Pharmacy and Therapeutics (P&T) Committee Meeting Record

Date: April 20, 2018

Time: 9:00 a.m. – 3:30 p.m. **Location:** Idaho Medicaid, 3232 Elder Street, Boise, Idaho, 83705, Conference Room D

Moderator: David Agler, M.D.

Committee Members Present: David Agler, MD-Chair; Tami Eide, PharmD; Andrei Rudyi, PharmD; Paul Driver, PharmD; Perry Brown, Jr., MD; David Calley, PharmD; Berk Fraser, RPh; Joseph Weatherly, DO; Jeffery Johnson, PA, PharmD; Brian Crownover, MD

Committee Members Absent: Christopher Streeter, MD

Others Present: Sarah Martinez, PharmD, Magellan Health Services; Jane Gennrich, PharmD, Division of Medicaid; Chris Johnson, PharmD, Division of Medicaid; Marian McDonagh, PharmD, Pacific Northwest Evidence-based Practice Center (by phone); Keshia Schneider, Division of Medicaid; Mark England, PharmD, Magellan Medicaid Administration; Ashley Fretwell, Division of Medicaid.

AGENDA ITEMS	PRESENTER	OUTCOME/ACTIONS
CALL TO ORDER	*David Agler, MD*	*Dr. Agler called the meeting to order.*
Committee Business		
➢ *Roll Call*	*David Agler, MD*	Dr. Agler completed the roll call and welcomed the P&T Committee members.
➢ *Reading of Mission and Confidentiality Statements*	*David Agler, MD*	Dr. Agler read the Mission and Confidentiality Statements.
➢ *Approval of Minutes from November 17, 2017 Meeting*	*David Agler, MD*	The November 17, 2017 minutes were reviewed. The minutes were approved with correction.
Drug Class Reviews and Committee Recommendations	*Sarah Martinez, PharmD Magellan Health Services*	**Drug Class Reviews and Committee Recommendations** Committee members were asked to base their recommendations for each drug class on the answers to the following questions:

		1. Is there comparative evidence to support clinically significant differences in efficacy or effectiveness between agents? If yes, what are the differences? 2. Is there comparative evidence to support clinically significant differences in safety between agents? If yes, what are the differences? 3. Are there any agents that the committee feels strongly must be preferred or non-preferred? 4. Are there any recommendations for changes to PA requirements?
➢ *Angiotensin Modulators*	*Sarah Martinez, PharmD*	**<u>Angiotensin Modulators</u>** Dr. Martinez reported that there were no new products in this class. She reviewed utilization patterns in the ACE Inhibitor, ACE Inhibitor/Diuretic, ARB, ARB/Diuretic, Direct Renin Inhibitor, and ARB/Neprilysin Combination subclasses. Dr. Martinez reported on the following recently published guidelines. • 2017 American College of Physicians (ACP) and American Academy of Family Physicians (AAFP) guidelines on treatment of hypertension in adults 60 years and older. • 2017 American College of Cardiology (ACC) and American Heart Association (AHA) guidelines revising the classification system for blood pressure. The guidelines base drug therapy on a combination of average BP, atherosclerotic CVD risk, and comorbid conditions. • 2017 American Academy of Pediatrics (APP) guidelines on diagnosis, evaluation, and treatment of high blood pressure in children and adolescents. **Committee Recommendations:** The Committee concluded that the evidence did not support significant differences in efficacy, effectiveness or safety between the agents.
➢ *Angiotensin Modulator Combinations*	*Sarah Martinez, PharmD*	**<u>Angiotensin Modulator Combinations</u>** Dr. Martinez reported no new products and no recent clinical information of significance in this class. She reviewed the current utilization patterns for the drugs in this class. **Committee Recommendations:** The Committee concluded that the evidence did not support significant differences in efficacy, effectiveness or safety between the agents. The committee recommended having a

		triple combination preferred if cost effective, to reduce pill burden and potentially increase compliance. The committee also recommended that Entresto remain non-preferred. Since Entresto should not be used concomitantly with an ACE inhibitor it was recommended that all prior authorization requests continue to be manually reviewed by an Idaho Medicaid pharmacist to ensure concurrence with national guidelines.
➢ *Beta Blockers*	*Sarah Martinez, PharmD*	**Beta Blockers** Dr. Martinez reported no new products in this class. She reviewed current utilization patterns for the class. She reported that Coreg (carvedilol) CR is now available generically. Dr. Martinez reported on two guideline updates published in 2016 and 2017 from the ACC/AHA/Heart Failure Society of America (HFSA) that focused on new pharmacological therapies and management for heart failure for treatment of Stage C patients. The guidelines recommend diuretics and salt restriction in patients with evidence of fluid retention, ACE inhibitors or ARBs in all patients, unless contraindicated, and an evidence-based beta-blocker (bisoprolol, carvedilol, or metoprolol succinate extended-release) and diuretic as needed. They further clarified that an ARB may be used as a reasonable alternative in ACE inhibitor-intolerant patients. They recommend switching to sacubitril/valsartan if ACE inhibitors or ARBs are tolerated to further reduce morbidity and mortality. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
➢ *Calcium Channel Blockers*	*Sarah Martinez, PharmD*	**Calcium Channel Blockers** Dr. Martinez reported that there are no new products and no recent clinical information of significance in this class. She reviewed utilization patterns for both short and long-acting agents. **Committee Recommendations:** The committee concluded that other than safety issues with nifedipine IR that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
Public Comment Period	*David Agler, MD* *Keshia Schneider*	**Public Comment Period** Daniel Flynn, MD, Pediatric Endocrinologist with St. Luke's Please see attached transcript of testimony.

Newer Antiplatelet Drugs: A Targeted Update Report	*Marian McDonagh, PharmD* *Pacific Northwest Evidence-based Practice Center*	**Newer Antiplatelet Drugs: A Targeted Update Report** Dr. McDonagh reported on the targeted update report on newer antiplatelet drugs used in acute coronary syndromes, coronary revascularization via stenting, bypass grafting, prior ischemic stroke or TIA or symptomatic peripheral arterial disease. Evidence was searched through April 2017 and included clopidogrel, dipyridamole ER plus aspirin, prasugrel, ticagrelor, and vorapsxar. Ticlopidine and cangrelor were excluded. In most cases differences were not found between the drugs. When differences existed, the magnitude was small. In the two cases where there was a demonstrated benefit, there was an increase in major bleeding. These included vorapaxar as an add on to aspirin and/or clopidogrel in patients with a prior MI or coronary artery disease and prasugrel vs clopidogrel in percutaneous coronary intervention (PCI). Ticagrelor vs clopidogrel in acute coronary syndrome was the only comparison demonstrating benefit with no increased harm, but the results are uncertain in US patients since benefit was seen in those on low-dose aspirin, but not in patients with lower body weight or not receiving lipid reducing drugs.
➢ *Antihypertensives, Sympatholytic*	*Sarah Martinez, PharmD*	**Antihypertensives, Sympatholytic** Dr. Martinez reported that there were no new products and no recent clinical information of significance in this class. She reviewed the quarterly utilization patterns in this class. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
➢ *Vasodilators, Coronary*	*Sarah Martinez, PharmD*	**Vasodilators, Coronary** Dr. Martinez reported no new products and no recent clinical information of significance in this class. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
➢ *Platelet Aggregation Inhibitors*	*Sarah Martinez, PharmD*	**Platelet Aggregation Inhibitors** Dr. Martinez reported no new products in this class, but that Effient was now available generically as prasugrel. She reviewed utilization patterns in this drug class.

		Committee Recommendations: The committee concluded that the evidence did not support differences in efficacy or effectiveness, but there were safety differences between the agents, particularly bleeding episodes. They recommended that Brilinta be non-preferred, but current patients grandfathered.
➢ *Anticoagulants*	*Sarah Martinez, PharmD*	**Anticoagulants** Dr. Martinez reported no new products in this class. She reviewed current utilization patterns in the oral anticoagulant and injectable anticoagulant subclasses. She reported that Eliquis is now available as a starter pack to support the transition of dosing from 10 mg twice daily to 5 mg twice daily. Dr. Martinez discussed that based on the Einstein Choice trial the FDA has revised Xarelto's indication and dosing for secondary prevention of DVT/PE past six months to specify those at continued risk for recurrent DVT and/or PE receive a dose of 10 mg once daily instead of previous 20 mg. Dr. Martinez also reviewed the ACC published guidelines on managing acute bleeding in patients taking direct oral anticoagulants and warfarin. She also reported on the ENGAGE AF-TIMI 48 trial in which reduced cardiovascular mortality was observed in edoxaban patients versus warfarin patients. And finally, she reported on a 37 study meta-analysis that compared the relative efficacy of anticoagulants in patients with atrial fibrillation. The meta-analysis concluded that apixaban may be the best medication for preventing stroke, rivaroxaban may be the best for preventing cardiovascular events, and dabigatran had a notable and comprehensive advantage to other medications in preventing hemorrhage, MI, and mortality. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
➢ *Lipotropics, Other*	*Sarah Martinez, PharmD*	**Lipotropics, Other** Dr. Martinez reported no new products in this class. Utilization of the various agents was reviewed. She reported that the FDA had approved a once monthly dosing for Praluent given as two 150 mg injections at 2 different sites. She also noted that Repatha is now indicated to reduce the risk of myocardial infarction, stroke, and coronary revascularization in adults

		with established cardiovascular disease. The lipid-lowering indication now includes all adults with primary hyperlipidemia to reduce LDL-C rather than just those with heterozygous familial hypercholesterolemia. Dr. Martinez also reported that the ACC has updated its consensus decision pathway on using non-statin drugs to lower LDL cholesterol in patients with clinical ASCVD and that the American Association of Clinical Endocrinologists (AACE) and the American College of Endocrinology (ACE) had published guidelines for the management of dyslipidemia and prevention of cardiovascular disease. These guidelines recommend that adults ≥ 20 years of age should be assessed annually for dyslipidemia. Children who are at risk for familial hypercholesterolemia should be assessed at 3 years old, again between ages 9 to 11, and at age 18. Adolescents > 16 years of age with ASCVD risk factors should be evaluated every 5 years. **Committee Recommendations:** The committee recommended keeping PCSK9's non-preferred. Concerns included potential cognitive effects and studies focusing only on disease-oriented outcomes, not mortality rates. The committee recommended making all niacin products non-preferred as there is no clinical evidence of efficacy, especially in pediatrics or in primary prevention. They concluded that the evidence did not support differences in efficacy in the other subclasses in this category.
➢ *Lipotropics, Statins*	*Sarah Martinez, PharmD*	**<u>Lipotropics, Statins</u>** Dr. Martinez reported that there were no new products in this class. She reviewed the utilization patterns of the individual agents for the committee. Dr. Martinez announced that Vytorin is now available generically as simvastatin/ezetimibe. Dr. Martinez reviewed the 2017 American Diabetes Association (ADA) Standards of Medical Care in Diabetes. They recommend that lipid status be assessed at the time of diabetes diagnosis, and at least every 5 years thereafter or on an individual basis in patients on a statin. The ADA recommends moderate- or high-intensity statin therapy in patients with diabetes based on patient age and presence of atherosclerotic cardiovascular disease (ASCVD) or ASCVD risk factors. Ezetimibe is recommended as an add-on to moderate-intensity statin therapy in patients with acute coronary syndromes and LDL-C ≥ 50 mg/dL or in patients with a history of ASCVD who cannot tolerate high-dose statins. The addition of a PCSK9 inhibitor to maximally tolerated statin doses may be considered in those at high risk for ASCVD events who require additional LDL-C reduction or who are intolerant to high-intensity statin therapy. She also discussed the AACE/ACE's 2017 Type 2 diabetes

		management algorithm which advises early and intensive management of dyslipidemia to prevent microvascular complications. **Committee Recommendations:** The committee concluded that at equivalent equipotent doses the evidence did not support differences in efficacy, effectiveness or safety between the agents. The committee recommended that at least on moderate and one high intensity statin be designated as preferred. The Department will update the PDL to remove the prior authorization requirement of trial of a preferred agent for 5 months before approval of a non-preferred as this is no longer being used in PA evaluation.
➢ *BPH Treatments*	*Sarah Martinez, PharmD*	**BPH Treatments** Dr. Martinez reported no new products and no recent clinical information of significance in this class. Utilization patterns of the individual agents were reviewed. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
➢ *Bladder Relaxant Preparations*	*Sarah Martinez, PharmD*	**Bladder Relaxant Preparations** Dr. Martinez reported no new products and no recent clinical information of significance in this class. Utilization patterns were reviewed. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
➢ *Bone Resorption Suppression and Related Agents*	*Sarah Martinez, PharmD*	**Bone Resorption Suppression and Related Agents** Dr. Martinez reported one new product in this class: Tymlos (abaloparatide). It is indicated for the treatment of osteoporosis in postmenopausal women who are at high risk for fractures. It is administered subcutaneously once daily and should not be used for greater than 2 cumulative years. It carries a boxed warning regarding the risk of osteosarcoma. She reviewed clinical studies and common adverse effects of the agent. . Dr. Martinez reported on a joint position statement from the International Osteoporosis Foundation, along with six other cancer and bone societies on management of bone loss in postmenopausal women receiving adjuvant aromatase inhibitor therapy for breast cancer. They recommend that all women initiating aromatase inhibitor therapy take vitamin D and calcium supplements and receive bone-directed therapy if they meet criteria provided in the position statement. Treatment with denosumab every 6 months or zoledronate yearly are recommended as preferred treatment over oral bisphosphonates. She also reviewed the

		American College of Physicians (ACP) updated guidance on treatment of low bone density or osteoporosis to prevent fractures in men and women. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
➢ *Phosphate Binders*	*Sarah Martinez, PharmD*	**Phosphate Binders** Dr. Martinez reported that there are no new products in this class. She reported that Renvela (sevelamer carbonate) and Fosrenol (lanthanum) are both now available generically. She also reported that Auryxia (ferric citrate) is now also approved as an iron replacement product for the treatment of iron deficiency anemia in adults with Chronic Kidney Disease not on dialysis. **Committee Recommendations** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
➢ *Androgenic Agents*	*Sarah Martinez, PharmD*	**Androgenic Agents** Dr. Martinez reported that there are no new products in this class. Axiron is now available generically. Lilly will discontinue production of the brand name Axiron and its authorized generic. This is not based on drug safety or efficacy. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents. The committee reviewed the current clinical criteria for all agents in this drug class and recommended no changes.
➢ *Pulmonary Arterial Hypertension Agents, Oral and Inhaled*	*Sarah Martinez, PharmD*	**Pulmonary Arterial Hypertension Agents, Oral and Inhaled** Dr. Martinez reported that Tracleer is now approved for pediatric patients 3 years or older with idiopathic or congenital PAH to improve pulmonary vascular resistance (PVR), which is expected to result in an improvement in exercise ability. A new product formulation of a 32-mg tablet for oral suspension is now available. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents. The committee recommended that all agents in the PDE-5 inhibitor class have clinical criteria to avoid their use to treat erectile dysfunction. Drugs for sexual dysfunction are excluded from Medicaid coverage by Federal and State rule.

Proton Pump Inhibitors Proposed Criteria	*Tami Eide, PharmD Idaho Dept. of Health and Welfare*	**<u>Proton Pump Inhibitors Proposed Criteria</u>** Dr. Eide reported on potential adverse outcomes due to long-term utilization of Proton Pump Inhibitors. She discussed observational studies which show an association of long-term use with chronic kidney disease, dementia, bone fracture, myocardial infarction, *Clostridium difficile* infection, community-acquired pneumonia and micronutrient deficiencies of magnesium, Vitamin B_{12}, iron, and calcium. Most evidence is low to very low quality and almost all literature refers to patients with uncomplicated GERD. The following criteria were proposed: • Preferred agents will be approved for an initial 60 days or less within a rolling 12-month period with no prior authorization requirements for indication. • Non-preferred agents will be approved for an initial 60 days or less within a 12-month period if the patient has tried and failed therapy with two preferred agents within the last six months. • Total length of therapy for all proton pump inhibitors current and past cannot exceed a total of 60 days within a rolling 12 -month period without further prior authorization. • Lansoprazole oral disintegrating tablets will only be approved for patients who cannot swallow tablets or capsules and who are not candidates for a preferred liquid preparation. • After an initial 60 days, an additional 30 days may be approved through the prior authorization process to allow for tapering. • Up to 1 year of continuous therapy will be approved for the following indications: o Pathological gastric acid hypersecretory conditions/Zollinger-Ellison Syndrome o Barrett's esophagus o Esophageal stenosis/stricture or Schatzki Ring o Recent erosive/ulcerative esophagitis o Recent gastric ulcer o Recent duodenal ulcer

		• Up to 1 year will be approved for patients receiving concurrent long-term therapy with any of the following medications: o Chronic NSAID or aspirin > 325 mg daily o Low dose aspirin with an EGD report of a GI Bleed o High-Dose systemic corticosteroids o Antiplatelet Agents o Anticoagulants o Bisphosphonates with documented pre-existing esophageal disorder o Pancreatic enzymes (e.g. Cystic Fibrosis patients) o Cancer therapy if PPI is prescribed by or in consultation with an oncologist • More than 60 days will not be approved for the following indications: o Uncomplicated GERD (Consideration will be given with documentation of trial and failure of an H2- Receptor antagonist at optimal dose for a minimum of 8 weeks, with time to taper off) o Esophagitis o *H. Pylori* (during treatment course only) o Respiratory disorder or laryngospasm without evidence of aspiration • Twice daily dosing will be considered only for the following indications: o Barrett's esophagus o *H. Pylori* o Other hypersecretory conditions
➢ *Proton Pump Inhibitors*	*Sarah Martinez, PharmD*	**<u>Proton Pump Inhibitors</u>** Dr. Martinez reported no new products in this class. Utilization of individual agents was reviewed. Dr. Martinez reviewed the American Gastroenterological Association clinical practice update on PPIs as well as the American College of Gastroenterology (ACG) and Canadian Association of Gastroenterology (CAG) updated guidelines on treatment of dyspepsia. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents. The committee concurred with concerns with the safety of long-term PPI use. The committee approved the proposed criteria. The department will disseminate provider education explaining why these criteria are to be implemented as well as information on how to taper PPI's appropriately.

➢ *H. Pylori Treatments*	*Sarah Martinez, PharmD*	***H. Pylori* Treatments** Dr. Martinez reported no new products in this class. Utilization shows 100% use of the preferred agent Pylera. Individual agents are being used for the other combination products. Dr. Martinez reviewed revised Pylera labeling regarding hepatic impairment. Patients with mild to moderate impairment should be monitored for metronidazole-related adverse events. Use is not recommended in patients with severe hepatic impairment. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents.
➢ *GI Motility, Chronic*	*Sarah Martinez, PharmD*	**GI Motility, Chronic** Dr. Martinez announced that there is one new product in this class: Symproic (naldemedine). It is indicated for the treatment of opioid-induced constipation (OIC) in adults with chronic, non-cancer pain and functions as a peripherally-acting mu-opioid receptor antagonist in tissues such as the gastrointestinal tract. She discussed dosing, warnings, adverse effects and clinical studies that approval was based on. She also announced an additional indication for Trulance for irritable bowel syndrome with constipation (IBS-C) in adults. It was noted that Amitiza was originally FDA approved for women only; it is now approved for men as well for certain indications. **Committee Recommendations:** The committee concluded that there was not comparative evidence to support differences in efficacy, effectiveness or safety for the different indications between the agents. The committee recommended that Symproic be non- preferred until better efficacy data is available.
➢ *Ulcerative Colitis Agents*	*Sarah Martinez, PharmD*	**Ulcerative Colitis Agents** Dr. Martinez reported that Lialda (mesalamine delayed-release) is now available generically. Utilization patterns were reviewed. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents. They recommended having at least one mesalamine product on the preferred list.
➢ *Hepatitis C – Interferons and Ribavirin*	*Sarah Martinez, PharmD*	**Hepatitis C – Interferons and Ribavirin** Dr. Martinez reported no new products and no recent clinical information of significance in this class.

		Committee Recommendations: The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents in either the interferon or ribavirin class.
➢ *Cystic Fibrosis, Oral*	*Sarah Martinez, PharmD*	**Cystic Fibrosis, Oral** Dr. Martinez discussed one new product in this class, Symdeko (tezacaftor/ivacaftor). Symdeko (tezacaftor/ivacaftor) is indicated to treat patients with Cystic Fibrosis who are homozygous for the F508del mutation or who have at least 1 mutation in the Cystic Fibrosis Transmembrane Conductance regulator (CFTR) gene that is responsive to Symdeko. She reviewed packaging, dosing, contraindications, warnings, adverse effects and drug interactions. She discussed the EVOLVE and EXPAND trials which were used for drug approval. Dr. Perry Brown provided via telephone his clinical perspective of Symdeko compared to Orkambi and Kalydeco. Symdeko covers a few more genotypes and is slightly better in terms of improving lung function than Orkambi. It also has less drug-drug interactions with drugs often used concurrently with CF patients as well as less hepatotoxicity. **Committee Recommendations:** The committee concluded that there was no comparative clinical evidence to prefer one agent over another as there were no head to head studies. Differences are presumed based on genotype coverage. The committee did feel that there were safety advantages to using Symdeko. It does have a disadvantage of only being approved for > 12 years old (Orkambi is FDA approved for ≥ 6 years old). Historically the age range in these treatments have been expanded as more studies are completed and clinical trials are currently in process. The committee recommended that if Symdeko was designated preferred that current preferred agents either stay preferred or patients be grandfathered for continuity of care. They recommended the clinical criteria for prior authorization remain.
➢ *Pancreatic Enzymes*	*Sarah Martinez, PharmD*	**Pancreatic Enzymes** Dr. Martinez reported that there were no new products and no recent clinical information of significance in this class. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents. It was recommended that the Department continue to ensure that there is a wide variety of dosing options available for preferred drugs to allow treatment of infants to adults.

➢ *Growth Hormones*	*Sarah Martinez, PharmD*	**Growth Hormones** Dr. Martinez reported that there were no new products in this class. She reported that Norditropin Flexpro and Nordiflex had received new pediatric indications for idiopathic short stature and growth failure due to Prader-Willi syndrome. Idaho Medicaid's current therapeutic criteria for growth hormone was reviewed. **Committee Recommendations:** The committee concluded that the evidence did not support differences in efficacy, effectiveness or safety between the agents as most differences were due to the specific delivery device. The committee approved criteria as currently written. The committee recommended that the Department consider Dr. Flynn's recommendation of having a preferred agent available that is preservative free (Genotropin) and an agent available that does not require refrigeration once opened (Norditropin).
Other Committee Business	*Tami Eide, PharmD*	**Other Committee Business** There is currently a physician member vacancy on the committee. Recommendations for a new P &T member should be directed to Dr. Eide. The meeting adjourned at 1:48 PM. Next meeting will be on May 18, 2018.

Pharmacy and Therapeutics Committee Meeting
Public Comment

Dr. Daniel Flynn:

My name is Daniel Flynn, MD. I'm a Pediatric Endocrinologist with St. Luke's at the Children's Endocrinology Clinic. I'm here with Novo Nordisk, not receiving compensation for testimony. In the past there have been speaking engagements, nothing in the past 12 months. This is in reference to, I know we were talking about antihypertensives, but this is in reference to growth hormones (somatropin) that's slated for later today. I wanted to recommend that we have, of the seven different companies that offer products, that we have a couple of different options for children treated with FDA approved indications for growth hormone. Want to remind us that for children less than two years of age we only have one option. That's not a Novo Nordisk product. That's the Genotropin Miniquick pen. That's because of the preservative profiles of the different medications. So that is the only one that is, due to lack of benzyl alcohol, able to be utilized in children less than 2 years of age. That medication works well for small children, but the maximum dose for the Miniquick pens is 0.4mg which is significantly less than would be used for older, growing children. So, we would need a second agent to be available for older kids.

The different devices that are available, the medications are all equivalent in terms of study effect on linear growth and secondary clinical outcomes. However, in the real world, due to Novo's product Norditropin not requiring refrigeration and having a significantly simpler delivery device, what we see in our patients is that it is used much more reliably. And so, with growth hormone, or somatropin, we can have either a six- or seven-day per week dosing schedule. What we see most reliably in our kids is that when Norditropin is utilized that, or is prescribed, that it is reliably administered in comparison to the other products where there's complaints of either pain or else there's, oftentimes especially during the summer months, lost product due to leaving it out on the counter overnight. So, what we see in the real world is that there's better response with Norditropin due to temperature stability and then ease of use of the delivery device. The medication, the active ingredient, is equivalent in all of the products, but we see better response. That's why we're asking that the committee to consider the Genotropin Miniquick for young children and the Novo Nordisk product Norditropin for older children.

Dr. Brian Crownover: For any of the products that are not on the preferred list currently, if you were to make a recommendation, if one of them is to be pulled to preferred, which one would you push first?

Dr. Daniel Flynn: Of the products that are currently on the list which one would we remove, or – ?

Dr. Brian Crownover: So, everything but Genotropin and Norditropin, everything else is on non-preferred.

Dr. Daniel Flynn: Right.

Dr. Brian Crownover: If we were to pull one more across into preferred, which one would you want to see pushed first?

Dr. Daniel Flynn: That would be Nutropin, probably. That would be the, for the, again that's for children greater than 2 years old. That's the one that people use reliably compared to some of the other products as well. Of the, of the non-Novo products we would recommend.

Dr. Brian Crownover: And that's based on, on Nutropin's pen design?

Dr. Daniel Flynn: Yeah. Pen design and a lot of it is ease of getting the medicine delivered. The infrastructure that they have to get the product to the house on time is savvy. It's a much smoother product, delivery system.

Dr. Brian Crownover: And which one would be your last choice to push across?

Dr. Daniel Flynn: The one that people seem to have a hard time with that we've seen is Saizen products. Some of that is due to, it's a more difficult delivery system, and sometimes there's interruptions or delays each month in getting the product to the house.

Dr. Brian Crownover: Just looking to create options. Thanks.

Dr. Agler: Any more questions for Dr. Flynn? Thank you for your time. We appreciate the input.

Dr. Eide: Thank you.