**2017 Objectives and Accomplishments**

1. Inform Coupon Effectiveness and Strategy
   1. Setup an environment and develop an easily configurable coupon engine with following capabilities: ***[Innovation]***
      1. Study relationships between copay, abandonment and adherence for various dynamically configured segments. This includes data visualization and modeling.

* Helped and guided team members (Ramana and Ambika) to design and develop flexible processes to get abandonment and adherence curves for dynamically configured segments using longitudinal patient level data for Diabetes and Belsomra. Overall objective is to channel these outputs for better coupon offer. Dynamically configured segments include Coupon users / No Buy Down users, Payment Type segments, Patient type segments (New vs Continuing) etc.
* Designed the process with a view to accommodate the normal SAS processes with flexible XML based configurations and driver codes to run appropriate codes based on the configuration. This design will help to add any future process optimizations like web based GUI and AI interfaces to SAS processes.
* Consulted with Ambika to resolve some of the adherence flatness seen in the KPIs. Development process will continue next year to include flexible visualizations and statistical modeling.
  + 1. Explore the possibility of using new technologies (AWS, R, Python etc.) that would add to savings in the future.
* Guided our intern Ambika Rana to implement coupon engine in AWS environment using Python to handle large patient level LAAD and FIA data located within AWS environment. The proof of concept prototype works and if we decide to move forward with this approach, SAS license cost of about **$150K** first year and about **$50K** each year could be saved.
  1. Collaborate with Brand teams, Finance, Consumer COE and vendors to develop optimal coupon strategy for brands such as Januvia and Belsomra. ***[ Financial Performance]***
     1. Study coupon effectiveness for patients.
     2. Enhance financial models with the patient level effectiveness findings
     3. Evaluate various coupon design strategies

Much of the work done on this space for brand teams this year involves various Relay Health EVoucher evaluations. These analysis provide decision support worth about **$50MM to $55MM** in 2017/2018 EVoucher costs for Merck and about **$10MM to $15MM** for regular coupon programs.. Closely collaborated with Finance, COE and brand teams.

1. Guided strategic analysis of **Belsomra RH program**.
   * Cost of this program for Belsomra is $4.2MM in 2017 and $10MM in 2018.
   * Program rolled out nationally with a single tier $30 program.
   * Identified implementation issues (ex: Walgreens)
   * Analyzed multiple offer scenarios. Impact measurement guided the management to decide on national rollout.
   * Initially developed and then Helped Ramana to deliver weekly performance reports and monthly executive summaries.
   * Regarded as one of the main consultant to study such programs by the brand team.
2. **Januvia EVoucher** Program
   * Cost of this program for Januvia in 2018 is about $29MM.
   * Program rolled out nationally in October 2017 for New Patients with $30 to $125 initial copays.
   * Helped to evaluate and develop more holistic and several views of Financial Models to determine the rollout of Januvia EVoucher program.
   * Several versions of abandonment and adherence curves were incorporated to understand the range of impact to business and patients.
3. **ERTU EVoucher** analysis
   * Estimated Cost of this program for ERTU in its first year of launch is about $7MM to $9MM.
   * Rollout is likely after launch in 2018.
   * Helped to evaluate and develop more holistic and several views of Financial Models to understand the potential impact of the program.
4. **Sivextro and Dificid EVoucher** analysis
   * Estimated Cost of this program for Sivextro in 2018 is about $700K.
   * Sivextro rolled out this year. Dificid to rollout in December 2017.
   * Consulted and evaluated various financial impact analysis developed by other teams.
5. **Belsomra and ERTU regular Coupons** (i.e, offered by McKesson)
   * Estimated yearly cost of these two coupon programs is about $10MM to $15MM**.**
   * Evaluated various financial scenarios to change the design of the current coupon program as well as the impact of various formulary wins this year for Belsomra. ERTU’s offer of $0 coupons was also evaluated similarly.
   * Brand team rolled out $30 single tier coupons for Belsomra and ERTU coupons with $0 copay is planned to rollout after launch.
6. Inform Sample and Voucher Effectiveness and Strategy ***[Financial Performance]***
   1. Study the impacts of Samples and Vouchers through data explorations and statistical modeling. Evaluate various investment scenarios and provide optimal investment recommendations

* **Januvia Web Voucher**
  + Program cost that was impacted is about **$4MM** per year
  + Provided in-depth analysis using LAAD and XPonent data based models to illustrate the financial impact of pulling web vouchers out for Januvia.
  + This analysis highlighted the risk involved before Marketing pulled out the web vouchers.

1. Support the continued rollout of Investment Prioritization Framework projects for multiple brands. ***[Financial Performance]***

* Guided Igor and Siddharth in the execution of IPF work for Diabetes, Belsomra, Gardasil, Zostavax and P23. This involves multiple promotional channels and analysis of optimal budget allocations for 2018 profit plan. Total Budget considered in the analysis by Siddarth and Igor is about **$195MM.**

1. Support brand and operations team towards design, execution and measurement of pilots and programs such as Relay Health, Januvia Sample pilot, Belsomra Digital heavyups, First Rx etc. ***[ Financial Performance]***
2. **Belsomra Relay Health Pilot Impact Measurement**
   * Helped Ramana to statistically measure the impact of RH pilot for 9 states twice. First measurement was after 3 months of rollout and the second measurement was after 6 months of rollout.
   * Consulted with brand team and COE, Guided the analysis process end to end including delivery of the appropriate results to brand team.
   * Analysis showed that break-even is possible and helped to go with national roll out.
3. **Januvia/Janumet Sampling Pilot** 
   * Guided the implementation of sampling pilot for Januvia franchise. Tasks included district selections and adjustments, estimation of sampling increase and decrease for each sub-brand, sample inventory and ordering evaluations and continuous monitoring of the rollout.
   * Worked closely with Januvia brand team, COE and Sampling Operations.
   * Built a tracking dashboard using various data sources and gave it to Sampling Operations team so that they can monitor.
4. Coach, Train and Manage consultant(s), intern(s) and direct reports to execute various promotional optimization projects. ***[People]***
   1. Coached and Managed Ramana Reddy on various aspects of day to day work (methodologies, model evaluations, process setups etc.)
   2. Coached and Managed Graduate Intern Ambika Rana in
      1. Analysis of field promotions through dynamic distributed lag models. This resulted in interesting and potentially valuable modeling related observations for the future.
      2. Coupon Engine developments related to Abandonment and Adherence computations for various brands and segments.
      3. Developing AWS / Python and R framework as an alternative cost saving model (instead of SAS servers) for handling large patient level transactional datasets.
   3. Motivated Ambika Rana to consider and accept permanent position with Merck by carefully evaluating and providing what she needs in terms of analytical complexity and general guidance.
5. Establish and/or provide necessary resources (hardware / software / logistical / administrative) needed for effective and efficient execution of various projects by the group. ***[People]***

* Helped to setup AWS environment for patient level data analysis. This was a time consuming task involving both learning on the fly and collaborating with IT.
* Saved $20K in Anylogic licensing costs by exploring internal alternatives.
* Managed hiring and filling of a Specialist position for the group.

1. Training and Development. ***[People]***

* Attended PMSA conference to learn about current industry trends in commercial analytics and presented the findings to IA&DS during the period when network and computer security were compromised.
* Represented IA&DS for the ALC/IIA meetings at Dow Center in Chicago. Learned a lot about new analytics trends and the thought process of senior leaders from several large companies and academia.

Compliance General Objective:

Awareness of/Conformity to Policies

* Complete all relevant compliance trainings.
* Review sensitive analysis with commercial legal.
* Encourage team members to raise any compliance issues or concerns.
* Required Compliance trainings were completed and reviewed various sensitive analyses with legal.