Minimally Disruptive Medicine

Victor M. Montori, MD, MSc
Professor of Medicine
Healthcare Delivery Research Program
Center for Science of Health Care Delivery
KER UNIT
Mayo Clinic

@vmontori

Disclosures

Relevant Financial Relationships
None

Off Label Usage
None
Objectives

Recognize that patient non-adherence can be induced by the organization and the delivery of care.

Enumerate the components of patient work and how patient work in relation to patient capacity can worsen adherence and outcomes.

Identify the goals and components of minimally disruptive medicine in the care.
Key problem: Do not follow advice

Wasted or misallocated healthcare resources: US$ 290b (100b in avoidable hospitalizations)

Poor health despite cost and side effects

Complicated patient-clinician relationship

Cutler and Everett NEJM 2010 10.1056/NEJMfp1002305

Beliefs and adherence in diabetes

<table>
<thead>
<tr>
<th>Need</th>
<th>Low</th>
<th>High</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerns</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Coercion thru threats of dire outcomes from poor control of the disorder are doubly unethical: it does not work and high anxiety patients withdraw from care when threatened.

Haynes et al. JAMA 2002

---

Poor fidelity to treatments is the patient’s fault

*Intentional noncompliance*

Beliefs about the disease and about the treatments

↓

Professional communication
Patient education
Behavioral interventions
Shared decision making

**Statin Choice**

1. What goes into figuring out my risk of having a heart attack in the next 10 years?
   - Age
   - Sex
   - Years of diabetes
   - Smoking
   - Inflammation XLC
   - Blood pressure
   - Cholesterol
   - Protein in your urine

2. What is my risk of having a heart attack in the next 10 years?
   - NO STATIN
     - 60 people out of 100 do NOT have a heart attack (green)
     - 20 people out of 100 do have a heart attack (red)
   - YES STATIN
     - 60 people out of 100 do NOT have a heart attack (green)
     - 5 people out of 100 do have a heart attack (yellow)
     - 35 people out of 100 do have a heart attack (red)
     - 5 people out of 100 experienced NO BENEFIT from taking statins

3. What are the downsides of taking statins (cholesterol pill)?
   - Statins need to be taken every day for a long time (maybe forever).
   - Statins cost money (do you or your drug plan)
   - Common side effects: nausea, diarrhea, constipation (most patients can tolerate)
   - Muscle aches: uncommon; 1 in 10 patients (some need to stop statins because of this)
   - Liver/blood test go up (no pain, no permanent liver damage: 2 in 100 patients; some need to stop statins because of this)
   - Muscle and kidney damage: 1 in 20,000 patients (requires patients to stop statins)

4. What do you want to do now?
   - [ ] Take no continue to take statins
   - [ ] Not take or stop taking statins
   - [ ] Decide at some other time

---

**Osteoporosis Choice**

**What is my risk of breaking a bone?**

- Your risk is categorized primarily by:
  - Age
  - Bone mineral density (Osteoporosis)

- If you answered yes, your risk is:
  - [ ] Aged 50 or older
  - [ ] Aged 50 to 69
  - [ ] Under 50

- If you answered no, you may be at risk if:
  - [ ] Diabetes
  - [ ] Hypertension
  - [ ] Heart disease

- Your fracture risk can be lowered with medications called bisphosphonates, which work to increase bone.

**Benefits**

- [ ] Weight loss
- [ ] Increased bone density
- [ ] Reduced risk of bone fractures

**Drawbacks**

- [ ] Nausea
- [ ] Stomach upset
- [ ] Bone loss

**Notes**

- [ ] Osteoporosis
- [ ] Bone density
- [ ] Bone mass

**What would you like to do?**

---

### Weight Change

| Metformin | Insulin | Glitazones | Exenatide | Sulfonlureas | Glitazones | Exenatide | Sulfonlureas | Glitazones | Exenatide | Sulfonlureas | Glitazones | Exenatide | Sulfonlureas | Glitazones |
|-----------|---------|------------|-----------|-------------|------------|-----------|-------------|------------|-----------|-------------|------------|-----------|-------------|------------|------------|
| None      | None    | None       | 3-6 h. ban | 2-3 h. ban  | None       | None      | 30 min. before meal | None       | 30 min. before meal | None       | 30 min. before meal | None       | 30 min. before meal | None       | 30 min. before meal |

### Low Blood Sugar

- **Metformin**: 1 - 2%
- **Insulin**: torso %

### Blood Sugar (A1C Reduction)

| Metformin | Insulin | Glitazones | Exenatide | Sulfonlureas | Glitazones | Exenatide | Sulfonlureas | Glitazones | Exenatide | Sulfonlureas | Glitazones |
|-----------|---------|------------|-----------|-------------|------------|-----------|-------------|------------|-----------|-------------|------------|------------|
| None      | None    | None       | 3-6 h. ban | 2-3 h. ban  | None       | None      | 30 min. before meal | None       | 30 min. before meal | None       | 30 min. before meal | None       | 30 min. before meal |

### Side Effects

- **Metformin**: In the first few weeks after starting. Metformin-related rash, nausea, liver function test, lactic acidosis, hypoglycemia.
- **Insulin**: Weight gain, fluid retention.
- **Glitazones**: Edema, weight gain, fluid retention.

### Daily Routine

- **Metformin**: None
- **Insulin**: None OR
- **Glitazones**: None

### Daily Sugar Testing (Monitoring)

- **Metformin**: None
- **Insulin**: Meals 0-2 hours post, last after dose.
- **Glitazones**: Meals 0-2 hours post, last after dose.

### Cost

- **Metformin (generic available)**: $0.50 per day
- **Insulin**: Not generic available - price varies by dose
- **Glitazones**: Not generic available, price varies by dose

### Sexual Issues

- **Some men may experience increased sex drive and/or duration of their erections.**

### What You Should Know

- **Some people may experience stiffness or fatigue because of their antidepressants.**

### Sleep

- **Some people may experience insomnia or nightmares because of their antidepressants.**

### Keep in Mind

- **Some people may experience breast tenderness or swelling because of their antidepressants.**

### Stopping Approach

- **Quitting your antidepressant or change in mood may signal relapse, so gradual tapering is recommended.**

### Sexual Issues

- **Some people may experience loss of sexual desire or ability to reach orgasm because of their antidepressants.**

### What You Should Know

- **How will the medication work for me?**
- **The antidepressant can be used as an effective treatment for depression.**
- **How can I take the medication to keep it effective?**
- **The medication should be taken consistently with meals for optimal effect.**
- **How should I stop taking this medication?**
- **The medication should be tapered to minimize withdrawal symptoms.**
- **Understanding side effects**
- **Some people taking antidepressants have at least one side effect.**
- **How can side effects be managed?**
- **Some side effects go away after a few weeks, but some only go away after you stop the medication.**

### Sexual Issues

- **Some people may experience loss of sexual desire or ability to reach orgasm because of their antidepressants.**

### What You Should Know

- **How will the medication work for me?**
- **The antidepressant can be used as an effective treatment for depression.**
- **How can I take the medication to keep it effective?**
- **The medication should be taken consistently with meals for optimal effect.**
- **How should I stop taking this medication?**
- **The medication should be tapered to minimize withdrawal symptoms.**
- **Understanding side effects**
- **Some people taking antidepressants have at least one side effect.**
- **How can side effects be managed?**
- **Some side effects go away after a few weeks, but some only go away after you stop the medication.**

### Sexual Issues

- **Some people may experience loss of sexual desire or ability to reach orgasm because of their antidepressants.**

### What You Should Know

- **How will the medication work for me?**
- **The antidepressant can be used as an effective treatment for depression.**
- **How can I take the medication to keep it effective?**
- **The medication should be taken consistently with meals for optimal effect.**
- **How should I stop taking this medication?**
- **The medication should be tapered to minimize withdrawal symptoms.**
- **Understanding side effects**
- **Some people taking antidepressants have at least one side effect.**
- **How can side effects be managed?**
- **Some side effects go away after a few weeks, but some only go away after you stop the medication.**

### Sexual Issues

- **Some people may experience loss of sexual desire or ability to reach orgasm because of their antidepressants.**

### What You Should Know

- **How will the medication work for me?**
- **The antidepressant can be used as an effective treatment for depression.**
- **How can I take the medication to keep it effective?**
- **The medication should be taken consistently with meals for optimal effect.**
- **How should I stop taking this medication?**
- **The medication should be tapered to minimize withdrawal symptoms.**
- **Understanding side effects**
- **Some people taking antidepressants have at least one side effect.**
- **How can side effects be managed?**
- **Some side effects go away after a few weeks, but some only go away after you stop the medication.**

### Sexual Issues

- **Some people may experience loss of sexual desire or ability to reach orgasm because of their antidepressants.**

### What You Should Know

- **How will the medication work for me?**
- **The antidepressant can be used as an effective treatment for depression.**
- **How can I take the medication to keep it effective?**
- **The medication should be taken consistently with meals for optimal effect.**
- **How should I stop taking this medication?**
- **The medication should be tapered to minimize withdrawal symptoms.**
- **Understanding side effects**
- **Some people taking antidepressants have at least one side effect.**
- **How can side effects be managed?**
- **Some side effects go away after a few weeks, but some only go away after you stop the medication.**
Collaborate to co-create a program that fits better

FIT

Intensify treatment
A survey of 627 US primary care clinicians

50% of my patients get too much care

50% of primary care docs are too aggressive
60% of specialists are too aggressive

35% practice much more aggressively than what they would like


Epidemic of risk-defined diseases
Promotion of treatments
Evidence-based guidelines are disease-specific
Poor care coordination
Increasingly complex regimens
Treatments | Monitoring
Decreasing healthcare support
Shift towards self-management
Increasing treatment burden
Failure to cope
Poor fidelity to the treatment program
Cumulative complexity model

Workload

Capacity

Burden of treatment

Outcomes

access
use
self-care

Burden of illness

Shippee N et al JCE 2012

The work of being a chronic patient

Sense-making work
Organizing work and enrolling others

Doing the work
Reflection, monitoring, appraisal
The work of being a chronic patient

**Self-reported:** 48 min/d

**Desirable (ADA):** 122 min/d

**+ admin:** 143 min/day

Russell LB et al. JFP 2005; 54: 52-56

Of 83 workload discussions in 46 primary care visits (24 min):

70% left unaddressed

Bohlen et al. Diabetes Care 2011

---

**Superusers**

Are heavier* users of visits, lab tests, imaging, pharmacy visits, number of medications

3 conditions: 2x

4 conditions: 4x

5+ conditions: 9x

vs. patients with diabetes and 1-2 conditions, adjusted by sex and age, in commercially insured patients

* top 25%

Shippee et al. En preparación.
Workload

Physical
Mental
Literacy
Financial
Social
Environmental

Capacity
Poor people accumulate comorbidity faster

Barnett et al. Lancet 2012

Poor people accumulate mental comorbidity faster

Barnett et al. Lancet 2012
Minimally disruptive healthcare

Health care delivery designed to reduce the burden of treatment on patients while pursuing patient goals

Want

Can       Need

May CR, Montori VM, Mair FS. BMJ 2009; 339:b2803

Burden of treatment          Coordination of care

Minimally disruptive healthcare

Comorbidity in clinical evidence and guidelines          Prioritize from the patient’s perspective
But...how do we measure quality?

**NQF framework**

**Outcomes**
Patient important outcomes  
(disease, PROs - function)

**Experience of care**
Access to usual source of care  
Seamless transitions (sites, providers)

**Content of care**
Avoid inappropriate, non beneficial care  
Shared decision making

---

**Minimally disruptive healthcare**

Burden of treatment  
Coordination of care

Comorbidity in clinical evidence and guidelines  
Prioritize from the patient’s perspective

NQF: MCC Measurement Framework 2012
To fully play the role they play

FIT
Need
   http://www.gradeworkinggroup.org

Want
   http://shareddecisions.mayoclinic.org

Can
   http://minimallydisruptivemedicine.org