<table>
<thead>
<tr>
<th>Medication class:</th>
<th>Diabetes Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Alpha – glucosidase inhibitors</td>
<td>• GLP1 agonists</td>
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<tr>
<td>• Biguanides</td>
<td>• Insulins</td>
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<tr>
<td>• DPP-IV Inhibitors</td>
<td>• Meglitinides</td>
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<tr>
<td>• SGLT 2 Inhibitors</td>
<td>• Sulfonylureas</td>
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<td>• Thiazolidinediones (TZDs)</td>
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</table>

I. Key Risks

**Safety concern(s):**
- Hypoglycemia and its consequences, including:
  - Falls/falls with injury
  - Change in mental status/delirium
  - Worsening co-morbidities (dementia, CV complications)

II. Appropriate use

**Indication:**
Treatment of hyperglycemia due to Type 1 and 2 diabetes
Decrease morbidity from microvascular complications (retinopathy, neuropathy, nephropathy)

**Diagnoses:**
Type 1 DM, Type 2 DM

III. Risk/ Benefit Ratio

**Goals of care:**
Minimize morbidity/mortality due to diabetes and/or its treatment
Patient-centered based on life expectancy, function, cognition, and co-morbidities
Patient/family preference

**Non-pharmacological management:**
- Regular diet (consistent caloric diet) and weight management if appropriate
- Physical activity promotion

IV. Safe Prescribing

**Medication use:**
- Switch from sliding scale to basal insulin (long-acting) or oral agent and decrease daily multiple glucose checks.
- Do not hold basal insulin if FBG is normal, and the patient will be eating
- Adjust basal insulin dose dependent on AM glucose level
- Simplify multiple-dose insulin regimens; in addition to basal, add mealtime insulin to the main meal initially, then to subsequent meals if goals are not achieved
- Link ultra short acting insulin administration to actual meal intake
- Avoid long-acting sulfonylureas
- Reduce dose of metformin if GFR is less than 60; stop if GFR is less than 30
- Don’t use TZDs in patients with heart failure
- Ensure hydration if SGLT2 inhibitors are used
- Avoid GLP1 agonists if GFR is below 30 mL/min
- Reconcile the pre-hospitalization orders for diabetes to nursing home admission orders; oral medications may have been stopped in the hospital or not on formulary

**Age-related:**
- Decline in renal and hepatic function function interferes with sulfonylurea and insulin metabolism, and increases their hypoglycemic effects

**Interactions:**
- Avoid combinations of sulfonylureas and insulins/meglitinides
- Recognize potential effects of steroids, thiazides, beta blockers, and atypical antipsychotics to increase blood glucose levels
- Impact of additional “stress” such as concurrent infection

**Drug history:**
- Obtain history of prior response, reactions and preferences

**Duplication:**
- Document that the benefit exceeds the risk of prescribing more than one diabetic agent to achieve desired goals.
- Avoid use of basal insulins with intermediate-acting insulins

**Potential for error:**
- Name confusion (sound alike/look alike) related to insulin products
- Inappropriate timing of medication in relation to meals
- Need to address change in therapy when intake is altered
- Repeated injections in same site or use of insulin before exercise
- Errors in order transcription
- Use of outdated insulin vials, dosing error (minimized with insulin pens)
- Need for caution when prescribing concentrated Insulins (regular U-500, glargine)
| **V. Monitoring/Effectiveness** | **Physiologic** | • Caloric intake and activity mismatch  
• Inappropriate caloric restriction  

**Symptom:** | • Hypoglycemia signs and symptoms may be atypical  

**Monitoring:** | • Avoid A1C values less than 7.5%; may be higher based on patient characteristics/health status/life expectancy /goals  
http://www.choosingwisely.org/clinician-lists/american-geriatrics-society-medication-to-control-type-2-diabetes/  
• Re-evaluate role and appropriateness of SMBG (self-monitoring of blood glucose)  
• Review patterns and trends of glucose values in a timely fashion  
• Minimize glucose checks in stable patients (AMDA CPG Diabetes Management)  
• Optimize facility response to and prompt practitioner notification for hypoglycemia

| **VI. De-Prescribing** | **Indications:** | • Recurrent hypoglycemic episodes  
• Change in patient care goals and/or risk/benefit

| **Caveats** | • Adverse events: hyperglycemia, dehydration, urinary incontinence, confusion, hyperosmolar state

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**References:**


American Diabetes Association (ADA); (January 2016) *Diabetes Care* 39:Suppl. 1; S81-85 at www.Diabetes.Org/Diabetes Care


