

## Equity Research

### Flexion Therapeutics, Inc.

FLXN: Initiating Coverage with an Outperform Rating

**Outperform / V**

Sector: Specialty Drugs

Market Weight

#### Initiation of Coverage

• **Summary: We are initiating coverage of Flexion Therapeutics (FLXN) with an Outperform rating and a valuation range of \$24-26.** We believe that FLXN is well positioned with its lead product FX006 to become a significant player in the large and growing market opportunity for intra-articular treatment of osteoarthritis (OA) pain. FX006 is a sustained-release injectable formulation of a common steroid currently administered in an immediate release (IR) formulation. In Phase 2b data, FX006 demonstrated significantly greater and more durable pain relief than IR steroid, in a head-to-head comparison. These data position FX006 to address an unmet medical need in OA pain treatment, for an efficacious, durable treatment with acceptable side effects. FX006 plans to begin a confirmatory Phase 2b study this year, with data expected in H1 2015 and estimated launch in 2017. We believe that the product can reach \$1.1B in peak sales in 2024E. FLXN also has two pipeline products that are in earlier stages of development, which we treat as free options in our model. Our valuation range of \$24-26 is DCF based.

• **FX006 can capitalize on a large and growing market opportunity in OA.** There are approximately 12 million OA knee patients in the United States, and the population is growing at about 2.9% per year. We believe that this will remain a large and growing market opportunity for years to come, due to demographic factors including aging of the population and obesity.

• **Potential for FX006 to address unmet medical need.** Currently available therapies to treat OA knee pain have significant shortcomings in either safety, or efficacy. There is an unmet medical need for a treatment that provides efficacious and durable pain relief, with minimal side effects. We believe that FX006 has the potential to address this need.

• **Self-commercialization and strong revenue growth could drive operating margin expansion.** FLXN plans to commercialize FX006 in the United States without a marketing partner, by establishing a sales force of approximately 60-100 representatives. The associated modest and relatively fixed selling expense, combined with strong revenue growth and high gross margin, could lead to rapid operating margin expansion.

• **FX007 and FX005 pipeline candidates represent free options in our model.** FLXN is developing two other pipeline candidates, FX007 for post-operative pain and FX005 for end-stage OA pain. We have excluded revenue for these products from our model, due to their earlier stages of development, and success of these programs could potentially provide upside to our model.

#### Valuation Range: \$24.00 to \$26.00 from NA to NA

Our valuation range of \$24-\$26 is DCF-based and assumes WACC=15% and no terminal value. Risks to our valuation pertain to FLXN's ability to successfully develop and commercialize FX006, including product concentration, clinical, regulatory, commercial, intellectual property, and future financing risk.

#### Investment Thesis:

We believe that FX006 can generate strong revenue and earnings growth due to 3 key positives: a large and growing market opportunity in OA; the potential to address an unmet medical need; and the opportunity for self-commercialization and strong revenue growth to drive operating margin expansion.

**Please see page 33 for rating definitions, important disclosures and required analyst certifications**

**All estimates/forecasts are as of 03/10/14 unless otherwise stated.**

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	2012A	2013E	2014E		
EPS		Curr. Prior	Curr. Prior		
Q1 (Mar.)	NE	(0.48) A	NE	(0.47)	NE
Q2 (June)	NE	(0.49) A	NE	(0.55)	NE
Q3 (Sep.)	NE	(0.52) A	NE	(0.67)	NE
Q4 (Dec.)	NE	(0.46)	NE	(0.81)	NE
FY	(2.04)	(1.94)	NE	(2.52)	NE
CY	(\$2.04)	(\$1.94)	NE	(\$2.52)	NE
FY P/E	NM	NM		NM	
Rev.(MM)	NE	NE		NE	

Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters  
NA = Not Available, NC = No Change, NE = No Estimate, NM = Not Meaningful  
V = Volatile, \* = Company is on the Priority Stock List

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Ticker	FLXN
Price (03/07/2014)	\$19.26
52-Week Range:	\$14-21
Shares Outstanding: (MM)	14.7
Market Cap.: (MM)	\$283.1
S&P 500:	1,878.04
Avg. Daily Vol.:	0
Dividend/Yield:	\$0.00/0.0%
LT Debt: (MM)	\$5.0
LT Debt/Total Cap.:	27.0%
ROE:	NM
3-5 Yr. Est. Growth Rate:	NM
CY 2014 Est. P/E-to-Growth:	NM
Last Reporting Date:	09/30/2013

Source: Company Data, Wells Fargo Securities, LLC estimates, and Reuters

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Together we'll go far





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## Company Description

Flexion Therapeutics, Inc. is a development stage specialty pharmaceutical company, focused on osteoarthritis (OA) pain treatments. The lead product candidate, FX006, is a sustained-release intra-articular steroid injection in Phase 2b trials for the treatment of moderate to severe OA pain in the knee. FLXN is also developing FX007 for post-operative pain, and FX005 for end stage OA pain.

## Investment Thesis Summary

**We are initiating coverage of FLXN with an Outperform rating and a valuation range of \$24-26.** Our investment thesis is driven by the following key points, **all related to the company's lead product, FX006**, which is in Phase 2b clinical trials for use as a long-acting injectable treatment for osteoarthritis (OA) of the knee.

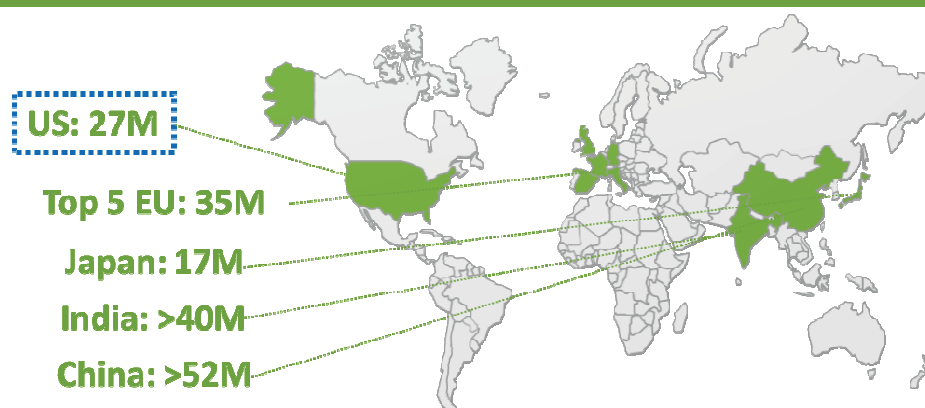
- (1) Large and growing market opportunity in OA.** There are approximately 12 million OA knee patients in the United States, and the population is growing at about 2.9% per year. We believe that this will remain a large and growing market opportunity for years to come, due to demographic factors including aging of the population and obesity.
- (2) Potential to address unmet medical need.** We believe currently available therapies to treat OA knee pain have significant shortcomings in either safety, or efficacy. There is an unmet need, in our view, for a treatment that provides efficacious and durable pain relief, with minimal side effects. We believe that FX006 has the potential to address this need.
- (3) Self-commercialization and strong revenue growth could drive operating margin expansion.** FLXN plans to commercialize FX006 in the United States without a marketing partner, by establishing a sales force of approximately 60-100 representatives. The associated modest and relatively fixed selling expense, combined with strong revenue growth and high gross margin, could lead to rapid operating margin expansion.

## Large Market Opportunity

Osteoarthritis is a large patient population affecting more than 100 million patients globally, with about 27 million in the United States. Of those 27 million in the United States, approximately 12 million patients have symptomatic knee OA. Demographic factors including aging and obesity are driving OA growth.

### Exhibit 1. More Than 12 Million People In The United States Have Symptomatic Knee OA

> 100 Million Symptomatic OA patients in the 5 major markets



- Obesity, sports injuries, & aging drive prevalence (67MM in US with OA by 2030E)
- Of the 27M patients in the US with OA, **12M have symptomatic knee OA**
- Medical treatment inadequate as many patients ultimately require total knee replacements (TKR) – 1M TKR's estimated in 2015

Source: Company data, Wells Fargo Securities, LLC

We estimate that symptomatic knee OA patients will increase to about 16.4 million by 2022. Based on the current volume of about 3.3 million TCA IR injections per year in the United States, we believe this equates to a market opportunity of more than \$2 billion by 2024E, which is our forecast peak year. This estimate assumes a price of \$500 per injection.

**Exhibit 2. We Expect Symptomatic Knee OA Patients To Increase To 16.4 Million By 2024E**

	Currently	Forecast Peak (2024)
Symptomatic OA Patients	27 million	38.1 million
Knee OA Patients	12 million	16.4 million
TCA IR injections (Knee)	3.3 million	4.5 million
Market Opportunity (@\$500/injection)	\$1.7 billion	\$2.3 billion

Source: Company data, Wells Fargo Securities, LLC estimates

**Potential to Address Unmet Medical Need**

**Currently available therapies to treat osteoarthritis of the knee have serious shortcomings in either safety, or efficacy, in our view.** Most of the orally available therapies including acetaminophen have limited efficacy as measured by pain relief. NSAIDs (non-steroidal anti-inflammatory drugs, such as naproxen) and COX II inhibitors (such as Celebrex) can put patients at risk for cardiovascular issues or gastrointestinal bleeding. While opioids can work well at reducing pain, they can cause adverse effects such as addiction or increased risk of fracture.

**Intra-articular injections can provide advantages over oral therapies, but still have significant shortcomings.** The two primary forms of intra-articular (IA) or joint injection therapy available today are immediate release steroids and hyaluronic acid (HA). IR steroids can provide reasonable initial efficacy in some patients, but often wane in efficacy, over time periods that vary by patient and by number of injections a patient has received, but often beginning after 2-4 weeks. HA injections work for some patients, but have overall weak efficacy for many, in our view. In fact, the American Academy of Orthopaedic Surgeons (AAOS) removed its recommendation for use of the products last year based on limited efficacy. This is despite FDA approval and the availability of HA products on the market for years.

**Exhibit 3. Current OA Therapies—Inadequate, in our view, with Serious Side Effects**

Type	Efficacy	Toxicity
<b>Oral:</b>	Acetaminophen	Limited pain relief Liver/GI
	NSAIDs	Limited pain relief • GI bleeding • Cardiovascular
	COX II inhibitors	Limited pain relief Cardiovascular
	Duloxetine	Limited pain relief • Suicidality • Liver
	Opioids	Good pain relief • Addiction • Fracture (elderly)
<b>Intra-Articular: (joint injection)</b>	Steroids	Limited duration of effect (can wane after 2-4 weeks) Generally well tolerated
	Hyaluronic acid (HA)	AAOS does not recommend using HA because of lack of efficacy Generally well tolerated

**OA patients are in need of therapies that:**

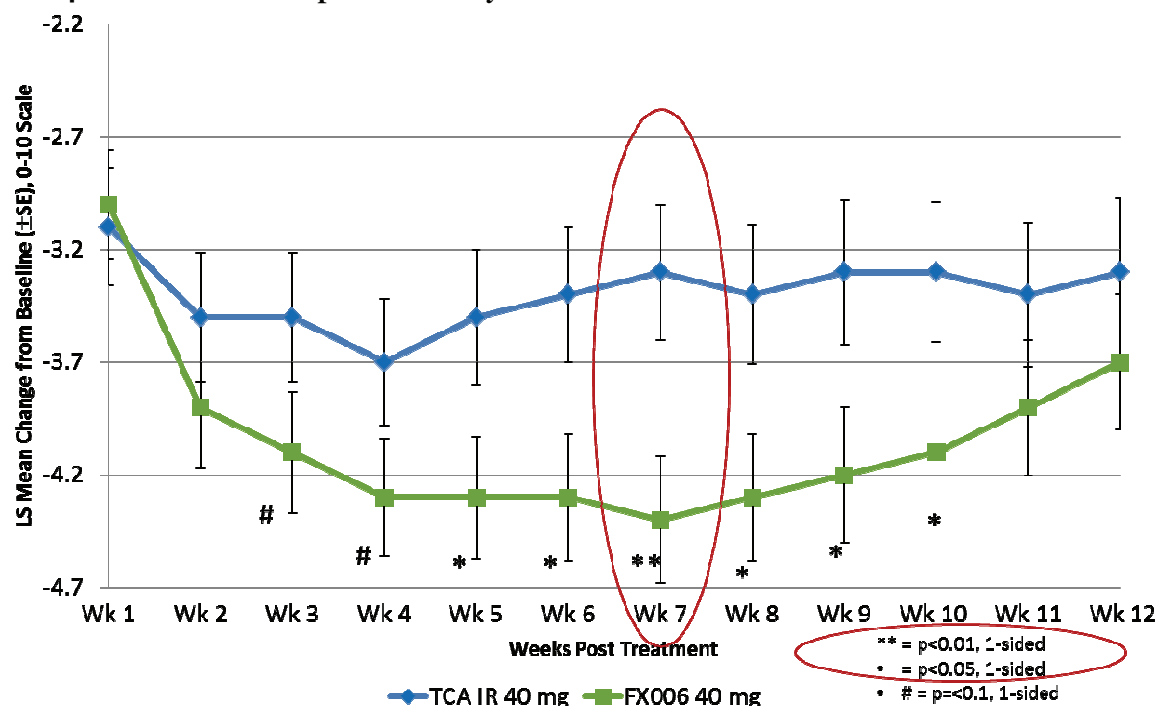
- Provide better and more sustained pain relief
- Avoid the risk of serious side effects

Source: Company data, Wells Fargo Securities, LLC

Results from the FX006's Phase 2b trial provide proof of concept that FX006 may be able to provide longer, better pain relief than immediate release steroid. Exhibit 4 compares the weekly average mean change from baseline of pain as measured on the patient reported 0-10 Numeric Pain Rating Scale over a 12-week period. In the following exhibit, the results of FX006 (40 mg dosing) are compared to those of TCA IR 40mg, which is one of the standard intra-articular steroid injections given to patients with OA of the knee.

The results show that in a head-to-head comparison with TCA IR, Fx006 appears to demonstrate superior magnitude and durability of efficacy. Specifically, at week 7, FX006 reduced by pain by approximately 4.3 points, compared to a 3.3 point reduction with TCA IR. The pain reduction was statistically significant at each week from weeks 5 to 10, with separation from TCA IR remaining until week 12, the last week measured.

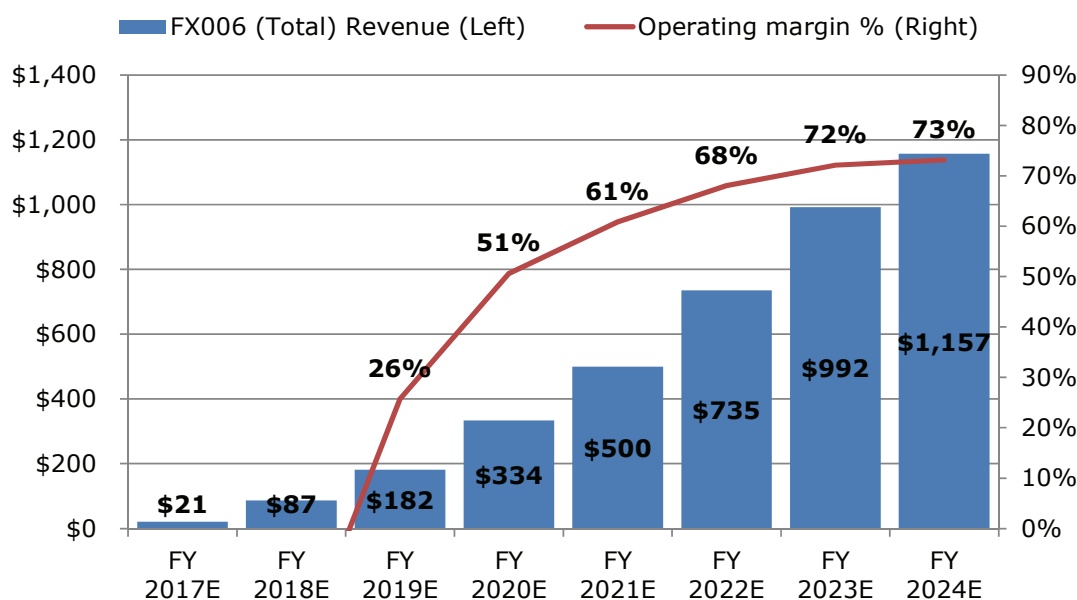
Exhibit 4. FX006 Showed Superior Efficacy to IR TCA in Phase 2b



Source: Company data, Wells Fargo Securities, LLC

## Self-commercialization and Strong Revenue Growth Could Drive Operating Margin Expansion

Flexion plans to commercialize FX006 itself by establishing a sales force of about 60-100 representatives for this product. The modest and relatively fixed selling expense associated with the sales force, coupled with potentially high gross margin (more than 90%) could lead to operating rapid margin expansion. Assuming a late-2017 launch, we estimate operating margin into the 60s and rising to more than 70% by 2024E, with peak sales at about \$1.1 billion.

**Exhibit 5. FX006 Can Drive Significant Operating Margin Expansion Potential**

Note: FY2017E operating margin is negative.

Source: Company data, Wells Fargo Securities, LLC estimates

**Investment Risks**

**Product Concentration.** FX006, which is currently in Phase 2 trials, is the company's lead product candidate. The other pipeline candidates, FX007 (preclinical) and FX005 (Phase 2a) are at earlier stages of development and farther away from potential commercialization. Therefore, the near-term success of the company is highly dependent on the success of FX006. As such, Flexion resources are concentrated on FX006. If FX006 is unable to reach the commercialization stage, Flexion may not be able to obtain the resources to further develop the remaining pipeline candidates.

**Clinical Risk.** Flexion still has multiple clinical trials remaining before NDA submission for FX006. These include the following: (1) Confirmatory Phase 2b; (2) Repeat dose and safety study; and (3) two pivotal Phase 3 trials. If FX006 does not meet primary efficacy endpoints or demonstrate an acceptable safety profile in any of these upcoming trials, that could be a material obstacle to eventual commercialization. Additionally, for the remaining trials, the Food and Drug Administration (FDA) has requested a placebo instead of active comparator, which could alter the statistical significance of the outcome compared to the Phase 2b trial, which was done with an active comparator.

**Regulatory Risk.** As mentioned, there are still multiple clinical trials remaining for FX006 before NDA submission, and therefore, there is also regulatory risk remaining. If the FDA decides that there are issues with clinical trial design or with results from the clinical trials, the regulator can request additional studies prior to approval. Additionally, Flexion plans to pursue a 505(b)(2) filing, which allows the company to reference previously established data from the clinical studies of other companies. If at some point in the future the FDA decides that Flexion cannot use the 505(b)(2) pathway to approval for FX006, then that would likely result in additional clinical studies, material expenditure, and a delay in time to commercialization.

**Commercial Risk.** The eventual commercial success of FX006 is highly dependent on the product's pricing and reimbursement by payers such as managed care organizations. Given that the incumbent product, immediate release TCA, has been on the market for many years and is relatively inexpensive, FX006 must demonstrate clinical differentiation to enable premium pricing. At this time, it is difficult to determine whether the results from the completed Phase 2b clinical trial will readily translate into a clinically meaningful benefit for patients and encourage physicians to prescribe FX006 and payers to reimburse patient costs at premium pricing levels.

**Future Financings Required.** Flexion does not have enough cash to fund the development of FX006 through commercialization. The capital from the IPO should fund the company only until about mid-2015. It is anticipated that additional capital will be required to fund the two pivotal Phase 3 trials and the launch of FX006. We estimate that three more rounds of capital raises will be needed to fund FLXN through commercialization of FX006 and to cash flow positive status. If at any time Flexion is unable to obtain the capital needed to fund the operations of the company, that would pose a material risk to the advancement of FX006 to commercialization, and therefore, affect the valuation of FLXN stock.

**Intellectual Property Not Yet Issued.** While patent applications have been filed in both the United States and the European Union with potential patent coverage until 2031, there are currently no issued patents for FX006 in the United States or the European Union. If Flexion is unable to secure patents protecting the composition of matter, method of use, and method of manufacture around its lead product candidate FX006, then that would pose significant risk to its commercialization strategy. In the event that competition enters the market earlier than expected and prevents premium pricing of FX006 or prevents FX006 from achieving expected levels of market share, that could materially adversely affect the commercialization of FX006 and therefore, the valuation of the company. Separately, in the event that the patents are issued, the claims ultimately granted could still leave room for competing products to reach the market and reduce sales and profit of FX006.

## Company Overview

### Company Background

**Flexion Therapeutics, Inc. is a development stage specialty pharmaceutical company focused on treatments for osteoarthritis (OA) pain.** The company's product pipeline addresses the OA pain treatment spectrum from moderate to severe pain. The lead product candidate, FX006, is an intra-articular injection of sustained release steroid, i.e., triamcinolone acetonide (TCA), which is in Phase 2b trials for the treatment of moderate to severe OA pain in the knee. Additionally, the company is developing FX007 (preclinical) for the treatment of post-op pain and FX005 (Phase 2a) for the treatment of OA end stage pain.

**Flexion was founded in 2007 by prior Eli Lilly management with seed capital from Versant Ventures.** Flexion was incorporated in Delaware in November 2007 and has principal executive offices in Burlington, Massachusetts. The company's two co-founders, CEO Mike Clayman, MD and CMO Neil Bodick, MD, PhD were previously at Eli Lilly and have extensive pharmaceutical development experience. The company was funded with initial seed capital of \$3 million from Versant Ventures. Since then, Flexion has raised about \$80 million in private equity via issuing convertible preferred stock. The most recent round was done in December 2012, where \$20 million of Series B convertible preferred stock was issued to Versant Ventures, Sofinnova Partners, 5AM Ventures, Pfizer, and Novo A/S. Novo A/S was the new addition to the VC list as the others have continued to invest in Flexion since the first issuance of Series A preferred stock in October 2009. Subsequently, Flexion completed its IPO for \$75 million (plus a 15% over-allotment option was exercised) in February 2014, which included participation by all five pre-IPO outside investors.

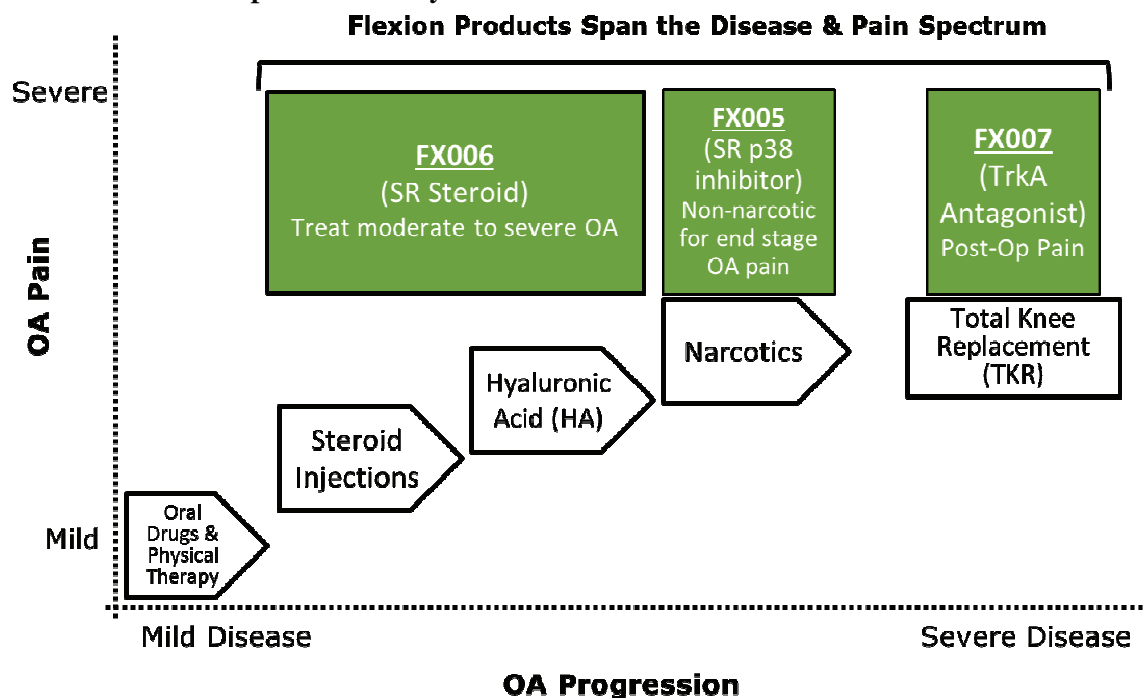
### Product Pipeline Summary

**Flexion's pipeline consists of three injectable products serving the spectrum of moderate to severe OA pain** (summarized in following exhibit). FX006 is the lead product candidate and the asset is at the core of the investment analysis.

- **FX006 is a corticosteroid formulated as a sustained-release injection** that aims to improve on existing immediate release (IR) steroids and hyaluronic acid (HA) injections, which are current joint injection therapies used in the treatment of OA of the knee.
- **FX007 is being developed for post-operative pain** and is scheduled to begin clinical trials in 2014.
- **FX005 is a novel non-narcotic candidate for end-stage OA pain**, which has proof of concept, but is being de-prioritized, due to resource allocation.



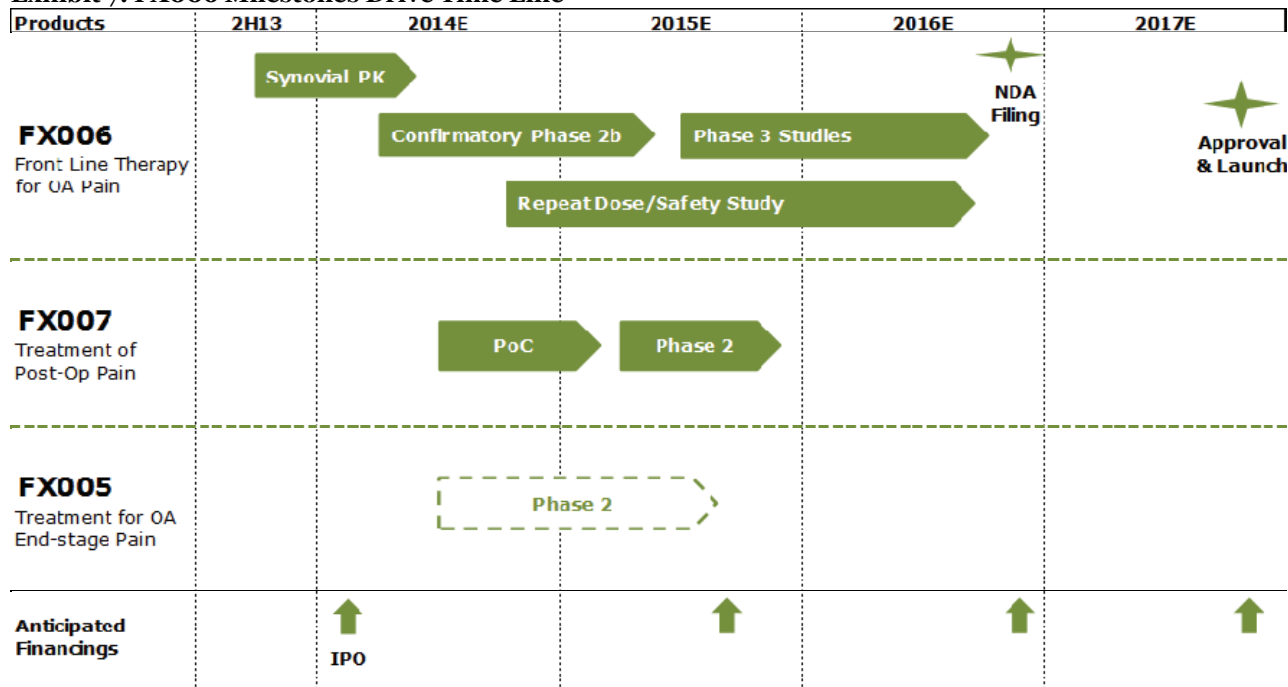
Exhibit 6. Product Pipeline Is Led by FX006



Source: Company data, Wells Fargo Securities, LLC

In **Exhibit 7**, we show a summary of the development time lines for the three pipeline products. FX006, the lead product, is scheduled to begin a confirmatory Phase 2b study in the first half of 2014 as part of an overall plan to reach the market in late 2017.

Exhibit 7. FX006 Milestones Drive Time Line



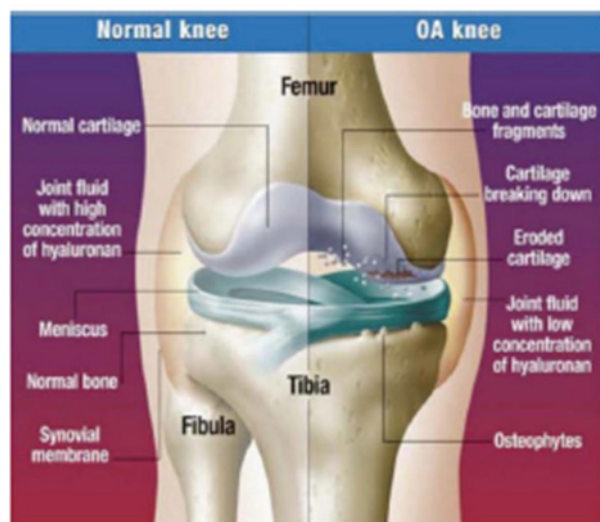
Source: Company data, Wells Fargo Securities, LLC

## FX006

**FX006 is a sustained release formulation of triamcinolone acetonide (TCA) being studied to treat moderate to severe OA knee pain.** TCA is the same active ingredient that has been on the market for years in an IR formulation; FLXN is studying it encapsulated in a PLGA microsphere formulation that provides the sustained release profile, intended for up to 12 weeks of efficacy. The microspheres allow for sustained therapeutic concentrations in the intra-articular space, which suggests the potential for prolonged efficacy, while maintaining low systemic concentrations, which results in the absence of systemic side effects seen thus far in studies. Given that TCA IR is a longstanding marketed steroid, Flexion is planning to use the 505(b)(2) registration pathway, which allows for a shorter time frame for clinical development. The company also sees potential for multiple other musculoskeletal indications.

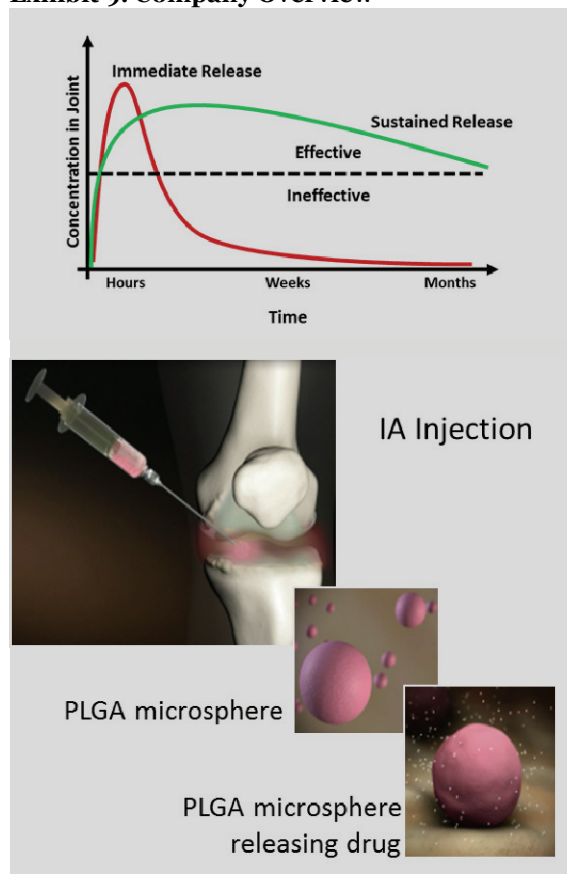
**The following exhibits depict** (a) on the left, a schematic diagram of osteoarthritis, and (b) on the right, a diagram illustrating the sustained release concept of FX006 with respect to OA pain reduction over time, and schematics of a an FX006 joint injection and of the PLGA microspheres that encapsulate and deliver TCA in FX006.

## Exhibit 8. Osteoarthritis Overview



Source: Company data, Wells Fargo Securities, LLC

## Exhibit 9. Company Overview



Source: Company data, Wells Fargo Securities, LLC

**FX006 is the company's key focus and primary value driver, in our view.** FX006 is scheduled for a series of trials from 2014 to 2016, with a goal of 2017 approval and launch. Flexion has generated encouraging Phase 2b data in a head-to-head trial with TCA IR.

**FDA has communicated to the company that it will require a placebo-controlled phase 2b confirmatory study,** and placebo controls in Phase 3, rather than an active comparator study. We believe that this requirement is not surprising and could be driven by two factors: (1) FDA's view of placebo-controlled studies as the gold standard for approval studies and (2) the dearth of placebo-controlled data for IR TCA, thus raising uncertainty about IR TCA as a baseline for comparison.

**In our view, this requirement to switch to placebo-controlled studies introduces a mix of risk and risk mitigation**, and on balance, positions the clinical/regulatory risk profile of FX006 between that of a typical Phase 2 candidate and a typical Phase 3 candidate.

**The trial design change adds risk in the near term.** One cannot be certain of how the statistical significance calculations will play out in a placebo study, as opposed to the prior active comparator study. The extent of a placebo effect that will occur in the placebo arm is unknown and is particularly of relevance in a study like this, with patient-reported pain endpoints. Furthermore, it is possible that the existence of a placebo arm could affect pain score reporting by patients in the active arm of the study, potentially causing under-reporting of FX006 efficacy since patients are aware of the possibility of receiving a placebo, which could adversely affect the demonstrated statistical superiority of FX006 to placebo.

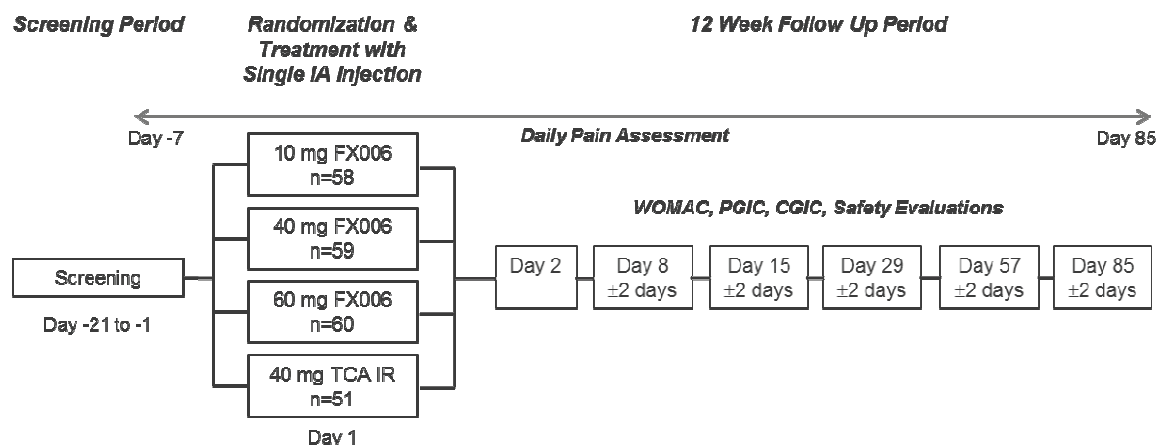
**On the other hand, the placebo-controlled design could represent a lower hurdle for FX006 than active comparator**, positioning FX006 well for success in the coming trials. It is not common for a company to have positive data versus active comparator at this stage.

**On balance**, we think the mix of risks and mitigation afforded by the trial design change position FX006's clinical/regulatory risk profile below that of a typical Phase 2 drug (which would normally not have active comparator data before running a placebo-controlled Phase 2b, as does FX006), but higher than that of a typical Phase 3 drug (which would normally be progressing to Phase 3 with the benefit in hand of a successful Phase 2 trial with a similar trial design). Therefore in our model, we assign a probability of clinical and regulatory success to FX006 of 50-60%, between the 20-30% commonly seen for Phase 2 drugs and the 75-85% often seen for Phase 3 drugs.

#### Phase 2b Clinical Trial Design

**The FX006 Phase 2b trial was a multi-center, randomized, double-blind, dose-ranging study comparing three doses of FX006 10 mg, 40mg, and 60mg, with TCA IR active comparator.** The trial design is summarized in Exhibit 10.

**Exhibit 10. FX006 – Phase 2b Trial Design – 12-week study comparing FX006 (10, 40, 60 mg) to TCA IR (40 mg)**

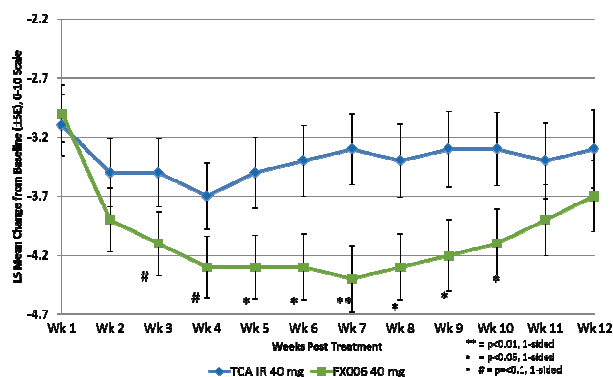


Source: Company data, Wells Fargo Securities, LLC

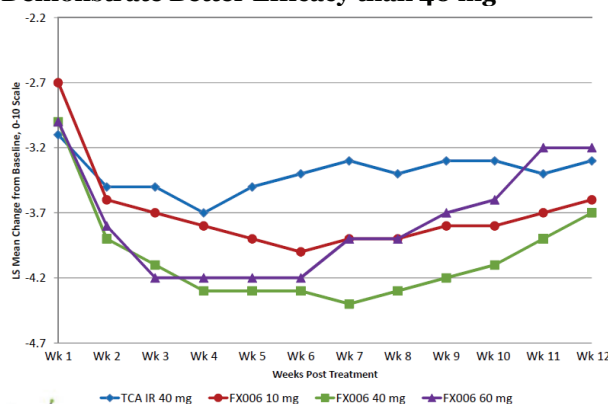
Inclusion criteria included age  $\geq 40$ , diagnosis of OA of the knee for at least six months prior to screening, with confirmation according to ACR classification criteria based on an X-ray within six months of screening, and qualifying mean score on the 24-hour average pain score (0-10 numeric rating scale). Each patient was randomized to be treated with a single IA injection of 10, 40, or 60 mg of FX006, or 40mg of TCA IR. The patients were then evaluated for 12 weeks following the injection, with measurements taken at Day 1 (baseline), 2, 8, 15, 29, 57, and 85. The primary endpoint was changed in baseline to each of weeks 8, 10, and 12 in the weekly mean of the average daily pain intensity score. Secondary endpoints included the Western Ontario and McMaster osteoarthritis index (WOMAC), patient global impression of change, clinical global impression of change, and safety evaluations.

## Phase 2b Clinical Data

The following exhibits contain highlights of FLXN's Phase 2b study for FX006.

**Exhibit 11. FX006 Showed Superior Efficacy to IR TCA in Phase 2b (both dosed at 40 mg)**

Source: Company data, Wells Fargo Securities, LLC

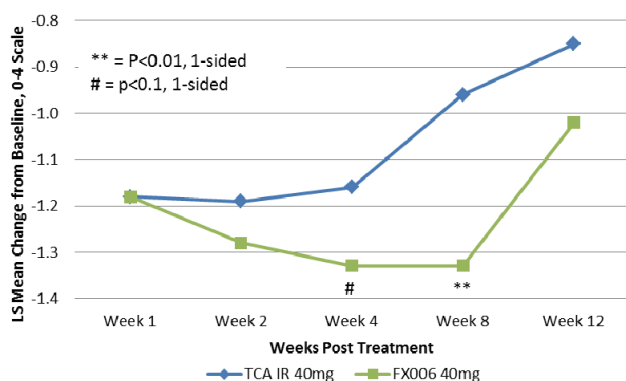
**Exhibit 12. Though 60 mg Dose Did Not Demonstrate Better Efficacy than 40 mg**

Source: Company data, Wells Fargo Securities, LLC

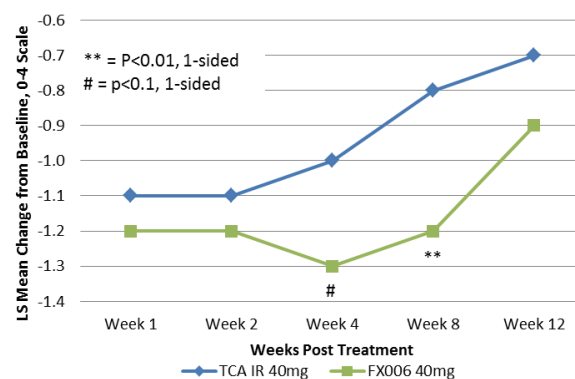
**Exhibit 11** (previously discussed in the investment thesis section of this report) shows FX006 efficacy at 40 mg dosing versus IR TCA. FX006 (40 mg) showed superior efficacy to IR TCA (40 mg), with statistical significance from weeks 5-10, and with numerical superiority in all other weeks from week 2-12.

**Exhibit 12** shows the efficacy of all three FX006 doses compared to IR TCA. As expected, the 10mg dose of FX006 demonstrated lower efficacy than the 40mg FX006; however, 10 mg FX006 showed directionally better efficacy than IR TCA after four weeks.

**A counterintuitive result in the study** was that the efficacy of the 60mg FX006 dose was comparable to the 40 mg dose up to week 6 and was numerically inferior to the efficacy of the 40 mg FX006 from weeks 7-12. FLXN believes that the lower efficacy of the 60mg dose was caused by the higher concentration of PLGA microspheres in the 60mg dose, which may have resulted in aggregation and accelerated degradation of the microspheres following injection, causing premature release of TCA. The study's statistical analysis assumed that the magnitude of pain relief would increase with dose, and since this was not the case, the primary endpoint (statistically superior efficacy to IR TCA at 12 weeks) was not achieved.

**Exhibit 13. WOMAC A (Pain)**

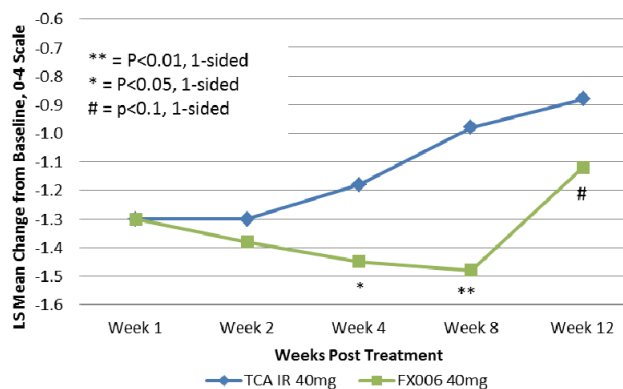
Source: Company data, Wells Fargo Securities, LLC

**Exhibit 14. WOMAC A1 (Pain on Walking)**

Source: Company data, Wells Fargo Securities, LLC

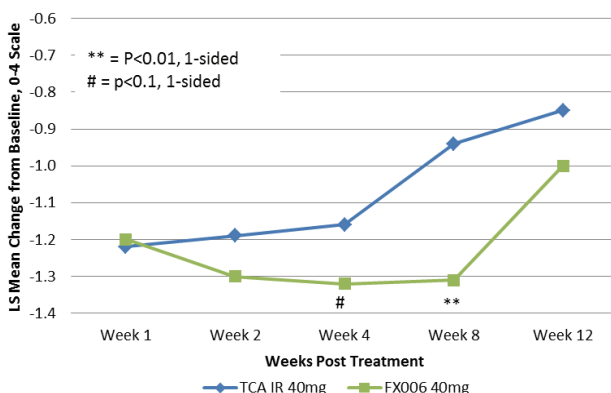
**Exhibit 13 and Exhibit 14 above** show that on both the WOMAC A (pain sub-score) and the WOMAC A1 (pain on walking) measurement, FX006 demonstrated a statistically significantly greater effect on reduction in pain versus TCA IR at week 8, though the effect seems to have waned thereafter.

Exhibit 15. WOMAC B (Stiffness)



Source: Company data, Wells Fargo Securities, LLC

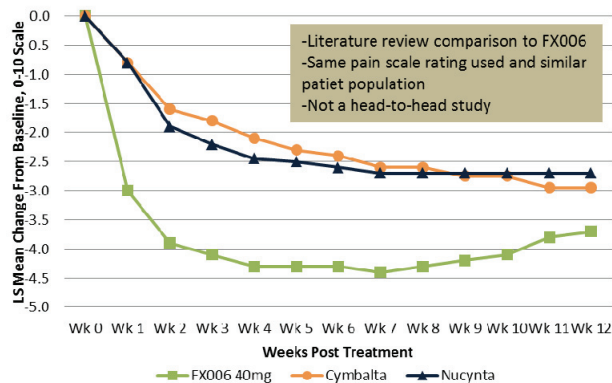
Exhibit 16. WOMAC C (Function)



Source: Company data, Wells Fargo Securities, LLC

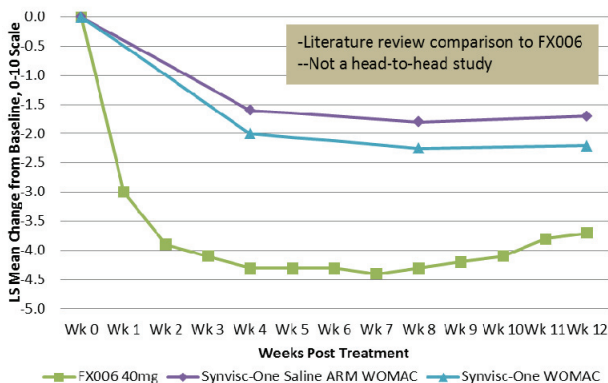
**Exhibit 15** shows that on the WOMAC B or stiffness sub-score, the effect of relief of FX006 was greater and statistically significantly versus TCA IR at week 4 and week 8, but the effect also waned thereafter. On the WOMAC C or function sub-score (**Exhibit 16**), FX006's greater effect was again statistically significant at week 8, but the effect also was not statistically significant to 12 weeks.

Exhibit 17. FX006 Comparisons to Other Marketed Analgesics



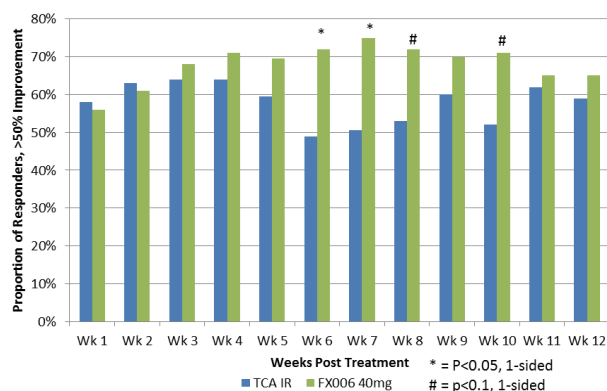
Source: Company data, Wells Fargo Securities, LLC

Exhibit 18. FX006 Comparison to Hyaluronic Acid (Synvisc-One Data)

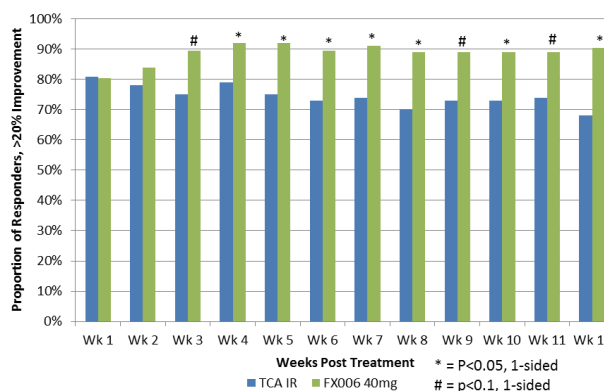


Source: Company data, Wells Fargo Securities, LLC

**Exhibit 17 and Exhibit 18** compare the weekly change from baseline on the 0-10 pain scale of FX006 with other marketed analgesics (left) and Synvisc-One, a marketed HA product (right), based on each respective compound's reported clinical trial results. The graph shows that FX006 appears to have a substantially greater effect on pain reduction than both marketed analgesics (Cymbalta and Nucynta) and Synvisc-One. However, we note that the above data were not from head-to-head studies, and these exhibits compare data from different trials with different designs, protocols, and patient populations (among other differences). Therefore, such a comparison is of limited use in drawing conclusions, but is incrementally encouraging in providing some context for the magnitude of FX006's activity in pain reduction.

**Exhibit 19. Proportions of Responders, > 50% Improvement**

Source: Company data, Wells Fargo Securities, LLC

**Exhibit 20. Proportions of Responders, > 20% Improvement**

Source: Company data, Wells Fargo Securities, LLC

**Exhibit 19 on the left** shows that the proportion of responders that had more than 50% improvement on FX006 was statistically significant at week 6 and week 7. **Exhibit 20 on the right** shows that the proportion of responders that had more than 20% improvement on FX006 was statistically significant from week 4 to week 8, and at week 10 and week 12. This is encouraging as the data imply that there is a durable effect of greater than 20% pain relief for a group of patients that could potentially last up to 12 weeks.

**Exhibit 21. FX006 Phase 2b – Summary of Adverse Events**

	FX006 10mg N=58 n (%)	FX006 40mg N=59 n (%)	FX006 60mg N=60 n (%)	TCA IR 40mg N=51 n (%)
# of Patients with at least 1 TEAE	27 (46.6)	33 (55.9)	34 (56.7)	28 (54.9)
# of Patients with at least 1 Serious TEAE	0	2 (3.4)*	1 (1.7)**	0
# of Patients with at least 1 TEAE leading to study withdrawal	1 (1.7)	0	0	0
# of Patients with TEAEs by Maximum Severity				
Mild	17 (29.3)	20 (33.9)	19 (31.7)	14 (27.5)
Moderate	9 (15.5)	13 (22.0)	15 (25.0)	12 (23.5)
Severe	1 (1.7)	0	0	2 (3.9)
# of Patients with TEAEs by Maximum Relationship				
Not Related	17 (29.3)	24 (40.7)	22 (36.7)	15 (29.4)
Unlikely	3 (5.2)	4 (6.8)	5 (8.3)	4 (7.8)
Possibly Related	3 (5.2)	2 (3.4)	4 (6.7)	3 (5.9)
Probably Related	2 (3.4)	3 (5.1)	2 (3.3)	5 (9.8)
Definitely Related	2 (3.4)	0	1 (1.7)	1 (2.0)
Possibly, Probably, or Definitely Related	7 (12.1)	5 (8.5)	7 (11.7)	9 (17.6)

TEAE = Treatment Emergent Adverse Event

\*Coronary artery disease and stroke - both judged to be not related to drug treatment

\*\*Axillary abscess - judged to be not related to drug treatment

Source: Company data, Wells Fargo Securities, LLC

**Exhibit 22. FX006 Phase 2b – Index-Knee Related Adverse Events**

	FX006 10mg N=58 n (%)	FX006 40mg N=59 n (%)	FX006 60mg N=60 n (%)	TCA IR 40mg N=51 n (%)
# Patients with at least 1 Index-Knee related AE	10 (17.2)	9 (15.3)	7 (11.7)	6 (11.8)
General disorders and admin site conditions				
Injection site erythema	1 (1.7)	0	0	0
Injection site hematoma	0	1 (1.7)	0	0
Injection site pain	1 (1.7)	0	0	0
Injury, poisoning and procedural complications				
Cartilage injury	1 (1.7)	0	0	0
Ligament injury	1 (1.7)	0	0	0
Muscle strain	1 (1.7)	0	0	0
Post-procedural swelling	0	0	1 (1.7)	0
Nervous System disorders				
Paraesthesia	0	0	1 (1.7)	0
Skin and subcutaneous tissue disorders				
Erythema	0	1 (1.7)	0	0
Vascular disorders				
Varicose vein	0	1 (1.7)	0	0
Musculoskeletal and connective tissue disorders				
Arthralgia	4 (6.9)	8 (13.6)	3 (5.0)	2 (3.9)
Arthropathy	0	0	1 (1.7)	0
Joint effusion	0	0	0	1 (2.0)
Joint stiffness	2 (3.4)	0	2 (3.3)	3 (5.9)
Joint swelling	0	0	1 (1.7)	0
Osteoarthritis	0	0	0	1 (2.0)
Synovitis	0	0	0	1 (2.0)
Tendonitis	1 (1.7)	0	0	0

Source: Company data, Wells Fargo Securities, LLC

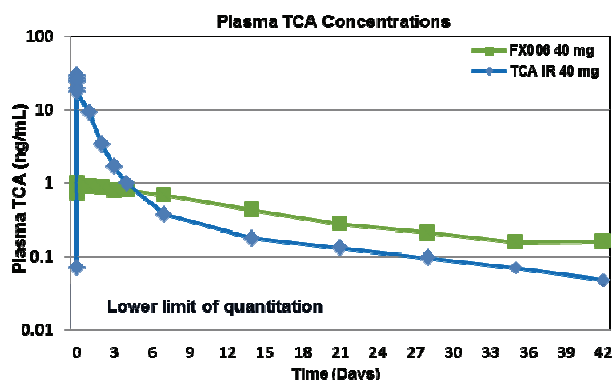
**Exhibit 21 and Exhibit 22** summarize adverse events experienced by all patients in the FX006 Phase 2b trial. All treatments appeared to be well tolerated and there were no drug-related serious adverse events. Adverse events were generally mild to moderate and unrelated to study drug.



## Phase 2a Clinical Data

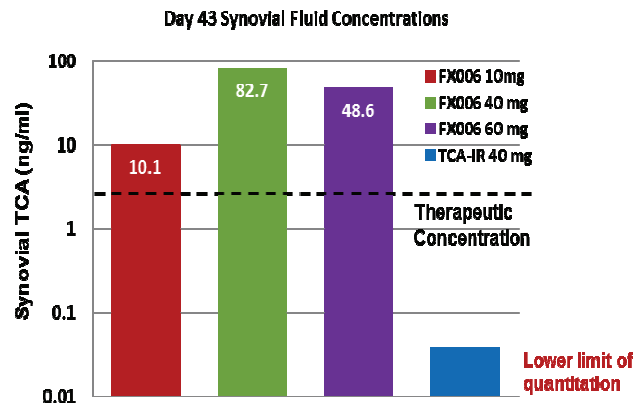
Below is a summary of Phase 2a data for FX006.

**Exhibit 23. Plasma TCA Concentrations Over Time**



Source: Company data, Wells Fargo Securities, LLC

**Exhibit 24. Synovial Fluid Concentrations at Day 43**



Source: Company data, Wells Fargo Securities, LLC

**Exhibit 23** demonstrates that FX006 appears to release the steroid consistently over time, causing no spikes in steroid concentrations in the plasma, while providing a higher level of steroid than the IR injection over time. **Exhibit 24 on the right** showed steroid concentration in the synovial fluid at day 43, indicating that with FX006, all doses were able to maintain joint concentration of steroid that is above the level required for a therapeutic effect. Both data sets are encouraging as they point to the potential of a longer lasting effect of FX006 on pain relief.

## FX007

**FX007 is a TrkA receptor antagonist intended to treat post-operative pain.** TrkA is the receptor for nerve growth factor, commonly known as NGF. NGF is a validated target for reducing pain and the inhibition of NGF has shown efficacy in clinical trials. However, the systemic use of NGF inhibitors has been shown to be associated with rapidly progressing OA requiring total joint arthroplasty. FX007 is intended for acute local tissue administration, which could enable FX007 to avoid systemic side effects. The company has conducted preclinical studies in models of OA and post-operative pain and demonstrated efficacy in both. Flexion intends to initiate clinical trials on FX007 in 2014, with a pre-IND meeting likely in H1 2014 and initiation of Proof of Concept bunionectomy trial in H2 2014. The company expects that FX007 will not require formulation with PLGA microspheres, unlike FX006 and FX005, which should expedite development. The reason is that FX007 has low solubility, which could allow it to remain in tissues long enough to treat post-operative pain.

**We think that FX007 is an interesting pipeline opportunity for FLXN; however, due to its early stage and lack of proof of concept at this time, we have not included any revenue for the product in our model or valuation,** as we would prefer to view a successful clinical program and launch as potential upside. However, we do include development expenses for FX007 in our estimates as FLXN is planning to commence clinical studies this year.

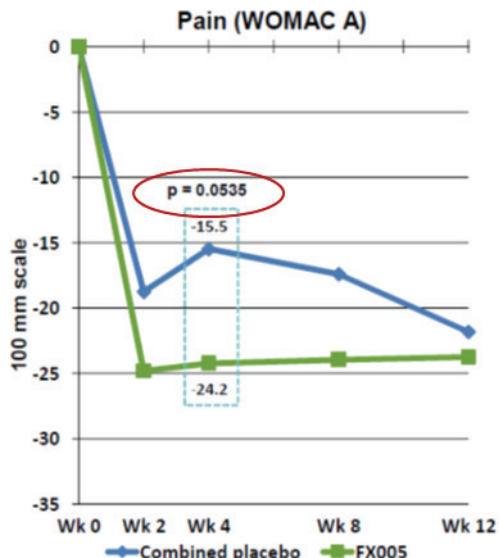
## FX005

**FX005 is a sustained release P38 MAP kinase inhibitor intended to treat end-stage OA pain.** Drugs targeting the p38 pathway have shown clinical efficacy in OA pain and inflammation; however, systemic administration has been shown an association with serious adverse effects on the central nervous system, heart, and liver. Flexion has developed an IA injection utilizing PLGA microspheres to maintain a sustained release profile. The formulation allows for systemic drug concentrations that the company believes are below the levels that cause systemic side effects, while providing persistent, approximately 90-day therapeutic concentration in the joint. Flexion has completed a Phase 2a trial for FX005 treating end-stage OA pain. However, the company is deprioritizing FX005 development, due to resource allocation (while it focuses on FX006 and FX007 development). If FX005 trials resume, we would expect that to occur at some time after the company becomes cash flow positive on the strength of FX006, which we project in 2019.

**Phase 2a data for FX005 – efficacy trends were demonstrated, but missed significance and toxicity signals will likely lead to lower dosing and narrower target patient population.** FLXN has completed a Phase 2a clinical trial for FX005. In the study's proof-of-concept phase, 104 patients were

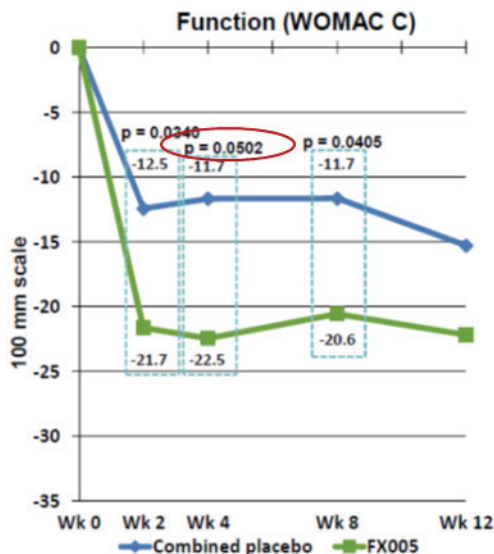
randomized to 45 mg of FX005, blank PLGA microspheres, and diluent. The following exhibits summarize the results, combining PLGA and diluent patients into the single line for “combined placebo.”

**Exhibit 25. WOMAC A (Pain) – All Patients**



Source: Company data, Wells Fargo Securities, LLC  
Note: The dose of FX005 is 45mg.

**Exhibit 26. WOMAC C (Function) – All Patients**

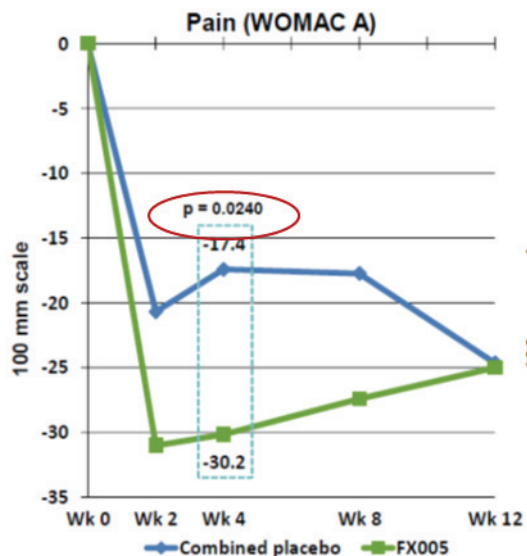


Source: Company data, Wells Fargo Securities, LLC  
Note: The dose of FX005 is 45mg.

The primary endpoint was the change from baseline in the WOMAC subscale at four weeks. The preceding charts show the results for the WOMAC A (pain) and WOMAC C (physical function) subscales. FX005 showed numerical superiority to placebo at weeks 2, 4, 8, and 12; however, the primary endpoint (four weeks) was not met with statistical significance. For WOMAC C, the superiority of FX005 was significant at weeks 2 and 8.

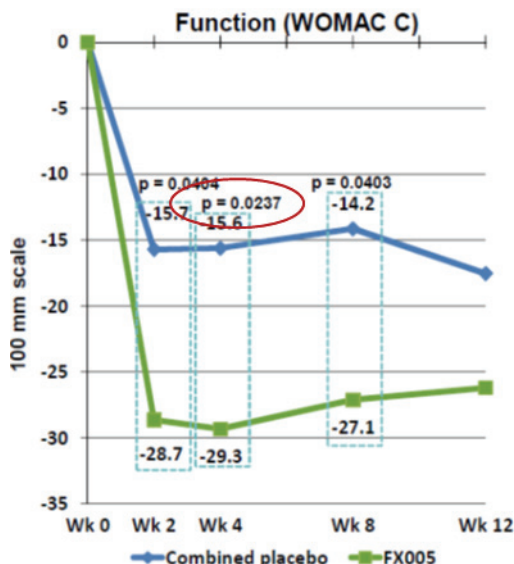
FX005 showed better results in a pre-specified analysis of a subset of patients with high baseline pain (**Exhibit 27 and Exhibit 28**). In this subgroup, FX005 showed statistically significant superior efficacy to placebo at week 4 (the primary endpoint).

**Exhibit 27. WOMAC A (Pain) – Higher Baseline Pain**



Source: Company data, Wells Fargo Securities, LLC  
Note: Higher pain defined as pain > 60mm on 100mm VAS; for both FX005 and placebo groups, n=29 (56% of total population)

**Exhibit 28. WOMAC C (Function) – Higher Baseline Pain**



Source: Company data, Wells Fargo Securities, LLC  
Note: Higher pain defined as pain > 60mm on 100mm VAS; for both FX005 and placebo groups, n=29 (56% of total population)



**Toxicity signal will likely lead to significantly lower doses in subsequent studies.** Repeat dose toxicology study showed that FX005 can be associated with synovial inflammation, articular cartilage damage, and alterations to joint structure. Since animals treated with blank microspheres did not show similar findings, the toxicity appears to be specific to FX005 at the studied dose.

**FLXN conducted additional toxicology studies at much lower doses** (human equivalent of 1mg and 3mg) and these studies showed no evidence of the cartilage damage that was shown in doses greater than or equal to 10 mg. Consequently, any further development of FX005 will likely be done with doses substantially lower than the phase 2a dose of 45 mg. This raises an open question of how efficacious the drug will be, at much lower doses, after missing statistical significance at 45 mg. This risk could be somewhat mitigated by limiting studies to a severe patient population (with high baseline pain); but that will likely also limit the scope of the potential indication.

**We have not included any revenue or development expense for FX005 in our model.** As discussed above, the drug still needs to be clinically validated at new, significantly lower doses, while avoiding the toxicity issues shown at the higher doses. We would prefer to see further validation before assuming any revenue. In addition, it is not clear when, or if, the company plans to pursue further studies of FX005. FLXN is prioritizing its resources toward FX006 and FX007 development. We believe significant additional capital raises will be needed to develop those products and launch FX006; so, in our view, it seems unlikely that FLXN will invest in FX005 development before reaching cash flow positive status. The risk of clinical success in efficacy and safety also lessens the chances of FLXN choosing to move FX005 ahead of the other two programs in priority. The uncertainty around when and if FLXN will resume FX005 leads us to exclude development expenses from our model, as well, at this time.

### Sales and Marketing

**Flexion aims to commercialize FX006 in the United States with a small specialty sales force.** Flexion has worldwide commercialization rights to all of its product candidates, including its lead product candidate, FX006. The company intends to market its products in the United States using a small sales force of about 60-100 representatives targeting specialty physicians, including orthopedists and rheumatologists. Flexion intends to target the top 40% of the approximately 17,800 active orthopedic surgeons and 5,700 rheumatologists who are considered the most relevant from an OA patient treatment perspective.

**FX006 is unencumbered, while FX005 and FX007 are royalty-bearing.** Worldwide rights to both FX005 and FX007 were in-licensed from AstraZeneca, and therefore, have related milestone and royalty payments. FX005 has up to \$17 million in milestones related to a product for OA indications and up to \$11 million for non-OA indications, with royalties on net sales ranging from low to high single digits payable for 12 years after first commercialization and an additional \$45 million of sales milestones. FX007 has up to \$21 million in milestones related to a product for OA indications and up to \$15 million for non-OA indications, with royalties on net sales ranging from low single digits to low double digits payable for 12 years after first commercialization and an additional \$75 million of sales milestones.

**Relatively fixed selling expense and potentially high gross margin drive an opportunity for operating margin expansion.** While commercialization is still several years out (late-2017 launch planned for FX006), we see the potential for rapid margin expansion given the modest and relatively fixed selling expense associated with a small specialty sales force and with potentially high gross margin as Flexion seeks premium pricing for FX006. Assuming a late-2017 launch, we estimate operating margin into the 60s and potentially more than 70% by 2024E, with peak sales at about \$1.1 billion (assumes \$500 price per injection).

**Potential partnerships ex-United States.** Flexion is actively seeking partnership opportunities for FX006 and its other pipeline candidates outside of the United States. While discussions have been ongoing, we believe a partnership announcement is not likely to occur in the near term. We see better partnership opportunities beginning in H2 2015 following results from the confirmatory Phase 2b study and as Phase 3 trials get under way. A partnership(s) could serve to reduce the size and number of potential follow-on financings.

### Pricing and Reimbursement

**Steroid injections are relatively inexpensive.** Current first-line intra-articular treatment for OA of the knee is commonly injection of immediate release steroids, which are all generic and relatively inexpensive (approximately \$20 per injection for the drug) and are reimbursed by payers. While steroids appear to provide immediate relief for some patients, the efficacy often wanes with subsequent injections. As such, physicians often turn to Hyaluronic Acid or HA injections after using steroids, despite efficacy levels in HA that are often considered mediocre at best, according to our physician consultants.

**Pharmaceuticals**

**However, premium HA pricing provides some headroom.** HA injections are priced at a large premium to IR steroids, with a wide range despite limited efficacy. They are also reimbursed with the most commonly used drugs on most payers' preferred lists. The older formulations of HA injections typically cost \$200-300 per injection for a course of 3-5 injections, while the newer products can cost approximately \$800 per injection. We note that recent American Academy of Orthopaedic Surgeons (AAOS) guidelines do not recommend the use of HA therapy, due to lack of efficacy, which corresponds to consistent comments noting mediocre HA efficacy in our physician consultations. Given that HA injections are able to charge a premium, but are still considered to lack efficacy, we believe this allows for potential premium pricing for FX006.

**FX006 needs to show differentiation to obtain significant premium pricing to IR steroids.** While the price of HA therapy provides some headroom, FX006 still needs to show material differentiation in clinical effect in its trials in order to obtain premium pricing over IR steroids. Flexion initially targets a \$500 price per injection for FX006, which is a significant premium over IR steroids and over some HA therapies, too.

**FX006 Phase 2b data encouraging, but some payers may require precertification.** While the data from the FX006 Phase 2b trial completed mid-2013 suggests potentially meaningful differentiation versus IR TCA, the extent to which the superiority is clinically meaningful is less easily quantifiable, in our view. We think that there is a risk that some payers will require precertification that IR steroid was tried first before they will reimburse for an FX006 injection. In such a case, FX006 could get a mix of first-line and second-line use.

**Supply Chain**

**Flexion relies heavily on third parties for the production of FX006.** The supply and manufacture of FX006 is completely reliant on third parties. The active ingredient in FX006 is triamcinolone acetonide (TCA), which is a corticosteroid that has been available in the U.S. market since the 1960s. FX006's TCA is manufactured and supplied by Farmabios SpA in accordance with cGMP.

**PGLA is third-party manufactured with Flexion patented technology.** The PGLA microsphere finished product and diluent are manufactured by Evonik Corporation, which is a commercial scale supplier of cGMP-complaint bioabsorbable polymers. Evonik's materials are components of marketed pharmaceutical and medical device products worldwide, including in the United States, Europe, India, and Asia. Flexion's relationship with Evonik began in August 2012 as Flexion sought a new commercial scale PLGA polymer manufacturer (prior was SwRI). The FX006 microspheres are currently made using Flexion's proprietary spray dryer and Evonik's proprietary sifting equipment in Evonik's Birmingham, Alabama facility. The drug encapsulated microspheres are formed using Flexion's proprietary rotating disk atomizer, which can readily be increased to commercial batch size by increasing the process time without having to add new equipment or changing the process. Management indicated that batch manufacturing at Evonik with the newly installed equipment produced comparable microspheres to the product manufactured at SwRI, and therefore, the site is clinical production ready.

Separately, management also noted that recent audits of both Farmabios and Evonik have confirmed that both sites are suitable for use in FX006's clinical development.

**Intellectual Property and Other Barriers to Competition**

**Exhibit 29. Summary of Flexion's Patents and Patent Applications**

Product	Patent/Application No.	Type	Potential Expiration
<b>FX006</b> SR Steroid	Parent App #: 13,422,994	Composition of matter, method of use, and method of manufacture	2031 if issued
<b>FX005</b> SR p38 inhibitor	7,943,776	Composition of matter, and formulation	COM: 2028 Form: 2029 if issued
<b>FX007</b> SR TrkA antagonist	8,324,252	Composition of matter, and formulation	COM: 2028 Form: 2030 if issued

Source: Company data, Wells Fargo Securities, LLC

## Flexion Therapeutics, Inc.

**No patents have been issued for FX006.** Flexion owns one pending U.S. non-provisional patent application and counterpart foreign patent applications and three pending U.S. provisional patent applications. Flexion's U.S. pending patent applications are directed to sustained-release formulations, populations of microparticles, method of manufacture, and method of use, corticosteroids for the treatment of joint pain. A patent, if issued based on this application, would expire in 2031. Separately, the three related pending provisional U.S. patents applications, if pursued as non-provisional patent applications, could result in an issued patent expiring in 2034.

**We estimate that a U.S. patent for FX006 could be issued in approximately mid-2015E.** The current status of the patent application is that Flexion has recently responded to an Office Action issued by the Patent Office on September 13, 2013. Per our patent consultant, it appears that Flexion initially pursued broad claims, which were not accepted by the patent office, and now intends to narrow its claims in a response to the office action. In early March 2014, Flexion's management indicated that a response has been filed. The parent patent application will likely aim to cover class B steroids (to which TCA belongs), formulated in a 75:25 PLGA ratio (75% lactic acid and 25% glycolic acid) and explicitly discloses the 40 mg dose. Following the results of the Phase 2b trial the company intends to amend the viscosity claim to bracket the range of efficacy (as 60 mg did not work well, in our view). Patent time lines are inherently unpredictable, but we estimate that Flexion could be issued a U.S. patent for the narrower claims in approximately mid-2015E.

**Risk of competing products exists despite patents.** While the specifications that were filed with Flexion's patent application for FX006 allow the company to add claims for other classes of steroids and other technologies (not PLGA), the U.S. PTO requires data to add claims. As it stands, if the narrow patent claim as described above is issued, competitors could conceivably try to develop competing products using (1) TCA or a different steroid combined with a PLGA-based delivery system with different specifications from FLXN's system, or (2) TCA or a different steroid combined with a delivery technology other than PLGA.

**Some comfort about FX006's position can be taken from Flexion's research** showing that the PLGA ratio is very important to the sustained release profile. Also, while there are many sustained release technologies, there are none that has been validated with steroids in the joint as far as we know. (See competition section below for other potential delivery technology competitors.)

**However, we believe the risk of a competitor evading FLXN's patents with an alternative product is a material risk, and we address this risk in our model by assuming the market entry of branded competition in 2025.**

**FX007.** Flexion has an exclusive license of one issued U.S. patent owned by AstraZeneca that covers the TrkA antagonist compound (FX007), which expires in 2028. Flexion has also licensed counterpart foreign patents, which are granted in Australia, Canada, and multiple European countries, and would expire in 2026, and are still pending in other countries. Separately, Flexion has rights to a formulation patent application for FX007 in the United States, which, if issued, would expire in 2031.

**FX005.** Flexion has an exclusive license of one issued U.S. patent owned by AstraZeneca that covers the p38 compound (FX005), which expires in 2028. Flexion has also licensed counterpart foreign patents, which are granted in Australia, Canada, and multiple European countries, and would expire in 2024, and are still pending in other countries. Separately, Flexion has rights to two formulation patent applications for FX005 in the United States, which, if issued, would expire in 2029.

### Potential Competition

**Unmet need exists as current OA therapies have inadequacies.** As discussed, current OA therapies have significant inadequacies, in our view, and some have serious side effects (see **Exhibit 3**). Many of the treatments have been on the market for decades, such as acetaminophen and IA steroids. There has been little innovation in the treatment of OA, with the most recent product developments concentrated in the HA group, which has been shown to lack efficacy and is no longer recommended by AAOS. Most patients still end up ultimately proceeding down the path to total joint replacement if surgery is an option for them. As such, there exists an unmet need to treat the significant and expanding OA knee patient population, in our view.

### Ampio's Ampion

**Ampio Pharmaceuticals (AMPE) is in Phase 3 development with Ampion**, a low molecular weight fraction of human serum albumin (HSA). The primary active ingredient is aspartyl-alanyl diketopiperazine, or DA-DKP, which is derived from HSA. Ampion also contains other small molecules that complement the anti-inflammatory effects of DA-DKP.

**Ampion BLA filing likely by year-end 2014.** Ampion is currently in the second of two pivotal trials, the Phase 3 STEP study for the treatment of OA of the knee. The trial enrolled its last patient in mid-February, with primary completion date estimated to be in April 2014, and the company expects to file a BLA for Ampion later this year.

## Pharmaceuticals

**SPRING Phase 3 data showed some positive signs and could contribute to Ampion becoming a novel OA therapy.** Ampio scientists recently published the results of the company's first Phase 3 trial (SPRING) for Ampion in the journal PLOS One on February 3, 2014. It was a multicenter randomized, saline-controlled, double-blinded study to evaluate the safety and efficacy of two doses of Ampion (4mL and 10mL) in the treatment of OA of the knee. The primary endpoint was change in WOMAC average pain subscore by 5-point Likert scale between baseline and week 12. A total of 329 patients were randomized into four arms of about 80 patients each (Ampion 4mL, saline 4mL, Ampion 10mL, and saline 10mL). In a pooled data analysis of both treatment groups, Ampion demonstrated a statistically significant reduction in pain from baseline at 12 weeks compared to saline, though the difference was modest (Ampion -0.93 vs saline -0.72,  $p=0.004$ ). The reduction in pain versus baseline was 42.3% for Ampion, versus 31.7% for saline control at week 12. The effect of Ampion was more pronounced in a subset of patients that had severe knee OA. Ampion appeared to be well tolerated, with generally mild adverse events, which were similar to those observed in the control arms.

**We look forward to future data to potentially address questions about Ampion.** Along with the SPRING study's positives, the results raise some questions, in our view, which could be further clarified in subsequent studies (including STEP, the second pivotal study, in process) and if approved, in real-world use. These questions include the following:

- *Lack of dose response:* the pain reduction versus saline was very similar in 4mL and 10mL doses of Ampion.
- *Unclear whether statistical significance was reached in the 4mL and 10mL doses, separately, versus their corresponding saline dose:* Ampio published p values only for a pooled analysis, combining results of the 4mL and 10mL arms of the study. It is unclear whether the 4mL and 10mL arms reached statistical significance on their own, and the smaller patient numbers in the separate arms (versus pooled) could hamper the chances of reaching significance. The second pivotal study, STEP, doses patients only at the 4mL dose, and the read-through from the SPRING significance to potential significance in STEP is not as straightforward as it would be if we knew the p values for the separate arms in SPRING. Of course, there are other variables that differ between the studies, for example the number of patients in the 4mL group, which could also affect differences in the results of the studies.
- *Statistically significant may not necessarily translate to clinically meaningful.* Despite the study's statistical significance, our physician consultants were unconvinced of the clinical relevance of the 42-31% difference in pain reduction compared to placebo at 12 weeks.

### Carbylan's Hydros-TA

**Carbylan Biosurgery is developing two HA-based products for treatment of OA of the knee.** Carbylan's products are (1) Hydros-IA, an HA injection composed of hyaluronan hydrogel suspended in HMW soluble hyaluronan produced bacterially, which is 52 mg bacterial HA delivered in a single 6mL injection, and (2) Hydros-TA - IA, an HA injection, coupled with a low-dose triamcinolone acetonide (TA), which is comprised of 52 mg bacterial HA + 10 mg TA delivered in a single 6mL injection.

**Hydros development could be stalled.** The company conducted a Phase 2 study of Hydros, Hydros-TA versus Synvisc-One, which was completed in 2010, and data were announced on July 25, 2011. In conjunction with that announcement, the company had disclosed plans for a large multicenter U.S. trial in 2012, although as of now, there has been no announcement from the company related to the trials.

**Limited data disclosed on company website for Phase 2 trial.** The phase 2 study had 98 patients and was conducted at 8 clinical sites in Canada, Belgium, and the Netherlands. Per Carbylan's press release on July 25, 2011, the Phase 2 study indicated potential for Hydros-TA (HA + steroid) to provide superior pain relief and improved function when compared to Synvisc-One. However, the data have not been published to our knowledge, and are provided only on the company's website with partial disclosure of results and no discussion of statistical significance. Results from the trial include using the WOMAC 100 mm visual analog scale (VAS), Hydros-TA provided a 43.5mm mean reduction from baseline pain at the two-week time point versus 37.7mm for Synvisc-One and 32.3mm for Hydros; and pain relief for Hydros TA over Synvisc-One at week 2 of -7.1mm, week 6 of -7.8mm, week 13 of -4.2 mm, and week of 26 -6.1 mm.

**Trial status unclear.** Given the partial data disclosure for the Phase 2 trial in 2011, the efficacy around the Hydros products seems unclear, particularly as HA is considered to have modest efficacy by many physicians, and HA (Synvisc-One) was the active control used in the trial. While Carbylan had disclosed plans for further trials and there is a trial registered with clinicaltrials.gov, the site indicates that the trial is not yet open for enrollment more than two years after the Phase 2 results were released. There have also been no updates forthcoming from the company, so at this point we are unsure what the development status of Hydros and Hydros-TA is, and whether Carbylan plans to move forward with both or one of them, and if so, what the time line would be.

**Alternative Delivery Systems**

The use of PLGA in drug delivery is well established and has been proven to be safe and effective in many combinations. As such, **there are many marketed drugs with different delivery systems that use PLGA encapsulation**, as shown in the following exhibit. No PLGA-based products have been approved for intra-articular use, to our knowledge. However as discussed in the intellectual property section, herein, we believe there is material risk of a competitor getting to market with a steroid/sustained release combination that evades FLXN's patent protection (if issued), and we therefore model market entry of branded competition in 2025.

**Exhibit 30. Drug Delivery Products on the Market with PLGA**

Product Name	Dosage Form	Distributor	Active	Duration, months
Decapeptyl	Microparticle	Ferring	Triptorelin acetate	1
Decapeptyl SR	Microparticle	Ipsen-Beaufour	Triptorelin acetate	1, 3
Zoladex	Implant	AstraZeneca	Goserelin acetate	1, 3
LupronDepot	Microparticle	Takeda Pharma NA	Leuprolide acetate	1, 3, 4, 6
Sandostatin LAR Depot	Microparticle	Novartis	Octreotide acetate	1
Somatuline LA	Microparticle	Ipsen-Beaufour	Lanreotide acetate	0.5
Profact Depot	Implant	Sanofi-Aventis	Buserelin acetate	2, 3
Suprecur MP	Microparticle	Sanofi-Aventis	Buserelin acetate	1
Eligard	Liquid	Sanofi-Aventis	Leuprolide acetate	1, 3
Luprogel	Liquid	MediGene AG	Leuprolide acetate	1
Trelstar Depot	Microparticle	Watson	Triptorelin acetate	1
Trelstar LA	Microparticle	Watson	Triptorelin acetate	3
Arestin	Microparticle	OraPharma	Minocycline HCL	0.5
Atridox	Injectable	CollaGenex Ph	Doxycycline hyclate	0.25
Risperdal Consta	Microparticle	Johnson & Johnson	Risperidone	0.5
SMARTShot B12	Microparticle	Stockguard Labs	Vitamin B12	4, 8
Vivitrol	Microparticle	Alkermes	Naltrexone	1
Revalor XS	Implant	Intervet	Trenbolone/estradiol	6
Ozurdex	Implant	Allergan	Dexamethasone	1
Propel	Implant/device	Intersect ENT	Mometasone furoate	1
Bydureon	Microparticle	Amylin	Exenatide	2
Longrange	Liquid	Meril Limited	Eprinomectin	5
Lutrate Depot	Microparticle	G P Pharm	Leuprolide acetate	1

Source: Company data, Wells Fargo Securities, LLC



## Financial Model Summary

The following is a summary of key assumptions in our financial forecast model:

**Company revenue and R&D expense:** We include revenue only for FX006, and only in the U.S. market. We exclude other potential revenue streams as follows, and any of these should offer upside potential to our estimates:

- **FX006 in Europe and Japan.** The company is planning to develop FX006 in Europe and Japan, likely with a partner, but the clinical and regulatory work has not begun, and we think a partnership will become more likely as clinical/regulatory visibility for FX006 in these markets improves. Furthermore, the reimbursement environment for FX006 could prove to be challenging in Europe. Due to these uncertainties, we do not include any ex-U.S. FX006 revenue at this time.
- **FX007.** As discussed in the FX007 section of the company overview in this report, while we think that FX007 is an interesting pipeline opportunity for FLXN. We exclude revenues from our model due to the product's early stage (preclinical) and lack of proof of concept at this time. However, we do include development expenses for FX007 in our estimates, as FLXN is planning to commence clinical studies this year.
- **FX005.** As discussed in the FX005 section of the company overview in this report, we have not included any revenue or development expense for FX005 in our model. The product needs to be clinically validated at new, significantly lower doses than studied in Phase 2a, while avoiding the toxicity issues shown at the higher doses. We would prefer to see further validation before assuming any revenue. In addition, it is not clear when, or if, the company plans to pursue further studies of FX005. FLXN is prioritizing its resources toward FX006 and FX007 development. We believe significant additional capital raises will be needed to develop those products and launch FX006; so, in our view, it seems unlikely that FLXN will invest in FX005 development before reaching cash flow positive status. The risk of clinical success in efficacy and safety also lessen the chances of FLXN choosing to move FX005 ahead of the other 2 programs in priority. The uncertainty around when and if FLXN will resume FX005 leads us to exclude development expenses from our model, as well, at this time.

**FX006 revenue.** We include the following assumptions:

- **Peak penetration and pricing.** We assume 25% peak penetration (in 2024) of IR TCA injections, and 25% of HA injections, at a price of \$500 per injection as contemplated by the company. Based on our consultations with physicians and payers, we think that FX006's differentiated magnitude and durability of efficacy could attract significant use. However the entrenched, inexpensive incumbent of IR TCA could create a tension between maximizing price and volume for FX006. If the phase 2b efficacy is validated in subsequent trials, we think attainment of the company's projected pricing of \$500/injection is possible, but it could cause some payers to require precertification showing that the patient tried IR steroids first, before granting reimbursement for FX006. Thus, we assume a mix of first- and second-line use, contributing to the above peak share levels.
- **Entry of competition and effect on peak sales.** As discussed in the Potential Competition (alternative delivery systems) section of this report, we believe that the risk exists of a competitor developing a competing product consisting of a steroid and a sustained-release delivery technology that does not infringe FLXN's patent (if issued). We address this risk in our model by assuming the entry of branded competition in 2025, to allow time for development and approval. Consequently, our market-share growth for FX006 peaks in 2024 and slowly declines thereafter as assumed competitor(s) gain share, with a steep decline in 2031E, when the patent (if issued) expires and generic competition could enter.

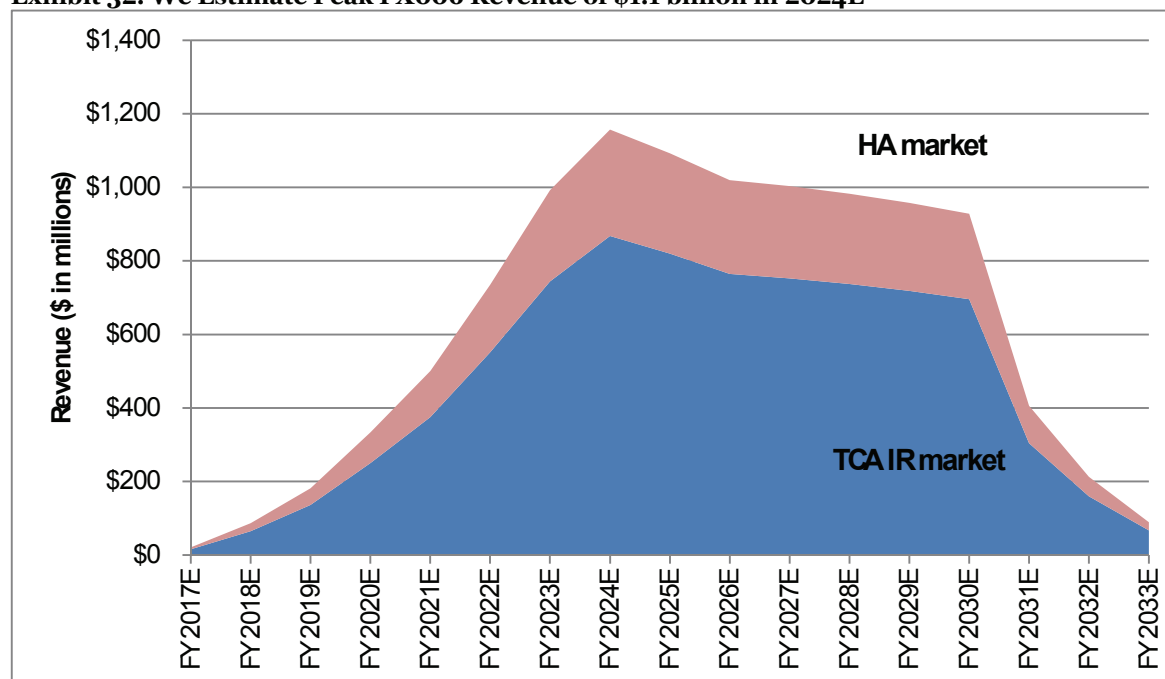
The following exhibits show two summaries of our FX006 revenue forecast. Exhibit 31 shows the key drivers and line items of our FX006 revenue build, from launch in 2017 to peak year revenue of \$1.1B in 2014E.

**Exhibit 31. FX006 Revenue Forecast Summary, 2017E-2024E**

(in millions, except price)	FY 2017E	FY 2018E	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E
TCA IR Injections (Knee)	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1
Assumed Penetration, %	0.6%	2.5%	5.0%	8.8%	12.5%	17.5%	22.5%	25.0%
HA Injections	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4
Assumed Penetration, %	0.6%	2.5%	5.0%	8.8%	12.5%	17.5%	22.5%	25.0%
Total FX006 injections	0.0	0.2	0.4	0.6	0.9	1.4	1.8	2.1
Price/injection (\$500 at launch +2%/yr)	\$500	\$500	\$510	\$520	\$531	\$541	\$552	\$563
FX006 Revenues	\$21.0	\$86.5	\$181.6	\$333.6	\$500.2	\$735.0	\$991.9	\$1,156.7
FX006 - Steroid	\$15.8	\$64.9	\$136.2	\$250.2	\$375.2	\$551.3	\$743.9	\$867.5
FX006 - HA	\$5.3	\$21.6	\$45.4	\$83.4	\$125.1	\$183.8	\$248.0	\$289.2

Source: Company data, Wells Fargo Securities, LLC estimates

Exhibit 32 shows FX006's forecasted revenue profile over the entire lifecycle of the product, from launch in 2017 to 2031, two years beyond patent expiration. The bottom portion of the chart represents FX006's penetration of the TCA IR market, and the top portion is penetration of the HA market. We model revenue peaking in 2024, before the entry of assumed competition in 2025. Then we forecast a slow erosion market share (partly offset by market growth and modest pricing growth) until 2031. In 2031, when the patent expires (presuming it is issued), we conservatively assume generics enter and market share and revenue plummet. We do not include any "tail" value beyond 2033 in our model.

**Exhibit 32. We Estimate Peak FX006 Revenue of \$1.1 billion in 2024E**


Source: Company data, Wells Fargo Securities, LLC estimates

**Sales and Marketing Expense.** We model expenses for a U.S. sales and marketing effort for FX006 conducted by Flexion and do not include any ex-U.S. infrastructure in line with excluding the revenue. We assume 60-100 sales representatives.

**Taxes.** We project Flexion to become a full U.S. taxpayer in 2022E.

Following is a summary of our income statement forecast from 2017 (FX006 launch year) to 2024 (assumed FX006 peak sales year).

**Exhibit 33. FLXN Income Statement Forecast Summary, 2017E-2024E (\$ Millions)**

	FY 2017E	FY 2018E	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E
FX006 (Total) Revenue	\$21.0	\$86.5	\$181.6	\$333.6	\$500.2	\$735.0	\$991.9	\$1,156.7
% annual growth	NM	311.6%	109.9%	83.7%	49.9%	46.9%	34.9%	16.6%
Gross Margin %	89.0%	89.0%	89.0%	89.3%	89.6%	89.9%	90.2%	90.5%
R&D Expense	\$38.4	\$42.3	\$46.5	\$51.2	\$56.3	\$62.0	\$68.1	\$75.0
SG&A Expense	\$54.6	\$60.4	\$68.4	\$77.7	\$87.5	\$98.7	\$111.4	\$125.9
Operating Income	(\$74.3)	(\$25.7)	\$46.8	\$169.0	\$304.3	\$500.2	\$715.1	\$846.0
Operating margin %	(353.6%)	(29.7%)	25.7%	50.6%	60.8%	68.0%	72.1%	73.1%
Net Income	(\$74.1)	(\$25.4)	\$45.9	\$165.8	\$221.4	\$315.6	\$451.7	\$534.2
EPS	(\$2.63)	(\$0.88)	\$1.53	\$5.41	\$7.09	\$9.91	\$13.90	\$16.12
% annual growth	(23.9%)	(66.4%)	(273.1%)	254.1%	30.9%	39.8%	40.3%	16.0%
Cash & Marketable Securities	\$60.5	\$17.0	\$41.8	\$173.6	\$356.4	\$400.8	\$698.9	\$838.7
Assumed Equity Offerings	\$100.0							

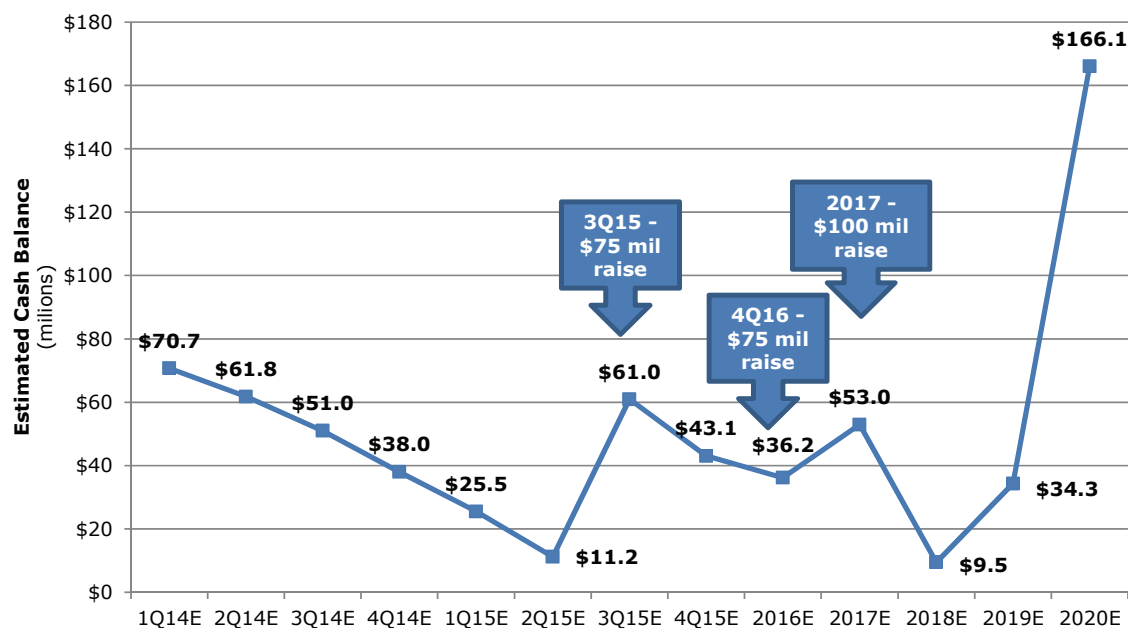
Source: Wells Fargo Securities, LLC estimates and company reports

Source: Company data, Wells Fargo Securities, LLC estimates

**Follow-on financings.** We expect the proceeds from the IPO to fund Flexion into the start of Phase 3 trials, but expect that the company will need additional capital raises in order to complete the Phase 3 trials and fund the commercial launch. We model three follow-on offerings totaling \$250 million to follow major milestones at data readouts for Phase 2b, Phase 3, and upon approval. These financings could be reduced if Flexion is able to sign a partnership, which would most likely be ex-United States.

**Exhibit 34** shows our forecast of FLXN's cash balance from 2014E to 2020E. Capital raises, as discussed, are assumed as shown to fund the company from Phase 3 to attainment of cash flow positive status.

**Exhibit 34. FLXN Forecasted Cash Balances, 2014E-2020E**



Source: Company data, Wells Fargo Securities, LLC estimates



## Valuation

### Discounted Cash Flow Analysis

**Our valuation range of \$24-26 is based on a discounted cash flow analysis.** We believe that DCF analysis is the most appropriate way to value Flexion. With only one product with visibility to approval and a finite product lifecycle bounded by potential launch in 2017 and patent expiry in 2031, the model is essentially a stream of expected cash flows over a limited period of time.

Therefore, we think it is more appropriate to discount that set of finite cash flows than to put a multiple on earnings or some other metric (which would imply a perpetuity). Furthermore, we apply a risk adjustment to our stream of cash flows to incorporate our estimate of probability of success for the development of FX006, which is the sole revenue driver in our model.

Our DCF analysis assumes a 15% discount rate, no terminal value, and a probability of success of 50-60%, which is between that of a typical Phase 2 and typical Phase 3 product.

**Exhibit 35 shows a sensitivity analysis of our DCF valuation and peak sales, to peak FX006 penetration and probability of approval.** For our base case model, as discussed throughout this report, we assume a 25% peak penetration of FX006 (penetration of TCA IR and HA injection volume), and a 50-60% (55% at the midpoint) probability of approval. These assumptions are key factors contributing to our valuation range for FLXN of \$24-26 (\$25 at the midpoint).

### Exhibit 35. Flexion DCF Analysis Sensitivity Table

DCF Value Per Share of Flexion							Peak Sales of FX006 (\$ MM)
%Probability of Approval of FX006							
		40%	50%	55%	60%	70%	
Peak	20%	\$10	\$14	\$16	\$18	\$22	\$930
Penetration	25%	\$17	\$22	\$25	\$28	\$33	\$1,160
of FX006	30%	\$23	\$30	\$34	\$37	\$44	\$1,390

Source: Company data, Wells Fargo Securities, LLC estimates

**As shown in the exhibit, FLXN's valuation is quite sensitive to assumptions about FX006 penetration and probability of success.** This sensitivity illustrates how as the product progresses through clinical and regulatory steps, the next major one being expected confirmatory Phase 2b data in H1 2015, the stock price could react meaningfully to investor perceptions of (1) derisking/risking of FX006 approval and/or (2) implications of clinical data on the potential market penetration of FX006.

### Comparable Companies

While we do not use comparable company metrics to directly value FLXN, we think that comps can be helpful to provide some valuation context. Following is a list of what we view to be comparable companies to FLXN.

### Exhibit 36. Flexion Comps

Company Name	Ticker	Stock Price	Market Cap (\$mm)	Enterprise Value (\$mm)	Lead/Key Product	Development Phase	Launch Year
Flexion	FLXN	\$19.26	\$284	\$268	FX006 for OA knee pain	Phase 2b	2017E
Cara	CARA	\$20.00	\$437	\$419	I.V. CR845 for post-op pain	2 complete	2016E
Ampio	AMPE	\$6.89	\$349	\$323	Ampion for OA knee pain	3	2015E
BioDelivery Sciences	BDSI	\$9.32	\$441	\$402	BEMA buprenorphine for chronic pain	3	2015E
AcelRx	ACRX	\$11.92	\$502	\$437	Zalviso for post-op pain	Filed (Sept. 2013)	2014E
DURECT	DRRX	\$1.51	\$167	\$149	Posidur for post-op pain (partnered)	NDA CRL 2/12/14	2014E
Zogenix	ZGNX	\$4.04	\$435	\$447	Zohydro ER for chronic pain	Approved	2014E
Supernus	SUPN	\$9.18	\$311	\$284	SPN-538 and SPN-804 for Epilepsy	Marketed	2013
Pacira	PCRX	\$74.43	\$2,509	\$2,525	Exparel for post-op pain	Marketed	2012
Horizon	HZNP	\$13.18	\$850	\$836	Vimovo for OA, RA, & ankylosing spondylitis	Marketed	2013
Insys	INSY	\$76.00	\$1,627	\$1,595	Subsys for breakthrough cancer pain	Marketed	2012

Note: Market data as of 3/7/14

Source: Company data, FactSet, Wells Fargo Securities, LLC estimates

Cara Therapeutics, also a recently IPO, is the closest comp, in our view. The company has a product for post-operative pain, (I.V.-CR845) as FLXN does with FX007. However Cara's drug is ahead of Flexion's in timing and derisking, with its lead product through Phase 2 and about to start Phase 3 this year, potentially leading to a 2016 launch, a year ahead of FLXN's first potential launch (FX006). Unsurprisingly, Cara has a higher valuation.

Pacira is on the other end of the spectrum of comps. We do not view it as a suitable valuation comp for Flexion as Flexion stands today, but Pacira could provide some directional sense of the value that can be created if FLXN is able to successfully execute its development and commercialization efforts.

## Catalysts

**Development milestones for FX006 will likely be the primary stock catalysts in the near to medium term.** Flexion is primarily focused on the development of FX006 for OA of the knee and therefore, events related to the development of FX006 should be the main value drivers in the near to medium term.

**We expect the phase 2b confirmatory study to be initiated in Q2 2014, with results available in Q2 2015.** This is one of the major milestones in the near term. The results of this study should determine whether the company is ready to move on to Phase 3. Also, the data from this trial are to be the first against placebo control and should be a reasonable indicator of the efficacy that could be seen in larger Phase 3 trials.

**Synovial PK results are expected in Q2 2014.** While the data from the synovial study are of less significance, they are still important because the study is one of the studies required by the FDA, and it should give an indication of how much drug stays in the joint and the related safety profile associated with it.

### FX006 Potential Catalysts

- **Q2 2014E** – Synovial PK data
- **Q2 2014E** – Confirmatory Phase 2b trial initiation
- **Q4 2014E** – Repeat dose/safety trial initiation
- **Q2 2015E** – Confirmatory Phase 2b data
- **Q3 2015E** – Phase 3 trial initiation
- **Mid 2015E** (Our estimate) – potential patent issuance; patent expiry is to be 2031 if issued.
- **Q2 2016E** – Repeat dose/safety data
- **Q3 2016E** – Phase 3 data
- **Q4 2016E** – NDA filing
- **Q4 2017E** – Approval and launch

### Ampion-Related Potential Catalysts (potential FX006 competitor)

- **Q2 2014E** – STEP Phase 3 trial (second pivotal study) initial data for primary outcome
- **H2 2014E** – BLA filing for Ampion
- **H2 2015E** – Potential approval and launch of Ampion

### FX007 Potential Catalysts

- **Q3 2014E** – Proof-of-Concept study initiation
- **Q2 2015E** – Proof-of-Concept data
- **Q2 2015E** – Phase 2 initiation
- **2016E** – Phase 2 data

## Management and Significant Shareholders

**Directors and officers are subject to a 180-day lock-up agreement following the IPO.** The lock-up runs through August 10, 2014.

**Michael D. Clayman, M.D. – President, Chief Executive Officer and Co-Founder.** Age 61, Dr. Clayman was a co-founder and has served as Flexion's president, chief executive officer, and a director since the company's inception in 2007. Previously, Dr. Clayman had a lengthy career at Eli Lilly and Company, a global pharmaceutical company, where he was most recently Vice President, Lilly Research Laboratories, and General Manager of Chorus, Lilly's early-phase development accelerator. During his career at Lilly, Dr. Clayman also led its Global Regulatory Affairs division, the Cardiovascular Discovery Research and Clinical Investigation, Research and Development at Advanced Cardiovascular Systems, a medical device subsidiary of Lilly, the Internal Medicine Division, the Lilly Clinic, Lilly's dedicated Phase 1 unit, and served as Chair of Lilly's Bioethics Committee. Prior to his tenure at Lilly, Dr. Clayman was an Assistant Professor in the School of Medicine at the University of Pennsylvania, where his research centered on the immunopathogenesis of renal disease. Dr. Clayman is the recipient of the Physician Scientist Award from the National Institutes of Health. Dr. Clayman earned a B.A., cum laude, from Yale University and an M.D. from the University of California, San Diego School of Medicine. Following an internship and residency in Internal Medicine at the University of California, San Francisco Moffitt Hospitals, Dr. Clayman completed clinical and research fellowships in Nephrology at the University of Pennsylvania. Flexion's board of directors believes that Dr. Clayman's clinical and research experience, along with his more than 20 years of experience in pharmaceutical development, qualifies him to serve on the company's board of directors.

**Neil Bodick, M.D., Ph.D. – Chief Medical Officer and Co-Founder.** Age 66, Dr. Bodick was a co-founder and has served as Flexion's chief medical officer since the company's inception in 2007. Previously, Dr. Bodick was at Eli Lilly and Company, where he founded Chorus and served as chief medical officer and chief operating officer. Prior to that, Dr. Bodick was responsible for early-phase clinical investigation at Lilly Research Laboratories. Dr. Bodick also was assistant professor in the School of Medicine at the University of Pennsylvania, where his research centered on the development of computer-based systems to support image-intensive diagnosis. Dr. Bodick holds 13 patents in the areas of neuroscience and computer science and is the recipient of the Biomedical Research Service Award and the New Investigator Research Award from the National Institutes of Health. Dr. Bodick earned an A.B. from Cornell University, a Ph.D. in neuroscience from Columbia University, an M.D. from the Albert Einstein College of Medicine, and an M.B.A. from the Wharton School of the University of Pennsylvania.

**Frederick W. Driscoll – Chief Financial Officer.** Age: 63. Mr. Driscoll has served as Flexion's Chief Financial Officer since May 2013. Prior to joining us, Mr. Driscoll was Chief Financial Officer at Novavax, Inc., a publicly traded biopharmaceutical company since 2009. Previously, Mr. Driscoll also served as Chief Financial Officer from 2007 to 2008, and subsequently Chief Executive Officer from 2008 to 2009, at Genelabs Technologies, Inc., a publicly traded biopharmaceutical and diagnostics company, Chief Financial Officer at Astraris, Inc., a private biotechnology company, from 2006 to 2007, and Chief Executive Officer at OXiGENE, Inc., a biopharmaceutical company, from 2002 to 2006. Mr. Driscoll earned a bachelor's degree in accounting and finance from Bentley University.

**Arthur Fratamico, R.Ph. – Chief Business Officer.** Age 48, Mr. Fratamico has served as Flexion's chief business officer since June 2012. Prior to joining us, Mr. Fratamico led the business development efforts, including overseeing numerous licensing transactions and acquisitions, at private biotechnology companies including Trevena, Inc. from 2011 to 2012, Gemin X Pharmaceuticals, Inc. from 2008 to 2011, and MGI Pharma, Inc. from 1999 to 2008. Mr. Fratamico earned a bachelor's degree in pharmacy from the Philadelphia College of Pharmacy and an M.B.A. from Drexel University.

**Patrick J. Mahaffy – Chairman of the Board.** Age 50, Mr. Mahaffy has served as one of Flexion's directors and as chairman of the board of directors since 2009. Mr. Mahaffy has served as the president, chief executive officer, and a director of Clovis Oncology, Inc., a biopharmaceutical company, since 2009, and also serves on the board of directors of Orexigen Therapeutics, Inc., a biopharmaceutical company. Previously, Mr. Mahaffy served as president and chief executive officer and as a member of the board of directors at Pharmion Corporation, a pharmaceutical company that he founded in 2000 and sold to Celgene Corporation in 2008. From 1992 through 1998, Mr. Mahaffy was president and chief executive officer of NeXagen, Inc. and its successor, NeXstar Pharmaceuticals, Inc., a biopharmaceutical company. Prior to that, Mr. Mahaffy was a vice president at the private equity firm E.M. Warburg Pincus and Co. He is also a trustee of Lewis and Clark College. Mr. Mahaffy earned a B.A. in international affairs from Lewis and Clark College and an M.A. in international affairs from Columbia University. Flexion's board of directors believes that Mr. Mahaffy's experience and expertise in the pharmaceutical industry qualifies him to serve on the company's board of directors.

Pharmaceuticals

**Exhibit 37. Summary of Major FLXN Holders**

	<b>% Outstanding</b>
Versant Ventures	19.7%
Sofinnov a Partners	12.7%
Pfizer	11.4%
5AM Ventures	10.3%
Nov o A/S	7.4%
Michael D. Clayman, M.D., CEO	5.1%
Public float/other investors	33.5%
<b>Total</b>	<b>100.0%</b>

Source: Company data, Wells Fargo Securities, LLC

Note: The numbers reflect ownership post-IPO (5mm primary shares), excluding the overallotment, and excluding any participation in the offering.

## Financial Model

FLXN - Revenue Forecast (in MM except price per injection)															
US Market															
	FY 2017E	FY 2018E	FY 2019E	FY 2020E	FY 2021E	FY 2022E	FY 2023E	FY 2024E	FY 2025E	FY 2026E	FY 2027E	FY 2028E	FY 2029E	FY 2030E	FY 2033E
<b>Overall Patient Pool</b>															
Number of patients with knee OA diagnosis	13.5	13.8	14.2	14.7	15.1	15.5	16.0	16.4	16.9	17.4	17.9	18.4	19.0	19.5	20.1
Growth, yy	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Number of patients with knee OA and IA steroid Rx	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.4	4.5	4.6	4.7	4.9	5.0
Growth, yy	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Avg No. of steroid injections/patient	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Total number of steroid injections	3.7	3.8	3.9	4.0	4.1	4.3	4.4	4.5	4.7	4.8	4.9	5.1	5.2	5.4	5.5
Number of patients with knee OA and HA Rx	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7
Growth, yy	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Avg No. of HA injections/patient	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Total number of HA injections	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.8	1.9	2.0	2.1
Total patients - steroid and HA	4.5	4.6	4.7	4.9	5.0	5.2	5.3	5.5	5.6	5.8	6.0	6.1	6.3	6.5	6.7
Growth, yy	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Total injections - steroid and HA	5.0	5.2	5.3	5.5	5.7	5.8	6.0	6.2	6.3	6.5	6.7	6.9	7.1	7.3	7.5
Growth, yy	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
<b>FX006 Market Opportunity</b>															
Based on steroid injection volumes and FX006 pricing															
Total injections - steroid	3.7	3.8	3.9	4.0	4.1	4.3	4.4	4.5	4.7	4.8	4.9	5.1	5.2	5.4	5.5
FX006 price/injection	\$500	\$500	\$510	\$520	\$531	\$541	\$552	\$563	\$574	\$586	\$598	\$609	\$622	\$634	\$647
Market opportunity - FX006	\$1,849.9	\$1,903.5	\$1,997.9	\$2,097.0	\$2,200.9	\$2,310.1	\$2,424.6	\$2,544.8	\$2,671.0	\$2,803.4	\$2,942.4	\$3,088.3	\$3,241.4	\$3,402.1	\$3,570.8
Growth, yy	2.9%	2.9%	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%
<b>FX006 Penetration and Volumes</b>															
Number of patients receiving IA steroid	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.4	4.5	4.6	4.7	4.9	5.0
Est % penetration of FX006	0.6%	2.5%	5.0%	8.8%	12.5%	17.5%	22.5%	25.0%	22.5%	20.0%	18.8%	17.5%	16.3%	15.0%	6.3%
Est. no. of FX006 injections/patient	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Total no. FX006 injs. (steroid group)	0.0	0.1	0.3	0.5	0.7	1.0	1.3	1.5	1.4	1.3	1.3	1.2	1.2	1.1	0.5
Number of patients receiving HA	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7
Est % penetration of FX006	0.6%	2.5%	5.0%	8.8%	12.5%	17.5%	22.5%	25.0%	22.5%	20.0%	18.8%	17.5%	16.3%	15.0%	6.3%
Est. no. of FX006 injections/patient	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Total no. FX006 injs. (HA group)	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.2
Total FX006 injections	0.0	0.2	0.4	0.6	0.9	1.4	1.8	2.1	1.9	1.7	1.7	1.6	1.5	1.5	0.6
Growth, yy	n/m	317.6%	105.8%	80.1%	47.0%	44.1%	32.3%	14.3%	(7.4%)	(8.5%)	(3.5%)	(4.0%)	(4.5%)	(5.0%)	(57.1%)
<b>FX006 Pricing and Revenues</b>															
FX006 price/injection	\$500	\$500	\$510	\$520	\$531	\$541	\$552	\$563	\$574	\$586	\$598	\$609	\$622	\$634	\$647
Price increase, yy	0.0%	0.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
<b>FX006 revenues</b>	<b>\$21.0</b>	<b>\$86.5</b>	<b>\$181.6</b>	<b>\$333.6</b>	<b>\$500.2</b>	<b>\$735.0</b>	<b>\$981.9</b>	<b>\$1,166.7</b>	<b>\$1,092.7</b>	<b>\$1,019.4</b>	<b>\$1,003.1</b>	<b>\$982.6</b>	<b>\$957.7</b>	<b>\$927.8</b>	<b>\$405.8</b>
Growth, yy	n/m	317.6%	109.9%	83.7%	49.9%	46.9%	34.9%	16.6%	(5.9%)	(6.7%)	(1.6%)	(2.0%)	(2.5%)	(3.1%)	(56.3%)
Source: Wells Fargo Securities, LLC estimates and company reports															

FLXN - INCOME STATEMENT (In MM except per share data)												
	FY 2011	FY 2012	2013				Dec-13					
			Mar-13	Jun-13	Sep-13	4QE	FY 2013E	FY 2014E	FY 2015E	FY 2016E	FY 2017E	FY 2018E
			1QA	2QA	3QA							
FX006 Revenues	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$21.0	\$86.5
<b>Total Revenues</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$21.0</b>	<b>\$86.5</b>
Cost of Products Sold	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$2.3	\$9.5
Gross profit	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$18.7	\$77.0
S&M	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.8	\$1.9	\$14.1	\$40.5	\$44.8
G&A	\$3.0	\$3.9	\$1.3	\$1.7	\$2.3	\$2.3	\$7.7	\$10.2	\$11.7	\$12.9	\$14.2	\$15.6
R&D	\$8.2	\$11.1	\$3.2	\$3.0	\$2.6	\$2.1	\$10.9	\$26.9	\$48.5	\$51.2	\$38.4	\$42.3
<b>EBITDA</b>	<b>(\$11.2)</b>	<b>(\$15.0)</b>	<b>(\$4.6)</b>	<b>(\$4.7)</b>	<b>(\$4.9)</b>	<b>(\$4.4)</b>	<b>(\$18.5)</b>	<b>(\$37.8)</b>	<b>(\$62.0)</b>	<b>(\$78.1)</b>	<b>(\$74.2)</b>	<b>(\$25.6)</b>
Amortization and Depreciation	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1
Operating Income	(\$11.3)	(\$15.0)	(\$4.6)	(\$4.7)	(\$4.9)	(\$4.4)	(\$18.6)	(\$37.9)	(\$62.1)	(\$78.2)	(\$74.3)	(\$25.7)
Interest expense	\$0.0	\$0.0	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.4)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Interest income	\$0.2	\$0.2	\$0.1	\$0.1	\$0.0	\$0.0	\$0.2	\$0.3	\$0.2	\$0.3	\$0.2	\$0.3
Net interest	\$0.2	\$0.2	\$0.0	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.2)	\$0.3	\$0.2	\$0.3	\$0.2	\$0.3
Other	(\$0.3)	(\$0.2)	(\$0.1)	(\$0.0)	(\$0.0)	(\$0.0)	(\$0.2)	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total other income	(\$0.2)	\$0.0	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.1)	(\$0.4)	\$0.3	\$0.2	\$0.3	\$0.2	\$0.3
Pretax Income	(\$11.4)	(\$15.0)	(\$4.7)	(\$4.8)	(\$5.0)	(\$4.5)	(\$19.0)	(\$37.6)	(\$61.9)	(\$78.0)	(\$74.1)	(\$25.4)
Income tax provision	\$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	(\$11.4)	(\$15.0)	(\$4.7)	(\$4.8)	(\$5.0)	(\$4.5)	(\$19.0)	(\$37.6)	(\$61.9)	(\$78.0)	(\$74.1)	(\$25.4)
Shares outstanding (basic)		7.3	9.7	9.7	9.7	9.8	9.8	14.9	18.0	22.6	28.2	28.7
Shares outstanding (diluted)		7.3	9.7	9.7	9.7	9.8	9.8	15.5	18.7	23.2	28.9	29.4
Shares outstanding (for EPS)		7.3	9.7	9.7	9.7	9.8	9.8	14.9	18.0	22.6	28.2	28.7
<b>EPS</b>		<b>(\$2.04)</b>	<b>(\$0.48)</b>	<b>(\$0.49)</b>	<b>(\$0.52)</b>	<b>(\$0.46)</b>	<b>(\$1.94)</b>	<b>(\$2.52)</b>	<b>(\$3.44)</b>	<b>(\$3.46)</b>	<b>(\$2.63)</b>	<b>(\$0.88)</b>
<b>Margin Analysis</b>												
<b>Gross Margin</b>	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	89.0%	89.0%
S&M as % of sales	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	192.5%	51.8%
G&A as % of sales	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	67.5%	18.0%
R&D % sales	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	182.6%	48.9%
EBITDA margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	(353.1%)	(29.6%)
<b>Operating margin</b>	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	(353.6%)	(29.7%)
Pre-tax margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	(352.5%)	(29.4%)
Statutory tax rate	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%	37.0%
AMT tax rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Tax rate, effective	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 margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	(352.5%)	(29.4%)
<b>Year/Year Changes</b>												
FX006 Revenues												
<b>Total Revenues</b>												
Gross profit												
S&M												
G&A												
R&D												
<b>EBITDA</b>												
<b>Operating income</b>												
Net income												
<b>Earnings per share</b>												

Source: Wells Fargo Securities, LLC estimates and company reports

FLXN - BALANCE SHEET (In MM except per share data)										2013							
		Mar-13		Jun-13		Sep-13		Dec-13									
FY 2011	FY 2012	10A	20A	30A	YTD	40E	FY 2013E	FY 2014E	FY 2015E	FY 2016E	FY 2017E	FY 2018E					
<b>Current Assets</b>																	
Cash and Equivalents	\$3.4	\$12.8	\$15.3	\$12.1	\$13.5	\$9.2	\$9.2	\$38.0	\$43.1	\$36.2	\$53.0	\$9.5					
Restricted Cash and Restricted Cash Equivalents	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1					
Marketable securities	\$7.2	\$16.5	\$14.0	\$12.8	\$7.5	\$7.5	\$7.5	\$7.5	\$7.5	\$7.5	\$7.5	\$7.5					
Prepaid expenses and other assets	\$0.3	\$0.5	\$0.4	\$0.3	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$1.4	\$2.4	\$2.6					
Total Current Assets	\$10.8	\$29.9	\$29.7	\$25.3	\$22.5	\$18.3	\$18.3	\$47.1	\$52.1	\$45.2	\$68.4	\$41.8					
<b>Long-term Assets</b>																	
Property and equipment, net	\$0.1	\$0.1	\$0.3	\$0.3	\$0.4	\$0.4	\$0.4	\$0.3	\$0.2	\$0.1	\$0.2	\$1.0					
Other assets	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0					
Total Assets	\$10.9	\$30.0	\$29.8	\$25.7	\$23.0	\$18.7	\$18.7	\$47.4	\$52.4	\$45.4	\$68.7	\$42.8					
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>																	
<b>Current Liabilities</b>																	
Accounts payable	\$0.7	\$0.5	\$0.2	\$0.2	\$1.9	\$2.0	\$2.0	\$2.4	\$2.9	\$3.1	\$3.2	\$3.1					
Accrued expenses and other current liabilities	\$1.1	\$2.2	\$2.0	\$2.5	\$2.5	\$2.6	\$2.6	\$2.4	\$3.9	\$4.1	\$4.3	\$3.9					
Current portion of long-term debt	\$0.0	\$0.0	\$0.0	\$0.5	\$1.0	\$1.0	\$1.0	\$0.6	\$0.1	\$0.0	\$0.0	\$0.0					
Total Current Liabilities	\$1.8	\$2.7	\$2.2	\$3.2	\$5.4	\$5.6	\$5.6	\$6.2	\$6.9	\$7.1	\$7.5	\$7.0					
<b>Long-term Liabilities</b>																	
Long-term debt	\$0.0	\$0.0	\$5.0	\$4.5	\$4.0	\$4.0	\$4.0	\$2.5	\$0.4	\$0.0	\$0.0	\$0.0					
Other Long-term Liabilities	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0					
Total Long-term Liabilities	\$0.0	\$0.0	\$5.0	\$4.5	\$4.0	\$4.0	\$4.0	\$2.5	\$0.4	\$0.0	\$0.0	\$0.0					
<b>Shareholders' Equity</b>																	
Preferred Stock	\$41.8	\$74.8	\$74.8	\$74.8	\$74.8	\$74.8	\$74.8	\$74.8	\$74.8	\$74.8	\$74.8	\$74.8					
Common stock	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0					
Additional paid-in capital	\$0.3	\$0.4	\$0.3	\$0.5	\$1.2	\$1.2	\$1.2	\$68.5	\$136.8	\$209.5	\$306.5	\$306.5					
Accumulated other comprehensive income	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0					
Deficit accumulated during the development stage	(\$33.0)	(\$48.0)	(\$52.6)	(\$57.4)	(\$62.5)	(\$67.0)	(\$67.0)	(\$104.6)	(\$166.5)	(\$246.1)	(\$320.2)	(\$345.6)					
Total Stockholders' Equity	\$9.2	\$27.3	\$22.6	\$18.0	\$13.6	\$9.1	\$9.1	\$38.8	\$45.1	\$38.3	\$61.2	\$35.8					
Total Liabilities & Stockholders' Equity	\$10.9	\$30.0	\$29.8	\$25.7	\$23.0	\$18.7	\$18.7	\$47.4	\$52.4	\$45.4	\$68.7	\$42.8					

Source: Wells Fargo Securities, LLC estimates and company reports

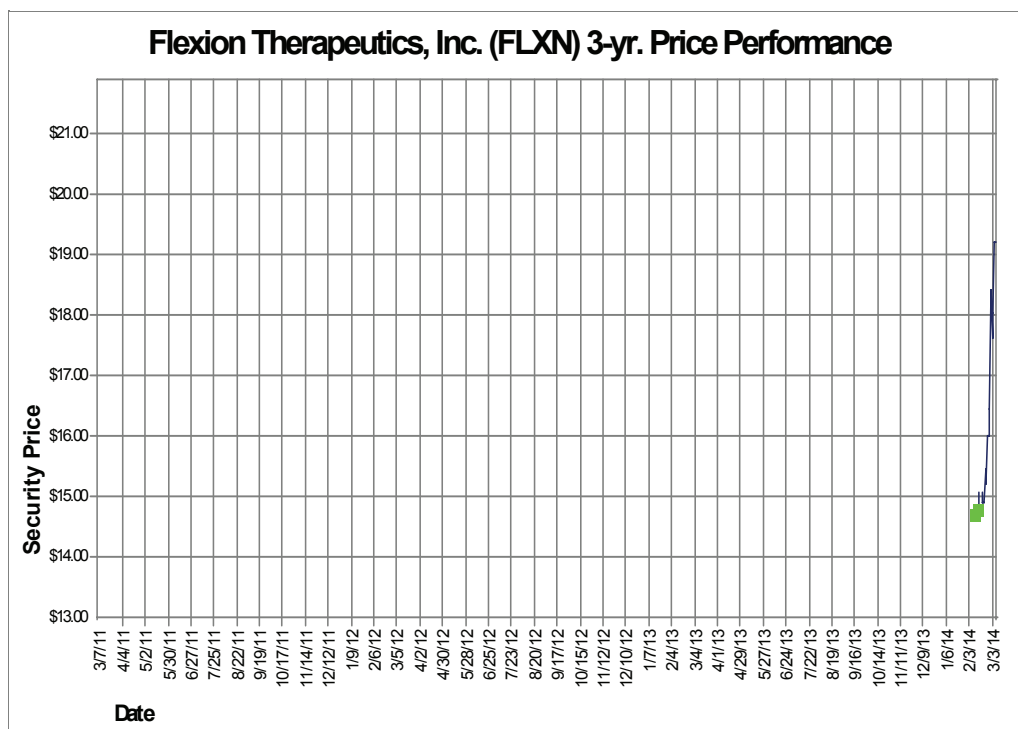


FLXN - CASH FLOW STATEMENT (In MM except per share data)									
	2013			2013			2013		
	FY 2011	FY 2012	Mar-13 1QA	Jun-13 2QA	Sep-13 3QA	Sep-13 YTD	Dec-13 4QE	FY 2013E	FY 2014E
Net Income (Loss)	(\$11.4)	(\$15.0)				(\$14.5)	(\$4.5)	(\$19.0)	(\$37.6)
<b>Adjustments to Net Income</b>									
Depreciation	\$0.1	\$0.0				\$0.1	\$0.0	\$0.1	\$0.1
Stock-based Compensation	\$0.1	\$0.1				\$0.8	\$0.0	\$0.8	\$0.0
Amortization of premium (discount) on marketable securities	\$0.1	\$0.1				\$0.1	\$0.0	\$0.1	\$0.0
Loss on disposal of property and equipment	\$0.2	\$0.0				\$0.0	\$0.0	\$0.0	\$0.0
Other	\$0.0	\$0.0				\$0.0	\$0.0	\$0.0	\$0.0
Changes in operating assets and liabilities									
Prepaid Expenses and other assets	\$0.2	(\$0.2)				\$0.4	\$0.0	\$0.4	\$0.0
Accounts Payable, accr. Exps., and other curr. liab	\$0.4	\$0.9				\$0.4	\$0.2	\$0.6	\$1.0
<b>Net Cash From Operations</b>	<b>(\$10.4)</b>	<b>(\$14.0)</b>	<b>(\$4.7)</b>	<b>(\$4.8)</b>	<b>(\$5.0)</b>	<b>(\$12.7)</b>	<b>(\$4.3)</b>	<b>(\$16.9)</b>	<b>(\$36.5)</b>
<b>Cash from Investing Activities</b>									
Purchases of property and equipment	(\$0.0)	(\$0.0)				(\$0.4)	\$0.0	(\$0.4)	\$0.0
Change in restricted cash	\$0.0	\$0.0				(\$0.1)	\$0.0	(\$0.1)	\$0.0
Purchases of marketable securities	(\$16.8)	(\$28.5)				(\$15.0)	\$0.0	(\$15.0)	\$0.0
Redemption of marketable securities	\$12.8	\$19.0				\$23.9	\$0.0	\$23.9	\$0.0
Other	\$0.0	\$0.0				\$0.0	\$0.0	\$0.0	\$0.0
<b>Cash from Investing Activities</b>	<b>(\$4.1)</b>	<b>(\$9.5)</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$8.4</b>	<b>\$0.0</b>	<b>\$8.4</b>	<b>\$0.0</b>
<b>Cash from Financing Activities</b>									
Proceeds from borrowings under term loan	\$0.0	\$0.0				\$5.0	\$0.0	\$5.0	(\$2.0)
Proceeds from issuance of Series A Cvt Prd Stock, net	\$13.0	\$13.1				\$0.0	\$0.0	\$0.0	\$0.0
Proceeds from issuance of Series B Cvt Prd Stock, net	\$0.0	\$19.9				\$0.0	\$0.0	\$0.0	\$0.0
Proceeds from common stock issuance	\$0.0	\$0.0				\$0.0	\$0.0	\$0.0	\$67.3
Proceeds from exercise of stock options	\$0.0	\$0.0				\$0.0	\$0.0	\$0.0	\$0.0
Other	\$0.0	(\$0.0)				(\$0.1)	\$0.0	(\$0.1)	\$0.0
<b>Cash from financing</b>	<b>\$13.0</b>	<b>\$33.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$0.0</b>	<b>\$4.9</b>	<b>\$0.0</b>	<b>\$4.9</b>	<b>\$65.4</b>
Increase/(decrease) in cash and cash equivalents	(\$1.5)	\$9.5				\$0.6	(\$4.3)	\$0.0	\$28.8
Beginning cash balance	\$4.8	\$3.4				\$12.8	\$13.5	\$12.8	\$9.2
<b>Ending cash balance</b>	<b>\$3.4</b>	<b>\$12.8</b>	<b>\$3.2</b>	<b>\$3.4</b>	<b>(\$1.6)</b>	<b>\$13.5</b>	<b>\$9.2</b>	<b>\$9.2</b>	<b>\$38.0</b>
Average cash balance	\$4.1	\$8.1				\$13.2	\$11.3	\$11.0	\$23.6

Source: Wells Fargo Securities, LLC estimates and company reports. Note: Quarterly cash flow statement historical figures for 1Q-3Q:2013 not available.



## Required Disclosures



	Date	Publication Price (\$)	Rating Code	Val. Rng. Low	Val. Rng. High	Close Price (\$)
■	2/12/2014		IPO at \$13.00			

Source: Wells Fargo Securities, LLC estimates and Reuters data

### Symbol Key

- ▼ Rating Downgrade
- ▲ Rating Upgrade
- Valuation Range Change
- ◆ Initiation, Resumption, Drop or Suspend
- Analyst Change
- Split Adjustment

### Rating Code Key

- 1 Outperform/Buy
- 2 Market Perform/Hold
- 3 Underperform/Sell
- SR Suspended
- NR Not Rated
- NE No Estimate

## Additional Information Available Upon Request

I certify that:

- 1) All views expressed in this research report accurately reflect my personal views about any and all of the subject securities or issuers discussed; and
- 2) No part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by me in this research report.

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**1=Outperform:** The stock appears attractively valued, and we believe the stock's total return will exceed that of the market over the next 12 months. BUY

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**3=Underperform:** The stock appears overvalued, and we believe the stock's total return will be below the market over the next 12 months. SELL

**SECTOR RATING**

**O=Overweight:** Industry expected to outperform the relevant broad market benchmark over the next 12 months.

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**U=Underweight:** Industry expected to underperform the relevant broad market benchmark over the next 12 months.

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**V =** A stock is defined as volatile if the stock price has fluctuated by +/-20% or greater in at least 8 of the past 24 months or if the analyst expects significant volatility. All IPO stocks are automatically rated volatile within the first 24 months of trading.

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