Foray into Computable Reports

Brown EPC
Duke EPC
Minnesota EPC
Disclosures

• None
The report
The Urinary Incontinence (UI) report

- Brown’s “Nonsurgical Treatments for Urinary Incontinence (UI) in Adult Women” updates a 2012 report by the Minnesota EPC.
- Evidence synthesis for 51 specific interventions (14 intervention categories) for
  - Cure, improvement, satisfaction (n=117 studies)
  - Quality of life (n=84 studies)
  - Adverse events (n=138 studies)
An interactive tool
Level 1

Evidence Graph for specific interventions

A1: oxybutynin
A2: solifenacin
A3: tolterodine
A4: trosprim
A5: fesoterodine
A6: flavoxate
A7: phenylpropanolamine
A8: propantheline
A9: propiverine

B: botox

C1: vaginal estrogen
C2: po estrogen
C3: sc estrogen
C4: transdermal estrogen
C5: raloxifene

D1: duloxetine
D2: mirtazapine

G1: electromupuncture
G2: interstim
G3: magnetic stimulation
G4: TENS

H1: bladder training
H2: education
H3: heat therapy
H4: PFMT
H5: bladder support
H6: biofeedback

I1: polycrystalline
I2: collagen
I3: autologous fat
I4: carbonated beads
I5: polymethylmethacrylate
I6: porcine collagen
I7: dextranomer hyalurionate

J: intravesical pressure release

K: sham/no treatment
Evidence Graph for specific interventions

[Some summary information]

[Amount of evidence]
- n studies
- N people

[Outcomes (studies; people)]
- Cure (75; 13921)
- Improvement (82; 17276)
- Satisfaction (12; 2430)

[Connectivity]
- 80 observed comparisons
- 1275 possible comparisons
- No treatment (K) is the most common comparator
Evidence Graph for specific interventions:

Excluding no treatment (K)

A1: oxybutynin
A2: solifenacin
A3: tolterodine
A4: trospium
A5: fesoterodine
A6: flavoxate
A7: phenylpropanolamine
A8: propiverine
A9: propiverine
B: botox
C1: vaginal estrogen
C2: po estrogen
C3: sc estrogen
C4: transdermal estrogen
C5: raloxifene
D1: duloxetine
D2: midodrine
G1: electroacupuncture
G2: interstim
G3: magnetic stimulation
G4: TENS
H1: bladder training
H2: education
H3: heat therapy
H4: PFMT
H5: bladder support
H6: biofeedback
I1: polycrylamide
I2: collagen
I3: autologous fat
I4: carbonated beads
I5: polymethylsiloxane
I6: porcine collagen
I7: dextranomer hyaluronate
J: intravesical pressure release
K: sham/no treatment
Level 1

Evidence Graph for intervention categories

A: anticholinergic
B: beta
C: hormones
D: alpha agonist
E: neuromodulation
F: behavioral therapy
G: penile bulking
H: intravesical pressure release
I: sham/no treatment
[Some summary information]

[Amount of evidence]
- n studies
- N people

[Outcomes (studies; people)]
- Cure (54; 8664)
- Improvement (62; 13407)
- Satisfaction (8; 1668)

[Connectivity]
- 24 observed comparisons
- 91 possible comparisons
- ...

A: anticholinergic
B: beta
C: hormones
D: alpha agonist
G: neuromodulation
H: behavioral therapy
I: penile vestibular bulking
J: intravesical pressure release
K: sham/no treatment
Level 2

Evidence Graph
for intervention categories:

Cure

A: anticholinergic
B: botox
C: hormones
D: alpha agonist
E: neuromodulation
F: behavioral therapy
G: periurethral bulking
H: intravesical pressure release
I: sham/no treatment
Level 2

Evidence Graph for intervention categories:

*Satisfaction*
All active treatments appear to be better than sham or no treatment with respect to satisfaction and, with one exception (combination of neuromodulation with behavioral therapy [G+H]), statistically significantly so.
<table>
<thead>
<tr>
<th>Intervention category</th>
<th>Mean Percent (95% CI)</th>
<th>Forecast Percent (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pharmacological</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anticholinergic (A)</td>
<td>51.0 (31.6, 70.1)</td>
<td>51.0 (9.9, 90.8)</td>
</tr>
<tr>
<td>Onabotulinum toxin A (B)</td>
<td>75.8 (50.8, 90.5)</td>
<td>75.8 (22.6, 97.1)</td>
</tr>
<tr>
<td><strong>Nonpharmacological</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuromodulation + Behavioral therapy (G+H)</td>
<td>65.9 (19.0, 94.1)</td>
<td>65.9 (9.0, 97.4)</td>
</tr>
<tr>
<td>Behavioral therapy (H)</td>
<td>75.8 (57.0, 88.1)</td>
<td>75.8 (24.5, 96.8)</td>
</tr>
<tr>
<td>Neuromodulation (G)</td>
<td>69.4 (44.2, 86.7)</td>
<td>69.4 (17.8, 96.0)</td>
</tr>
<tr>
<td><strong>Combination</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anticholinergic + Behavioral therapy (A+H)</td>
<td>62.9 (40.8, 80.7)</td>
<td>62.9 (14.7, 94.3)</td>
</tr>
<tr>
<td><strong>No treatment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sham/no treatment (K)</td>
<td>28.7 (15.0, 48.0)</td>
<td>28.7 (4.1, 79.4)</td>
</tr>
</tbody>
</table>

CI=confidence interval.
And so on...

...with various kinds of summaries (e.g., odds ratios, amount of direct and indirect data, RoB assessments, SoE assessments... )

... at different levels of granularity...
Other outcomes

• Analogous Evidence Graphs can serve as “navigation maps” for outcomes that have been synthesized qualitatively.

• For qualitative-only synthesis, the tool will present specifically-crafted summaries

• Two levels of abstraction
  • High level summary
  • More nuanced summary
Evaluation
Duke Health System, Stakeholders

• J. Bae, MD: Associate Chief Medical Officer for Patient Safety and Clinical Quality
• G. Cheely, MD, MBA: Medical Director for Care Redesign
• T. Owens, MD: Chief Medical Officer and Vice President for Medical Affairs
Role of Stakeholders

Stakeholders will inform on

• Tool development: What information is useful
• Pilot implementation: Which needs are met versus not met by the tool
Eliciting Stakeholder input

• Semi-structured interviews
Coordination between EPCs
Brown, Duke, Minnesota EPCs

• Brown will create the prototype tool including evidence graphs, associated summaries, and network meta-analysis results.

• Minnesota will create summaries for qualitatively synthesized results, which will be hooked into the tool by Brown.

• Duke will run the evaluation.
Scalability

• We propose to create a prototype web-based tool
• We will not create a software framework to enable analogous summaries for future EPC reports
• The qualitative-outcomes version of the tool pertains to all EPC reports
Fallback

• A static version of the tool, along the lines of this presentation, can be created at any time.