Portability and Accountability Act (HIPAA)

- **Responsible Conduct of Clinical Research**
  - Conflict of Interest
  - Data Integrity
  - Study Methodologies

- **Study Start-up, Implementation and Data Collection**
  - Regulatory document preparations and submissions
  - Contracts and Study Budgets
  - Screening and Recruitment strategies
  - Data submissions
Orientation and Training Curriculum Outline

- **Data and Safety Reporting**
  - Serious Adverse Event and Adverse Event Reporting
  - Data Adjudications
- **Cardiovascular diseases targeted with cell therapy**
  - Acute Myocardial Infarction (heart attacks)
  - Heart Failure/Heart Transplant/Mechanical Circulatory Support
  - Refractory Ischemia (angina)
  - Peripheral Artery Disease (Critical Limb Ischemia)
  - Stroke
- **Current Cell Therapy Technologies**
  - Cell types (adult vs. cord vs. embryonic)
  - Autologous vs Allogeneic
  - Cell harvesting and processing
  - Cell Delivery (Intravenous, Intramyocardial, Intracoronary, Retrograde Coronary Sinus)
- **Introduction to Study Methodology**
  - Biostatistics
  - Clinical Trial Design
  - How to read and critique a scientific paper
  - How to write an abstract or manuscript for peer-review submission
MHIF Coordinator Orientation

• Hands-on
  – Traditional: see one; do one; teach one
• Didactic
  – Weekly faculty lectures and in-services
• Online
  – Moderated and self-guided
  – Linked to publicly available resources
• Journal Club
  – Article repository
• Multi-media approach
  – Desktop, laptop, tablet
Convergence and Expansion

- In 2014, NHLBI Project Director requested that MHIF and THI Coordinator training grant teams find ways to expand and extend their work with other CCTRN coordinators and Network staff

- Jennifer Chambers from THI actively participated with MHIF’s team

- Joint training curriculum was developed

- Standardized modules created

- Expanded to all 7 CCTRN sites
MHIF-THI Collaborative Modules

Modules

I. Stem Cells 101
II. Cardiac Anatomy
III. Stem Cell Research Delivery Methods
IV. Cell Harvest Considerations (in progress)
V. Cell Processing Overview
VI. Cell Transportation/Reconstitution
VII. Considerations for: Preparation for Treatment, Day of Treatment, Recovery After Treatment, Discharge
VIII. Recruitment
IX. Staff Education
X. Stem Cell Protocol Review
XI. Consent
XII. Regulatory
I would not have this slide in both your presentation and Rachel's.

Bettencourt, Judith L, Tuesday, September 20, 2016
Driving Factors for MOOC

- **Technology-driven**
  - Hardware
    - Networks, Servers, Internet Service Providers
  - Software
    - Apps
  - Social Media
    - Virtual connections

- **Need for Faster Information Delivery**
  - Globalization
    - Extensive Reach
    - Changing workforce
  - Cost
    - Obviate need for physical classroom
    - Time
  - Connectivity
    - Both learners and teachers
Advantages of MOOC Platform Training Resource

- “Once and done” distribution of uniform content to multiple sites and users
- An intuitive and user friendly training platform
- Utilization of network expertise
- Dynamic, multimodal lessons
- Self-paced learning
- A centrally managed, scalable learning environment that includes metrics
Speaker

Gerry Yumul | @workingatheart
Digital Strategist and eLearning Advisor
Minneapolis Heart Institute Foundation (MHIF)
Professional Background

Digital Strategy

- Online presence, Social Media, e-Commerce
- Content Strategy and Information Architecture
- Advocate for Open-source Technology
eLearning

- Learning Managements Platform (LMS) Design
- LMS Information Systems Architecture
- UX/Interface Design
- Interest in Learning How to Learn
Challenges

Staff Background  eLearning Platform  Desktop Computers

Image from http://www.huffingtonpost.co.uk/
Challenge

Staff Background

Research Coordinators – Healthcare Background

Time allotment

Administrative 15%

Other (LMS) 2%

Research Operation 42%

Information Technology 43%

Study Recruitment 41%
Challenge

Complex and Arcane eLearning Platform

Not Very intuitive Interface—Legacy Visual Basic Generated UI and .NET platform
Challenge

Works on Desktop Computer Only

Desktop Computers Only

Goal: To make learning materials accessible to learners
Business Analyst Perspective

- Research knowledge content
- MHIF research operation
- Knowledge in Digital Media
- eLearning
- Enabling Digital Content
- Consumable digital learning content
Improvement Consideration

- User types: range from non-technical to somewhat familiarity with technology not savvy
- Platform Cost
- Turn-around time
- Security
- Archiving and curation of content
Solution Drivers

• Subscription model (not building from ground-up)
• Intuitive Interface
  – Simple configuration
  – Low complexity in managing content and platform
  – Easy to use interface
• Device Agnostic or Responsive Interface
Platforms Considered

- moodle
- edX
- Canvas
- Udemy
Platform

Udemy for Organization (UFO)  Udemy for Business
Why Udemy?

- Ready to use
- Simple to configure
- Brandable
- Intuitive interface
- Low complexity content management
  - Drag and drop interface
- Security – Lives in Amazon Web Services, inherits infrastructure security settings
- Contained and controlled content access
Cost Comparison

Old Platform

$1,500/Year  25 Users

Current Platform

$1,000/Year  50 Users
CCCT/Udemy Setup
User Demographic

Years in Clinical Practice
- 36-57 Years (19%)
- 18-35 Years (10%)
- 11-17 Years (17%)
- 6-10 Years (17%)
- 1-5 Years (9%)
- <1 Year (27%)
- 0 Years (8%)

Years in Research
- 27-40 Years (9%)
- 18-26 Years (11%)
- 11-17 Years (15%)
- 6-10 Years (21%)
- 1-5 Years (21%)
- <1 Year (21%)
- 0 Years (30%)

Years in Stem Cell Research
- 18-26 Years (9%)
- 6-8 Years (5%)
- 3-5 Years (5%)
- 1-3 Years (8%)
- 0 Years (71%)
Usage Metrics

Minutes spent per active user
148.18 Minutes

~50% Active Users
45 Total Users

16.8% of user activity was Mobile App

Average usage per user
1.94 Hours

Top 10% users spent
8.82 Hours
Continuously Improving/Future Direction

• Move to portable format
• Real-time backup
• More scale (currently subscription is limited to 50 seats)
• More control/less dependency in platform provider
• Value – Cost/Scale
• Open source (mature enterprise level platform)
  – Extendable functionality
  – Granular reporting capabilities
  – Enable to accommodate continuously evolving content
Take-away

• Newly discovered research knowledge can be shared in easy to use platforms available in the marketplace
• Focus time and investment on content generation
• Modern eLearning platforms are mature and most are user friendly from both content management and user/learners
Rachel Olson, RN, CCRC
Senior Clinical Research Content Consultant
The Two Nurse Coordinator Skill Core Programs

- Research Nurse Coordinators
- Udemy Website
- Web based (independent) and In-person training program
- Independent Research Nurse Coordinator

Texas Heart Institute

- Registered Nurse w/o Research Experience
- Hands on Training in the Stem Cell Center at THI
- 16 month program
- Independent Research Nurse coordinator
MHIF-THI Collaboration Goal

To maintain an effective and user friendly means to train coordinators and disseminate the most up to date information.
Purpose

• Develop and disseminate best practices for coordinators in stem cell clinical research via education modules.
• The self-paced modules are designed for training and education.
• Increase knowledge and skills in stem cell clinical research
  o Provide a foundation to train coordinators new to stem cell clinical research
  o Augment current practice for experienced coordinators.
Target Audience

• The CCTRN Nursing Skills Core Training modules are designed to meet the needs of nurses coordinating stem cell clinical trials within the CCTRN network.

• Non-nurse coordinators who may also benefit from the educational content are encouraged to participate.
Value Proposition

• **Comprehensive**
  – Research
  – Cardiology
  – Stem Cell

• **Convenient**
  – Independent Study

• **Adaptable**
  – Resource for training new coordinators
MHIF-THI Collaboration Modules

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Content

- Recorded lectures
- Videos
- Additional resources
- Self assessment
- Contact information for feedback
Content Outline

• Introduction and objectives
• Target Audience
• Lesson includes a list of the module content and links
• Additional resources such as links to websites, manuscripts, etc.
• Self assessment
• Feedback on module
Udemy Site Tour (Live Demonstration)

Mplsheart.org

- For Medical Professionals
- Clinical Nurse Coordinator Training
- MHIF/THI Collaboration
- Log in/Request Access

Go to mhif.udemy.com
Summary

- Comprehensive
- Dynamic
- Convenient
- Adaptable
Next Steps

- Training for CCTRN non-nurse coordinators
- Expand CEU credits for courses
- Develop and maintain new modules to support future CCTRN clinical trials
- Consider expanding training modules to appeal to broader audience
- Consider offering as a certificate program
Long Term Goals

- Continue to add content
- Reach out to a broader audience
Panel Discussion

CCTRNM
Thank you!