CLOSER LOOK

MEMORANDUM

MannKind relaunches Afrezza inhaled insulin with improved co-pay assistance program, new titration pack, spirometry offering, and speakers bureau - August 2, 2016

Executive Highlights

- MannKind announced yesterday that it has resumed full responsibility for marketing and distributing Afrezza following the terminated partnership with Sanofi in January.
- Accompanying the relaunch are programs for co-pay assistance (just $15/month for commercially insured patients), streamlined prior authorization assistance, a new 30-day titration pack, and in-office spirometers. These efforts will hopefully overcome the access obstacles Afrezza has faced so far.
- MannKind will need to ramp revenue quickly to restore investor confidence, gain some momentum, and show what it can do on its own. The company has said that it only has cash sufficient to take it into the first quarter of next year.

MannKind announced yesterday the relaunch of MannKind-branded Afrezza, following Sanofi's termination of its licensing partnership for the inhaled ultra-rapid-acting insulin in January. While Afrezza has been available since January, MannKind has now assumed direct responsibility for distributing Afrezza to major wholesalers and has made Afrezza available by prescription from retail pharmacies nationwide. The relaunch features the MannKind Cares support program - rolling out next week on August 8 - which hopes to streamline the prior authorization process and shorten a patient's wait time from prescription to obtaining Afrezza to a few days at most. Though the announcement emphasized that Afrezza has access to 70% of commercial lives covered, challenges surrounding reimbursement and, in particular, prior authorization requirements are frequently noted as some of the biggest barriers to Afrezza uptake. MannKind has initiated an improved co-pay assistance program that will reduce out of pocket expenses to $15/month for commercially insured patients (prior co-pay cards activated by Sanofi will still be accepted as well). The new co-pay system could play an important role in improving patient adherence, given the lower formulary status Afrezza had with payers out of the gate. The program also hopes to enroll all patients in a customized adherence program starting on August 8 - we are thrilled to hear about this.

As part of the relaunch, MannKind is also making available (i) a new 30-day titration pack (90 four-unit cartridges and 90 eight-unit cartridges) that allows for greater patient flexibility in adjusting insulin dose; (ii) in-office spirometers so that healthcare providers can perform pulmonary function tests at time of prescription (see our picture of the improved device from ADA); and (iii) a speakers bureau to educate providers about Afrezza. MannKind previously highlighted FDA-required pulmonary function testing as another major barrier to Afrezza uptake as only 30% of endocrinologists had direct access to the necessary spirometry equipment and we're glad to see the relaunch plan directly addressing this gap - this should never have been a gap, unfortunately, as it was an addressable problem to start. The dedicated Afrezza sales rep force announced in the company's 1Q16 update began calling on targets earlier this month.

This full throttle effort focuses in equal part on access, patient and provider education, and reducing the clinical and administrative hurdles associated with prescribing Afrezza. MannKind must execute on all these fronts to be successful with Afrezza in the second half of 2016, particularly as cash runs thin - the company has said that it only has cash sufficient to take it into the first quarter of next year.

Since Afrezza's FDA approval, we've been very excited about the promise of an inhaled mealtime insulin for patients with both type 1 and type 2 diabetes since the status quo is not working - we hear routinely the very

high percentage of patients on insulin not at goal and it is obvious that many patients should either be starting or intensifying insulin given the high percentage of patients not in good control. The innovative insulin delivery mechanism offers a rapid absorption profile that lends itself well to a prandial insulin, while data from the EXPERIENCE trial suggested that patients with type 2 diabetes are more likely to initiate insulin therapy with an inhaled insulin option. We imagine the inertia Afrezza has experienced thus far can largely be attributed to a complicated prescription and access process that will hopefully be mitigated through MannKind's new streamlined reimbursement and education programs. The launch of Sanofi's Toujeo (U300 insulin glargine) at the end of March 2015, less than two months after Afrezza's launch, likely competed with Afrezza for resources within Sanofi's portfolio in a year in which Sanofi experienced significant competitive pricing pressure and other challenges within its core basal insulin market. We hope that Afrezza fares better with MannKind's attention focused solely on the product.

- **MannKind has maintained confidence and optimism in Afrezza throughout the sluggish initial launch and Sanofi's licensing partnership termination.** In particular, management has previously highlighted the "overwhelmingly positive communications" from users in social media. We're happy to see MannKind's continued commitment to ensuring that Afrezza is available for the patients who would benefit from its unique dose administration method and its faster-on-faster-off profile. Our sense is that, for some patients, Afrezza is a gamechanger that has transformed their diabetes management. While inhaled insulin is clearly not for everyone, we hope that Afrezza is preserved as a future option for the millions of patients not achieving success with the current set of therapies - and, of course, for the subset of patients for whom Afrezza is the optimal choice in terms of lifestyle and preferences.
- **We expect to hear more about the plan for Afrezza through the rest of 2016 during MannKind's 2Q16 earnings call next week, on August 8.** We'll be curious to see how Afrezza sales have fluctuated during 2Q16 in response to the Sanofi-to-MannKind licensing shift, and to hear updates on the company's plans to study Afrezza in pediatric patients with input from JDRF. We hope very much that the company can get help from others beyond JDRF, as alternatives to the status quo are sorely needed.
- **We heard much discussion at ADA 2016 on new rapid-acting insulin analogs, including positive and negative views on Afrezza.** While Dr. Stefano Del Prato (University of Pisa, Pisa, Italy) expressed reservations on the efficacy of Afrezza in improving diabetes health outcomes and on the safety profile of Afrezza in terms of lung cancer risk and declining pulmonary function, others acknowledged high patient satisfaction among Afrezza users. Dr. Nancy Bohannon (California Pacific Medical Center, San Francisco, CA) did point out that individualizing insulin doses for patients on Afrezza requires a large amount of trial and error, which certainly could partly explain the lower patient retention rates for Afrezza. We hope that further provider education could alleviate some of the more critical perceptions of Afrezza.
- **As part of the relaunch announcement, management stated that Dr. Frank Pompilio (previously Kythera Biopharmaceuticals, Agoura Hills, CA) has been appointed Vice President of North America Medical Affairs.** Previously, Dr. Pompilio led medical communications at California-based Kythera Biopharmaceuticals, Amgen, and BMS. Among other responsibilities, Mr. Pompilio will take the lead in developing and executing medical affairs strategy for Afrezza.

-- by Payal Marathe, Helen Gao, Adam Brown, and Kelly Close