Global Pharmaceuticals
Physician Survey Highlights Potential Impact of EMPA-REG OUTCOME

October 08, 2015
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- **Bottom Line:** Given the EMPA-REG OUTCOME data and the substantial benefit seen in cardiac and all cause mortality, we sought to examine its impact on the overall oral diabetes market given the potential implications on numerous pharma companies. We conducted an online survey with 51 physicians (25 endocrinologists and 26 primary care) and were impressed by how aware the physicians were of the EMPA-REG data just two weeks after the results were presented, and by how highly they regarded the actual findings. Based on the results of our survey we are adjusting our sales estimates for LLY, MRK and JNJ. Please see slide 19 for our estimate revisions. We also see Jardiance as now being poised to drive near-term upside to LLY and, in conjunction with what we see as a diverse pipeline that is still underappreciated, we are upgrading LLY to Outperform (from Neutral) and increasing our target price to $105 (from $89). Please see link to companion LLY note that was also published today.

- **Positive data to drive Jardiance and SGLT-2s higher, pressure DPP-4s, GLP-1s.** Overall, our survey highlighted that physicians were very impressed with the EMPA-REG data and they see themselves increasing their use of LLY’s Jardiance (and other SGLT-2s) both in the first-line and add-on market. Conversely, they generally see their use of DPP-4s and (less so) GLP-1s as flat or declining as a result of the Jardiance data. We were also impressed by how high the awareness of the EMPA-REG results already is, which may allow for the data to impact sales even prior to the data being added to the package insert.

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Survey Respondents Included General Practitioners and Specialists, With a Focus on High Volume Prescribers

- Our survey focused on US physicians (n=51) who are high volume prescribers of the commonly used diabetes drugs
  - 100% are US-based, board-certified physicians
  - 49% of respondents are endocrinologists
  - 37% of respondents are general practitioners
  - 14% of respondents are internists

- Respondents see an average of 44 patients with type 2 diabetes mellitus (T2DM) per week

- All classes of commonly-used diabetes drugs were widely used by physicians surveyed
  - 55% of respondents already use SGLT2 as a potential first line therapy
  - 86% of respondents currently use SGLT2 as add-on therapy

Source: Credit Suisse Physician Survey
Results from Survey Suggests Significant Variability in Treatment Approaches

Q: What is the % breakdown among the therapies you prescribe as front line for T2DM?

Across all respondents, front line treatment remains metformin with DPP-4s used most frequently among the branded assets.

Q: What is the % breakdown among the therapies you prescribe as add-on for T2DM?

Increasing usage of branded products is seen in the add-on population with DPP-IV predominating.

Insulin was noted by some respondents as the preferred therapy before both GLP-1 and SGLT2.

* Bar sizes represent the variability in responses (within 1 standard deviation)

Source: Credit Suisse Physician Survey
Most Respondents Were Aware of the EMPA-REG OUTCOME Study Results Prior to Survey Entry

Q: Are you aware of the recently published EMPA-REG OUTCOME results?

Note: For those physicians who answered that they were NOT familiar with the EMPA-REG data prior to completing the survey, the main efficacy and safety results were presented to them before they completed the rest of the survey.

Source: Credit Suisse Physician Survey
Almost All Respondents Found the EMPA-REG Results Moderately to Very Compelling

Q: How compelling is the data that was presented about the EMPA-REG OUTCOME trial?

Source: Credit Suisse Physician Survey
Respondents Were Split on Whether They Believed the Effects Were Jardiance-Specific or a Class Effect for the SGLT-2s

Q: Based on the data that was presented about the EMPA-REG OUTCOME trial, would you extrapolate these results to the entire SGLT2 class or do you believe this is product specific?

- 45% of respondents believe this applies to the entire SGLT2 class.
- 55% of respondents think this result is product specific and they would need outcomes data for all other SGLT2 before believing this benefit applies to them.

Source: Credit Suisse Physician Survey
Endocrinologists and Higher Volume Prescribers Tended to View EMPA-REG Results as More Likely to be a Class Effect

Survey Responses Broken Down by Specialty and Practice Volume

- Class effect remains a key question in understanding the impact of the EMPA-REG data
- Overall, surveyed physicians were split on whether the cardiovascular benefit was product driven or class driven
- A trend was evident when we separated the respondents by specialty with endocrinologists, generally, believing the CVOT benefit was driven by a class effect
- A similar trend was seen in physicians who see more than 50 patients with T2DM per week

Source: Credit Suisse Physician Survey
Physicians Agree Metformin Will Remain the Foundation for Front-Line Treatment…

Q: 2 years from now, of your T2DM, please estimate the percentage of patients that will be taking the following drug classes in the first line setting?

- Metformin
- SGLT2 Inhibitors
- DPP-4
- Insulin therapy
- GLP-1
- Sulfonylureas
- Thiazolidinediones
- Meglitinides

* Bar sizes represent the variability in responses (within 1 standard deviation)

Source: Credit Suisse Physician Survey
… But Significant Percentage Also Expect to Increase Their Use of Jardiance in the Front-Line Setting

Q: Based on the data that was presented about the EMPA-REG OUTCOME trial, would you consider changing your use of Jardiance in the front line setting?

Source: Credit Suisse Physician Survey
Physicians See SGLT2s Becoming the Leading Class That They Will Use in the Add-on Setting…

Q: 2 years from now, of your T2DM, please estimate the percentage of patients that will be taking the following drug classes in the add-on setting?

- Metformin
- SGLT2 Inhibitors
- DPP-4
- Insulin therapy
- GLP-1
- Sulfonylureas
- Thiazolidinediones
- Meglitinides

* Bar sizes represent the variability in responses (within 1 standard deviation)

Source: Credit Suisse Physician Survey
… With Large Majority Planning on Increasing Their Use of Jardiance in the Add-On Setting

Q: Based on the data that was presented about the EMPA-REG OUTCOME trial, would you consider changing your use of Jardiance in the add-on setting?

Source: Credit Suisse Physician Survey
We Were Surprised to See That a Small Percentage of Physicians Would Even Consider Switching Stable Patients to Jardiance

Q: Based on the data that was presented about the EMPA-REG OUTCOME trial, would you consider switching stable patients on other therapies (e.g., DPP-IV) to Jardiance?

- **64%** Yes, would switch all patients
- **14%** Yes, but only patients with concurrent heart disease
- **10%** No but would use Jardiance more readily as add-on in patients with poorly controlled diabetes
- **12%** No (please explain)

<table>
<thead>
<tr>
<th>No (please explain)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I already use the class a lot</td>
</tr>
<tr>
<td>Stable is stable. The agent itself it not terribly powerful at reducing A1C, which is another risk factor</td>
</tr>
<tr>
<td>I need head to head data with other meds, not placebo</td>
</tr>
</tbody>
</table>

Source: Credit Suisse Physician Survey
Depth of Awareness and Positive Impression of EMPA-REG Data Suggests Commercial Impact Possible Ahead of Any Label Change

Analyzing our survey results across various subgroups, we see a high level of awareness of the EMPA-REG data already, especially amongst key target customer segments such as endocrinologists and high volume prescribers.

- Perception of the EMPA-REG data was also very positive, with most stating the results were moderately to very compelling.
- The feeling that the results are a class effect was particularly notable with endocrinologists and higher volume prescribers, possibly due to greater prior awareness of the SGLT2-class.
- All of this suggests to us a potential positive impact on scripts for Jardiance (and less so other SGLT-2s) even prior to the EMPA-REG data being incorporated into the Jardiance package insert.

Source: Credit Suisse Physician Survey
Regardless of Specialty, Add-on Therapy Is Where Most Physicians Believed They Would Increase Their Jardiance Usage

Survey Responses by Specialty

- **Endocrinologists** showed a greater probability of increasing their Jardiance use for both first-line and add-on therapy.
- Interestingly, general practitioners (GPs) were the most bullish on the EMPA-REG data with 21% of respondents stating that they would actively switch stable patients onto Jardiance.
- In comparison, internal medicine physicians were largely unaware of the EMPA-REG data and the majority did not feel that their treatment approach would change in the near term.

**Survey Responses by Specialty**

<table>
<thead>
<tr>
<th>Probability of Prescribing</th>
<th>Increase Front Line Jardiance Use</th>
<th>Increase Add-On Jardiance Use</th>
<th>Switch All Stable Patients to SGLT2 Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prob of Prescribing (Endocrinology)</td>
<td>52%</td>
<td>68%</td>
<td>12%</td>
</tr>
<tr>
<td>Prob of Prescribing (General Practice)</td>
<td>42%</td>
<td>63%</td>
<td>21%</td>
</tr>
<tr>
<td>Prob of Prescribing (Internal Medicine)</td>
<td>29%</td>
<td>43%</td>
<td>0%</td>
</tr>
</tbody>
</table>

"Proven to reduce risk of CV events and death is significant"

**Physician Responder**

Source: Credit Suisse Physician Survey
High Prescribers Were More Likely to Increase Jardiance Use in the Front Line and Add-on Settings

Survey Responses by Practice Volume

<table>
<thead>
<tr>
<th>Probability of Prescribing</th>
<th>Increase Front Line Jardiance use</th>
<th>Increase Add-On Jardiance Use</th>
<th>Switch All Stable Patients to SGLT2 Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prob of Prescribing (0-50)</td>
<td>39%</td>
<td>61%</td>
<td>6%</td>
</tr>
<tr>
<td>Prob of Prescribing (&gt;50)</td>
<td>62%</td>
<td>69%</td>
<td>8%</td>
</tr>
</tbody>
</table>

- Some divergence in future prescription habits was also seen in clinicians who had practices heavy in diabetes (>50 patients a week) vs. those who were light to moderate (0-50 patients per week)

- Could suggest reasonable uptake with high volume prescribers in the near-term and then more of a longer-term impact if lower volume prescribers begin to move Jardiance up in the treatment algorithm over time

- Head winds to our belief in rapid impact from EMPA-REG remains payer acceptable of the data and the belief that many will see the CVOT benefit as being more class related than product related

“Formulary will continue to be an issue for a while, and what if this is a class effect”

Physician Responder

Source: Credit Suisse Physician Survey
Physicians Aware of EMPA-REG Appeared More Willing to Increase Jardiance Use

### Survey Responses by Previous Awareness of EMPA-REG

<table>
<thead>
<tr>
<th>Probability of Prescribing</th>
<th>Increase Front Line Jardiance use</th>
<th>Increase Add-On Jardiance Use</th>
<th>Switch All Stable Patients to SGLT2 Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability of Prescribing (Not Aware of EMPA)</td>
<td>21%</td>
<td>50%</td>
<td>14%</td>
</tr>
<tr>
<td>Probability of Prescribing (Aware of EMPA)</td>
<td>54%</td>
<td>68%</td>
<td>14%</td>
</tr>
</tbody>
</table>

- Using survey results, we used conditional probabilities to determine the likely effect EMPA-REG will have on Jardiance and the overall market. Specifically, we modelled a physician prescribing behavior through accounting for awareness of data and perception of class effect. As such, the numbers reflect a physician probability of increasing Jardiance use given the results from the EMPA-REG study.

- Predictably, physicians who were aware of EMPA-REG prior to the survey (e.g. more knowledgeable around the data) responded with higher probability of increasing Jardiance use both in the front line and add-on setting.

- A physician's willingness to switch a stable patient seemed to be unrelated and may speak to the complicated nature of treating a patient with type 2 diabetes.

Source: Credit Suisse Physician Survey
Our Discussion with KOLs Reveals 3 Top Unmet Needs in Diabetes Care

- **Drugs that reduce cardiovascular events**
  - CV events are a major comorbidity of Type 2 diabetes with historical therapies having been linked to either increased or shown no benefit in cardiovascular outcomes. Recent focus on addressing this unmet need have emerged with multiple cardiac outcome trials reading out in the near term.

- **Drugs that improve long-term efficacy**
  - A significant drawback of current antidiabetic drugs is that they have restricted therapeutic longevity with many patients still unable to attain their target HbA1c with multiple oral agents.

- **Drugs targeting diabetic complications**
  - Diabetes has considerable morbidity and these complications lack treatments that are both tolerable, efficacious and safe.

We believe the positive *EMPA-REG* data helps to address this need.

Source: Credit Suisse Physician Survey
Survey Results Show Usage Increasing the Most of the SGLT2 Class

Change in % of Patients on Therapy (2 years from now) and separated by perception of EMPA-REG results

*This is the only study to show convincing and meaningful reduction in CV events for an oral diabetes medication*  

Physician Responder

Generally, physician opinions indicated a rise in their use of the SGLT2 class in both front-line and add-on setting

- This was particularly notable in physicians who felt the EMPA-REG results were compelling
- On the other hand, less drastic trends were observed in those physicians who did not find the EMPA-REG results compelling

Consistent with our assumptions, physicians believed that their use of DPP-4s would steadily decline as the results from EMPA-REG become more widely known

- Doctors who found the EMPA-REG data more compelling are also likely to reduce their use of GLP-1s

Source: Credit Suisse Physician Survey
Increasing Estimates for SGLT-2s, Lowering for DPP-4s, While GLP-1 Estimates Are Essentially Unchanged

CS 2020 US Sales Estimates
(Sales in $ Million)

DPP-IV sales decrease by $319MM

SGLT2 sales increase by $1,474MM

GLP1 sales increase by $65MM

Source: Company data, Credit Suisse estimates
Material Changes to Credit Suisse US Pharma Team Diabetes Market Estimates

<table>
<thead>
<tr>
<th></th>
<th>Januvia</th>
<th>Tradjenta</th>
<th>Invokana</th>
<th>Jardiance</th>
<th>Trulicity</th>
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</thead>
<tbody>
<tr>
<td><strong>CS Estimates (Before)</strong></td>
<td>$3,274</td>
<td>$634</td>
<td>$1,607</td>
<td>$518</td>
<td>$861</td>
</tr>
<tr>
<td><strong>CS Estimates (After)</strong></td>
<td>$3,007</td>
<td>$582</td>
<td>$1,998</td>
<td>$1,602</td>
<td>$926</td>
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<tr>
<td><strong>Change in Estimates</strong></td>
<td>-$267</td>
<td>-$52</td>
<td>$391</td>
<td>$1,083</td>
<td>$65</td>
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<tr>
<td><strong>Diabetes Total Market (Before)</strong></td>
<td>$6,895</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Diabetes Total Market (After)</strong></td>
<td>$8,116</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Change in DPP-4 Sales</strong></td>
<td>-$319</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Change in SGLT2 Sales</strong></td>
<td>$1,474</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Change in GLP1 Sales</strong></td>
<td>$65</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Source: Credit Suisse Estimates
We Believe EMPA-REG Will Have Significant Commercial Read-throughs

Using the survey responses, we constructed a decision diagram looking at a random sample of 100 physicians.

- 73% of doctors are aware of EMPA-REG.
- 63% of those aware believe the effect is class related.
- 37% of those aware believe the effect is product related.
- 46 doctors believe the effect is class related.
- 20 doctors (63%) of those believe would increase Jardiance use as add-on.
- 28 doctors (61%) of those believe would increase front line use.
- 44 doctors (61%) of those believe would increase front line use.

We estimate that 44% of doctors will increase Jardiance use as add-on.
In addition, we estimate 37% of physicians will increase front-line Jardiance use.

Source: Credit Suisse Physician Survey, Credit Suisse analysis
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<table>
<thead>
<tr>
<th>Rating</th>
<th>Versus universe (%)</th>
<th>Of which banking clients (%)</th>
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</thead>
<tbody>
<tr>
<td>Outperform/Buy*</td>
<td>95%</td>
<td>(12%) banking clients</td>
</tr>
<tr>
<td>Neutral/Hold*</td>
<td>29%</td>
<td>(41%) banking clients</td>
</tr>
<tr>
<td>Underperform/Sell</td>
<td>13%</td>
<td>(23%) banking clients</td>
</tr>
<tr>
<td>Restricted</td>
<td>2%</td>
<td></td>
</tr>
</tbody>
</table>

*For purposes of the NYSE and NASD ratings distribution disclosure requirements, our stock ratings of Outperform, Neutral, and Underperform most closely correspond to Buy, Hold, and Sell, respectively; however, the meanings are not the same, as our stock ratings are determined on a relative basis. (Please refer to definitions above.) An investor's decision to buy or sell a security should be based on investment objectives, current holdings, and other individual factors.

Price Target: (12 months) for Eli Lilly & Co. (LLY.N)

Method: Our $105 target price is based on 50/50 blend of DCF valuation ($103) and SOTP ($107). We use a 7% WACC along with a -1% perpetually growing forecast for our DCF valuation.

Risk: Key risks to our $105 target price include (1) pipeline failures, particularly on their key diabetes phase 3 assets and autoimmune assets; and (2) inability to appropriately contain costs in keeping with long-term targets.

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