

### Guidelines for Diabetes - Diagnosis

|                                  | Fasting Plasma Glucose<br>(confirm results if borderline) | HbA1C                                    |
|----------------------------------|---|--|
| Normal                           | FPG < 100   | < 5.5                                    |
| IGT (Impaired Glucose Tolerance) | 100 to < 126  | ≥ 5.5 and < 6.5                          |
| Diabetes Mellitus                | ≥ 126<br>(or random ≥ 200)                                | ≥ 6.5%<br>(confirm with fasting glucose) |

### Guidelines for Diabetes - Treatment

#### Step 1

#### Treatment for ALL Diabetics and IGT

- Education
- Nutritional counseling
- Weight loss if obese
- Regular exercise
- Daily self foot exam
- Low dose ASA
- Folate
- ARB or ACEI for HTN or if urine is positive for microalbumin (or increase in urine albumin/creatinine)
- Statin for hyperlipidemia
- Minimize alcohol use

#### Step 2 (if HbA1C goals not achieved)

#### Insulin Sensitizer

- Metformin preferred
- Pioglitazone (Actos) if metformin contraindicated
- 2<sup>nd</sup> generation sulfonylurea, if both metformin and pioglitazone contraindicated



**Step 3** (if HbA1C goals not achieved)

**Add:**

- 2<sup>nd</sup> generation sulfonylurea or glinide or
- Add DDP-4 inhibitor

**Step 4** (if HbA1C goals not achieved)

**Add:**

- TZD (if not already on and no contraindications) or
- 2<sup>nd</sup> generation sulfonylurea or
- DDP-4 inhibitor or
- GLP – 1 agonist or
- Lantus qhs



Summary of Key Risks of Medications

|   | Metformin               | DPP4 Inhibitor | GLP-1 Agonist (Incretin Mimetic) | Sulfonylurea                                    | Glinide*             | TZD   | Alpha Glucosidase Inhibitor | Insulin   | Pramlintide |
|---|-------------------------|----------------|----------------------------------|---|----------------------|---|-----------------------------|---|-------------|
| Formulary Agents**  | metformin, metformin ER | Januvia        | Byetta                           | glyburide, glipizide, glipizide ER, glimepiride | nateglinide, Prandin | Actos, Avandia                                    | acarbose                    | Novolin N/R, Novolin 70/30, Novolog, Novolog 70/30, Lantus, Levemir | Symlin      |
| Hypoglycemia -Use caution in elderly                                  | Neutral                 | Neutral        | Neutral                          | Moderate  | Mild                 | Neutral   | Neutral                     | Moderate to Severe  | Neutral     |
| Gastrointestinal Symptoms   | Moderate                | Neutral        | Moderate                         | Neutral   | Neutral              | Neutral   | Moderate                    | Neutral   | Moderate    |
| Risk of use with renal insufficiency                                  | Severe                  | Reduce Dosage  | Moderate                         | Moderate  | Neutral              | Mild  | Neutral                     | Moderate  | Unknown     |
| Contraindicated in Liver Failure or Predisposition to Lactic Acidosis | Severe                  | Neutral        | Neutral                          | Moderate  | Moderate             | Moderate  | Neutral                     | Neutral   | Neutral     |
| Heart failure/Edema   | Use with caution in CHF | Neutral        | Neutral                          | Neutral   | Neutral              | Mild/Moderate (Contraindicated in class 3, 4 CHF) | Neutral                     | Neutral unless with TZD   | Neutral     |
| Weight Gain   | Benefit                 | Neutral        | Benefit                          | Mild  | Mild                 | Moderate  | Neutral                     | Mild to Moderate  | Benefit     |
| Fractures   | Neutral                 | Neutral        | Neutral                          | Neutral   | Neutral              | Moderate  | Neutral                     | Neutral   | Neutral     |

Adapted from 2009 AACE/ACE Consensus Statement

\* nateglinide (Starlix), Prandin (repaglinide)

\*\* See the Pharmacologic Agents for Treatment of Diabetes table.



## Pharmacologic Agents for Treatment of Diabetes

### 2010 SCAN Formulary Drugs

| Medication   | Dosing & Administration | Risk for Drug-Drug Interactions | Adverse Drug Reactions  | Tier Level & Notes             |                                   |                   |
|--|-------------------------|---------------------------------|---|--------------------------------|-----------------------------------|-------------------|
|  |                         |                                 |   | CA (except San Joaquin County) | AZ SNP/ MAPD & San Joaquin County | AZ Long Term Care |
| <b>Biguanides</b>  |                         |                                 |   |                                |                                   |                   |
| <i>metformin</i>   | 500 – 850 mg BID –TID   | Neutral                         | Nausea/ vomiting, GI upset, metallic taste, diarrhea, flatulence, lactic acidosis | 2                              | 1                                 | 1                 |
| <i>metformin er</i>  | 500 – 2000 daily        |                                 | Nausea/ vomiting, GI upset, diarrhea, flatulence, lactic acidosis                 | 2                              | 1                                 | 1                 |
| <b>Sulfonylureas &amp; Sulfonylurea Combination Agents</b> |                         |                                 |   |                                |                                   |                   |
| <i>glimepiride</i>   | 1- 8 mg daily           | Moderate                        | Dizziness, headache, hypoglycemia, nausea, weight gain                            | 2                              | 1                                 | 1                 |
| <i>glipizide</i>   | 2.5 - 20 mg daily       |                                 | Rash, diarrhea, dizziness, headache, diarrhea, hypoglycemia, nausea, weight gain  | 2                              | 1                                 | 1                 |
| <i>glipizide er</i>  | 5 - 20 mg daily         |                                 | Asthenia, headache, dizziness, rash, nausea, hypoglycemia,                        | 2                              | 1                                 | 1                 |



|  |                                    |         |   |        |                |                 |
|--|------------------------------------|---------|---|--------|----------------|-----------------|
| <i>glipizide / metformin</i>                 | 2.5 / 500 mg bid                   |         | weight gain<br>Rash, diarrhea, dizziness, headache, nausea, hypoglycemia, lactic acidosis, flatulence | 2      | 1              | 1               |
| <i>glyburide</i>                             | 1.25 -20 mg daily                  |         | Rash, heartburn, hypoglycemia, nausea, hypoglycemia, weight gain                                      | 2      | 1              | 1               |
| <i>glyburide / metformin</i>                 | 1.25/250 mg QD-BID                 |         | Rash, heartburn, hypoglycemia, nausea / vomiting, lactic acidosis, flatulence                         | 2      | 1              | 1               |
| <b>Thiazolidinediones</b>                    |                                    |         |   |        |                |                 |
| ACTOS<br>(pioglitazone)                      | 15 - 45 mg QD                      |         | Anemia, edema, weight gain, headache, myalgia   | 3 [QL] | 2[ST],<br>[QL] | 2 [ST],<br>[QL] |
| ACTOPLUS MET<br>(pioglitazone/<br>metformin) | 15 / 500 mg - 45 /<br>1500mg daily |         | Anemia, edema, weight gain, headache, myalgia, lactic acidosis, flatulence                            | 3      | 2[ST],<br>[QL] | 2 [ST],<br>[QL] |
| DUETACT<br>(pioglitazone/<br>glimepiride)    | 30 / 2 mg – 30 / 4<br>mg daily     | Neutral | Anemia, edema, weight gain, headache, myalgia, dizziness, hypoglycemia, nausea                        | 3 [QL] | 2[ST],<br>[QL] | 2 [ST],<br>[QL] |
| AVANDIA<br>(rosiglitazone)                   | 2 - 4 mg BID                       |         | Anemia, back pain, edema, weight gain, fatigue, headache  | 3      | 2[ST],<br>[QL] | NF              |
| AVANDAMET<br>(rosiglitazone/<br>metformin)   | 2 / 500 mg - 8 /<br>2000 mg daily  |         | Anemia, back pain, edema, weight gain, fatigue, headache, lactic acidosis, flatulence                 | 3      | 2[ST]<br>[QL]  | NF              |



|  |  |          |   |   |                |                 |
|--|--|----------|---|---|----------------|-----------------|
| AVANDARYL<br>(rosiglitazone/<br>glimepiride)     | 4 / 1 mg - 8 / 4 mg<br>daily   |          | Anemia, back pain, edema, weight<br>gain, fatigue, headache, dizziness,<br>hypoglycemia, nausea | 3 | 2[ST],<br>[QL] | NF              |
| <b>Alpha-Glucosidase Inhibitor</b>               |  |          |   |   |                |                 |
| <i>acarbose</i>                                  | 25 - 100 mg TID<br>Administered at the<br>start of each meal<br>to decrease<br>postprandial<br>glucose peaks | Neutral  | Abdominal pain, diarrhea,<br>flatulence, elevated serum<br>transaminases                        | 2 | 1              | 1               |
| <b>Meglitnides</b>                               |  |          |   |   |                |                 |
| PRANDIN<br>(repaglinide)                         | 0.5 - 4 mg TID<br>before meals   | Moderate | Hypoglycemia, arthralgia, diarrhea,<br>weight gain  | 3 | 2              | 2               |
| <i>nateglinide</i>                               | 60 - 120 mg TID<br>before meals  |          | Dizziness, arthralgia,<br>hypoglycemia, diarrhea, weight<br>gain, increase uric acid            | 2 | NF             | 1               |
| <b>DPPIs (Dipeptidyl Peptidase-4 Inhibitors)</b> |  |          |   |   |                |                 |
| JANUVIA<br>(sitagliptin)                         | 100 mg daily   | Neutral  | Abdominal pain, diarrhea,<br>headache, nasopharyngitis,<br>nausea                               | 4 | 2 [QL]         | 2 [ST],<br>[QL] |
| JANUMET<br>(sitagliptin/<br>metformin)           | 100 / 2000mg daily   |          | Abdominal pain, diarrhea,<br>headache, nasopharyngitis,<br>nausea, flatulence, lactic acidosis  | 4 | 2 [QL]         | 2 [ST],<br>[QL] |
| <b>Insulins</b>                                  |  |          |   |   |                |                 |



|                           |   |         |   |        |              |              |
|---------------------------|---|---------|---|--------|--------------|--------------|
| HUMULIN N, R              | Patient specific dosing applies         | Neutral | Hypoglycemia, injection site reaction, lipodystrophy, hypokalemia | 3      | NF           | NF           |
| HUMULIN 50/50, 70/30      |   |         |   | 3      | NF           | NF           |
| NOVOLIN N / R             |   |         |   | 3      | 2            | 1            |
| NOVOLIN 70/30             |   |         |   | 3      | 2            | 1            |
| HUMALOG                   |   |         |   | 3      | NF           | NF           |
| HUMALOG mix 50/50,75/25   |   |         |   | 3      | NF           | NF           |
| LANTUS (insulin glargine) |   |         |   | 3      | 2            | 1            |
| LEVEMIR (insulin detemir) |   |         |   | 3      | 2            | 1            |
| <b>Incretin Mimetic</b>   |   |         |   |        |              |              |
| BYETTA (exenatide)        | 10 mcg SC BID                           | Neutral | Diarrhea, nausea, vomiting, dizziness, headache                   | 4 [PA] | 2[PA], [QL]  | 2 [PA], [QL] |
| <b>Amylinomimetic</b>     |   |         |   |        |              |              |
| SYMLIN (pramlintide)      | 60 mcg – 120 mcg SC prior to main meals | Neutral | Nausea, anorexia, dizziness, fatigue                              | 4 [PA] | 2 [PA], [QL] | 2 [PA], [QL] |



Brand-name drugs are capitalized and generic drugs are listed in the lower-case italics

[NF] = Non-formulary      [PA] = Prior Authorization      [QL] = Quantity Limit

\*FDA-Approved Indications: Primary Hyperlipidemia, Type 2 Diabetes Mellitus

\*\* 2009 AACE/ACE Consensus Statement

[ST] = Step Therapy



## Diabetes Guidelines References

Diabetes Guidelines adapted from:

- AACE/ACE Consensus Statement: Consensus Panel on Type 2 Diabetes Mellitus: An Algorithm for Glycemic Control. *Endocrine Practice*. (2009, Sept-Oct). 15(6). 540-559.
- Executive Summary: Standards of Medical Care in Diabetes – 2010. *Diabetes Care*, Vol 33, Sup 1, (2010, Jan).
- Drug Facts & Comparisons. (2010, Feb). Retrieved from [www.online.factsandcomparisons.com](http://www.online.factsandcomparisons.com). Wolters Kluwer Health: Deventer, The Netherlands.