A New Algorithm

**Metformin**
- [GFR 45+: 2000mg]
- [GFR 30-45: 1000mg]

**Exceptions:**
- GFR <30

**Liraglutide**
- Exceptions: hx of med. thyroid ca/MEN2

**Empagliflozin**
- Exceptions: GFR <45, hx recurrent GU infections

3mth Repeat HgA1c Above Goal

HgA1c
- <8.0%
- ≥8.0%
- ≥10% or symptoms

HgA1c ≥10% or symptoms

HgA1c <8.0%

HgA1c ≥8.0%
# Mercy Diabetes Management Algorithm

<table>
<thead>
<tr>
<th>Diagnosis of Diabetes</th>
<th>A1c ≤ 1.0 over goal</th>
<th>A1c 1.1-2.0 over goal</th>
<th>A1c &gt; 2.0 over goal</th>
<th>Failure to Achieve A1c Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish Patient-Specific A1c Goal</td>
<td>INITIATE MONOTHERAPY</td>
<td>INITIATE MONO- or DUAL THERAPY</td>
<td>INITIATE DUAL or TRIPLE THERAPY</td>
<td>INTENSIFY INSULIN or REFER TO ENDOCRINOLOGY</td>
</tr>
</tbody>
</table>

**Process Steps**
- **Modification**: Adjust diet and exercise to achieve positive outcomes, potentially delaying or avoiding drug therapy. If patient has maximized lifestyle modification or is unable or unwilling to make necessary modifications, proceed to next step.
- **Initiation**: Start drug therapy based on patient’s current A1c relative to individual goal.
- **Titration**: Increase dose within each “tier” to the maximally tolerated dose or until goal is achieved.
- **Escalation**: If A1c goal is still not achieved after dosage titration, escalate to the next tier and add another agent as needed.
- **Intensification**: Once all tiers have been maximized, intensify insulin therapy with both basal and pre-meal insulins. Consider referral to Endocrinology.

### Lifestyle Modification
- **Lifestyle Modification**: Lifestyle modification includes weight loss, increased physical activity, and dietary changes.
- **Tritrate to Goal**: Initiate therapy based on lifestyle modifications.
- **Tritrate to Goal**: Add 2nd line agent and maintain 2nd line agent.
- **Tritrate to Goal**: Add 3rd line agent and maintain 2nd line agent.
- **Tritrate to Goal**: Add 3rd line agent and initiate 4th line agent.
- **Tritrate to Goal**: Intensify therapy with basal insulin.

### Reasonable HgbA1c Goals for T2DM

<table>
<thead>
<tr>
<th>&lt; 7.0</th>
<th>&lt; 7.5</th>
<th>&lt; 8.0</th>
<th>&lt; 8.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomplicated Adults</td>
<td>Fit Older</td>
<td>Frail Older w/Co-morbidity, &lt; 10 yrs life expectancy</td>
<td>Very Old</td>
</tr>
</tbody>
</table>

### Diabetes Drug Therapy Options

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Route</th>
<th>Hypoglyc. Risk</th>
<th>Weight Gain</th>
<th>CHF</th>
<th>CV Benefit</th>
<th>Typical A1c Change</th>
<th>Avg Cost /30 days</th>
<th>Cost per 1.0 A1c decr/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metformin</td>
<td>Oral</td>
<td>Low</td>
<td>Slight Loss</td>
<td>Neutral</td>
<td>Neutral</td>
<td>1.0-2.0</td>
<td>$7</td>
<td>$84</td>
</tr>
<tr>
<td>GLP-1 RAs</td>
<td>Inj</td>
<td>Low</td>
<td>Loss</td>
<td>1st Pref*</td>
<td>1st Pref*</td>
<td>0.5-1.0</td>
<td>$570</td>
<td>$9,120</td>
</tr>
<tr>
<td>SGLT2i</td>
<td>Oral</td>
<td>Low</td>
<td>Loss</td>
<td>1st Pref</td>
<td>2nd Pref*</td>
<td>0.8-1.2</td>
<td>$360</td>
<td>$4,320</td>
</tr>
<tr>
<td>DPP4i</td>
<td>Oral</td>
<td>Low</td>
<td>Neutral</td>
<td>Avoid</td>
<td>Neutral</td>
<td>0.5-0.8</td>
<td>$350</td>
<td>$6,461</td>
</tr>
<tr>
<td>TZD</td>
<td>Oral</td>
<td>Low</td>
<td>Gain</td>
<td>Avoid</td>
<td>Avoid</td>
<td>0.5-1.4</td>
<td>$65</td>
<td>$821</td>
</tr>
<tr>
<td>SU</td>
<td>Oral</td>
<td>High</td>
<td>Gain</td>
<td>Neutral</td>
<td>Neutral</td>
<td>1.0-2.0</td>
<td>$8</td>
<td>$96</td>
</tr>
<tr>
<td>Insulin</td>
<td>Inj</td>
<td>High</td>
<td>Gain</td>
<td>2nd Pref</td>
<td>2nd Pref</td>
<td>1.5-3.5</td>
<td>$525</td>
<td>$2,520</td>
</tr>
</tbody>
</table>

GLP-1 RA = glucagon-like peptide 1 receptor agonists (e.g. Victoza, Byetta, Bydureon, Trulicity, Tanzeum, Ozempic)
SGLT2i = sodium glucose cotransporter 2 inhibitors (e.g. Invokana, Jardiance, Farxiga, Steglitro)
DPP4i = dipeptidyl peptidase-4 inhibitors (e.g. Januvia, Tradjenta, Onglyza, Nesina)
TZD = thiazolidinedione (e.g. Actos (pioglitazone), Avandia); SU = sulfonylurea (e.g. glipizide, glyburide, glimepiride)

*NOTE: Victoza is preferred GLP-1 RA for CHF and ASCVD; Jardiance is preferred SGLT2i for ASCVD per clinical trials and FDA labeling.