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# Evoke Pharma, Inc.

*Company Description: Evoke Pharma is developing EVK-001, an intranasal formulation of metoclopramide, for the treatment of diabetic gastroparesis in women. The company plans on initiating its Phase 3 study for EVK-001 in Q2 2014. Evoke was founded in 2007 and is based in San Diego, California.*

Healthcare- Specialty Pharmaceuticals April 22, 2014

## Evoke: an easy risk to stomach, initiate with STRONG BUY, $16.00 price target

(EVOK - $7.86) STRONG BUY

### *Key Points*

- **Evoke's EVK-001 will be initiating a Phase 3 trial this quarter, targeting women with diabetic gastroparesis (~80% of diabetic gastroparesis sufferers).**
- **EVK-001's intranasal formulation metoclopramide avoids the issues associated with oral delivery in gastroparesis patients. Gastroparesis is a gastrointestinal (GI) motility disorder causing delayed gastric emptying (in the absence of an obstruction) which can prevent systemic delivery via an oral formulation.**
- **In the US, approximately 4-5 million prescriptions for metoclopramide are written annually. We think this translates into a $1.3-$3.2 billion total addressable market (TAM), depending on pricing.**
- **Our estimates assume Evoke is able to capture 30% of the TAM by 2021, resulting in peak sales of $430 million. This is below peak sales levels other drugs, such as Propulsid (over $1 billion in 2000) and Zelnorm ($488M in 2006) achieved in GI indications before both were pulled from the market due to safety issues. Unlike Propulsid and Zelnorm, metoclopramide has been on the US market for 35 years (and ~50 years in the EU) and has been very well characterized.**
- **Given the large number of prescriptions written for metoclopramide annually, the fact that metoclopramide is well characterized, a lack of branded competition, and differentiated intranasal formulation, we believe there is a high likelihood EVK-001 shows effectiveness in its upcoming Phase 3 trial, gains approval, and captures a significant share of the diabetic gastroparesis market.**
- **As such, we are initiating on EVOK shares with a STRONG BUY rating and $16.00 price target. We anticipate the company executing on multiple milestones over the coming twelve months, including topline data on METO-IN-003, the soon-to-begin Phase 3 study.**

### Financial Summary

| Rev(mil) | 2013A | 2014E | 2015E |
|---|---|---|---|
| Mar | $0.0A | $0.0E | $0.0E |
| June | $0.0A | $0.0E | $0.0E |
| Sept | $0.0A | $0.0E | $0.0E |
| Dec | $0.0A | $0.0E | $0.0E |
| FY | $0.0A | $0.0E | $0.0E |
| P/Sales | NM | NM | NM |

| EPS | 2013A | 2014E | 2015E |
|---|---|---|---|
| Mar | ($0.43)A | ($0.33)E | ($0.43)E |
| June | ($0.21)A | ($0.61)E | ($0.31)E |
| Sept | ($0.41)A | ($0.87)E | ($0.24)E |
| Dec | ($0.27)A | ($0.89)E | ($0.21)E |
| FY | ($1.20)A | ($2.69)E | ($1.19)E |
| P/E | NM | NM | NM |

| | |
|---|---|
| Price: | $7.86 |
| 52-Week Range: | $14.25-$6.48 |
| Target: | $16.00 |
| Rating: | STRONG BUY |
| Shares Outstanding: | 6.1 mil |
| Mkt. Capitalization: | $47.9 mil |
| Ave. Volume: | 34,000 |
| Instit. Ownership: | N/A |
| BV / Share: | $3.47 |
| Debt / Tot. Cap.: | 12% |
| Est. LT EPS Growth: | 40% |

*Please see important disclosures on pages 17 to 19.*

## INVESTMENT THESIS

Evoke Pharma is a specialty pharmaceutical company focused on developing EVK-001, an intranasal form of metoclopramide to treat gastroparesis in women with diabetes mellitus. Metoclopramide has been well characterized and is the only approved medication for treatment of gastroparesis. However with gastroparesis being a gastrointestinal (GI) motility disorder, oral formulations (the vast majority of metoclopramide prescriptions) often do not provide relief as the drug is not able to reach the intestines due to gastroparesis delaying stomach emptying. Evoke's intranasal formulation avoids this issue. Being Evoke has shown solid results for EVK-001 and metoclopramide is already well characterized, we believe FDA approval of EVK-001 is a low-risk proposition. With roughly 4-5 million metoclopramide prescriptions written each year in the US, this represents a massive market opportunity for Evoke at an expected pricing range of $5-$15/day with the typical metoclopramide user utilizing the drug for ~150 days per year. We estimate that Evoke will capture 30% of the market at peak sales levels, this would represent ~$500 million in annual sales, a level achieved by GI drugs Zelnorm and Propulsid, which saw peak sales of $500 million to $1 billion before being pulled from the market due to cardiovascular issues. We believe the combination of a low-risk FDA approval proposition, the massive potential market, EVK-001's Phase 3 trial readout only a year from now, and EVOK's current market capitalization of ~$50 million provides an attractive opportunity for investors. As such, we have assigned EVOK shares a STRONG BUY rating and a $16.00 price target.

## Opportunities

Large market. We estimate the indication sought by Evoke for diabetic gastroparesis in women is approximately 2.9-3.8 million people in the US. Currently, approximately 4-5 million prescriptions are written each year for metoclopramide. Assuming $6/day pricing and usage of the drug for five months per year per patient, this would imply a $1.3 billion theoretical market upon launch. Based upon sales on sales of two previously approved drugs, Propulsid and Zelnorm, that have since been pulled from the market due to safety issues, it would appear the realizable market could be well north of $500 million. Zelnorm achieved 2006 sales of $488 million prior to being pulled from the market in 2007, while Propulsid achieved sales of over $1 billion in 2000 before being pulled from the market in 2001. We have elected to be conservative in our estimates, estimating peak sales of $430 million, it would not surprise us to see the zenith higher than our estimates.

Metoclopramide well characterized, increasing likelihood of approval. Metoclopramide has been on the market for ~35 years and has been well studied, with tens of millions of prescriptions written over the years. BioMed Tracker's data, looking at over 4,000 drugs in over 7,000 indications, suggest the likelihood of approval for a drug entering Phase 3 trials is 44%. However, their data also suggests higher success rates for compounds going before the FDA multiple times, suggesting success rates of ~65%-75% depending on the molecule and whether it is a lead or secondary indication. While we are not aware of data on alterations in delivery mechanisms, we would suspect such attempts would fall towards the higher end of the 44%-75% range suggested by BioMed Tracker. In addition to Evoke's Phase 2b study (which showed significance in women), a prior Phase 2 by Questcor Pharmaceuticals (QCOR – not rated), from which Evoke acquired the product rights, revealed a statistically significant difference in total symptom score for patients taking either of the two different doses of metoclopramide nasal spray (10 mg and 20 mg) against the FDA-approved 10 mg oral metoclopramide tablet. Thus, we believe EVK-001 has a high likelihood of FDA approval.

Differentiated delivery mechanism for gastroparesis. One of the chief problems of utilizing oral medications for the treatment of GI (gastrointestinal) motility disorders like gastroparesis is the drugs cannot be absorbed until they have passed through the stomach. EVK-001 avoids this issue by delivering metoclopramide intranasally, avoiding such issues by bypassing the stomach, resulting in faster onset of action and higher predictability of absorption as no first-pass metabolism is necessary. Similarly, it avoids the situation where a patient might take multiple oral tablets to relieve the gastroparesis symptoms only to see a bolus of the drug delivered once the stomach finally does empty, which we speculate increases the incidence of side effects; the intranasal formulation showed fewer moderate-to-severe adverse events in an 89-patient study conducted by the Temple School of Medicine.

Unique situation with a single approved drug, yet no competing messaging. As metoclopramide is the only drug approved for a gastroparesis indication and has long been generic, EVK-001, if it is approved, will find itself in an unique situation where no other competing sales forces are in the field muddling the messaging of Evoke's sales force.

Ahead of potential competing drugs' timelines. Evoke's EVK-001 is set to begin Phase 3 trials during Q2 2014, while potential competition from GlaxoSmithKline, Theravance, and Rhythm Therapeutics is in either Phase 2 or Phase 2a at present. Potential competition has seen similar drugs fail in the past; for example, two similar ghrelin agonists developed by Tranzyme Pharma failed in Phase 3 and Phase 2b trials (please see "Competition and Potential Competition" section for

further discussion). Based on the current state of development of these potential competitors, we think it unlikely any could reach the US market prior to 2019 if all goes well in their trials.

505(b)(2) approval pathway is easier and less costly. The 505(b)(2) FDA approval pathway allows sponsors to gain approval while utilizing safety and effectiveness data from previous trials where the FDA ultimately approved the drug under consideration but were not conducted by the applicant. Additionally, Evoke will not have to go before an FDA advisory panel vote prior to approval. As EVK-001 is a new route of metoclopramide administration, it qualifies to use this pathway, which is less time consuming and less expensive than traditional pathways for FDA clearance. The number of drugs gaining approval under the 505(b)(2) pathway increased to ~80% of all drugs approved in 2012 from ~20% in 2006.

Lengtly patent coverage. Currently, Evoke has three issued US patents – 6,770,262 expiring in 2021 for "Nasal Administration of Agents for the Treatment of Gastroparesis", 5,760,086 expiring in 2016 for "Nasal Administration for the Treatment of Delayed Onset Emesis", and 8,334,281 expiring in 2030 for "Nasal Formulations of Metoclopramide". In addition, they have a pending US application for the "Treatement of Symptoms Associated with Female Gastroparesis" which would expire in 2032 if granted, as well as EU patents offering protection for intranasal treatment of gastroparesis and delayed onset emesis, expiring in 2021 and 2016 respectively. We believe Evoke has a strong patent position through 2021 for the treatment of gastroparesis intranasally which would extend to 2032 if their pending patent application is granted in the US. That said, there always remains the risk that a granted patent could be invalidated in court.

Acquisition candidate. We believe Evoke profiles as an acquisition candidate, especially with multiple recent transactions in the GI space. Most prominently, Salix Pharmaceuticals (SLXP - not rated) acquired Santarus (formerly SNTS) in January of this year (see "Thoughts on Valuation" for further discussion) for $2.6 billion. Santarus similarly got their start reformulating generic drugs. Salix, in particular, has been relatively aggressive on the GI acquisition trail, also acquiring Oceana Therapeutics for $300 million in 2011. We think Evoke's value could be substantially higher in the event of an acquisition by a firm with an existing GI franchise – our DCF results in a ~$40/share valuation in such a case even if we assume a massively dilutive financing in early 2015.

Inexpensive valuation. Evoke's current enterprise value is a modest $28 million, far below similar peers. While the biotech indicies have recently fallen ~20% from their 2014 highs, EVOK shares are off nearly 40%. Although we believe this decline to be unwarranted, it is not odd to see small-company shares fall disproportionately as the broader group sells off. Biotech IPO investors have seen a large number of deals come public recently with multi-billion dollar theoretical markets, above our ~$1.3 billion TAM estimate. In our view, EVOK shares have wound up lost in the shuffle, which we view as a mistake with EVK-001's relatively short time period to top-line Phase 3 data. Thus, we think EVOK shares represent a prudent risk.

## Risks

Trial fails to show significance. With only EVK-001 in development, it is virtually guaranteed that investors will face substantial losses should it fail in the upcoming Phase 3 trial. Evoke would either need to go back to the drawing board and conduct additional trials or would be forced to abandon EVK-001. At present, Evoke does not have any other drugs in its pipeline, and while management has evaluated other potential opportunities to add to the pipeline, nothing has been added. Thus, our thesis currently rests on the successful approval of EVK-001, there is no pipeline to provide a backstop to an unfavorable result in the Phase 3 study. While EVK-001 showed efficacy in women in the Phase 2b study, men exhibited a strong placebo response, if this should occur in the Phase 3 trial amongst women, it is likely the EVK-001 will fail.

Competition from lower-priced generic versions of metoclopramide. Oral versions of metoclopramide are available from a variety of manufacturers for less than $1/day. Other indications where alternate delivery mechanisms are available have not seen a great deal of uptake from new delivery formulations outside of gastroparesis. However, the difficulties of delivering drugs orally for treatment of gastroparesis is a unique case, given the disorder's symptoms. We would consider EVK-001 a special case due to this issue, but there is no guarantee payors will see the situation the same way.

Side effect concerns. Metoclopramide is currently subject to a black box warning on tardive dyskinesia (TD), a disorder characterized by involuntary, repetitive, purposeless body movements, usually facial. We expect EVK-001 to be subject to the same black box treatment if it gains approval. While it is unclear exactly what causes TD, using metoclopramide for extended periods has been shown to cause TD in a small proportion of patients. National guidelines have suggested occurrence in 1%-10% of patients; however, a 2010 study found less than 1% of metoclopramide users develop TD. Evoke did not find any instances of TD in their 267 patient Phase 2b study in or any other studies conducted on intranasal metoclopramide. EVK-001's delivery mechanism should remove the situation where a metoclopramide user takes multiple

oral doses, which are then released into the intestines in a bolus, exposing the patient to a large dose at once. We speculate this bolus of drug has a higher likelihood of causing TD over time.

**Likely to require additional capital following release of Phase 3 results.** Exiting 2013, Evoke had $24.2 million in cash. Based upon our estimates of the Phase 3 study costs and other expenses, we believe current funding will take them through the release of top-line data on EVK-001, but the company would then require additional funding to file the NDA and bring the drug to market.

## Thoughts on Valuation

Valuing pre-revenue specialty pharmaceutical companies is much more art than science. Naturally, one needs to take into account the likelihood of approval, the size of the ultimate market, potential competition, and a number of other factors. While the author does not ordinarily tend to look towards discounted cash flow (DCF) exercises and prefers to value companies on revenue or earnings multiples, we feel a DCF model is prudent as a valuation exercise for EVOK shares given its pre-revenue status. Based on our estimates out to 2030, using a 15% discount rate, we arrive at a ~$24.00 valuation assuming a $50 million raise in early 2015 (which we assume is priced at current levels, diluting current shareholders by ~50%) and EVK-001 gains approval in late 2016. As we estimate EVK-001 has a two-in-three chance of gaining approval, we arrive at a $16.00 price target using this methodology.

The following table details specialty pharmaceutical companies targeting GI pharmaceutical market as well as recent IPOs in the midst of either Phase 3 or Phase 2b trials with similarly sized addressable markets as Evoke is targeting. Synergy Pharmaceuticals (SGYP – not rated) strikes us as the most similar to Evoke of the GI companies, having recently (Novemeber 2013) begun a Phase 3 study on plecanatide (a synthetic analog of uroguanylin) for chronic idiopathic constipation. Synergy is also studying the drug in constipation-predominant irritable bowel syndrome (IBS-C), on which they closed enrollment in a Phase 2b study in December 2013 and expect top-line data in Q2 2014. While the markets Synergy is targeting are larger, we view the greater than ten-fold difference in enterprise value between SGYP and EVOK shares as an unwarranted valuation discrepency. We would further note IRWD's and NPSP's revenue ramps over the next couple of years look similar to our EVOK revenue estimates for 2017-2020. Should our estimates for Evoke come to fruition and Evoke achieves similar multiples, EVOK shares stand to appreciate substantially in the coming years. Of the recent IPOs, on average there is a large valuation discrepancy between the recent-IPO comp group and EVOK. We prefer not to value firms based on an average of enterprise values, but we believe inclusion of this comp group is illustrative of our belief EVOK shares are undervalued at present.

| | | | | Revenue | | | EPS | | | EV/sales | | | P/E | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Company Name (GI companies)** | **Ticker** | **Price** | **EV** | **2013** | **2014** | **2015** | **2013** | **2014** | **2015** | **2013** | **2014** | **2015** | **2013** | **2014** | **2015** |
| **Ironwood Pharmaceuticals, Inc.** | IRWD | $ 11.19 | 1,340.6 | 22.9 | 79.0 | 178.9 | $ (2.35) | $ (1.40) | $ (0.59) | 58.6 | 17.0 | 7.5 | NM | NM | NM |
| **Furiex Pharmaceuticals, Inc.** | FURX | $ 77.50 | 850.1 | 71.0 | 37.5 | 51.4 | $ (2.92) | $ (2.01) | $ 0.51 | 12.0 | 22.7 | 16.5 | NM | NM | 152.0 |
| **NPS Pharmaceuticals, Inc.** | NPSP | $ 26.65 | 2,708.1 | 155.6 | 246.9 | 437.8 | $ (0.14) | $ 0.19 | $ 1.36 | 17.4 | 11.0 | 6.2 | NM | 140.3 | 19.6 |
| **Salix Pharmaceuticals Ltd.** | SLXP | $ 104.86 | 7,110.8 | 933.8 | 1,620.0 | 1,970.0 | $ 3.76 | $ 6.58 | $ 7.55 | 7.6 | 4.4 | 3.6 | 27.9 | 15.9 | 13.9 |
| **Synergy Pharmaceuticals, Inc.** | SGYP | $ 4.49 | 352.0 | - | - | - | $ (0.73) | $ (0.91) | $ (0.61) | NM | NM | NM | NM | NM | NM |
| **Average** | | | **2,472.3** | | | | | | | **23.9** | **13.7** | **8.5** | **27.9** | **78.1** | **61.8** |
| **Median** | | | **1,340.6** | | | | | | | **14.7** | **14.0** | **6.8** | **27.9** | **78.1** | **19.6** |
| **Company Name (Recent IPOs)** | **Ticker** | **Price** | **EV** | **2013** | **2014** | **2015** | **2013** | **2014** | **2015** | **2013** | **2014** | **2015** | **2013** | **2014** | **2015** |
| **Auspex Pharmaceuticals, Inc.** | ASPX | $ 20.88 | 391.0 | - | - | 3.5 | NA | NA | NA | NM | NM | 111.1 | NA | NA | NA |
| **Cara Therapeutics, Inc.** | CARA | $ 14.93 | 271.3 | 12.0 | 2.1 | 5.1 | $ (0.74) | $ (0.80) | $ (1.06) | 22.7 | 129.2 | 53.4 | NM | NM | NM |
| **Celladon Corp.** | CLDN | $ 12.53 | 168.9 | - | - | - | $ (1.67) | $ (2.01) | $ (1.81) | NM | NM | NM | NM | NM | NM |
| **Dipexium Pharmaceuticals** | DPRX | $ 9.70 | 44.3 | - | - | - | $ (0.87) | $ (1.44) | $ (1.54) | NM | NM | NM | NM | NM | NM |
| **Egalet Corp.** | EGLT | $ 10.72 | 113.3 | - | 3.3 | NA | $ (4.18) | $ (1.44) | NA | NM | 34.0 | NA | NM | NM | NA |
| **Eleven Biotherapeutics, Inc.** | EBIO | $ 13.34 | 160.3 | 1.3 | - | - | $ (16.18) | $ (1.73) | $ (1.52) | 120.1 | NM | NM | NM | NM | NM |
| **Nephrogenex** | NRX | $ 6.42 | 21.0 | - | NA | NA | $ (19.71) | NA | NA | NM | NA | NA | NM | NA | NA |
| **Revance Therapeutics, Inc.** | RVNC | $ 28.62 | 423.1 | 0.6 | 0.1 | 0.2 | $ 1.05 | $ (3.21) | $ (3.50) | 685.7 | 3,254.5 | 2,488.7 | 27.3 | NM | NM |
| **Average** | | | **199.1** | | | | | | | **276.2** | **1,139.2** | **884.4** | **27.3** | **NM** | **NM** |
| **Median** | | | **164.6** | | | | | | | **120.1** | **129.2** | **111.1** | **27.3** | **NM** | **NM** |
| **Evoke Pharma, Inc.** | **EVOK** | **$ 7.86** | **26.7** | **-** | **-** | **-** | **$ (1.20)** | **$ (2.69)** | **$ (1.19)** | **NM** | **NM** | **NM** | **NM** | **NM** | **NM** |

We also think it valuable to look at similar companies historically who have attempted to develop GI drugs. We believe the most comparable example to be Santarus in their early days as a public company. At the time of the SNTS IPO, they had submitted their first two NDAs for immediate-release formulations of omeprazole (originally approved as Prilosec), a generic proton pump inhibitor (PPI), combined with sodium bicarbonate (an antacid) for the treatment of a variety of upper GI diseases and disorders. Proton pump inhibitors at the time were only available in delayed-release formulations and were not combined with antacids. Santarus quickly built its sales force to 250-300 people to sell this product, ultimately known as Zegerid, quickly ramping sales to nearly $100 million several years after approval of their new immediate-release

formulation, going up against five delayed-release PPI brands with large sales forces in the $12.9 billion (2003, source: IMS Helath) PPI market. During this time, SNTS shares peaked at a EV of nearly $500 million. We think it worth noting Santarus had to fight it out with multiple large sales forces competing in the PPI market; in stark contrast, upon approval Evoke is highly unlikely to be competing with competing metoclopramide sales forces or any other drug indicated for gastroparesis for that matter. Santarus was acquired by Salix Pharmaceuticals (SLXP) for $2.6 billion in January of this year (the acquisition was announced last November).

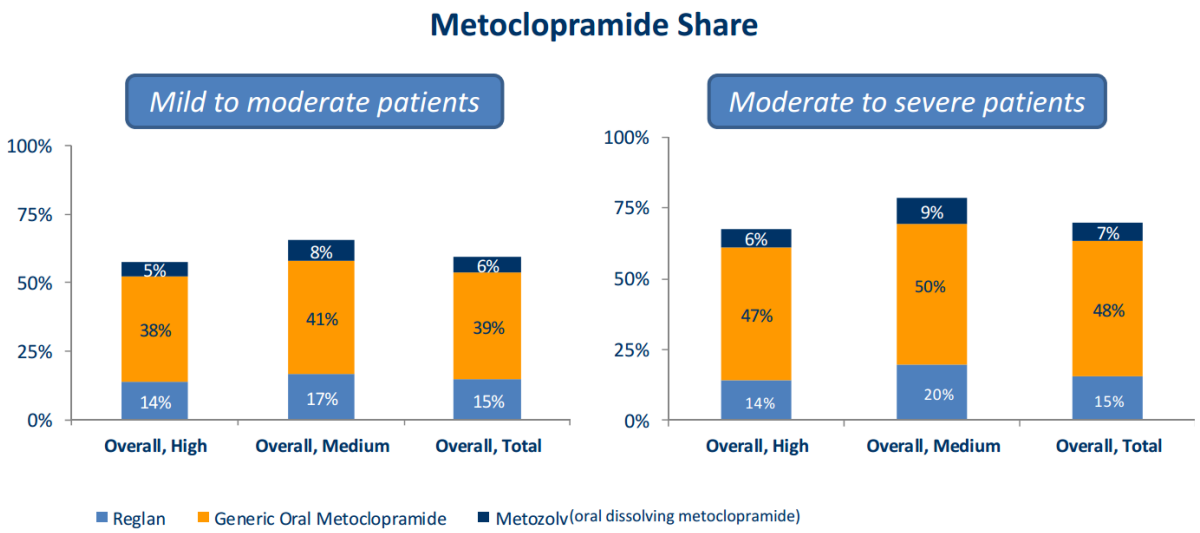
To provide an unsuccessful example as well, Aryx Pharmaceuticals attempted to develop a GI drug, ATI-7505 (naronapride), without the cardiac issues associated with Propulsid (cisapride), Johnson & Johnson's (JNJ – not rated) GERD drug. The drug showed favorable results in its thorough QT study and achieved statistical significance in a Phase 2b trial that was stopped early as their partner, Proctor & Gamble, exited the drug development business. While the company had a number of other drugs in development, and once attained a $175 million market capitalization, its lead candidate at the time was ATI-7505. Ultimately, the company ran into problems as the FDA was slow providing guidance for the design of their Phase 3 trial and investors were not forthcoming with additional funds, forcing the company to wind down operations. Although Aryx was ultimately unsuccessful in gaining approval, we find it intriguing the company attained a $175 million market capitalization despite never bringing its GERD drug to a Phase 3 trial. As such, we do not see a strong reason disqualifing EVOK shares from a similar valuation prior to completion of its Phase 3 study.

Our $16.00 price target, based upon our DCF model (which contains a highly dilutive financing we regard as highly conservative), represents a ~$75 million enterprise value, or roughly 1.0x our 2017 EV/sales estimate. Should Evoke release positive Phase 3 results and raise the same $50 million we estimate nearer our price target, our DCF model would provide for a price target of ~$30.00.

## Key Model Assumptions

We have attempted to be conservative in our modeling; however, while our valuation is discounted based upon the likelihood EVK-001 fails to gain approval, our model assumes the drug clears the FDA in late 2016. We assume the company raises $50 million at $7.50/share in early 2015, following the release of top-line results of the METO-IN-003 trial. We further estimate the company will hire 200 salespeople in the 18 months following FDA clearance of EVK-001 at $250,000/head annually. We have made assumptions regarding G&A and other public company costs based on the experience of similar firms historically.

The sales ramp is based upon our model for diabetic gastroparesis sufferers, found in the “Prevalence” section that follows. We have assumed the average patient utilizes EVK-001 for 150 days per year, inline with current mild-to-moderate gastroparesis sufferers usage patterns; moderate-to-severe patients may use metoclopramide as many as 300 days per year. We feel we have been conservative in modeling peak penetration at 30%. Shown below are results from Evoke’s survey of 121 metoclopramide prescribers; in our view, EVK-001 will ultimately capture a market share similar to Reglan and Metzolov combined as well as taking ~900bps of market share from oral metoclopramide. That said, it appears current metoclopramide prescribers are concerned about the absorption of orals and safety issues arising from delayed absorption (please see the “Evoke Market Research” section for further discussion). If this were to change prescribing habits, we estimate EVK-001 could capture a ~40%+ share of diabetic gastroparesis prescriptions (including non-metoclopramide scripts), although as previously stated, we have modeled 30%.




Source: Company survey, presentation.

## Company Brief

Evoke Pharma is a specialty pharmaceutical company founded in 2007 focused on developing EVK-001, an intranasal formulation of metoclopramide intended to relieve symptoms of diabetic gastroparesis in women with diabetes mellitus. Evoke plans on initiating a Phase 3 trial of EVK-001 in Q2 2014.

## EVK-001 Overview

### Description

As previously stated, EVK-001 is a novel intranasal reformulation of metoclopramide currently awaiting the initiation of a Phase 3 trial. Originally approved in 1979 in oral and intravenous applications, metoclopramide is the only product approved to treat gastroparesis in the U.S. at present and is available in oral, orally dissolving tablet and intravenous formulations. Gastroparesis delays the emptying of the stomach (please see the "Gastroparesis" section that follows for an in depth discussion of the condition), which limits the bioavailability of oral formulations. EVK-001's primary container enclosure system has been utilized in other nasal spray products and comes preassempled as a multi-dose sprayer capable of delivering a 30-day supply (4 doses/day).

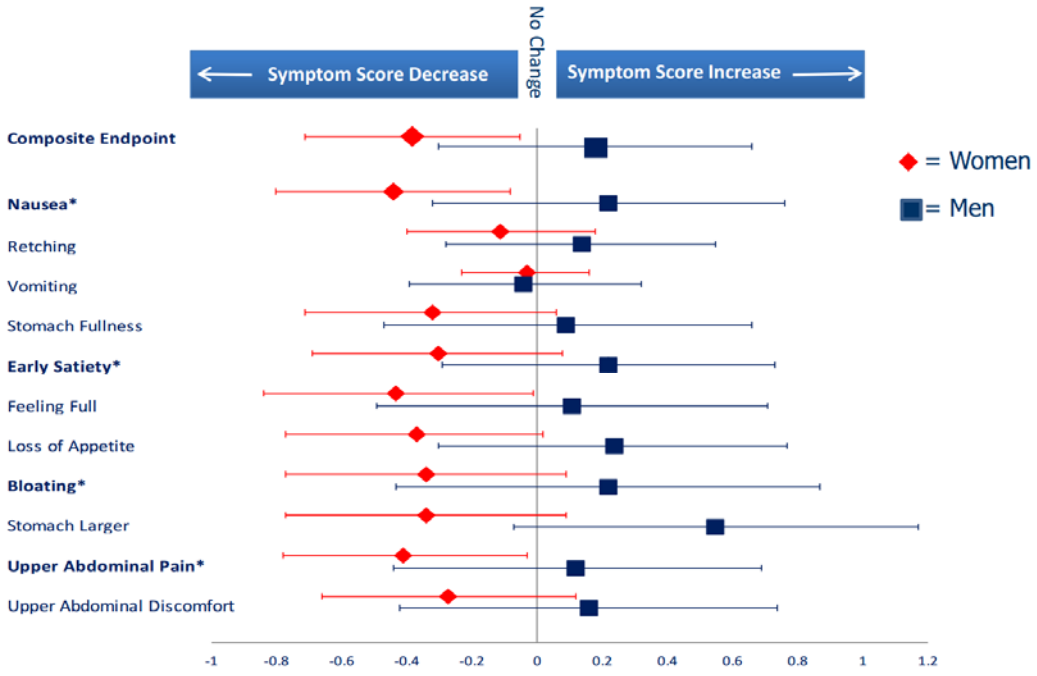
### History of Development

Since 1985, 24 clinical studies with a total of 1,045 patients have focused on the safety and efficacy of metoclopramide nasal spray. Evoke acquired rights to intranasal metoclopramide (initially developed by Nastech) from Questcor in June 2007 for $650,000 with additional milestone payments worth as much as $52.0 million. The potential milestone payments consist of $500,000 upon beginning Phase 3 clinical trials on EVK-001, $1.5 million upon the FDA's acceptance for review of an NDA, $3.0 million upon FDA approval, and up to $47.0 million in low single digit royalties to Questcor on net sales of the drug through the life of EVK-001's patent, expiring in 2030. Since acquiring rights to what is now EVK-001 in 2007, Evoke optimized the composition of the spray to focus on improved stability. They also removed inactive ingredients to improve the platability and tolerability for users, as well as formulated the product to have excipients at or below the FDA's Inactive Ingredient Database. Evoke has evalusted this formulation 229 patients in their Phase 1 and Phase 2 trials.

### EVK-001 Phase 2b Trial Results

Evoke conducted a Phase 2b study of EVK-001, known as METO-IN-002, which was the largest ever conducted in a diabetic gastroparesis population for any delivery form of metoclopramide. The multicenter, double-blind, placebo-controlled study enrolled 287 subjects with diabetic gastroparesis. The primary endpoint was based upon patient reported outcomes (PRO) on the modified Gastroparesis Cardinal Symptom Index Daily Diary (mGCSI-DD), tracking a four-symptom composite of nausea, early satiety, bloating, and upper abdominal pain for patients who had a score of over 2 and less than 4 on the mGCSI-DD scale for seven days prior to randomization.

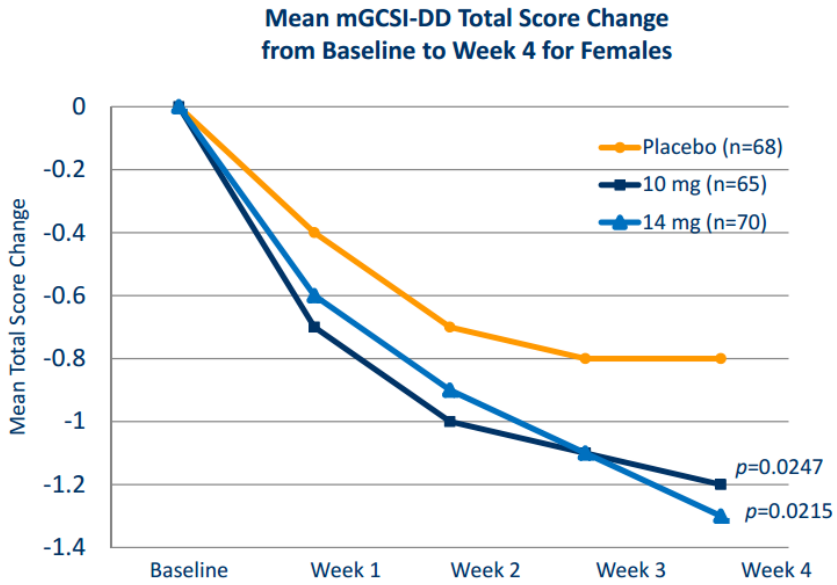
EVK-001 exhibited a favorable safety profile in the trial, but did not show statistical significance in the entire intention-to-treat (ITT) population, as the men enrolled in the study showed a large placebo response. However, amongst women, who turned out to be 79% of the ITT population in the Phase 2b study, EVK-001 demonstrated effectiveness in reducing the most common symptoms of diabetic gastroparesis. Importantly, GI motility disorders tend to affect women in far greater proportion than men and similar proportions between men and women affected by GI disorders have been found, such as irritable bowel syndrome (IBS). Additionally, a number of drugs targeting GI disorders have been approved by the FDA based on effectiveness solely in women; examples include Zelnorm (tegaserod, since pulled from the market due to safety issues, discussed in the "Competition and Potential Competition" section that follows) by Novartis, Amitiza (lubiprostone, to treat chronic idiopathic constipation) by Takeda, and Lotronex (alosetron, to treat severe diahrrea-predominant IBS) by Prometheus Laboratories. Interestingly, prior studies on metoclopramide have not evaluated gender and have generally been studied in only small populations; for instance, Reglan enrolled fewer than 150 subjects across all the studies included in the NDA. The chart below shows the gender disparity between men and women found in METO-IN-002.




*mGCSI-DD = four bolded symptoms.
Differences of least-square means of 10 mg treatment scores, 95% confidence intervals

Source: Company presentation.

The chart below details the improvement amongst women in mGCSI-DD total score change in METO-IN-002. One can see the 10mg dosage was the lowest effective dose; this is the dosage Evoke will utilize in the Phase 3 trial.




Source: METO-IN-002 Phase 2b study, Company presentation.

FDA Regulatory Guidance Following METO-IN-002 and Phase 3 Trial Design

Following the completion of the Phase 2b study, Evoke met with the FDA to discuss their Phase 3 study. Based on the discussions, Evoke plans to conduct a ~200 patient study at ~60 sites across the US, with the trial population consisting solely of women. The FDA will also require a thorough QT (TQT) study to evaluate cardiovascular risk (the QT interval is a time measurement between the start of the Q wave and end of T wave in the heart's electrical cycle; lengthened QT interval is a marker for risk of ventricular tachyarrhythmias and is a risk factor of sudden death). In addition, the FDA is requiring a safety study in males with diabetic gastroparesis, although this will not be required to submit an NDA seeking approval for treatment of women. The companion safety study in males will contain a futility stop based on efficacy; the safety results from the male study will be included in the NDA.

The Phase 3 trial design is similar to the Phase 2b study – four-week, multicenter, randomized, double-blind, and placebo-controlled. The main difference, aside from focusing solely on adult women with diabetic gastroparesis, is the usage of the Gastroparesis Symptom Assessment (GSA) score of patient-reported outcomes instead of the mGCSI-DD score as in the Phase 2b study. It will use the 10mg dose as there was no statistical significant difference between the 10mg and 14mg dose in the METO-IN-002 study. The primary endpoint will be the change in average GSA score versus baseline at the end of four weeks. The GSA is a patient-reported outcome instrument derived from the GCSI-DD, and Evoke has analyzed the Phase 2b results using the GSA methodology, finding nearly identical statistical improvement on the GSA scale in females as the GCSI-DD as well as statistically significant efficacy (p=0.025 for the GSA versus p=0.0247 for the GCSI-DD).

Timeline

Evoke will initiate the Phase 3 study in Q2 2014, both the female and male studies. In Q3 2014, they will begin the TQT study, with top-line data expected in Q4 2014. The top-line data from METO-IN-003 (the female Phase 3 study) is expected in Q2 2015. We anticipate Evoke will file an NDA in the second half of 2015 and gain approval in the second half of 2016 should the Phase 3 trial see success.

Mechanism of Action

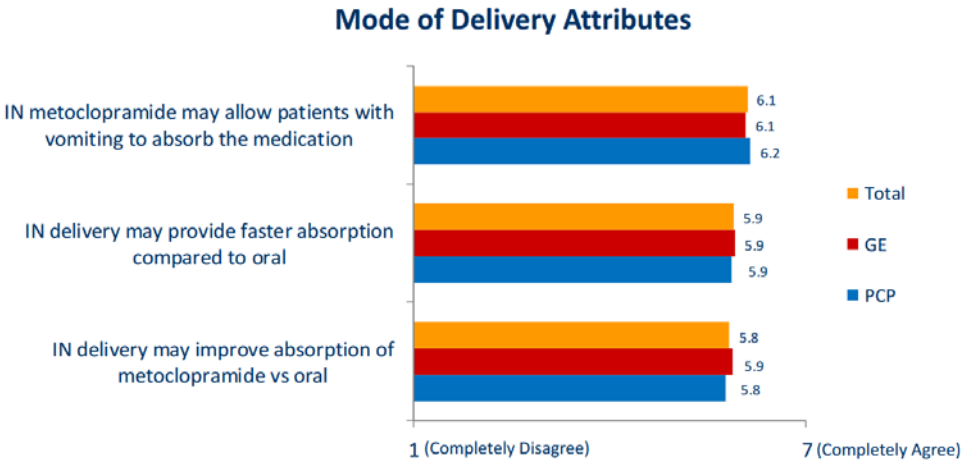
EVK-001 is a novel, intranasal formulation of metoclopramide, a dopamine antagonist, mixed $5\text{-HT}_3$ antagonist, and $5\text{-HT}_4$ agonist, which has promotility (promoting movement through the gastrointestinal tract) and antiemetic (nausea and vomiting inhibition) properties. Dopamine antagonists block dopamine receptors through receptor antagonism (preventing a biological response) providing antiemetic properties. Similarly, $5\text{-HT}_3$ antagonists prevent emesis. Metoclopramide's $5\text{-HT}_4$ agonist properties has benefits through two possilble mechanisms – the inhibition of 5-HT release from enterochromaffin cells (which contain ~80% of the body's supply of serotonin) and the restoration of anally driven paristaltic waves in the upper gastrointestinal tract. This may also counteract colonic constipation which can occur in patients treated with $5\text{-HT}_3$

receptor antagonists. More simply put, metoclopramide prevents patients from vomiting and relieves nausea while encouraging the stomach to move its contents into the small intestine more quickly.

While the mechanism of action for EVK-001, as discussed above, is no different than metoclopramide, oral versions of metoclopramide may not be efficacious due to the nature of gastroparesis. Thus, intranasal delivery appears a promising delivery option for metoclopramide for two main reasons – first, the mucosa of the nasal cavity is well vascularized, due to it's single epithelial cell layer, allowing metoclopramide molecules to be transferred directly and systemically; and, second, there is no first-pass liver metabolism needed before onset of action. This, of course, gives EVK-001 favorable characteristics as compared to oral versions of metoclopramide.

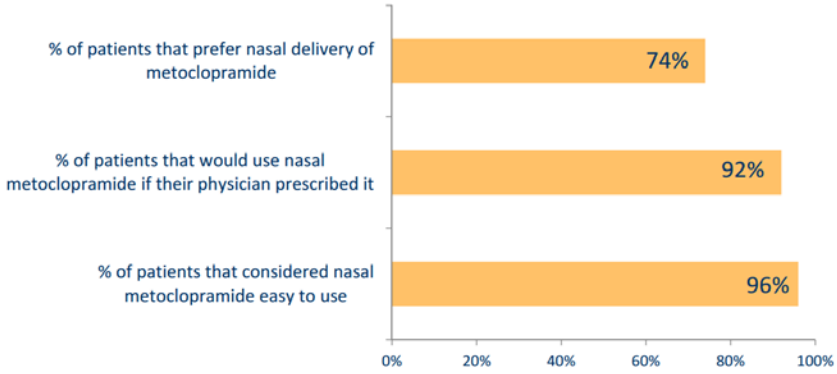
Evoke Market Research

Evoke has conducted a great deal of market research interviewing over 300 gastroenterologists, primary care and internal medicine practitioners. As we previously noted, prescribers of metoclopramide have shown concern about the absorption of oral metoclopramide as well as the safety issues associated with delayed absorption of oral formulations administered multiple times per day. The chart below shows strong agreement from metoclopramide prescribers (n = 121) on the key advantages of an intranasal formulation of metoclopramide such as EVK-001.




Source: Company survey, presentation.

In addition, they have surveyed patients who were enrolled in their Phase 2b study. The results from the patient survey (n = 98) are shown below, which suggest patients would nearly universally utilize the intranasal delivery mechanism of EVK-001 if prescribed by their doctor.




Source: Company survey, presentation.

Addressable Market Size

The table below lays out our total addressable market model for EVK-001 through 2030. Our diabetes population model is based upon our work first published in "The Truffle Shuffle: Diabetes Edition" from October 2011, which assumes no additional growth in the rate of obesity in the US. A July 2010 study published in the Journal of Gastrointestinal and Liver

Diseases found that between 25% and 55% of Type 1 diabetics and 15% to 30% of Type 2 diabetics suffer from symptoms associated with gastroparesis; we have chosen the lower bound in each case to build our market model, although other studies have found higher levels of incidence. Based upon statistics presented at Digestive Disease Week last year, we have estimated ~63% of patients with diabetic gastroparesis seek treatment. As such, we have assumed only 70% of diabetic gastroparesis patients are prescribed metoclopramide. Studies have shown up to 30% of patients cannot tolerate metoclopramide, usually due to drowsiness, fatigue, irritability or restlessness. We have further assumed usage for five months/year, consistent with the typical usage level of a mild-moderate patient; severe patients may use metoclopramide for twice as many days in a given year. Lastly, we assume it is only prescribed to women, who make up ~80% of diabetic gastroparesis sufferers, although we believe most GI specialists treat all gastroparesis patients similarly. Thus, we believe the assumptions contained within our market model are of the conservative variety.

EVK-001 Market Model (in millions, except percentages and days utilized/patient)

| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total US Diabetics | 23.2 | 24.2 | 25.3 | 26.2 | 27.1 | 27.9 | 28.8 | 29.5 | 30.3 | 31 | 31.7 | 32.4 | 33.1 | 33.7 | 34.3 | 35 | 35.6 | 36.1 | 36.7 | 37.3 | 38.5 |
| Type 1 population | 1.62 | 1.69 | 1.77 | 1.83 | 1.90 | 1.95 | 2.02 | 2.07 | 2.12 | 2.17 | 2.22 | 2.27 | 2.32 | 2.36 | 2.40 | 2.45 | 2.49 | 2.53 | 2.57 | 2.61 | 2.70 |
| Type 1 incidence | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% | 25% |
| Type 1 gastroparesis patients | 0.41 | 0.42 | 0.44 | 0.46 | 0.47 | 0.49 | 0.50 | 0.52 | 0.53 | 0.54 | 0.55 | 0.57 | 0.58 | 0.59 | 0.60 | 0.61 | 0.62 | 0.63 | 0.64 | 0.65 | 0.67 |
| % seeking treatment | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% |
| % prescribed metoclopramide | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% |
| Addressable Type 1 market | 0.18 | 0.19 | 0.20 | 0.20 | 0.21 | 0.22 | 0.22 | 0.23 | 0.23 | 0.24 | 0.24 | 0.25 | 0.26 | 0.26 | 0.26 | 0.27 | 0.27 | 0.28 | 0.28 | 0.29 | 0.30 |
| Type 2 population | 21.58 | 22.51 | 23.53 | 24.37 | 25.20 | 25.95 | 26.78 | 27.44 | 28.18 | 28.83 | 29.48 | 30.13 | 30.78 | 31.34 | 31.90 | 32.55 | 33.11 | 33.57 | 34.13 | 34.69 | 35.81 |
| Type 2 incidence | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% | 15% |
| Type 2 gastroparesis patients | 3.24 | 3.38 | 3.53 | 3.65 | 3.78 | 3.89 | 4.02 | 4.12 | 4.23 | 4.32 | 4.42 | 4.52 | 4.62 | 4.70 | 4.78 | 4.88 | 4.97 | 5.04 | 5.12 | 5.20 | 5.37 |
| % seeking treatment | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% | 63% |
| % prescribed metoclopramide | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% |
| Total addressable Type 2 market (metoclopram | 1.43 | 1.49 | 1.56 | 1.61 | 1.67 | 1.72 | 1.77 | 1.81 | 1.86 | 1.91 | 1.95 | 1.99 | 2.04 | 2.07 | 2.11 | 2.15 | 2.19 | 2.22 | 2.26 | 2.29 | 2.37 |
| % women | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% | 80% |
| **EVK-001 addressable market (patients)** | **1.14** | **1.19** | **1.25** | **1.29** | **1.33** | **1.37** | **1.42** | **1.45** | **1.49** | **1.53** | **1.56** | **1.59** | **1.63** | **1.66** | **1.69** | **1.72** | **1.75** | **1.78** | **1.81** | **1.84** | **1.89** |
| Days utilized per year per patient | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| **EVK-001 addressable market ($s) at various per day pricing** | | | | | | | | | | | | | | | | | | | | | |
| **$6** | **$ 1,028** | **$ 1,072** | **$ 1,121** | **$ 1,161** | **$ 1,200** | **$ 1,236** | **$ 1,276** | **$ 1,307** | **$ 1,342** | **$ 1,373** | **$ 1,404** | **$ 1,435** | **$ 1,466** | **$ 1,493** | **$ 1,519** | **$ 1,550** | **$ 1,577** | **$ 1,599** | **$ 1,626** | **$ 1,652** | **$ 1,705** |
| $9 | $ 1,541 | $ 1,608 | $ 1,681 | $ 1,741 | $ 1,801 | $ 1,854 | $ 1,914 | $ 1,960 | $ 2,013 | $ 2,060 | $ 2,106 | $ 2,153 | $ 2,199 | $ 2,239 | $ 2,279 | $ 2,325 | $ 2,365 | $ 2,399 | $ 2,438 | $ 2,478 | $ 2,558 |
| $12 | $ 2,055 | $ 2,144 | $ 2,241 | $ 2,321 | $ 2,401 | $ 2,472 | $ 2,551 | $ 2,613 | $ 2,684 | $ 2,746 | $ 2,808 | $ 2,870 | $ 2,932 | $ 2,985 | $ 3,039 | $ 3,101 | $ 3,154 | $ 3,198 | $ 3,251 | $ 3,304 | $ 3,411 |
| $15 | $ 2,569 | $ 2,680 | $ 2,802 | $ 2,901 | $ 3,001 | $ 3,090 | $ 3,189 | $ 3,267 | $ 3,355 | $ 3,433 | $ 3,510 | $ 3,588 | $ 3,665 | $ 3,732 | $ 3,798 | $ 3,876 | $ 3,942 | $ 3,998 | $ 4,064 | $ 4,130 | $ 4,263 |

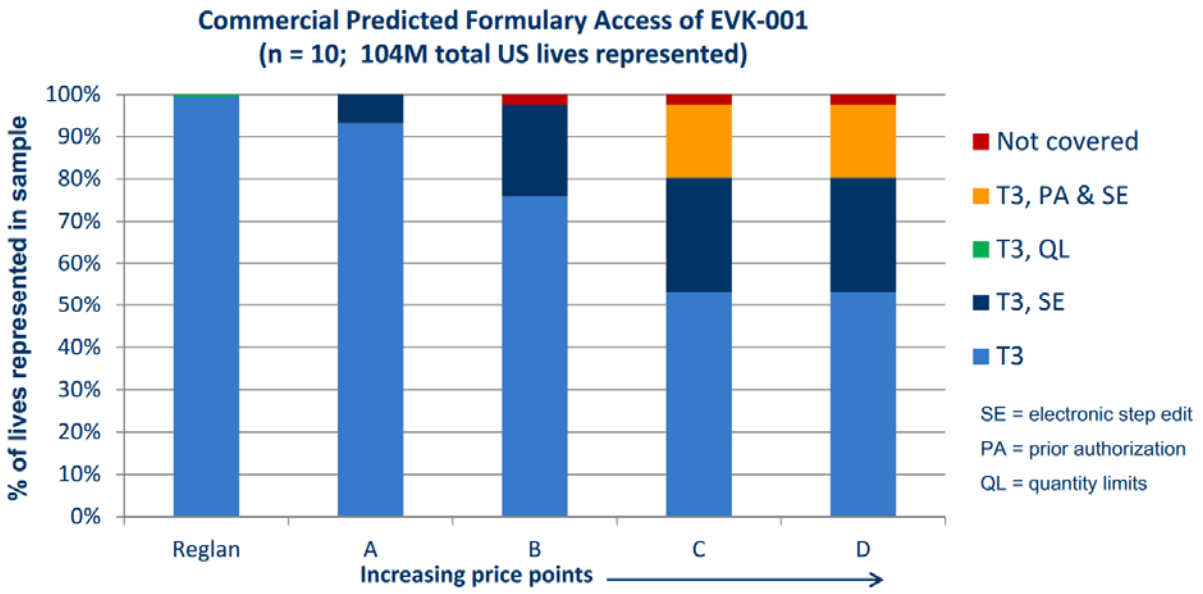
Source: Feltl estimates.

## Other Potential Applications

Metoclopramide may have application in other GI disorders, including irritable bowel syndrome (IBS), gastroesophogeal reflux disease (GERD), chemotherapy-induced nausea and vomiting (CINV, impacting ~70%-80% of patients undergoing chemotherapy), and functional dyspepsia (which shares many of the same symptoms of gastroparesis). In fact, metoclopramide has been studied in all of these applications at some point, although not always with favorable results relative to the standard of care at the time of study. We do not include any off-label usage in our projections, but would note that this markets could be significant; for example, both IBS and GERD affect 10%-20% of the US population.

## Pricing

We understand typical pricing of branded GI drugs falls in the $8-$15/day range. While we do not know what pricing ranges Evoke tested in the chart below, we have based our model on $6/day pricing, which we believe is conservative. We are encouraged by the fact over half of patients are covered without condition at the highest level of pricing tested in Evoke's research.




Competition and Potential Competition

Metoclopramide is the only product currently approved in the US to treat gastroparesis. As such, Evoke will face competition from the generic and branded (Reglan from Ani Pharmaceuticals) oral, oral dissolving tablet and intravenous version of metoclopramide. Erythromycin and domperidone also compete with metoclopramide for treatment of gastroparesis. However, erythromycin is sometimes prescribed off-label for gastroparesis and has been well known to induce nausea and vomiting and repeated administration, is linked to desensitization to motilin receptor and tachyphylaxis, and can lead to drug-resistant bacteria if administered in an extended dosing fashion. Domperidone (Motilium), a dopamine receptor modulator is available in the US through compounding pharmacies under a specific FDA restricted-access program, but is not FDA approved and it has not been well characterized.

Of the drugs currently in development, shown in the table below, certain similar compounds have failed FDA trials. While we cannot state whether similar fates will befall these products, it would appear to us that successful navigation of the FDA is less likely. For instance, Rhythm Therapeutics' RM-131 ghrelin agonist, a small-peptide analog of ghrelin (a hormone produced in the stomach that stimulates gastrointestinal activity), is being developed for gastrointestinal (GI) motility disorders. Tranzyme Pharma previously attempted development of two ghrelin analogs, an IV version, known as ulimorelin, for use in post-operative ileus (disruption of the normal propulsive ability of the GI tract) and an oral ghrelin agent, TZP-102, for use in diabetic gastroparesis. The development of both versions have since been discontinued after ulimorelin failed in two Phase 3 trials and TZP-102 was unsuccessful in two Phase 2b trials.

Potential Competitive Compounds in Development

| Product | Class | Route | Company | Development Status |
|---|---|---|---|---|
| **RM-131** | Ghrelin agonist | Sub Cutaneous | Rhythm Therapeutics | Phase 2 |
| **GSK962040** | Motilin agonist | Oral | GlaxoSmithKline | Phase 2a |
| **TD-5108** | 5-$HT_4$ agonist | Oral | Theravance | Phase 2a |
| **EVK-001** | **Dopamine antagonist/ mixed 5-$HT_3$ antagonist/5-$HT_4$ agonist** | **Intranasal** | **Evoke Pharma** | **Phase 3 Ready** |

Source: Company filings.

In addition to past unsuccessful attempts to achieve FDA approvals for similar compounds, a couple of drugs that previously gained FDA approval and were used off-label in the treatment of gastroparesis, Propulsid (cisapride) and Zelnorm (tegaserod), have since been withdrawn from the market due to cardiac safety issues. Tegaserod, a 5-$HT_4$ agonist and 5-$HT_{2B}$ antagonist, was removed from the market in 2007 after gaining initial approval as a treatment for chronic

idiopathic constipation and irritable bowel syndrome with constipation. The FDA based its tegaserod decision on data derived from an 18,000+ patient sample, which Novartis disputes, alleging the affected patients all had preexisting cardiovascular disease or risk factors. A 2010 study, looking at 52,000+ patients from a US health insurance database was not able to find a link between risk of cardiovascular events and tegaserod. Tegaserod may still be used in emergency situations, but only with prior authorization from the FDA. Cisapride, a serotonin 5-$HT_4$ agonist, was withdrawn from the US market in 2000 and was approved for gastroesophageal reflux disease (GERD), although it is still available in the US for use in veterinary applications. This is not to say all 5-$HT_4$ agonists will generate cardiac risk concerns; we felt it prudent to point out certain compounds have been tagged on this in the past. In addition, we would note that Theravance's TD-5108 is an oral, and would suffer from the same drawbacks in treating gastroparesis as oral metoclopramide.

To us, GlaxoSmithKline's GSK962040 motilin agonist is the most interesting of the potentially competitive compounds. It is a selective non-peptide motilin receptor agonist, which is a new approach in treating delayed gastric emptying. Motilin is an endogenous peptide produced by the duodenum that increases the gastric emptying rate. Its physiological action is mediated by motilin receptors located on enteric neurons, the smooth muscle of the gut, and peripheral terminals of the vagus. Once again, it would likely suffer from the same oral delivery drawbacks as other gastroparesis treatements.

## Gastroparesis

### Brief

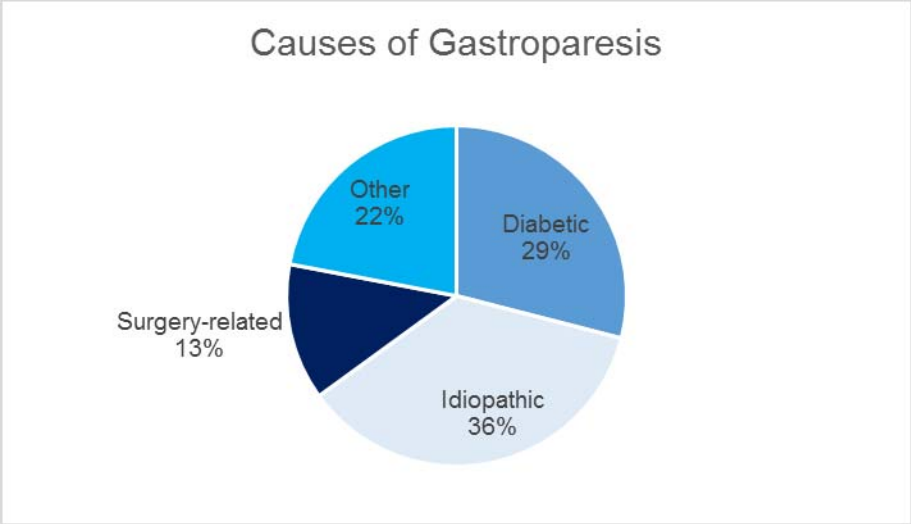
Gastroparesis is a medical condition resulting in delayed gastric emptying, or food remaining in the stomach longer than necessary. The vagus nerve controls the contractions required to move stomach contents to the small intestine. Damage to the vagus nerve can be caused for numerous reseasons including diabetes, (the most common cause of gastroparesis) as well as eating disorders, smoking, connective tissue diseases, acute viral infrections, gastric surgeries, mitochondrial disorders, and neurological conditions (such as Parkinson's). Chronic gastroparesis can be debilitating, with chronic nausea, vomiting, abdominal pain, and early satiety being the most common symptoms. The condition is clinically defined based solely on the emptying time of the stomach and can be diagnosed with x-rays, manometry, and gastric-emptying scans. Approximately 80% of gastroparesis patients are female.

### Treatment

Metoclopramide is the only FDA-approved medication to treat gastroparesis. However, a number of treatment regimens are available. Lifestyle treatments include dietary changes (reducing fiber, fat, and solid intake – although we are unaware of any controlled trials looking at dietary changes on clinical outcomes) and for diabetic patients, changing in insulin dosing. Outside the US, Propulsid (cisapride) and Motilium (domperidone) are available. Erythromycin is sometimes prescribed.

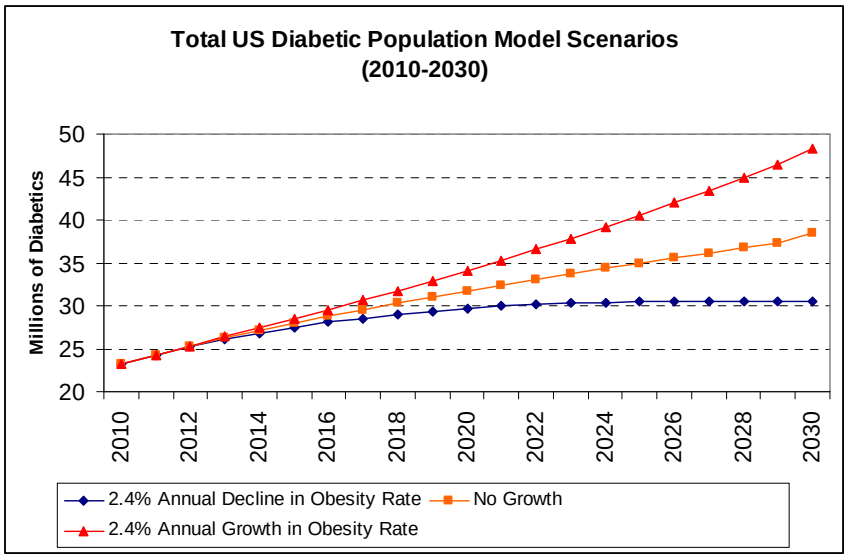
### Prevalence

Evoke estimates roughly 12-16 million people in the US suffer from symptoms of gastroparesis. This squares with the American Motility Society Task Force on Gastroparesis' estimate of up to 4% of the US population. Roughly 30% of gastroparesis cases are caused by diabetes, which would imply 3.6-4.8 million people in the US. Similar to other GI disorders, it is far more prevalent in women than men. In fact, approximately 80% of cases are women – implying a theoretical addressable market of 2.9-3.8 million women in the US for EVK-001. A 2013 study presented at the Digestive Disease Week conference suggested approximately 2.3 million people are presently seeking treatment, of which we estimate 1.8 million are women.




Source: Journal of Gastrointestinal and Liver Disease (July 2010), Current Gastroenterology Reports (2007).

Given the epidemic nature of diabetes, the population of people suffering from diabetic gastroparesis is likely to continue to grow, see our US diabetic population forecast below, first published in our "The Truffle Shuffle: Diabetes Edition" note from October 2011 detailing varying assumptions as to the growth in obesity. As is readily apparent, even if a Jazzercise craze sweeps the nation and obesity rates decline, diabetes cases will grow massively over the next couple of decades before leveling off. In our market model for EVK-001, we have assumed the US population continues to have the same per capita level of obesity as today, an assumption we view as relatively conservative.




Source: Centers for Disease Control and Prevention, National Institute of Health, Census Bureau, Feltl estimates.

## Management

David A. Gonyer, R.Ph. – President and Chief Executive Officer, Co-Founder

Mr. Gonyer has over 26 years of experience in the pharmaceutical industry and has been President and CEO since March 2007. From January 2004 to June 2007, Mr. Gonyer served as Vice President, Strategic and Product Development of Medgenex, Inc., a subsidiary of Victory Pharma, Inc. a biopharmaceutical company focused on acquiring, developing and marketing products to treat pain and related conditions. From April 2000 to December 2004, Mr. Gonyer was a founder and Vice President of Sales and Marketing at Xcel Pharmaceuticals, Inc., a specialty pharmaceutical focused on neurological disorders. From December 1996 to April 2000, Mr. Gonyer served as Director of Marketing at Elan/Dura Pharmaceuticals,

Inc. From 1987 to 1996, Mr. Gonyer held a broad range of management positions in commercial operations, alliance/partnership management, and regional sales at Eli Lilly & Company. Mr. Gonyer serves as a member of the board of directors of Neurelis, Inc., a privately held neurological specialty pharmaceutical company. Mr. Gonyer is a Registered Pharmacist and holds a B.Sc. in Pharmacy from Ferris State University School of Pharmacy.

Matthew J. D'Onofrio – Chief Business Officer, Co-Founder

Matthew J. D'Onofrio has served as Executive Vice President, Chief Business Officer since 2010 and as Executive Vice President, Corporate Development, Treasurer and Secretary since March 2007. Mr. D'Onofrio has over 20 years of experience in both large and small pharmaceutical firms. Prior to founding Evoke, Mr. D'Onofrio was Vice President, Business Development for Victory Pharma, a growing specialty pharma company based in San Diego. From 2002 to 2005, Mr. D'Onofrio led efforts to acquire marketed brands for the growing sales force. Earlier, Mr. D'Onofrio was previously Director and Head of West Coast Business Development at Vertex Pharmaceuticals, a biotechnology company, directing partnership efforts associated with the La Jolla research facility as well as other corporate assets. Mr. D'Onofrio also held various commercial roles of increasing responsibility over a decade at Eli Lilly & Company, including significant experience in worldwide corporate business development. During his licensing career, Mr. D'Onofrio has developed and executed license and investment relationships across a wide collection of disease states and technologies. Mr. D'Onofrio earned a B.S. in Chemistry from San Diego State University and an M.B.A. (Finance) from the Marshall School of Business, University of Southern California.

## Evoke Pharma, Inc. (EVOK)

**Ben Haynor, CFA**
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bchaynor@feltl.com

| Income Statement (millions) | 2012 | Q1 | Q2 | Q3 | Q4 | 2013 | Q1E | Q2E | Q3E | Q4E | 2014E | Q1E | Q2E | Q3E | Q4E | 2015E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| COGS | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Gross profit | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Gross margin* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* |
| Operating expenses: | | | | | | | | | | | | | | | | |
| Research and development | 1.2 | 0.1 | 0.1 | 0.1 | 0.6 | 1.0 | 0.9 | 2.5 | 4.0 | 4.0 | 11.4 | 4.0 | 2.5 | 1.5 | 1.2 | 9.2 |
| General and administrative | 0.8 | 0.2 | 0.1 | 0.4 | 0.9 | 1.6 | 1.1 | 1.2 | 1.3 | 1.4 | 5.0 | 1.5 | 1.5 | 1.5 | 1.5 | 6.0 |
| Sales and marketing | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Purchase of in-process research and development | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total operating expenses | 2.0 | 0.3 | 0.2 | 0.5 | 1.6 | 2.6 | 2.0 | 3.7 | 5.3 | 5.4 | 16.4 | 5.5 | 4.0 | 3.0 | 2.7 | 15.2 |
| Operating income (loss) | (2.0) | (0.3) | (0.2) | (0.5) | (1.6) | (2.6) | (2.0) | (3.7) | (5.3) | (5.4) | (16.4) | (5.5) | (4.0) | (3.0) | (2.7) | (15.2) |
| Interest income | - | - | - | 0.0 | 0.0 | 0.0 | - | - | - | - | - | - | - | - | - | - |
| Interest expense | - | - | - | (0.0) | (0.0) | (0.1) | - | - | - | - | - | - | - | - | - | - |
| Change in fair value of preferred stock purchase right | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Change in fair value of warrant liability | - | - | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | - | - | - |
| Grant income | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total other income (expense) | (0.0) | (0.2) | (0.0) | (0.0) | (0.0) | (0.2) | - | - | - | - | - | - | - | - | - | - |
| Income before taxes | (2.0) | (0.5) | (0.2) | (0.5) | (1.6) | (2.8) | (2.0) | (3.7) | (5.3) | (5.4) | (16.4) | (5.5) | (4.0) | (3.0) | (2.7) | (15.2) |
| Taxes | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Tax rate* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* |
| Net income (loss) | (2.0) | (0.5) | (0.2) | (0.5) | (1.6) | (2.8) | (2.0) | (3.7) | (5.3) | (5.4) | (16.4) | (5.5) | (4.0) | (3.0) | (2.7) | (15.2) |
| Earnings (loss) per share | | | | | | | | | | | | | | | | |
| Basic | $ (1.79) | $ (0.43) | $ (0.21) | $ (0.41) | $ (0.27) | $ (1.20) | $ (0.33) | $ (0.61) | $ (0.87) | $ (0.89) | $ (2.69) | $ (0.43) | $ (0.31) | $ (0.24) | $ (0.21) | $ (1.19) |
| Diluted | $ (1.79) | $ (0.43) | $ (0.21) | $ (0.41) | $ (0.27) | $ (1.20) | $ (0.33) | $ (0.61) | $ (0.87) | $ (0.89) | $ (2.69) | $ (0.43) | $ (0.31) | $ (0.24) | $ (0.21) | $ (1.19) |
| Weighted-average shares outstanding | | | | | | | | | | | | | | | | |
| Basic | 1.1 | 1.2 | 1.1 | 1.2 | 6.0 | 2.4 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 12.8 | 12.8 | 12.8 | 12.8 | 12.8 |
| Diluted | 1.1 | 1.2 | 1.1 | 1.2 | 6.0 | 2.4 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 12.8 | 12.8 | 12.8 | 12.8 | 12.8 |

**Evoke Pharma, Inc. (EVOK)**

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| Income Statement (millions) | 2012 | 2013 | 2014E | 2015E | 2016E | 2017E | 2018E | 2019E | 2020E | 2021E | 2022E | 2023E | 2024E | 2025E | 2026E | 2027E | 2028E | 2029E | 2030E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenue | - | - | - | - | 6.4 | 78.4 | 161.1 | 274.6 | 393.2 | 430.5 | 410.5 | 388.1 | 364.6 | 341.1 | 315.4 | 271.8 | 227.6 | 181.7 | 136.4 |
| COGS | - | - | - | - | 1.6 | 3.9 | 8.1 | 13.7 | 19.7 | 21.5 | 20.5 | 19.4 | 18.2 | 17.1 | 15.8 | 13.6 | 11.4 | 9.1 | 6.8 |
| Gross profit | - | - | - | - | 4.8 | 74.5 | 153.0 | 260.9 | 373.5 | 409.0 | 390.0 | 368.7 | 346.4 | 324.0 | 299.6 | 258.2 | 216.2 | 172.7 | 129.6 |
| *Gross margin* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *75.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* | *95.0%* |
| Operating expenses: | | | | | | | | | | | | | | | | | | | |
| Research and development | 1.2 | 1.0 | 11.4 | 9.2 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| General and administrative | 0.8 | 1.6 | 5.0 | 6.0 | 10.5 | 21.0 | 21.6 | 22.3 | 22.9 | 23.6 | 24.3 | 25.1 | 25.8 | 26.6 | 27.4 | 28.2 | 29.1 | 29.9 | 30.8 |
| Sales and marketing | - | - | - | - | 15.0 | 52.5 | 61.8 | 63.7 | 65.6 | 67.5 | 69.6 | 71.6 | 73.8 | 76.0 | 78.3 | 80.6 | 83.1 | 85.5 | 88.1 |
| Purchase of in-process research and development | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total operating expenses | 2.0 | 2.6 | 16.4 | 15.2 | 30.5 | 78.5 | 88.4 | 90.9 | 93.5 | 96.2 | 98.9 | 101.7 | 104.6 | 107.6 | 110.7 | 113.9 | 117.1 | 120.5 | 124.0 |
| Operating income (loss) | (2.0) | (2.6) | (16.4) | (15.2) | (25.7) | (4.0) | 64.6 | 170.0 | 280.0 | 312.8 | 291.1 | 267.0 | 241.8 | 216.4 | 188.9 | 144.4 | 99.1 | 52.2 | 5.7 |
| Interest income | - | 0.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Interest expense | - | (0.1) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Change in fair value of preferred stock purchase right | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Change in fair value of warrant liability | - | 0.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Grant income | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total other income (expense) | (0.0) | (0.2) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Income before taxes | (2.0) | (2.8) | (16.4) | (15.2) | (25.7) | (4.0) | 64.6 | 170.0 | 280.0 | 312.8 | 291.1 | 267.0 | 241.8 | 216.4 | 188.9 | 144.4 | 99.1 | 52.2 | 5.7 |
| Taxes | - | - | - | - | - | - | 19.4 | 68.0 | 112.0 | 125.1 | 116.4 | 106.8 | 96.7 | 86.6 | 75.6 | 57.8 | 39.6 | 20.9 | 2.3 |
| *Tax rate* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *0.0%* | *30.0%* | *40.0%* | *40.0%* | *40.0%* | *40.0%* | *40.0%* | *40.0%* | *40.0%* | *40.0%* | *40.0%* | *40.0%* | *40.0%* | *40.0%* |
| Net income (loss) | (2.0) | (2.8) | (16.4) | (15.2) | (25.7) | (4.0) | 45.2 | 102.0 | 168.0 | 187.7 | 174.7 | 160.2 | 145.1 | 129.8 | 113.4 | 86.6 | 59.4 | 31.3 | 3.4 |
| Earnings (loss) per share | | | | | | | | | | | | | | | | | | | |
| Basic | $ (1.79) | $ (1.20) | $ (2.69) | $ (1.19) | $ (1.95) | $ (0.30) | $ 3.24 | $ 7.10 | $ 11.38 | $ 12.38 | $ 11.22 | $ 10.03 | $ 8.87 | $ 7.75 | $ 6.60 | $ 4.93 | $ 3.31 | $ 1.70 | $ 0.18 |
| Diluted | $ (1.79) | $ (1.20) | $ (2.69) | $ (1.19) | $ (1.95) | $ (0.30) | $ 3.08 | $ 6.76 | $ 10.84 | $ 11.81 | $ 10.72 | $ 9.60 | $ 8.49 | $ 7.42 | $ 6.33 | $ 4.74 | $ 3.18 | $ 1.64 | $ 0.17 |
| Weighted-average shares outstanding | | | | | | | | | | | | | | | | | | | |
| Basic | 1.1 | 2.4 | 6.1 | 12.8 | 13.2 | 13.6 | 14.0 | 14.4 | 14.8 | 15.2 | 15.6 | 16.0 | 16.4 | 16.8 | 17.2 | 17.6 | 18.0 | 18.4 | 18.8 |
| Diluted | 1.1 | 2.4 | 6.1 | 12.8 | 13.2 | 13.6 | 14.7 | 15.1 | 15.5 | 15.9 | 16.3 | 16.7 | 17.1 | 17.5 | 17.9 | 18.3 | 18.7 | 19.1 | 19.5 |

## Analyst Certification

I, Ben Haynor, CFA, certify that the views expressed in this research report accurately reflect my personal views about the subject company and its securities. I also certify that I have not been, am not, and will not be receiving direct or indirect compensation related to the specific recommendations expressed in this report.

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Buy: The stock is expected to have total return potential of at least 10%. Near term catalysts may not exist and the common stock needs further time to develop. Investors requiring time to build positions may consider current levels attractive.
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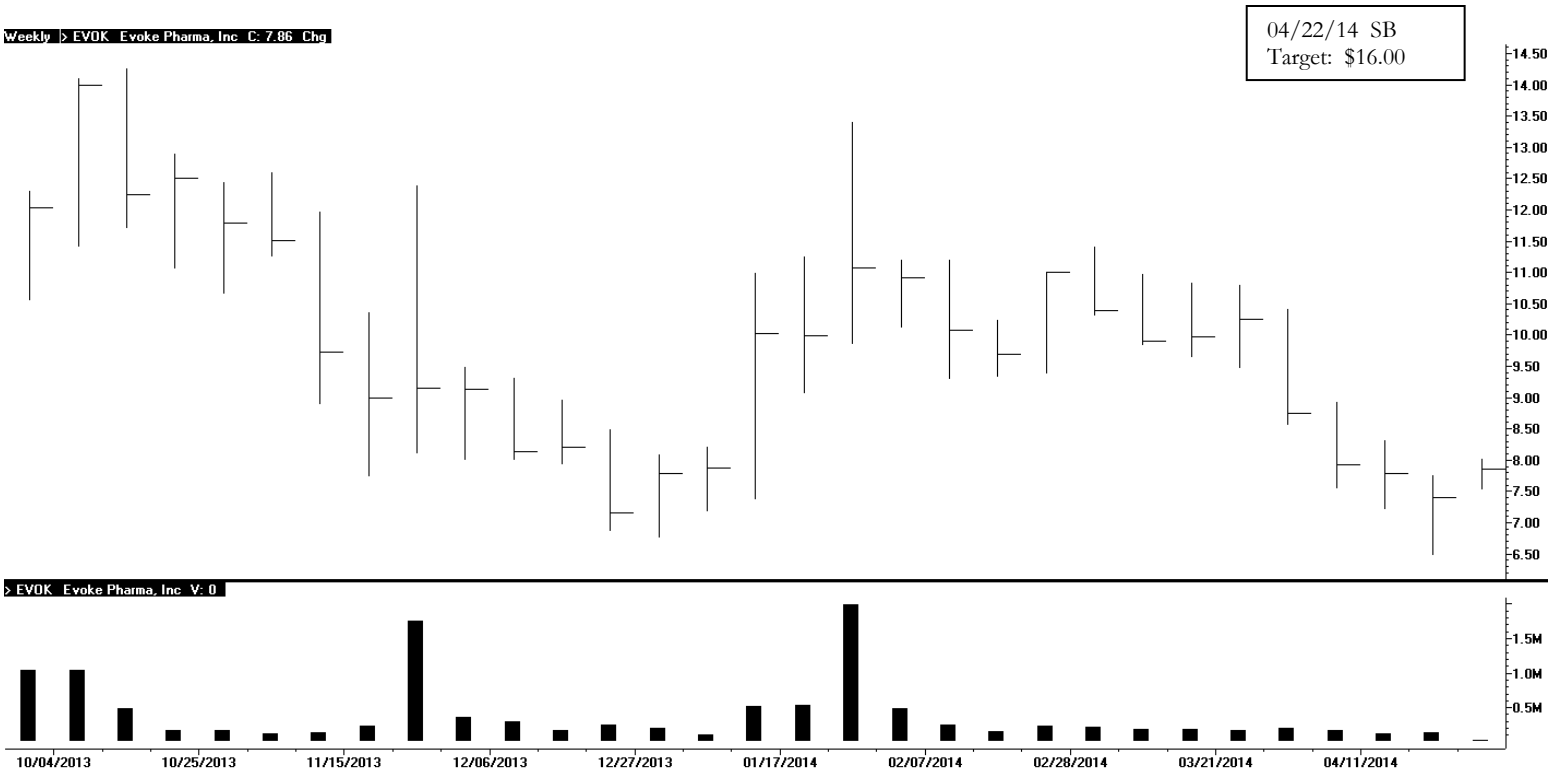
4/22/2014

Ratings Distribution for Feltl and Company

| | | | ------ Investment Banking ------ | |
|---|---|---|---|---|
| Rating | Number of Stocks | Percent of Total | Number of Stocks | Percent of Rating category |
| SB/Buy | 47 | 64% | 9 | 20% |
| Hold | 23 | 32% | 0 | 0% |
| Sell | 3 | 4% | 0 | 0% |
| | 73 | 100% | 9 | 13% |

The above represents our ratings distribution on the stocks in the Feltl and Company research universe, together with the number in (and percentage of) each category for which Feltl and Company provided investment-banking services in the previous twelve months.




| Date | Nature of Report | Rating | Price Target |
|---|---|---|---|
| 04/22/14 | Initiation@ 7.86 | StrongBuy | $16.00 |
| | | | |
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Feltl and Company does make a market in the subject security at the date of publication of this report. As a market maker, Feltl and Company could act as principal or agent with respect to the purchase or sale of those securities.

Valuation and Price Target Methodology:

Our valuation is based upon an discounted cash flow methodology. Our DCF implies a $24.00 price target, which we have discounted by a third based upon our estimated two-in-three chance EVK-001 gains FDA approval. After discounting for the likelihood of approval we arrive at a $16.00 price target. This represents a ~$75 million enterprise value or ~1.0x EV/sales based on our 2017 revenue estimate.

Risks to Achievement of Estimates and Price Target:

Trial fails to show significance. With only EVK-001 in development, it is virtually guaranteed that investors will face substantial losses should it fail in the upcoming Phase 3 trial. Evoke would either need to go back to the drawing board and conduct additional trials or would be forced to abandon EVK-001. At present, Evoke does not have any other drugs in its pipeline, and while management has evaluated other potential opportunities to add to the pipeline, nothing has been added. Thus, our thesis currently rests on the successful approval of EVK-001, there is no pipeline to provide a backstop to an unfavorable result in the Phase 3 study. While EVK-001 showed efficacy in women in the Phase 2b study, men exhibited a strong placebo response, if this should occur in the Phase 3 trial amongst women, it is likely the EVK-001 will fail.

Competition from lower-priced generic versions of metoclopramide. Oral versions of metoclopramide are available from a variety of manufacturers for less than $1/day. Other indications where alternate delivery mechanisms are available have not seen a great deal of uptake from new delivery

formulations outside of gastroparesis. However, the difficulties of delivering drugs orally for treatment of gastroparesis is a unique case, given the disorder's symptoms. We would consider EVK-001 a special case due to this issue, but there is no guarantee payors will see the situation the same way.

Side effect concerns. Metoclopramide is currently subject to a black box warning on tardive dyskinesia (TD), a disorder characterized by involuntary, repetitive, purposeless body movements, usually facial. We expect EVK-001 to be subject to the same black box treatment if it gains approval. While it is unclear exactly what causes TD, using metoclopramide for extended periods has been shown to cause TD in a small proportion of patients. National guidelines have suggested occurrence in 1%-10% of patients; however, a 2010 study found less than 1% of metoclopramide users develop TD. Evoke did not find any instances of TD in their 267 patient Phase 2b study in or any other studies conducted on intranasal metoclopramide. EVK-001's delivery mechanism should remove the situation where a metoclopramide user takes multiple oral doses, which are then released into the intestines in a bolus, exposing the patient to a large dose at once. We speculate this bolus of drug has a higher likelihood of causing TD over time.

Likely to require additional capital following release of Phase 3 results. Exiting 2013, Evoke had $24.2 million in cash. Based upon our estimates of the Phase 3 study costs and other expenses, we believe current funding will take them through the release of top-line data on EVK-001, but the company would then require additional funding to file the NDA and bring the drug to market.

Please see the company's SEC filings for additional discussion on risks.

Other Disclosures:

The information contained in this report is based on sources considered to be reliable, but not guaranteed, to be accurate or complete. Any opinions or estimates expressed herein reflect a judgment made as of this date, and are subject to change without notice. This report has been prepared solely for informative purposes and is not a solicitation or an offer to buy or sell any security. The securities described may not be qualified for purchase in all jurisdictions. Because of individual requirements, advice regarding securities mentioned in this report should not be construed as suitable for all accounts. This report does not take into account the investment objectives, financial situation and needs of any particular client of Feltl and Company. Some securities mentioned herein relate to small speculative companies that may not be suitable for some accounts. Feltl and Company suggests that prior to acting on any of the recommendations herein, the recipient should consider whether such a recommendation is appropriate given their investment objectives and current financial circumstances. Past performance does not guarantee future results. Additional information is available upon request.

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