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EQUITY RESEARCH
Company Report

March 27, 2017

NovaBay Pharmaceuticals (NBY - $3.80)

Healthcare / Biotechnology

Initiation of Coverage – U.S. Avenova Leads NBY's Turnaround

Ticker:	**NBY**
Rating:	**Buy**
Price Target:	**$10.00**

We are initiating coverage of NovaBay Pharmaceuticals (NBY) with a Buy rating and a $10 price target. NBY's lead product candidate is Avenova, a prescription cleanser for removal of microorganisms and debris on and around eyelids and eyelashes due to blepharitis, meibomian gland dysfunction (MGD), and/or dry eye. As the only eye care product formulated with a proprietary pure form of Hypochlorous Acid (HOCl) called Neutrox, we see little direct comparators to Avenova as other products are either surfactant (soap) based or contain bleach impurities. NBY, in our opinion, represents an exciting turnaround story since their new CEO Mark Sieczkarek transformed their commercial strategy at the beginning of 2016 from a buy and bill sales model to focusing on prescription sales through ophthalmologists. While NBY is solely focusing on U.S. Avenova sales for the moment, the ~30M recurring patients with blepharitis and dry eye alone attests to the impressive size of the market opportunity. As Avenova awareness grows through additional post-marketing trials and a significant enlargement of their sales force, we see NBY as an exciting turnaround story with upside potential at these levels. We are initiating NBY coverage with a Buy rating and $10 price target.

- **New CEO, new strategy, out of the gate running and gaining momentum.** With a full year of implementing CEO Sieczkarek's commercial strategy, which consists of focusing on Avenova sales by mainly targeting the ~17,000 ophthalmologists in the U.S., net sales grew over 175% from 2016 with guidance of an additional 65% growth in 2017 to $19M in sales. Over 75% of sales are now coming from prescriptions in 4Q16, a complete flip from 2015.
- **Hard to overstate the size of the market.** Without taking into consideration patients with contact lens intolerance, retinal injections, Lasik and cataract surgeries, Avenova is still well-suited for >25M Americans with blepharitis and ~5M more with dry eyes.
- **Indications still relatively untapped.** As most other products available are either soap based or contain bleach impurities and the Avenova sales force (n= ~45) is only at 1/3 of its goal, we see opportunity for continued sales growth.
- **Initiate with a Buy rating, $10 PT.** Our price target is based on Avenova at $9/share and cash (end'17) & tech value at $1/share.

Trading Data:

Last Price (03/24/2017)	$3.80
52–Week High (11/10/2016)	$5.29
52–Week Low (4/11/2016)	$1.90
Market Cap. (MM)	$57.5
Shares Out. (MM)	15.13

Earnings Estimates: (per share)

Dec FY	1Q	2Q	3Q	4Q	FY	P/E
FY18E	0.01	0.06	0.01	0.07	0.15	25.3
FY17E	(0.15)	(0.13)	(0.13)	0.00	(0.40)	NA
FY16	(1.15)	(0.31)	(0.19)	(0.13)	(1.17)	NA
FY15	.(2.15)	(1.83)	(1.82)	(1.84)	(7.59)	NA

Source: Laidlaw & Company estimates

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5 Key Reasons to Own NBY

1. **New CEO with new Strategy, out of the gate running and gaining momentum.** With new and current CEO Mark Sieczkarek since October 2015, NBY represents an exciting turn-around story with a transformed commercial strategy that is already paying off. NBY now solely focused on U.S. sales of prescription Avenova has proven vastly more profitable than old buy and bill model and is reimbursed in >90% of cases vs. ~70% at the beginning of 2016 as net sales have grown ~185%.

2. **Hard to overstate the size of the market.** Prescription Avenova is well-suited for >25M Americans with blepharitis (chronic inflammation of the eyelids). Not counting the U.S. patients with contact lens intolerance, retinal injections and eye surgeries, Avenova could be used by the ~5M U.S. patients suffering from dry eyes. By comparison, Shire (SHPG)'s Xiidra for dry eye (launched in mid-2016) has already captured ~20% of the dry eye market by December 2016 while generating $54M in sales in its first 6 months, and is currently on a >$300M run rate.

3. **Indications still relatively untapped with no real competition in sight.** While most other products on the market are soap based or contain bleach impurities, Avenova is the only eye care product formulated with a proprietary stable pure form of neutrally charged HOCl (Neutrox) that can penetrate into bacterial biofilm and spores to kill bacteria. Avenova is also more cost-efficient than steroids and doesn't generate resistance of antibiotics. With ~45 sales representatives at the moment, NBY intends to ramp up to ~120 reps to cover the entire U.S. market.

4. **Commercial awareness growing, positive medical feedback.** While sales are on the right track, growth of Avenova commercial awareness mostly due to positive feedback from the medical community. Encouraging post-marketing clinical trials could only help U.S. sales.

5. **Focused on one product for the moment, far from a one trick pony.** Although NBY's focus is currently solely on U.S. Avenova sales, they are also looking to reduce OpEx and are seeking additional revenue streams either through partnering, divesting and/or by other ways of monetizing their non-core assets in urology, dermatology, and wound care. While all these products are shelved for the time being, NBY's portfolio consists of additional commercial Neutrox products (NeutroPhase and CelleRx), as well as an Aganocide compound (Auriclosene) for reducing urinary catheter blockage and encrustation (UCBE), which is a Phase 3 ready clinical program.

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Valuation

We value NBY on a sum of the parts with Avenova representing the bulk of the value at $9/share based on a 3.5x multiple of 2019 Avenova sales discounted back 2 years at a 10% discount rate. We value net cash at the end of 2017 at $7.5M and a remaining technology value of $10M for a value of $1/share. We estimate that NBY will raise ~$12M in 2017.

Figure 1. Sum-of-the-Parts Analysis

Sum-of-the-parts valuation		
Segment	Valuation (000's)	Per share value
Avenova	$179,850	$9.00
Cash (end '17) & tech value	$17,405	$1.00
	$197,255	**$10.00**
2017 fully diluted shares out (000)		16,100

Source: Company reports; Laidlaw and Company estimates

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Company Description

NovaBay Pharmaceuticals is a biopharmaceutical company developing products for the eye care market. They are currently focused primarily on commercializing prescription Avenova in the U.S. for managing hygiene of the eyelids and lashes mostly in patients with blepharitis and dry eye. Avenova is the only eye care product formulated with a proprietary, stable and pure form of hypochlorous acid (HOCl) called Neutrox. By replicating the anti-microbial chemicals used by white blood cells to fight infection, Neutrox has proven in laboratory testing to have broad antimicrobial properties. Avenova with Neutrox removes debris from the skin on eyelids and lashes without burning or stinging.

NBY has developed additional commercial products containing Neutrox, including their NeutroPhase Skin and Wound Cleanser for wound care and CelleRx for the dermatology market. They have partnerships for NeutroPhase in the U.S. as well as select overseas markets, most notably China.

In addition to their Neutrox family of products, NBY has synthesized and developed a second category of novel compounds aimed at harnessing the power of white blood cell chemistry to address the global, topical anti-infective market. This second product category includes auriclosene, their lead clinical-stage Aganocide compound, which is a patented, synthetic molecule with a broad spectrum of activity against bacteria, viruses and fungi.

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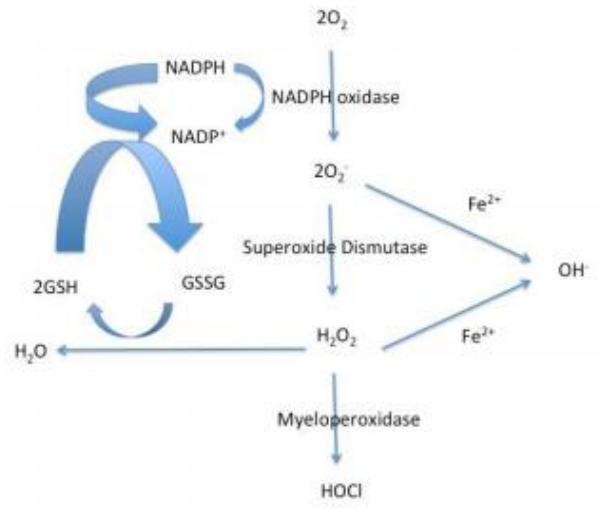
Neutrox Family

Avenova

As mentioned previously, Avenova is the only eye care product formulated with a proprietary, stable and pure form of HOCl (produced by neutrophils) called Neutrox and works by replicating the anti-microbial chemicals used by white blood cells to fight infection. HOCl is essential for phagocytes to kill bacteria and is created by a respiratory burst (oxidative burst). The respiratory burst consists of a rapid release of reactive oxygen species (ROS) occurring inside phagocytes allowing for degradation of bacteria as part of the innate immune system. Avenova consists of a new dimension in lid and lash hygiene that is designed for removal of foreign materials including microorganisms and debris on and around the lash and eyelid margins that may be due to Blepharitis, Meibomian Gland Dysfunction (MGD), and/or dry eye. Lab tests show that Neutrox, identical to a naturally occurring substance produced by white blood cells as a first line of defense against microbial invaders, has potent antimicrobial activity, and yet is non-toxic to mammalian cells. Neutrox has also been shown to neutralize bacterial toxins and break up biofilms. Laboratory studies show that Avenova may work by blocking bacterial enzymes that degrade the tear film. Avenova is marketed as a medical device regulated under the FDA 510(k) clearing process and was launched in 2014. 510(k) clearance originally happened in 2008 for Neutrox, a wound cleansing solution for irrigating and cleansing of dermal wounds.

Figure 2: Mechanism of Action – Production of Hypochlorous Acid (HOCl)



Source: Journal of Clinical Investigation, 1984

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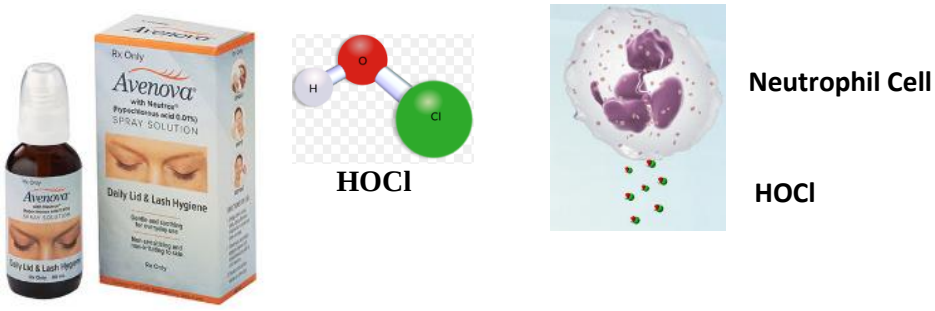
When the current CEO, Mark Sieczkarek took over in October 2015, NBY had ~$2M of cash and was burning approximately the same amount monthly. As of 1/1/16, NBY decided to become a pure-play in ophthalmology and focus on growing Avenova revenues in the U.S.

Figure 3: Avenova and HOCl



Source: Company Presentation

NBY's first priority is to grow top-line Avenova in the U.S. by implementing new sales and marketing strategies to boost profitability. Their strategy is fairly straightforward. While NBY used to employ a buy and bill strategy, which consisted of selling to doctors that would then sell Avenova back out of their outlets, they realized ophthalmologists liked the product and were already prescribing it. NBY decided to change their strategy and call directly on ophthalmologists to drive Rx growth over buy & bill sales. Their second goal is to substantially reduce operating expenses and their third priority consists of seeking additional sources of revenue either through partnering, divesting and/or by other ways of monetizing their non-core assets in urology, dermatology, and wound care, which are all de-emphasized for the time being. The strategy is off to a good start as NBY's market capitalization has nearly doubled since early 2016 and they have ~$10M in cash as of 3Q16.

Figure 4: Avenova Method of Use – Simple and Efficient

Source: Company Website

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Prescription Avenova (0.01% Neutrox) is well-suited for daily eyelid and eyelash hygiene by >25M Americans who suffer from blepharitis (Cornea, 2012). Common symptoms of blepharitis consist of eye and eyelid irritation, crusting or scaling, redness of eyelid as well as itching or burning sensation. Blepharitis is common and frequently a chronic condition often associated with symptoms of dry eye syndrome. Blepharitis is defined as an inflammation of the eyelids often close to the base of the lashes. It usually occurs when small oil glands between the lashes get clogged, which results in a crusty or oily appearance with flaking of the skin around the eyelids. The lids could then turn red and swollen causing a burning or itchy sensation. Blepharitis usually doesn't result in permanent eye damage. There are two types of blepharitis, anterior and posterior. Anterior blepharitis occurs adjacent to the eyelashes, is often associated with bacteria and skin conditions and is accompanied by dandruff of the scalp and eyebrows. On the other hand, posterior blepharitis is commonly called MGD. It affects the portion of the eyelid closest to the eyeball and is recognized as a primary cause of Dry Eye Syndrome. This type of blepharitis is also usually caused by abnormal oil production and is associated with bacterial overgrowth on the lids. Bacteria from both types of blepharitis release toxins that can cause inflammation of the lids and surface of the eye. The most common cause of blepharitis is staphylococcus bacteria. In response to the toxins, the body then releases cytokines allowing white bloods to get to the site. Common remedies for blepharitis include antibiotics, warm compresses, unclogging of the oil glands with massage and lubricating ointments.

Figure 5: Blepharitis

Source: Company Presentation

NBY estimates that an additional 11M patients suffering from other conditions such as dry eye, contact lens intolerance, retinal injections, Lasik surgery and cataract surgery could potentially benefit from the use of Avenova, bringing the total potential market to ~40M patients. Dry eye itself affects 5.7% of women under 50 years old and 9.8% of women 75 years old and over. The age-adjusted prevalence of dry eye was 7.8%, which equates to ~3.23M women 50 years old or older (Am J Ophtalmol, 2003). In terms of men in the U.S., the prevalence of dry eye disease was 3.9% of men aged 50 to 54 years and 7.67% for men 80 years and older. The age-standardized prevalence of dry eye disease was 4.34%, which equates to ~1.68M men 50 years and older and is expected to be >2.79M by 2030 (Arch Ophthalmol, 2009).

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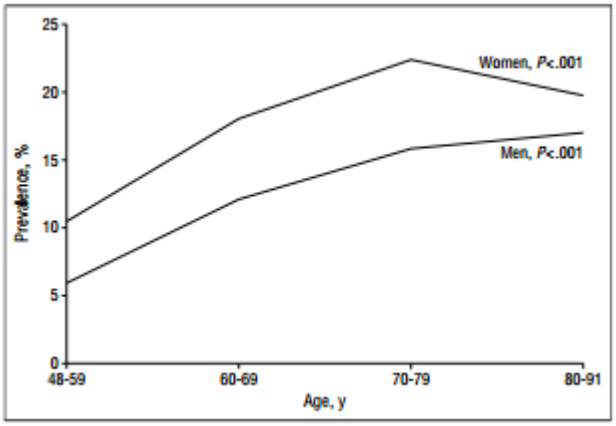
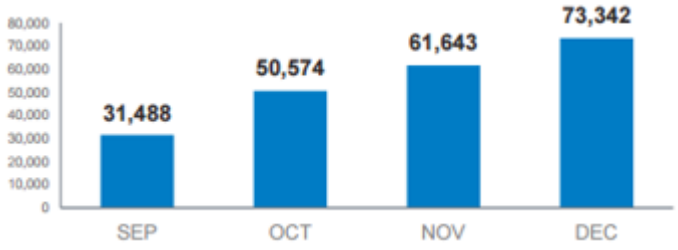
Figure 6: Dry Eye Prevalence in Relation to Age and Sex



Source: Arch Opthalmol, 2000

The two main players in the ~5M US patients market are AGN's Restasis (cyclosporine ophthalmic emulsion) and SHPG's Xiidra (lifitegrast). Initially approved in the US in 1983, Restasis is a topical immunomodulator indicated to increase tear production in patients whose tear production is thought to be suppressed due to ocular inflammation. In 2015, Restasis had global revenues of $1,047.8M (AGN 10K15). SHPG's Xiidra was recently approved by the FDA in July, 2016 for the treatment of the signs and symptoms of dry eye disease (DED). Xiidra was made available on 8/29/16. Through 1/27/17, there have been 274,386 TRx sold and Xiidra has been able to capture 19% of TRx market shares through December 2016. With the overall market up 19% between September and December 2016 vs. 2015 and Xiidra seizing 50% of NTRx market share, SHPG believes ~65% of Xiidra Rxs are going to treatment-naïve patients. SHPG has filed for approval in Canada in 4Q16 and they expect EU filing in 3Q17. Regardless of the impact of Xiidra coming in to the market and Restasis having a very large presence for dry eye, we don't view these two products as competition but rather as complementary to dry eye therapy. As opposed to Avenova, Xiidra and Restasis treat the symptoms of dry eye while Avenova targets the underlying cause of the disease.

Figure 7: Monthly US Xiidra TRx 2016



Source: SHPG 4Q16 Presentation

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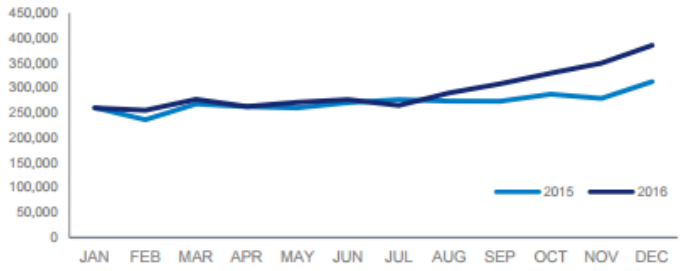
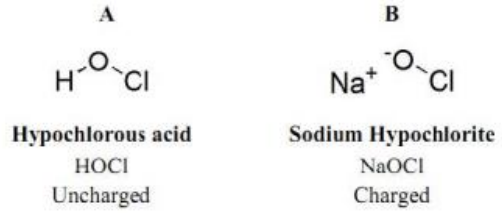
Figure 8: Monthly Dry Eye Disease TRx Market Volume



Source: SHPG 4Q16 Presentation

NBY is targeting a customer base of prescribers that includes the ~17,000 ophthalmologists and ~37,000 optometrists in the U.S. In 2014, they launched an Avenova sales force of 10 direct sales representatives in 10 major metropolitan areas across the U.S. These markets included New York, Los Angeles, Boston, Atlanta, and San Francisco. In 2015, they rebranded their product originally known as i-Lid Cleanser as Avenova in order to more clearly differentiate this prescription product from over-the-counter (OTC) detergent-based lid wipes. Avenova differentiates itself by removing micro-organisms from the skin without the use of harmful ingredients such as detergents and bleach. Avenova's advantage comes from its ability to keep HOCl in its pure form. Since HOCl is charge neutral and small, it can penetrate into bacterial biofilm and spores. It can also exhibit anti-inflammatory activity by neutralizing inflammatory mediators. While other products use HOCl, they usually contain sodium hypochlorite (NaOCl), which happens to be the main ingredient in Chlorox bleach. Since NaOCl is charged, it can't easily penetrate into bacteria and is thus less effective in killing bacteria than HOCl is.

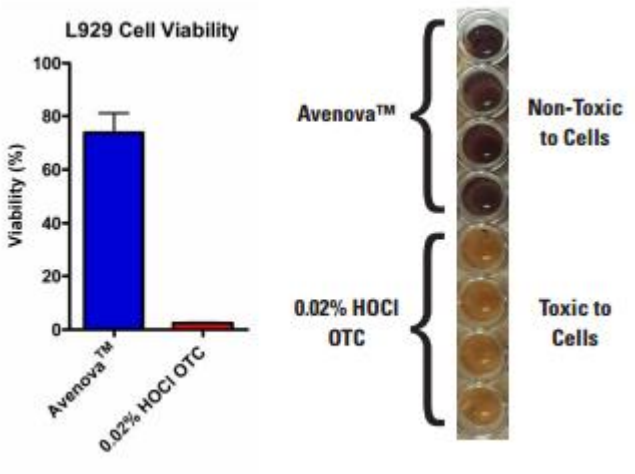
Figure 9: Neutral HOCl vs. Charged NaOCl



Source: Company Reports

A study was performed in mouse fibroblast cells comparing the cytotoxicity of Avenova with Neutrox with 0.02% hypochlorous product containing significant NaOCl impurities. While cytotoxicity was defined as <50% of viable cell count vs. untreated cells, results showed Avenova cell count at 73.77% +/- 7.32% vs. untreated control. When 0.02% hypochlorous acid was assayed, the viable cell count was only 2.44% +/- 0.24% vs. untreated control.

Figure 10: Avenova vs. 0.02% HOCl OTC – Clearly Better Cytotoxicity



Source: Company Reports

While clinical results have shown Avenova successful at relieving clinical signs and symptoms of blepharitis especially in mild blepharitis in patients receiving treatment 2x/day for 2 weeks, further post-marketing studies will be important for raising Avenova awareness (ARVO, 2015).

Following encouraging results, they expanded their sales force to 35 sales representatives in February 2015 before getting to 43 representatives in August 2015. These sales representatives are calling on targeted ophthalmologists and optometrists that treat large numbers of blepharitis and dry eye patients. Avenova represents a natural addition to their existing lid hygiene regimens. NBY believes that in the coming years, they will need to ramp up to ~120 sales representatives to cover the U.S. While, on 9/12/16, NBY announced that its Neutrox product line received the European conformity CE mark, CEO Sieczkarek's primary goal is to accelerate sales of Avenova in the largely untapped U.S. market. With focus on U.S sales of Avenova, NBY is looking for partners to introduce the product ex-US. With CEO Sieczkarek in charge, the pure play strategy with emphasis on prescription sales has been showing significant results. The growth has been impressive when taking into consideration that the strategy has been in place for only one year.

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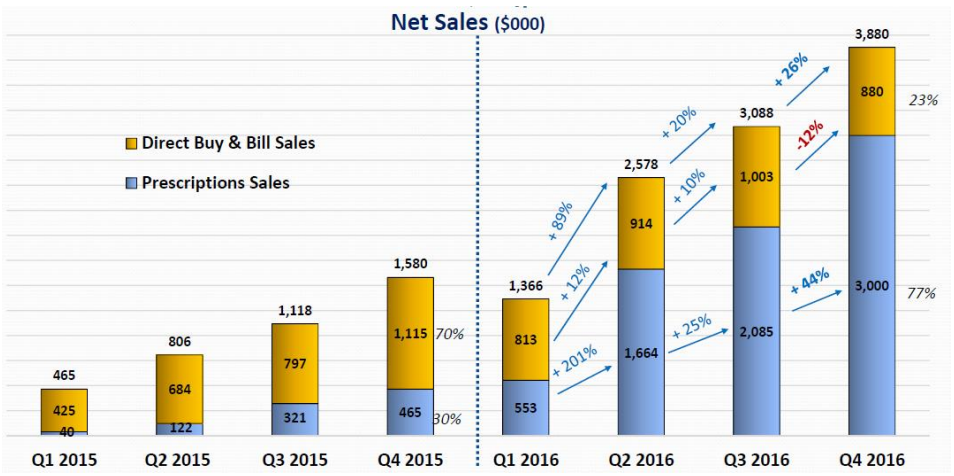
Figure 11: 43 Sales Representatives in Key U.S. Areas

Source: Company Presentation

Figure 12: Avenova Net Sales – Focus on Prescriptions as of 2016



Source: Company Presentation

NBY has distribution agreements with McKesson, Cardinal Health and AmerisourceBergen, that make Avenova accessible in 90% of the ~67,000 retail pharmacies across the U.S. Avenova also is marketed through the top ophthalmology and optometry networks. These include Vision Source Independent Optometry Network, the largest independent optometry network in the country (2,800 independent optometrist offices), and ALLDocs Optometry Group (also known as The Association of LensCrafters Leaseholding Doctors), the second largest independent optometry group in the U.S., which works closely with its LensCrafters partners. Through a partnership with ALPHAEON, Avenova is available to member ophthalmologists on the ShoutMD Store, which is the first social commerce store for lifestyle healthcare products. Avenova is also available for order online with a prescription, and they provide an online pharmacy locator to assist patients with filling prescriptions.

Reimbursement under insurance coverage has also grown once again. While ~68% of Avenova prescriptions were covered at the end of 2015, >90% of Avenova prescriptions were reimbursed by insurance as of 6/3/16 (Figure 13).

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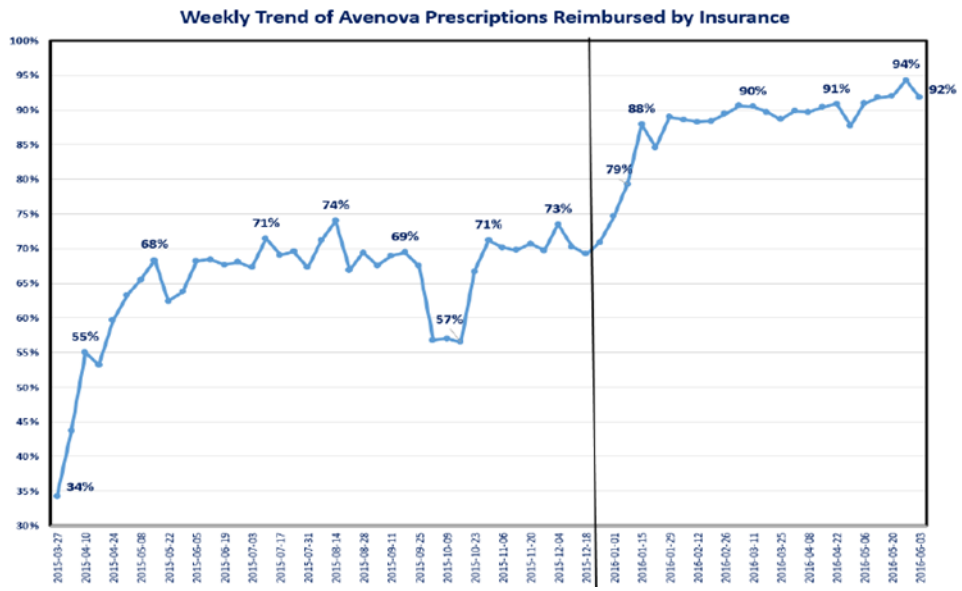
Supported by the high percentage rate of insurance reimbursement, NBY is focusing their primary sales efforts on building their prescription business under a new value pricing model. In order to ensure consistent pricing, they have instituted rebate cards to ensure the best price for the patient at the pharmacy. Patients who are insured and covered pay a maximum of $25 while those insured but not reimbursed pay no more than $60. In comparison with alternatives, it is a lot more costly to prescribe both antibiotics and steroids.

Figure 13: Reimbursement – Growth of Insurance Coverage



Source: Company presentation

Avenova also benefits from the fact that it doesn't induce bacterial resistance, which is often the case with antibiotics. The highlighted bacteria in the following figure represent organisms that are commonly found in lids and lashes.

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Figure 14: Avenova Targets - Kills Organisms Quickly with Low Resistance Potential

Organism	Time to Kill (s)	% reduction
Aspergillus brasiliensis	60	>99.99%
Bacteroides fragilis	60	>99.99%
Candida albicans	60	>99.99%
Clostridium perfingens	60	>99.99%
Corynebacterium amycolatum	60	>99.99%
Enterobacter aerogenes	60	>99.999%
Vancomycin-resistant Enterococcus faecium	60	>99.99%
Haemophilus influenzae	60	>99.999%
Klebsiella pneumoniae	60	>99.999%
Proteus mirabilis	60	>99.999%
Pseudomonas aeruginosa	60	>99.9999%
Serratia marcescens	60	>99.999%
Methicillin-resistant Staphylococcus aureus	60	>99.999%
Staphylococcus aureus	60	>99.999%
Staphylococcus epidermidis	60	>99.99%
Staphylococcus haemolyticus	60	>99.99%
Staphylococcus hominis	60	>99.99%
Staphylococcus pyogenes	60	>99.99%
Vibrio vulnificus	60	>99.999%

Source: Company Presentation and Laidlaw estimates

Recently, the media coverage around Avenova has been growing. Here are some quotes from specialists in the field.

> *I've had great results using twice-daily wipes with Avenova for children with blepharitis and other conditions. Not only do the inflammation, pain, and other problems go away, the children also say that Avenova feels refreshing and brings quick relief. Parents like the fact that Avenova is easy to apply to children's lids. As a result, Avenova has become first line therapy for my young patients (Dr. Lichtenstein)*

> *Avenova inactivates the bacterial enzymes, helping to stabilize the tear film and improve comfort. So far, every single one of my patients suffering from contact lens intolerance or other chronic eye conditions has been helped by simple twice-daily wipes with Avenova. It truly is a breakthrough (Dr. Donnenfeld).*

> *We have been using Avenova with our blepharitis patients for quite some time, and it has become my go-to therapy for this condition. It is gentle enough on the lids but strong enough to eradicate the problem and keep it under control (Dr. Schachet).*

> *Avenova has quickly become a foundational treatment for the majority of my patients with ocular surface disease. I find it most useful in patients with seborrheic and demodex blepharitis. The feedback I receive regarding comfort parallels the clinical picture within the first few weeks of daily use (Dr. Fahmy).*

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Competition

NBY's Avenova product is the only product for the management of eye conditions that contains their proprietary Neutrox (pure HOCl). Neutrox was cleared by the FDA as a prescription medical device for the cleansing and removal of microorganisms from wounds and skin. There are many companies that sell lid and lash scrubs, most of these are surfactant (soap) based, such as lid scrubs or baby shampoos. Prescription Avenova has been shown to neutralize bacterial toxins in vitro and is designed for continuous daily eyelid hygiene. Unlike its competitors, Avenova consists of saline and 0.01% HOCl, without the bleach impurities included in competitive offerings. Newer prescription products have more recently been commercially launched; however, all include bleach or other impurities.

Figure 15: Avenova Competition

Competition	Description
AVENOVA	**PURE HOCl, SALINE**
OCuSoft	Water, PEG 80, Sorbitan, Laurate, Sodium Trideceth Sulfate, PEG-150 Distearate, Disodium Lauropamphodiacetate, Cocamidopropyl Hydroxysultaine, Sodium Laureth-13 Carboxylate, Sodium Chloride, Quaternium-15.
SteriLid	Water, PEG 80, Sorbitan Laurate, Sodium Trideceth Sulfate, Cocamidopropyl Betaine, Sodium, Lauroamphoacetate, PEG 150 Distearate, Sodium Laureth 13, Carboxylate, Linalool Oil, Hepes Acetate, Sodium Perborate Monohydrate, Panthenol, Allantoin (Comfrey Root), Sodium Chloride, Tea Tree (Melaleuca Alternifolia) Oil, Tris EDTA, Boric Acid, Cocamidopropyl PG Dimonium Chloride, Etridronic Acid, Citric Acid for pH adjustment, Sodium Hydroxide for pH adjustment
Oasis Lid and Lash	Water, Poloxamer, Polyethylene, Glycol, Borate, Hyaluronan, Methylparaben, Carbopol 940
LIDCLENZ	non-foaming pH balanced formulation of non-ionic surfactant in purified water
VisiCleanse	Water, Cocamidopropyl Betaine, PEG-150 Distearate, Aloe, Barbadensis Leaf Extract, Chamomilla Recutita (Matricaria) Flower, Extract, Cucumis Sativus (Cucumber) Fruit Extract, Althaea Officinalis, Root Extract, Avena Sativa (Oat) Kernel Extract, Tetrasodium EDTA, Citric Acid, Polyaminopropyl Biguanide
Eye Scrub	Water USP (Purified), PEG 200 Hydrogenated Glyceryl Palmate, Disodium Laureth Sulfosuccinate, Cocoamidopropyl amine Oxide, PEG 80 Glyceryl Cocoate, Benzyl Alcohol, Edetate Disodium

Dilute baby shampoos

Source: Laidlaw estimates

Over the past 10 years NBY has developed additional Neutrox-related products. In addition to Avenova, the Neutrox branded products currently being commercialized as prescription medical devices are NeutroPhase and CelleRx. As is the case for Avenova, the principal competitive advantage of these products is the fact that in-vitro studies show their effectiveness in killing bacteria, fungi and viruses, including bacteria in biofilm; very low potential for the development of resistance; fast time to kill bacteria; a wide safety margin; a low side-effect profile and cost effectiveness.

NeutroPhase

NBY has partnerships for NeutroPhase in the U.S. as well as select overseas markets such as China. Since its U.S. launch in 2013, NeutroPhase has impacted how wound care is administered. Consisting of 0.03% Neutrox, NeutroPhase is a proprietary, FDA-cleared, 510(k) product used to cleanse and remove microorganisms from any type of acute or chronic wound, and can be used with any type of wound care modality. It is intended for use under the supervision of healthcare professionals and has been found to be an effective irrigation solution as part of the adjunct treatment for Necrotizing Fasciitis (NF), also called the "flesh-eating infection." This is a severe and rapidly progressive infectious

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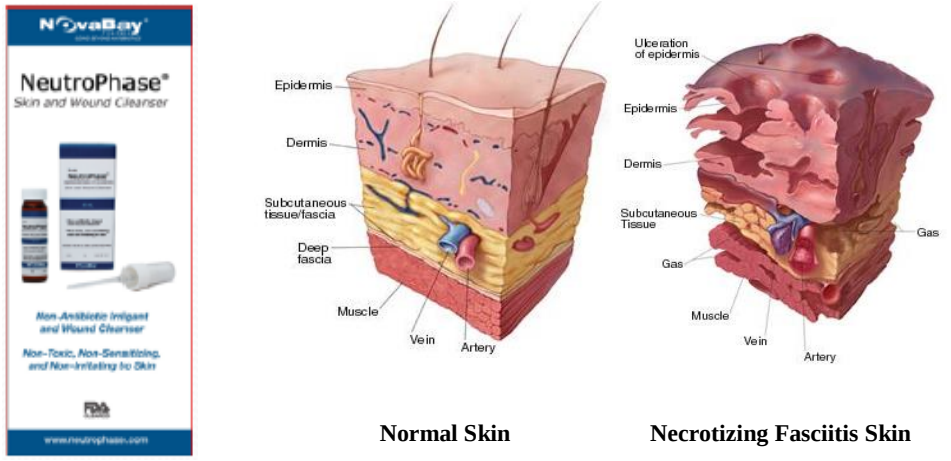
disease that attacks superficial as well as deep fascia, subcutaneous fat tissue and muscle. While the incidence is relatively small, the median mortality is high and represents a serious burden to patients and hospitals. NF typically has a mortality of~30% (The International Journal of Lower Extremity Wounds, 2015). In vitro studies have shown that in solution, NeutroPhase both kills the microorganisms implicated in NF and neutralizes the toxins secreted by the microorganisms. Success using NeutroPhase as an irrigation solution has established it as an effective part of the adjunct treatment for this deadly disease. In the case of NF, NBY doesn't charge for NeutroPhase.

Figure 16: NeutroPhase and Normal vs. Necrotizing Fasciitis Skin



Source: Company Presentation and Muscoloskeletal Illustrations

NeutroPhase should be well-suited to treat the 6M patients in the U.S. with chronic non-healing wounds, such as pressure, venous stasis and diabetic ulcers. In U.S. and ex-U.S., NeutroPhase is distributed through commercial partners. In 2012, NBY entered into an exclusive distribution agreement with Pioneer Pharma, a Shanghai-based company, for the distribution throughout Southeast Asia and mainland China. They then expanded the agreement with Pioneer so that it includes the licensing rights to the rest of NBY's Neutrox family, CelleRx and Avenova. In September 2014, China's FDA cleared NeutroPhase for sale throughout mainland China. In November 2014, Taiwan's FDA cleared their NeutroPhase Skin and Wound Cleanser for sale in Taiwan. NBY began shipping NeutroPhase to China and Taiwan in 4Q14. In the U.S., NeutroPhase is distributed through their partner, Principle Business Enterprise (PBE). In 2015, the National Necrotizing Fasciitis Foundation (NNFF) named NeutroPhase its official "Flesh Eating Disease" wound cleanser.

CelleRx

Created for cosmetic procedures, CelleRx (0.015% Neutrox) is a gentle cleansing solution that is effective for post-laser resurfacing, chemical peels and other cosmetic surgery procedures. Cosmetic surgeons and aesthetic dermatologists have found that CelleRx results in less pain, erythema, and exudate vs. Dakin's solution, which contains bleach impurities. CelleRx is a non-alcohol formulation that doesn't dry or stain the skin, and has been shown to reduce the patient's

downtime post procedure. CelleRx is competing in the cosmetic surgery and aesthetic dermatology space as an adjunct therapy for the pre/post procedural phase of chemical and laser facial skin peels. There are many generic creams and salves, as well as home-mixed acetic acid potions used for this purpose. As a differentiator CelleRx is the only Rx product with 510(k) clearance for use as a skin and wound cleanser that is safe, soothing and has broad spectrum antimicrobial action in solution.

Aganocide Compound - auriclosene

In addition to their Neutrox family of products, NBY has also synthesized and developed a second category of novel compounds aimed at harnessing the power of white blood cell chemistry to address the global, topical anti-infective market. Their first-in-class Aganocide compounds, led by auriclosene (NVC-422), are patented, synthetic molecules with a broad spectrum of activity against bacteria, viruses and fungi. Mimicking the Mechanism of Action (MOA) that human white blood cells use against infections, Aganocides possess a reduced likelihood of bacteria or viruses developing resistance, which is critical for advanced anti-infectives. The World Health Organization (WHO) approved a new generic nomenclature by which their novel compound NVC-422 is identified—auriclosene. NBY believes that their Aganocide compounds may, if approved by the regulatory authorities, have significant advantages over existing compounds and compounds in development because the Aganocide compounds could be used to prevent infections or to treat infections with bacterial and viral components, such as conjunctivitis.

Their urology program has the most potential. In September 2013, the Phase 2 clinical study of their Auriclosene Irrigation Solution (AIS) vs. saline solution for reducing urinary catheter blockage and encrustation (UCBE) showed statistically-significant and clinically-meaningful results for patients with long-term indwelling catheters. UCBE represents a major healthcare risk for permanently catherized patients such as paraplegics and quadriplegics. The leading causes of paralysis are stroke (29%), spinal cord injuries (23%) and multiple sclerosis (17%). They started their next Phase 2b study in 4Q14, which was completed in 4Q15. Patients with long-term indwelling urinary catheters were treated with AIS or its vehicle. On 9/19/16, AIS demonstrated statistically significant and clinically meaningful results in the prevention of UCBE in subjects with chronic indwelling urinary catheters who have repeat history of blockage. Auriclosene has been designated as a new chemical entity and granted composition of matter patent protection to 2028 by the U.S. Patent Office. There are ~300,000 chronically catheterized patients in the U.S. Auriclosene is ready for pivotal trials.

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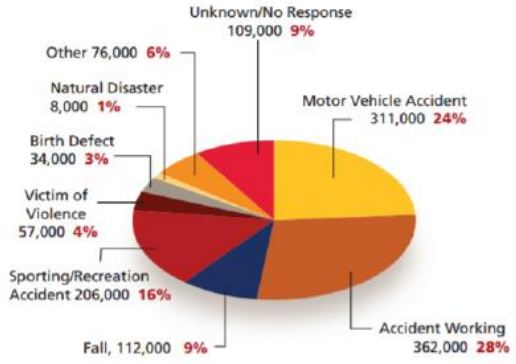
Figure 17: Causes of Spinal Cord Injuries (n=1,275,000)



Source: Company Presentation

Figure 18: Auriclosene Phase 2 Studies

Study Type	Description	Status
Phase 2	Effects on bacteriuria in chronically catheteized subjects; n=20, single & multiple instillations of 0.1 or 0.2% auriclosene for up to 7 days	Complete
Phase 2	Effects on urinary catheter patency; Crossover Design; n=67; formulations and treatment regimens compared to saline in 3 part study	Complete
Phase 2	Effect on urinary catheter patency; parallel Design; n=36, AIS 0.2% vs its vehicle	Complete

Source: Laidlaw Estimates and Company presentation

Additional Device Option - Intelli-Case

In 2015, NBY received FDA-clearance for the NovaClear Intelli-Case, a device used with hydrogen peroxide disinfection solutions for soft and rigid gas permeable contact lenses. There are >24M Americans that disinfect their contact lenses with a multipurpose disinfection system to prevent potentially serious infections. Approximately 2M people use hydrogen peroxide as a disinfection solution. Many ophthalmologists and optometrists favor the disinfection and lens material compatibility peroxide systems provide, yet side effects associated with misuse and noncompliance limit peroxide system use. Hydrogen peroxide in too low of a concentration does not fully disinfect lenses and in too high of a concentration can irritate the eye. The Intelli-Case monitors the neutralization of hydrogen peroxide during the disinfection cycle with sophisticated microprocessor electronics embedded in the cap of what otherwise looks like a standard peroxide lens case. The LED indicators on the lid inform the user if the lenses are safe to insert into the eyes, resulting in a disinfection system that is simple to use. NBY is actively seeking potential partners with the resources to make this device available in the US.

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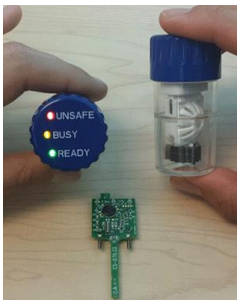
Figure 19: NovaClear Intelli-Case



Source: Company Reports

Major Risks

Exogenous events could impact our outlook. We believe pharmaceutical companies have the least control over competitive, political, and regulatory risks. Although we have incorporated competitive assumptions into our forecasts, there may be other risks beyond the scope of our analysis. Changes in the drug reimbursement system, as well as any political or regulatory amendments, may significantly influence the earnings power of these companies.

Actual clinical results and the FDA's conclusions may deviate from expectations. Many of our assumptions are based on a review of incomplete clinical trial data available in the public domain. Often, our conclusions are drawn from early stage data, which may not be reflected by pivotal studies. Furthermore, the FDA's conclusions may not coincide with our own, materially changing our revenue and earnings assumptions.

Compliance issues, product recalls, and other mandates by regulatory authorities could materially change our expectations. Regulatory compliance issues, ranging from accounting irregularities to defective manufacturing practices, could materially change our assumptions and earnings outlook. Unanticipated product recalls and labeling changes could also have adverse consequences on our earnings assumptions.

Legal risks could lead to additional liabilities and revenue loss. In addition to the expenses incurred by patent challenges, product liability and other legal suits could occur and lead to additional liabilities and revenue loss, which could substantially change our financial assumption

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Management

Mark Sieczkarek, CEO and Chairman. Mr. Sieczkarek was appointed Chairman of the Board of NovaBay in April 2015. He served as past CEO and Chairman of the Board of Solta Medical and served as a director for seven years until it was acquired by Valeant Pharmaceuticals in January 2014. Mr. Sieczkarek has more than 18 years of leadership experience in the medical device industry and served as President and CEO of Conceptus from 2003 to 2011. Previously, Mr. Sieczkarek was Senior VP and President of The Americas Region, responsible for the commercial operation of all Bausch & Lomb businesses in the US, Canada and Latin America. Mark joined Bausch & Lomb in 1995 as VP and Controller in the Personal Products division and also served as a VP in Corporate Business Development. Previously, Mark held an executive level position with KOS Pharmaceuticals, several Bristol Myers-Squibb subsidiaries and Sanofi Diagnostics Pasteur. Mr. Sieczkarek received a MBA degree in Finance from Canisus College and a B.S. degree in Accounting from the State University of New York at Buffalo.

Thomas Paulson, CFO. Thomas Paulson has served as NovaBay's CFO since 2008. Prior to joining NovaBay, Mr. Paulson was a partner at Tatum LLC, an executive services and consulting firm in the US. Mr. Paulson was also President and CEO of The Paulson Group, a management consulting company whose clients included high-technology and biotechnology companies. He also held senior management positions at Avigen, Neurogen Corporation, Ciba-Corning Diagnostics, Quidel Corporation, and Abbott Laboratories. Mr. Paulson received a B.A. from Loyola University and an MBA from the University of Chicago.

Glenn Moro, VP, Marketing. Glenn Joined NovaBay in December of 2014. Prior to working with NovaBay, he worked for Alcon for 26 years, working in various marketing and sales roles including sales management, product manager and international business unit manager, culminating in the position of Global Director of Marketing for the Contact Lens Care products. Mr. Moro received a B.A. in marketing from the University of South Florida.

Greg Miller, Director, Strategic Sales. Greg joined NovaBay in January 2015. He has worked for over 30 years within the healthcare industry in pharmaceuticals, medical devices and in healthcare marketing. Greg has held leadership positions as US Director of Sales, Strategic Account Manager, National Sales Manager, Sales Director and Manager of Training and Development with PharmaJet, Transcend Medical, Surgical Laser Technologies, Iolab Corporation (Johnson& Johnson) and Lederle Laboratories. Mr. Miller received a B.S. in Marketing from Metropolitan State University of Denver.

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Figure 20: Quarterly Income Statement

Novabay Pharmaceuticals
Quarterly income statement

($000's except per share)	2015A Year	2016A 1QA	2016A 2QA	2016A 3QA	2016A 4QA	2016A Year	2017E 1QE	2017E 2QE	2017E 3QE	2017E 4QE	2017E Year
Revenues											
Avenova	$4,146	$1,655	$2,654	$3,262	$3,900	$11,471	$3,395	$4,027	$4,339	$7,085	$18,846
Other revenue	235	64	9	176	177	$426	100	100	100	100	$400
Total revenues	**$4,381**	**$1,719**	**$2,663**	**$3,438**	**$4,077**	**$11,897**	**$3,495**	**$4,127**	**$4,439**	**$7,185**	**$19,246**
Expenses											
COGS	1,261	611	479	566	808	2,464	510	603	648	1,049	2,810
Gross margin	**3,120**	**1,108**	**2,184**	**2,872**	**3,269**	**9,433**	**2,985**	**3,525**	**3,791**	**6,136**	**16,436**
R&D	6,045	933	278	4	156	1,371	225	225	225	225	900
Sales & marketing	11,006	3,144	2,853	2,663	3,149	11,809	3,344	3,625	3,875	3,875	14,719
G&A	7,083	1,655	1,258	2,218	1,994	7,235	1,750	1,750	2,000	2,000	7,500
Tot. Operating expenses	**24,134**	**5,732**	**4,389**	**4,885**	**5,299**	**20,415**	**5,319**	**5,600**	**6,100**	**6,100**	**23,119**
Operating income/(loss)	**(21,014)**	**(4,624)**	**(2,205)**	**(2,013)**	**(2,030)**	**(10,982)**	**(2,334)**	**(2,075)**	**(2,309)**	**36**	**(6,682)**
Other income/(exp)	(96)	(68)	(59)	(52)	1	(68)	(50)	(50)	(50)	(50)	(200)
Loss before income tax exp.	**(21,110)**	**(4,692)**	**(2,264)**	**(2,065)**	**(2,029)**	**(11,050)**	**(2,384)**	**(2,125)**	**(2,359)**	**(14)**	**(6,882)**
Tax expense	(12)	0	(2)	0	0	(2)	0	0	0	0	0
Adj-Net income/(loss)	**(21,122)**	**(4,692)**	**(2,266)**	**(2,065)**	**(2,029)**	**(11,052)**	**(2,384)**	**(2,125)**	**(2,359)**	**(14)**	**(6,882)**
Non-cash gain/(loss), warrant lia	2,149	(385)	(424)	(1,671)	381	(2,099)					
NI/(loss) as reported	**(18,973)**	**(5,077)**	**(2,690)**	**(3,736)**	**(1,648)**	**(13,151)**					
Adj-EPS ex-non-cash	**($7.59)**	**($1.15)**	**($0.31)**	**($0.19)**	**($0.13)**	**($1.17)**	**($0.15)**	**($0.13)**	**($0.13)**	**($0.00)**	**($0.40)**
EPS as reported	**($6.82)**	**($1.24)**	**($0.36)**	**($0.34)**	**($0.11)**	**($1.40)**					
Shares out (000)	2,784	4,086	7,407	10,913	15,459	9,408	15,709	15,959	17,959	19,959	17,397
Fully diluted shares (000)	4,630	5,844	11,199	13,344	17,959	12,086	18,209	18,459	20,459	22,459	19,897

Source: Bloomberg LP; Company reports; Laidlaw & Company estimates

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Figure 21: Annual Income Statement

Novabay Pharmaceuticals
Annual income statement

($000's except per share)	2015A	2016A	2017E	2018E	2019E	2020E	2021E	Comments
Revenues								
Avenova	$4,146	$11,471	$18,846	$43,524	$62,177	$88,695	$100,693	
Other revenue	235	426	400	400	400	400	400	
Total sales	**$4,381**	**$11,897**	**$19,246**	**$43,924**	**$62,577**	**$89,095**	**$101,093**	**2017 guide: $19M**
COGS	1,261	2,464	2,810	6,589	8,761	12,473	14,153	
Gross margin	**3,120**	**9,433**	**16,436**	**37,335**	**53,816**	**76,622**	**86,940**	**2017 guide: high 80% range**
R&D	6,045	1,371	900	1,000	1,500	1,750	2,000	scaling back R&D spend
Sales & marketing	11,006	11,809	14,719	24,875	35,625	38,500	39,500	43 reps currently
G&A	7,083	7,235	7,500	7,750	8,750	9,600	10,000	
Tot. Operating expenses	**24,134**	**20,415**	**23,119**	**33,625**	**45,875**	**49,850**	**51,500**	
Operating income/(loss)	**(21,014)**	**(10,982)**	**(6,682)**	**3,710**	**7,941**	**26,772**	**35,440**	
Other income/(exp)	(96)	(68)	(200)	(200)	(200)	(200)	(200)	
Loss before income tax exp.	**(21,110)**	**(11,050)**	**(6,882)**	**3,510**	**7,741**	**26,572**	**35,240**	
Tax expense	(12)	(2)	0	0	(471)	(2,657)	(6,245)	Sig. tax loss carryforwards
Adj-Net income/(loss)	**(21,122)**	**(11,052)**	**(6,882)**	**3,510**	**7,270**	**23,915**	**28,995**	**2017 guide: ($6,200) loss**
Non-cash gain/(loss), warrant liab	2,149	(2,099)	0	0	0	0	0	
NI/(loss) as reported	**(18,973)**	**(13,151)**	**0**	**0**	**0**	**0**	**0**	
Adj-EPS ex-non-cash	**($7.59)**	**($1.17)**	**($0.40)**	**$0.15**	**$0.30**	**$0.95**	**$1.10**	
EPS as reported	**($6.82)**	**($1.40)**						
Shares out (000)	2,784	9,408	17,397	20,584	21,584	22,709	23,909	
Fully diluted shares (000)	4,630	12,086	19,897	23,084	24,084	25,209	26,409	
Cash balance	$2,385	$9,512	$7,405	$8,115	$11,135	$32,299	$58,595	2017 guide: $3M burn rate

Source: Bloomberg LP; Company reports; Laidlaw & Company estimates

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Figure 22: Balance Sheet

Novabay Pharmaceuticals
Balance sheet

($000's except per share)	2015A	1Q16A	2Q16A	3Q16A	2016A	2017E	2018E	2019E	2020E	2021E
Current Assets										
Cash and equivalent	$2,385	$1,430	$3,495	$9,430	$9,512	$7,405	$8,115	$11,135	$32,299	$58,595
AR	536	1,497	1,490	2,079	2,120					
Total Current Assets	**4,527**	**4,561**	**6,574**	**14,420**	**14,471**	**14,905**	**18,365**	**25,635**	**48,799**	**76,595**
PE, net	395	370	366	282	371	325	400	450	450	450
Other assets	155		65	439	539	400	400	400	400	400
Total Assets	**5,077**	**4,931**	**7,005**	**15,141**	**15,381**	**15,630**	**19,165**	**26,485**	**49,649**	**77,445**
Current Liabilites										
Total Current Liabilites	**4,633**	**4,028**	**4,368**	**3,728**	**4,323**	**3,500**	**4,750**	**6,250**	**7,000**	**7,500**
Deferred revenue, LT portion	2,248	3,115	2,132	1,913	1,986					
Deferred rent	189	189	189	248	327					
Notes payable- related party	1,655	3,063	524							
Warrant liability	1,450	1,835	2,259	2,336	1,446					
Other				198	198					
Total Liabilities	**10,175**	**12,230**	**9,472**	**8,423**	**8,280**	**8,250**	**10,000**	**11,750**	**13,000**	**14,250**
Shareholders' Equity										
Common stock	35	51	92	149	153	175	175	175	175	175
Additional paid-in	85,387	88,248	95,728	108,592	110,619	117,758	116,033	114,333	112,333	109,883
Accumulated deficit	(90,520)	(95,598)	(98,287)	(102,023)	(103,671)	(110,553)	(107,043)	(99,773)	(75,859)	(46,863)
Total SE (deficit)	**(5,098)**	**(7,299)**	**(2,467)**	**6,718**	**7,101**	**7,380**	**9,165**	**14,735**	**36,649**	**63,195**
Total liabilities & SE	**5,077**	**4,931**	**7,005**	**15,141**	**15,381**	**15,630**	**19,165**	**26,485**	**49,649**	**77,445**

Source: Bloomberg LP; Company reports; Laidlaw & Company estimate

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Figure 23: Cash flow Statement

Novabay Pharmaceuticals
Statement of cash flows

($000's except per share)	2015A	1Q16A	2Q16A	3Q16A	2016A	2017E	2018E	2019E	2020E	2021E
Operating Cash Flow										
Net Income/Loss	($18,973)	($5,077)	($7,767)	($11,503)	($13,151)	($6,882)	$3,510	$7,270	$23,915	$28,995
Change assets & liabilities	1,018	(649)	(1,361)	(3,938)	(2,151)	(3,364)	(1,500)	(2,750)	(1,250)	(1,000)
Cash from operations	**(18,559)**	**(4,932)**	**(7,592)**	**(11,441)**	**(12,627)**	**(10,046)**	**2,210**	**4,770**	**22,915**	**28,295**
Investing Activities										
Purchase PP&E	(123)	(16)	(38)	(78)	(100)	(500)	(500)	(750)	(750)	(1,000)
Disposal of PP&E	37									
Cash from investing	**(86)**	**(16)**	**(38)**	**(78)**	**(100)**	**(500)**	**(500)**	**(750)**	**(750)**	**(1,000)**
Financing Activities										
Issue common stock	11,519	2,628	9,875	13,648	13,648	10,780	0	0	0	0
Warrant exercise, net	1,250			6,571	6,750					
Proceeds from borrowings		1,365	1,365	1,365	1,365					
Repayment of borrowings	1,655		(2,500)	(3,020)	(3,250)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)
Proceeds from shelf	1,177									
Cash from financing	**15,601**	**3,993**	**8,740**	**18,564**	**18,513**	**9,780**	**(1,000)**	**(1,000)**	**(1,000)**	**(1,000)**
Change in cash	**(3,044)**	**(955)**	**1,110**	**7,045**	**5,786**	**(766)**	**710**	**3,020**	**21,165**	**26,295**
Cash, start of period	5,429	2,385	2,385	2,385	2,385	8,171	7,405	8,115	11,135	32,299
Cash, end of period	**2,385**	**1,430**	**3,495**	**9,430**	**8,171**	**7,405**	**8,115**	**11,135**	**32,299**	**58,595**

Source: Bloomberg LP; Company reports; Laidlaw & Company estimates

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DISCLOSURES:

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Additional information available upon request.

‡ Laidlaw & Company has received compensation from the subject company for investment banking services in the past 12 months and expects to receive or intends to seek compensation for investment banking services from the company in the next three months.

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RATINGS INFORMATION

Rating and Price Target Change History

3 Year Rating Change History

Date	Rating	Closing Price ($)
08/20/2...	Buy (B)	20.25
11/19/2...	Drop (D)	4.18
03/27/2...	Buy (B)	3.80*

3 Year Price Change History

Date	Target Price ($)	Closing Price, ($)
08/20/2...	47.50**	20.25
11/19/2...		4.18
03/27/2...	10.00	3.80
03/27/2...	10.00	3.80*

** Previous Close3/24/2017*
*** Split Adjusted*

Source: Laidlaw & Company **Created by: Blue-Compass.net**

Laidlaw & Company Rating System*		% of Companies Under Coverage With This Rating	% of Companies for which Laidlaw & Company has performed services for in the last 12 months	
			Investment Banking	Brokerage
Strong Buy (SB)	Expected to significantly outperform the sector over 12 months.	2.44%	2.44%	0.00%
Buy (B)	Expected to outperform the sector average over 12 months.	63.41%	29.27%	2.44%
Hold (H)	Expected returns to be in line with the sector average over 12 months.	2.44%	0.00%	0.00%
Sell (S)	Returns expected to significantly underperform the sector average over 12 months.	4.88%	0.00%	0.00%

ADDITIONAL COMPANIES MENTIONED

Allergan (AGN – Not Rated)
Shire plc (SHPG – Not Rated)
McKesson (MCK – Not Rated)
Cardinal Health (CAH – Not Rated)
AmerisourceBergen (ABC – Not Rated)
Pioneer Pharma (1345:HK – Not Rated)

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