Best Practices in Teaching the Electronic Health Record
Course Objectives

- Understand how to incorporate EHR training beginning with the pre-clinical environment

- Outline tools for case-based learning through creation of a virtual patient roster

- Construct ways to improve EHR utilization in the early clinical experience
Go to: www.rwpoll.com
SESSION ID: DENTALEHR
Do you currently use an EHR at your institution?

A. Yes
B. No
How much training do students receive regarding the EHR prior to clinic entry?

A. 0 Hours
B. 1-5 Hours
C. 5-10 Hours
D. > 10 hours
Breakout into small groups

Challenges faced in implementation of EHR

Utilize Flip Chart Pad to write down and share after break-out

Top three challenges in order of challenge

Each group to share one challenge
Best Practices:

1) Case-based Learning: Teaching in context of patient care through authentic clinical cases

2) Use of active learning strategies: Involving students in the learning process and allowing them to work in teams

3) Early implementation in a pre-clinical environment: How to use the EHR should be taught before entry into the clinic

Worst practices:

Trying to teach the EHR through passive means such as lectures, without relevant clinical cases, and while students are already in the clinical setting.
EHR readiness

Students see IT to prepare their laptop

Set up passwords for Pre-Clinical environment

(these passwords will carry over to Clinic)
EHR Readiness

Pre-clinic roster creation:
Student name + numeric suffix
Birthdates to accommodate patient age

1/1/year
Virtual Patient Roster

Highlight Birthdates: note year to accomplish desired patient age

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<tr>
<th>Name</th>
<th>Chart #</th>
<th>Home Phone</th>
<th>BirthDate</th>
<th>Id</th>
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<tbody>
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<td>Hilburg1, Faculty</td>
<td>774</td>
<td>(212) 555-5555</td>
<td>1/1/1990</td>
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<tr>
<td>Hilburg2, Faculty</td>
<td>775</td>
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<td>1/1/1993</td>
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EHR readiness

Students will “treat” ~8 cases in the pre-clinical setting with increasing complexity

Diagnoses are made

Treatment plan is formulated

Treatment is performed on typodont

Documented in EHR daily

Appropriate forms entered as needed
Pre-Clinical Case Selection

- Cases carefully selected to reflect progression of pre-clinical curriculum
- Case progression follows learning of more complex and more complicated utilization of EHR
- Simulation of clinical workflow
  - EHR entries coincide with “Patient” treatment
Pre-Clinical Case Content Summary

• Early cases include healthy adult/ minimal dental history/ No missing teeth/ Dental needs are basic and include several operative restorations and periodontal prophylaxis for gingivitis

• Cases progress so that medical history includes allergies, diseases such as diabetes, history of endocarditis, and medications for hypertension, depression etc.

• Cases progress to include endodontics, edentulous spaces, crowns, onlays, implant restorations, removable prostheses, esthetic issues such as veneers, moderate to severe periodontitis
Case Descriptions Summary

Case #1: Periodontal Disease Prevention & Simple Restorative Care

Case #2: Periodontal Disease Prevention, More advanced restorative care & At-home whitening

Case #3: Periodontal Disease Treatment & FPD, endodontic procedures

Case #4: Periodontal Disease Treatment & Implant Restorations

Case #5: Periodontal Disease Prevention & RPDs

Case #6: CD/CD

Case #7: Implant-retained Overdenture

Case #8: Periodontal Disease Prevention and Porcelain Veneers
Approximately what percentage of medical school programs allow students to use an EHR?

A. 15%
B. 25%
C. 50%
D. 65%
E. 85%
Educational Recommendations in Dentistry

- axiUm, from the Exan group, is installed in 75% of North American Dental Schools.
- Currently, most schools use the EHR as a replication of paper forms with little to no additional functionality.
- Recommendations for teaching students to use the EHR have not been defined in the dental literature.
Educational Recommendations

The Alliance for Clinical Education recommends these practice guidelines:

1. Students must document in the patient’s chart, and their notes should be reviewed for content and format.

2. Students must have the opportunity to practice order entry in an EHR – in actual or simulated patient cases – prior to graduation.

3. Students should be exposed to using the decision aids that typically accompany EHRs.

4. Schools must develop a set of medical student competencies related to charting in the EHR.
Select patient from roster

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<td>Prov./User</td>
<td>Code</td>
<td>Site</td>
<td>Surf.</td>
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</tbody>
</table>

**Site**
- All
- Station View
- Everything
- Student
- Notes
- Completed
- Conditions Preexisting
- Planned/In Process

**Views**
- EHR - Chart / Tx History - Hilburg9, Faculty (782)
Lab Order Details

Order Details (for Active Item)
- Patient: Hilburg1, Faculty (774)
- Discipline
- Procedure: D2740-25 Porcelain/ceramic substrate - Delivery
- Lab Proc: LD2740, Lab - Ceramic Crown
- Open Date: 09/16/2014
- Order #: 69701
- Case #: 76161
- Order in: In - Progress
- Expected: 10/01/2014

Order Item
- Provider: Hilburg, Jessica
- Redo: No
- Lab Item: 1
- Active Item

Details:

Lab Item | App. Date | Provider | Returned | Redo | User | Appr. User
--- | --- | --- | --- | --- | --- | ---
1 | 09/16/2014 | F00009 | No | Hilburg, Jessica | Hilburg, Jessica

Supplements:
- Bite Registration
- Master Impression
- Opposing Cast
- Photos

Approve
“We just got an update to the user manual for our Electronic Medical Record system. Where do you want it?”
Prescription

Patient Prescription Entry

Patient: Hilburg1, Faculty (774)
Provider: Hilburg, Jessica
Practice: Vanderbilt Clinics:PreClinic14
Doctor: 

Prescription Information

Drug: Amoxicillin
Dosage: 500mg
Frequency: Four (4) tabs 1 hour before dental appointment
Note: 
Reference: N/A
PMP review: N/A

Pharmacy:

Phone #: 
Fax #: 

Period Taken (Estimated)
Start Date: 09/16/2014
Period: 
End Date: 

Drug: 
Dose: 
Total: 
Refills: 

Date: 09/16/2014
Approved On: 

Columbia University
College of Dental Medicine
Medical Consult Request

September 30, 2014

Dear Doctor:

Faculty Hilbwigl presented to our clinic for comprehensive dental care.

The patient presented with a significant medical history: Aortic Valve Replacement, Recent surgery for stent placement, Hypertension

Current Medication: Lipitor, Hydrochlorothiazide

Please indicate if patient has any other medical problems and/or is taking any other medication:

________________________________________________________________________

Are there any concerns for this patient to receive any dental treatment?

________________________________________________________________________

Would you recommend the dosage of any of the medication be changed prior to dental treatment?

________________________________________________________________________

Please indicate if the patient needs to be pre-medicated prior to dental work, and if so, what regimen and dosage would you suggest?

________________________________________________________________________

If applicable, please provide the following data:

☐ PT/PTT/NR
☐ CD4/CD8/viral load
☐ Physical or laboratory characterization of heart murmur

Physician’s Signature _____________________________
Telephone # _____________________________
## Internal Referral Form

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<th>Form Question</th>
<th>Answer</th>
<th>Date</th>
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<td>Referred From</td>
<td>Junior Clinic</td>
<td>09/30/2014</td>
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<tr>
<td><strong>Referring to:</strong></td>
<td><strong>Oral Surgery</strong></td>
<td></td>
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<td></td>
<td><strong>Y</strong></td>
<td>09/30/2014</td>
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<tr>
<td><strong>Reason for Referral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chief Complaint</td>
<td>&quot;My wisdom teeth hurt&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>09/30/2014</td>
</tr>
<tr>
<td>Tooth number(s) or site</td>
<td>17,32</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>09/30/2014</td>
</tr>
<tr>
<td>Comments</td>
<td>Please evaluate all third molars (1,16,17,32) for extraction. Thank you.</td>
<td>09/30/2014</td>
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Case # 2
Preclinical Comprehensive Care
21 year old female patient presents for comprehensive care.

Chief complaint: “The filling I had placed last month hurts and I want white teeth.”
Medical History

- PMH: (+) PPD test in Dec 07, but (-) chest x-ray
- Meds: Isoniazid and Vitamin B6 from January 2008–October 2008
- All: NKDA
- Social Hx: (-) smoking/tobacco, pt admits a marked increase in consumption of sodas to stay up at night and frequently falls asleep without brushing teeth since starting medical school
Clinical Exam

- EOE: (+) Right TMJ click (pt asymptomatic), (-) LAD, (-) asymmetry, (-) masses/lesions, (-) swelling

- IOE: Soft tissues: WNL, oral cancer exam: (-)
Dental History

- Dental Hx: regular dental visits once/year. Last dental visit 1 month ago and had #14 MO amalgam restoration placed.
- Last cleaning <6 months ago.
- Patient brushes 2x/day, flosses 4x/week, no oral rinses.
- No previous history of periodontitis, no family history of periodontitis
Patient Photo
Frontal View Anteriors
Patient Photo
Maxillary Occlusal
<table>
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<tr>
<td>Recurrent Caries</td>
<td>14</td>
<td>D2392</td>
<td>MO</td>
<td>1 : 1</td>
<td>Resin-based comp-2 surf, po</td>
<td>F00008</td>
<td>100.00</td>
<td>0.00</td>
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<td>Prophy - adult</td>
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<td>Caries Primary</td>
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<td>D3330-1</td>
<td>Endo Molar - Access</td>
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<td>D3330-2</td>
<td>Endo Molar - Clean and Shap</td>
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<tr>
<td>Caries Primary</td>
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<td>D3330-3</td>
<td>Endo Molar - Fill Canal</td>
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<tr>
<td>Caries Primary</td>
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<td>4 : 1</td>
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<td>0.00</td>
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Does your EHR integrate with that of your medical center in any way?

A. Yes  B. No

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<th>Time</th>
<th>Percentage</th>
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<td>1-5 Hours</td>
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<td>5-10 Hours</td>
<td>25%</td>
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<tr>
<td>&gt;10 Hours</td>
<td>25%</td>
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</table>
Future Directions

Using the EHR as a tool for fostering interprofessional education and collaborative practice

At a minimum, allow EHRs at the same medical center to combine

Using data to more easily monitor and improve patient outcomes
Breakout session

Discuss innovative ways that the EHR is being used at your institution
Transition to CLINIC

Orientation

Case discussions before clinic

Workshops throughout year

As students see more complex patients, the EHR is utilized in more depth

Review Lab Order

Review Rx
Conclusions

• Carefully plan teaching the EHR just as you would plan anything else that needs to be taught

• Teach the use of the EHR well before students need to use it in a clinical setting

• Rely on active vs. passive learning strategies

• Incorporate authentic patient cases into EHR education
Contact Information

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rg2032@cumc.columbia.edu

Dr. Lynda Torre
lt2363@cumc.columbia.edu