Using Clinical Looking Glass to Determine the Impact of an Intervention on Physician Prescribing of Contraceptives and Folate

Mindy Sobota, MD
Research Fellow, Division of General Medicine
Montefiore Medical Center
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Overview

• Background (including residency project)
• Methods
  - Testing accuracy of CLG to detect RxPad data
  - Measurement of RxPad outcome
• Preliminary results
Background

• **The Problem:** Unintended pregnancy
• **The Solution:** Contraception and Folate

-Typical use of “the pill” x 1y to prevent pregnancy: **NNT = 1.3**
-Use of statin x 5y to prevent hospitalization/CHD death: **NNT = 19**

Data calculated from: USPSTF, 2nd edition, pp. 741-744
Ford, NEJM, 2007
Background

- BUT internists rarely prescribe…
  - Internists less likely to provide family planning than other primary care physicians
  - 80% of women of reproductive age at risk for unintended pregnancy, yet only 10% counseled about emergency contraception

Cunnane 2006
Ewing 1999
Conway 1995
Residency Project

- **Objective:** to increase the proportion of internists who prescribe emergency contraception (EC) in the last month.

- **Hypothesis:** an intervention consisting of a one-time education session and clinical reminder x 1 month will increase EC prescribing among internists.
Residency Project: Methods

- **Setting**: CHCC
- **Participants**: 35 IM residents and attendings
- **Intervention**: 45-minute small group education session + sticker reminder x 1m
- **Design**: Pre/post intervention assessment at baseline and 6 months after intervention
- **Measures**: Self-reported questionnaire
  - EC prescribing (last 30 days)
THIS PATIENT MAY BE ELIGIBLE FOR ADVANCED EMERGENCY CONTRACEPTION...

This patient has sex with men?  no  yes
This patient does NOT want to get pregnant?  no  yes
This patient does NOT have an IUD/ tubal ligation/hysterectomy?  no  yes

If yes to all 3...
Did you discuss birth control?  
Did you offer plan B?  

☐  ☐
Residency Project: Results (Pre- and 6m Post-Intervention)

“In the last 30 days, have you prescribed EC to any patients?” (Y/N)

Proportion of participants reporting yes

P<0.003
Fellowship Project: Background

- **Objective**: To increase the proportion of internists who prescribe contraceptives or folate in the last month
- **Hypothesis**: An intervention consisting of a brief education session and clinical reminder x 1m will increase contraceptive and folate prescribing among internists
Fellowship Project: Methods

• **Setting:** CFCC and FCC
• **Participants:** ~60 internal medicine residents on ambulatory or outpatient rotation 12/06-2/07
• **Design:** RCT
• **Randomization:** Stratified by gender & site
• **Intervention:** Educational session and clinical reminder x 1 month
• **Control:** No education session or clinical reminder
THIS PATIENT MAY BE ELIGIBLE FOR THE 3 A’S OF REPRODUCTIVE HEALTH...

1. ASSESS: PREGNANCY POSSIBLE?  
   YES

2. ASK: WANTS TO GET PREGNANT?  
   YES
   NO

3. ADVISE: PRECONCEPTION CARE
   - Folic acid 400 mcg po qday
   - Diabetic? Refer ASAP
   - Review medications
   - Discuss tob, EtOH, drugs

3. ADVISE: CONTRACEPTION
   - Prescribe Plan B
   - Prescribe condoms
   - Hormonal contraception?
   - Referral for IUD?
Fellowship Project: Methods

- **Data collection:**
  - Self-reported survey (baseline and 6m)
  - RxPad (extracted for the 6th month after the intervention)
Fellowship Project: Methods

- **Primary outcome**: RxPad prescribing in the last 30d (6m after intervention)
  1. Condoms
  2. Hormonal pills, patches, rings, IUDs
  3. Folate pills
  4. Multi/prenatal vitamins with folate
  5. Composite of all four outcomes
Fellowship Project: Methods

• Verification of accuracy of outcome
  - Potential sources of error
  - Tests #1-3
Accuracy of RxPad Data in CLG

• **Potential sources of low sensitivity**
  1. Not written (OTC)
  2. Not on RxPad (paper Rx)
  3. Not signed by resident (but by precepting attending)
  4. Not found in CLG
     - User problem
     - System problem
Accuracy of RxPad Data in CLG

- **Verification methods:**
  1. Using CareCast/RxPad:
     - Look up provider schedule for given date
     - Record patient name, age, prescription
  2. Using CLG Smart Reports:
     - Confirm provider wrote prescription on specified date for patient of same age/sex
Accuracy of RxPad Data: Test #1

- All RxPad prescriptions written by MS at CHCC on 6/5/07

>>> All 10 Rx’s (3 patients) verified in CLG!
Accuracy of RxPad Data: Test #2

- Prescriptions signed by 3 residents on a total of 4 patients at CHCC on 6/27/07 (authorized by HK)
- Resident #1: 4/4 rx’s verified (2 patients)
- Resident #2: 0/1 rx verified…
- Resident #3: 0/1 rx verified…
Accuracy of RxPad Data: Test #2

- Potential sources of low sensitivity
  1. Not written?
  2. Written, but not on RxPad?
  3. Written, but not signed by resident?
  4. Written, but not found in CLG?
     - User dependent
     - System dependent
Accuracy of RxPad Data: Test #2

- Error = data transfer from RxPad to CLG
- Solution: data reloaded
  - NOT date-specific
  - NOT provider-specific
  - NOT prescription-specific
Accuracy of RxPad Data: Test #3

- Verified 1 rx for each of 15 providers (~25%) during study timeframe
- 14 providers: 1/1 rx’s verified
- 1 provider: 0/1 rx verified!
Accuracy of RxPad Data: Test #3

- Potential sources of low sensitivity
  1. Not written?
  2. Written, but not on RxPad?
  3. Written, but not signed by resident?
  4. Written, but not found in CLG?
Accuracy of RxPad Data: Test #3

• Error = resident filled attending’s name in “signed by” box
  - Made same error consistently
  - On 5/15/07, resident “signed” rx
  - After 5/15/07, consistently “signed”
  - 6 month follow-up started 5/28/07
Fellowship Project: Methods

• Measurement of outcome: SmartReports
  1. Defined patients by criteria
  - 30 days, starting 6m after intervention (different for different providers)
  - No specified age range
  - Females only
Fellowship Project: Methods

• **Measurement of outcome (cont.)**
  2. Created MD set for each provider
  3. Created medication set for each outcome:
     - Condoms
     - Hormonal contraception
     - Folate pills
     - Multi/Prenatal vitamins
     - Composite of all 4
Fellowship Project: Results

Table 1. Demographic characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Intervention (N=30)</th>
<th>Control (N=27)</th>
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</thead>
<tbody>
<tr>
<td>Male sex</td>
<td>12 (41%)</td>
<td>11 (41%)</td>
</tr>
<tr>
<td>CFCC site</td>
<td>11 (38%)</td>
<td>10 (37%)</td>
</tr>
</tbody>
</table>
Fellowship Project: Results

RxPad Prescribing at 6 Months
(Last 30 Days)
Thank you

- Drs. Hillary Kunins and Julia Arnsten
- Shahidul Islam/Clinical Looking Glass
- CFCC & FCC Faculty, Residents and Staff
Accuracy of RxPad Data: Potential Sources of Low Specificity

1. Written for another indication
   (MVI, folate, condoms, hormones…)

2. Others?
**Order Text Search**

**Text Search**

Enter Search Text: folic

**Search Method**
- BEGINS WITH
- CONTAINS
- 1st WORD

**Searching for**
- All
- Non-Meds
- Meds
- Ord Sets

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<table>
<thead>
<tr>
<th>S</th>
<th>Order Description</th>
<th>Type</th>
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<tbody>
<tr>
<td></td>
<td>Folic Acid Cap (20mg) ORALLY</td>
<td>SC</td>
</tr>
<tr>
<td></td>
<td>Folic Acid Cap (5mg) ORALLY</td>
<td>SC</td>
</tr>
<tr>
<td></td>
<td>FOLIC ACID PLUS B12 Tab (1-0.8mg) ORALLY</td>
<td>SC</td>
</tr>
<tr>
<td></td>
<td>Folic Acid Solution (5mg/mL) INJECTION (UNSPECIFIED PARENTE)</td>
<td>SC</td>
</tr>
<tr>
<td></td>
<td>Folic Acid Tab (1mg) ORALLY</td>
<td>SC</td>
</tr>
<tr>
<td></td>
<td>Folic Acid Tab (400mcg) ORALLY</td>
<td>SC</td>
</tr>
<tr>
<td></td>
<td>Folic Acid Tab (800mcg) ORALLY</td>
<td>SC</td>
</tr>
<tr>
<td></td>
<td>Folic Acid-B6-B12-L-Arginine Tab (2-500-500mg-mg-mcg-mg) ORALLY</td>
<td>SC</td>
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<tr>
<td></td>
<td>Folic Acid-Benfot-MV-AOS Tab (1-150-850mg) ORALLY</td>
<td>SC</td>
</tr>
<tr>
<td></td>
<td>Folic Acid C-B6-B12-E-Arginine Tab (0.8mg) ORALLY</td>
<td>SC</td>
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<td></td>
<td>FOLIC ACID-VIT B-6-VIT B-12 Tab ORALLY</td>
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<td>Folic Acid-Vit E6-B12-MV-AOS Tab (2.5-25-2-875mg) ORALLY</td>
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<td>Folic Acid-Vit E6-Vit B12 Tab (0.5-0.5-0.2mg) ORALLY</td>
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<tr>
<td></td>
<td>Folic Acid-Vit E6-Vit B12 Tab (0.05-0.02mg) ORALLY</td>
<td>SC</td>
</tr>
</tbody>
</table>

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**Options**

- Select Order
- Cancel

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**ADD PROB:**
Medication Sets

Select Type and Action
Set Type: Medication Sets

Existing Sets
Pick an existing set: Please Choose

Search
Include Text
Type of Search: Generic, Product, Brand
Display Option: Show Generic Only, Show All Levels
Copy From Existing Set: Please Choose
Find, Reset

Assign
Click here to move all

- Estradiol
- Ethinyl Estradiol / Levonorgestrel
- Ethinyl Estradiol 0.05 MG / Levonorgestrel
- Ethinyl Estradiol 0.03 MG / Levonorgestrel
- Ethinyl Estradiol 0.02 MG / Levonorgestrel
- Ethinyl Estradiol 0.03 MG / Levonorgestrel
- Ethinyl Estradiol 0.04 MG / Levonorgestrel
- Ethinyl Estradiol / Norethindrone
- Ethinyl Estradiol / Norethindrone
- Desogestrel / Ethinyl Estradiol
- Ethinyl Estradiol
- Ethinyl Estradiol / ethynodiol

- Desogestrel / Ethinyl Estradiol
- Ethinyl Estradiol / ethynodiol
- Ethinyl Estradiol / norgestimate
- Ethinyl Estradiol / Norgestrel
- Drospirenone / Ethinyl Estradiol
- Ethinyl Estradiol / norelgestromin
- Ethinyl Estradiol / Ferrous fumarate / Norethinдрone
- Mestranol / Norethindrone
- Norethindrone
- Estradiol / Norethindrone
- Estradiol / norgestimate
- Norgestrel
- Medroxyprogesterone
- Devices

Clear, Close, New, Save...