Ways to Assess Medication Adherence…in Practice

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Objectives

1. Describe a model of medication adherence and persistence.
2. Explain different ways to assess medication adherence.
3. Understand why asking about reasons for medication non-adherence for each medication/class is necessary.
Model System of Medication Adherence and Persistence

- **Capacity**
  - Executive function
  - Psychomotor ability
  - Skill

- **Availability**
  - Cost
  - Shortages

- **Intention**
  - Disease Beliefs
  - Medication Beliefs

- **Remember**
  - Strategies, Cues

- **Long-term Outcomes**
  - Reduced morbidity
  - Improved quality of life

- **Medication persistence**

- **Positive Short-term Results**
  - Health status
  - Treatment satisfaction

- **Coping Strategies**
  - e.g. Social Support,
  - Other medications, CBT, exercise

- **Negative Short-term Results**
  - ADE
  - Side effects

- **Medication adherence**
Facts

1. Medication non-adherence is prevalent.
2. Medication non-adherence leads to poorer outcomes and higher costs.
3. Medication non-adherence is a decision and is caused by numerous, varying reasons.
4. The same individual can be adherent to one medication and not to another.
5. Medication non-adherence is experiencing an increased visibility among payers and policy-makers.
Fiction

1. There is a non-adherent persona or personality.
2. People should just do what their doctors say.
3. It’s only about whether people can afford their medicines.
4. We know how to improve medication non-adherence.
Methods of Measuring Adherence

• Direct
  – Directly observed therapy, e.g., TB, mental health facilities
  – Blood level, e.g., warfarin
Methods of Measuring Adherence

• Indirect
  – Real-time bottle technology
  – Electronic pill caps (download periodically)
  – Refill rates, e.g., PDC, MPR
  – Pill counts, e.g., in-person or phone-based
  – Therapeutic response
  – Self-report, e.g., questionnaire or diary
  – Proxy report, e.g., parent or caregiver
Electronic monitoring ...
Electronic monitoring...
What is practical in day-to-day practice?
What is **practical** to assess medication non-adherence?

- Blood level
- Refill records
- Self-report
- ? Unannounced pill count (can be telephonic)
- ? Electronic monitoring
Quick, valid adherence assessments you may use in practice… and you must follow-up with *Reasons*

1. Single-item past 7 days
2. Single-item rating scale (SIRS)
3. DRAW©
Single item past 7 days
(Unni, Olson & Farris, 2013)

• Over the last 7 days, how many days were you able to take your [specific medicine] exactly as prescribed?
  ☐ 0 days
  ☐ 1 day
  ☐ 2 days
  ☐ 3 days
  ☐ 4 days
  ☐ 5 days
  ☐ 6 days
  ☐ 7 days
Single Item Rating Scale  (Feldman, et al, AIDS Behav 2013)

- Thinking about the past 4 weeks, please rate your ability to take your [insert medication name] as prescribed.
  ___ Excellent
  ___ Very good
  ___ Good
  ___ Fair
  ___ Poor
### Drug Adherence Work-up Tool (DRAW™)

Ask each question and note “YES” response. For each YES, consider the suggested actions and refer to the guide sections on the next page.

<table>
<thead>
<tr>
<th>Patient Interview</th>
<th>Yes</th>
<th>Suggested actions &amp; GUIDES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Please tell me how you take your medication every day.</td>
<td>N/A</td>
<td>Verify adherence; Identify any discrepancies; Add to their knowledge A, B, E</td>
</tr>
<tr>
<td>2) Do you feel like you have too many medications or too many doses per day?</td>
<td></td>
<td>Reduce number of meds per day by stopping/changing medications; Simplify regimen A, C, D</td>
</tr>
<tr>
<td>3) Do you sometimes forget to take your medication on routine days?</td>
<td></td>
<td>Adherence aid, alarm or specialized packaging; Med calendar; Memory aid; Rule out anticholinergic meds A, E</td>
</tr>
<tr>
<td>4) Do you forget on non-routine days such as weekends or when traveling?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Do you have a concern that your medication is not helping you?</td>
<td></td>
<td>Patient education; Guided counseling B, C</td>
</tr>
<tr>
<td>6) Do you feel that you do not need this medication?</td>
<td></td>
<td>Guided counseling; Switch medications; Symptom management B, C</td>
</tr>
<tr>
<td>7) Have you had any side effects?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) Are you concerned about side effects?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) Is the cost of this medication too much?</td>
<td></td>
<td>Switch to less costly medication; cost reduction strategy D</td>
</tr>
<tr>
<td><strong>Pharmacist:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10) At any time during this interview, did you sense an issue about decreased cognitive function?</td>
<td></td>
<td>Rule out anticholinergics; Discuss with other area providers; Referral to assistance resource; Recommend or support medication assistance including aids and/or caregivers A, E</td>
</tr>
<tr>
<td>11) Is there a limitation on instrumental activities of daily living to affect adherence and/or use of adherence aids?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12) Do you plan to follow up with this patient?</td>
<td></td>
<td>Schedule follow-up date</td>
</tr>
</tbody>
</table>

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Reasons for non-adherence
(Unni & Farris, 2009; 2011; Unni, Olson & Farris, 2013)

We know there are many reasons why people miss their medications. In thinking about your [name of drug], please check all the reasons that caused you to miss it during the past 4 weeks.

___ I experienced side effects from it.
___ I have concerns about possible side effects from it.
___ I have concerns about long term effects from it.
___ I do not think I need it anymore.
___ I do not think that it is working for me.
___ I did not have the money to pay for it.
___ The pharmacy did not have it or could not get it.
___ I have trouble managing all the medicines I take.
___ I have trouble take it because of how and when I have to take it.
___ I missed it because of my busy schedule.
___ I have trouble forgetting things in my daily life.
___ I simply missed it.
___ Other ________________________________
Did not ask about forgetting…

• I would have taken it but…
  – Simply missed it
  – Busy schedule
  – Have problems forgetting things in my life
  – Did not consider taking medication a high priority
Some data...
Comparisons…

• Cholesterol lowering medications
  – 50% non-adherent using reasons
  – 37.4% using single item past 7 days
  – 30% using Morisky

• Asthma maintenance medications
  – 68% non-adherent using reasons
  – 44% using single item past 7 days
  – 62% using Morisky
In the past 4 weeks, self-rated ability to take AI medication (n=226)

- Excellent: 82%
- Very Good: 8%
- Good: 6%
- Fair: 1%
- Poor: 3%
In the past 4 weeks, self-rated ability to take oral oncolytic medication (n=117)

- Excellent: 74%
- Very Good: 17%
- Good: 8%
- Fair: 1%

In the past 4 weeks, self-rated ability to take oral oncolytic medication (n=117)
Lu et al, AIDS Behav 2008,
(See also Feldman, AIDS Behav 20130
Frequency of reasons for non-adherence to asthma maintenance medicines... (Unni & Farris, 2009; Unni & Farris 2011; Unni, Olson & Farris, 2013)

<table>
<thead>
<tr>
<th>Reasons, where adherence &lt; 90%</th>
<th>0 days (%)</th>
<th>1 or 2 days (%)</th>
<th>3 or more days (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I had difficult opening the container</td>
<td>87.8</td>
<td>5.5</td>
<td>6.7</td>
</tr>
<tr>
<td>I don't have medicine because the pharmacy was out of it</td>
<td>87.5</td>
<td>7</td>
<td>5.5</td>
</tr>
<tr>
<td>I was not comfortable taking it for personal reasons</td>
<td>85.1</td>
<td>8.2</td>
<td>6.7</td>
</tr>
<tr>
<td>I was not comfortable taking it for social reasons</td>
<td>85.1</td>
<td>8.2</td>
<td>6.7</td>
</tr>
<tr>
<td>I do not think this medicine is working for me</td>
<td>84.9</td>
<td>2.7</td>
<td>12.4</td>
</tr>
<tr>
<td>I have trouble managing all the medicines that I take</td>
<td>82.4</td>
<td>10.9</td>
<td>6.7</td>
</tr>
<tr>
<td>I do not consider taking this medicine a high priority in my life</td>
<td>81</td>
<td>6.8</td>
<td>12.2</td>
</tr>
<tr>
<td>I do not think I need this medicine anymore</td>
<td>78.4</td>
<td>10.9</td>
<td>10.7</td>
</tr>
<tr>
<td>I had side effects from this medicine</td>
<td>77.3</td>
<td>13.3</td>
<td>9.4</td>
</tr>
<tr>
<td>I did not have the money to pay for this medicine</td>
<td>77</td>
<td>6.8</td>
<td>16.2</td>
</tr>
<tr>
<td>I would have taken it but missed it due to busy schedule</td>
<td>75.3</td>
<td>12.3</td>
<td>12.4</td>
</tr>
<tr>
<td>I am concerned about possible side effects from this medicine</td>
<td>74.7</td>
<td>9.4</td>
<td>15.9</td>
</tr>
<tr>
<td>I sometimes skip this medicine to see if I still need it</td>
<td>74.3</td>
<td>12.2</td>
<td>13.5</td>
</tr>
<tr>
<td>I would have take it but have problems forgetting things in my daily life</td>
<td>73</td>
<td>10.9</td>
<td>16.1</td>
</tr>
<tr>
<td>I am concerned about long-term effects from this medicine</td>
<td>72</td>
<td>9.3</td>
<td>18.7</td>
</tr>
<tr>
<td>I would have taken it but simply missed it</td>
<td>59.6</td>
<td>21.7</td>
<td>18.7</td>
</tr>
</tbody>
</table>
Frequency of reasons for non-adherence to cholesterol-lowering medicines... (Unni, Olson & Farris, 2011)

<table>
<thead>
<tr>
<th>Reasons, where adherence &lt;90%</th>
<th>0 days (%)</th>
<th>1-2 days (%)</th>
<th>3 or more days (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t have the medicine because the pharmacy is out</td>
<td>89.9</td>
<td>8.1</td>
<td>2</td>
</tr>
<tr>
<td>I am concerned about possible side effects from this medicine</td>
<td>88.7</td>
<td>3.3</td>
<td>8</td>
</tr>
<tr>
<td>I had side effects from this medicine</td>
<td>88</td>
<td>5.3</td>
<td>6.7</td>
</tr>
<tr>
<td>I am concerned about the long-term effects from this medicine</td>
<td>88</td>
<td>2.6</td>
<td>9.4</td>
</tr>
<tr>
<td>I do not have the money to pay for this medicine</td>
<td>84.7</td>
<td>7.4</td>
<td>7.9</td>
</tr>
<tr>
<td>I would have taken it but have problems forgetting things in my daily life</td>
<td>83.3</td>
<td>12.7</td>
<td>4</td>
</tr>
<tr>
<td>I would have taken it but simply missed it</td>
<td>72</td>
<td>22</td>
<td>6</td>
</tr>
</tbody>
</table>
### Table 3: DRAW Tool Responses

<table>
<thead>
<tr>
<th>Questions 3-9 (Medications=603)</th>
<th>Number of Meds with Yes Answer (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3: Do you sometimes forget to take your medication on routine days?</td>
<td>123 (20.4)</td>
</tr>
<tr>
<td>Q4: Do you forget on non-routine days such as weekends or when traveling?</td>
<td>144 (23.9)</td>
</tr>
<tr>
<td>Q5: Do you have a concern that your medication is not helping you?</td>
<td>50 (8.3)</td>
</tr>
<tr>
<td>Q6: Do you feel that you do not need this medication?</td>
<td>33 (5.5)</td>
</tr>
<tr>
<td>Q7: Have you had any side effects?</td>
<td>93 (15.4)</td>
</tr>
<tr>
<td>Q8: Are you concerned about side effects?</td>
<td>73 (12.1)</td>
</tr>
<tr>
<td>Q9: Is the cost of this medication too much?</td>
<td>57 (9.5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Questions 2,10,11 (Patients = 179)</th>
<th>Number of Patients with Yes Answer (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2: Do you feel like you have too many medications or too many doses per day?</td>
<td>46 (25.7)</td>
</tr>
<tr>
<td>Q10: At any time during this interview, did you sense an issue about decreased cognitive function?</td>
<td>12 (6.7)</td>
</tr>
<tr>
<td>Q11: Is there a limitation on instrumental activities of daily living to affect adherence and / or use of adherence aids?</td>
<td>7 (3.9)</td>
</tr>
</tbody>
</table>
Conclusions

- It is more prevalent that you might think
- Different reasons for different medications
- Use a single item, refill records or clinical indicators to gain insight, then ask about reasons
- Reasons interventions...asking about reasons will give you more information about frequency and cause
Objectives

1. Describe a model of medication adherence and persistence.
2. Explain different ways to assess medication adherence.
3. Understand why asking about reasons for medication non-adherence for each medication/class is necessary.