**Promotion Optimization Team Accomplishments – 2022**

1. **Oncology**

* Informed a total of about $700MM investments in Marketing Promotions
* Guided data lake team to Complete first two versions of Mkt Mix data lake to collect all promotions data in a single platform.
* Portfolio
  + DOMINO: Helped senior leaders (AVP/VP) in 2023 budget allocation process involving about $675MM+ budgets across Keytruda, Lynparza, Lenvima, Welireg, above brand
    - Allocations were done by brand, tumor, HCP vs Consumer levels
  + In 2022, enhanced DOMINO process to include Lynparza, Lenvima, Welireg.
  + Helped evaluate 2022 budget allocations and reallocations through DOMINO / Tumor Prioritization model retrospective analysis.
  + Tumor Prioritization: Evaluated and guided the Keytruda tumor prioritization (national level) process and informed the tumor strategy for all tumors within the portfolio (Keytruda, Welireg, Keytruda/Lenvima/Lynparza combos)

* HCP
  + CIA (Channel Investment Allocation): allocated $45M KEYTRUDA HCP Digital Promotion budget by tumor and consulted on allocating tumor budget to fourteen HCP Promotion Channels; Recommend tumor budget changes when promotion budget increased/decreased.
  + Informed reallocation of budgets for 2022 through multiple evaluations and business specific questions.
  + Mkt Mix (support from ZS): Assessed ROIs and Rx impacts of HCP promotions at brand, lung/non-lung, channel, vendors for Keytruda, Lenvima and Lynparza.
  + Evaluated and Informed strategies for optimal allocation of 2022 resources at vendors, channels, tumors etc.
  + Evaluated multiple vendors for whom impacts are hard to determine through Test/Control measurements (ex: Contextual Search impacts, Alert ROI confirmations)
  + Guided mass media program evaluations with Crossix partnerships (HCP Paid Search & eNewsletters)
  + Channels: HQ Emails, Third Party Emails, Alerts, Banners, Med Ed programs, Mass Media HCP displays etc.
  + Close collaboration and trusted partnerships with HCP promotions team (Lori Hancock / Jarrett Roth)
  + ADT (Oncology version of DET) impact analysis is under evaluation currently.
  + NBE / Engagement Indexes: Indexed, Triangulated and provided channel response slopes for Keytruda to compute CEI (customer engagement index) and dCEI (digital version).

* HCC
  + Informed about $200MM+ investments per year in consumer marketing promotions.
  + Evaluated and provided business case for TV investments ($75MM in 2022 and $ 100MM in 2023). This business case goes up to CEO Rob Davis for approvals.
  + HCC Channels include TV, Point of Care, Streaming Video, Online Video, Display, Social Media, Paid Search, Radio etc.
  + Evaluated HCC channels through Mkt Mix (ZS support), internal statistical models, Crossix guidance and collaborations. Triangulated multiple measurements to help create one truth version for brand team.
  + Close collaboration with brand (Susan Corbin / Jarrett Roth / Nancy Ibach), Media teams, Vendors like Crossix, Initiative, multiple POC vendors etc.
  + Other projects that helped consumer brand strategy and evaluations: Lung precision marketing, Arcadia text messaging, TNBC Social Determinants of Health, Optimal media frequency analysis (with and in addition to Crossix), Crossix net impact, optimal resource allocations through projected HCC channel level response curves etc.
  + Evaluation of alternate data sources for TV: VideoAmp (scheduled to go ahead in 2023) and EDO (dropped from consideration after our evaluations), Charter (ongoing – looks promising). All in partnership with Media and Brand team.
* Adhocs
  + Helping to develop measurement protocols for various Accelerate initiatives (ex: tumor prioritization (n=1), splitters etc)
  + Answering multiple day-to-day business questions as well as help to refine promotion strategies through ongoing consultations. Considered as premier and experienced team in this area and often given audiences with and answer direct questions from AVPs and VPs
  + Developed internal mkt mix models for Lynparza (NPP/HCC) & Lenvima (NPP) and recommended optimal channel level investments and marketing budgets to brand and media teams.
  + Evaluation of Content Hyper Personalization initiatives (through retrospective models) for Keytruda.
  + Helped develop IBC cases for various Keytruda investments for Finance. For the first time took a retrospective look on investments made in 2021 and returns to validate a new IBC case for Oncology Finance.

1. **Vaccines**

* Inform strategies around investment of about $200MM+ in Marketing Promotions
* DET Campaign Impact Analysis (Rx Impacts) and Campaign Planning
  + Evaluate Rx impacts by tactics (including contents), channels, vendors, and campaign groups – A more granular analysis of DET campaign impact on Rxs and ROIs.
  + 2022 Brands – G9 Adolescents, G9 Adults, Vaccine Confidence Campaign
  + Campaign Planning Tool (Rx impact based) second phase development is complete and operational. Helps in yearly engagement / delivery third party contract planning using results from various Rx impact analysis and expected yearly next year (2023) forecasts. Gardasil Adult in vaccine BU applies this tool for determining vendor and channel level yearly investments (+ contracting) for 2023.
* Rx Impact Assessments / Mkt Mix Models / Promotion Response Curves (PRCs)
  + Analyzed Rx Impacts and ROIs of both HCP and HCC marketing channels (including Digital) and vendors through Marketing Mix models.
    - Two cycles for G9 Adults & G9 Adolescents
    - Pneumovax
    - PED Vaccines: Rotateq / Vaxelis / Proquad
  + Sales Force (Details) PRCs for G9, P23, Vaqta PED and Rotateq
  + Guided Crossix net impact analysis and triangulated and helped to inform strategies around HCC investments for Gardasil Adults and Adolescents at sub-channel and publisher levels
  + Guided multiple POC vendors and provided measurement protocols for Gardasil and other Vaccine brands with POC programs.
* Optimal Resource Allocations (Investment Prioritization Framework)
  + 2023 profit planning guidance and investment optimization support for Gardasil Adolescents, Gardasil Adults and Pneumovax
    - *includes HCC channels and HCP channels with ~$110MM investments*
  + Addressed multiple ongoing 2022 investment strategies and brand questions for all measured brands mentioned above. Of particular mention are G9 Adult and G9 Adolescents that have major investments and growth goals. This is in partnership with brand teams, media team, DET teams, vendors like Initiative, Solved and Crossix.
  + Helped to make a business case for large investments in TV and streaming videos for brand and media teams. The TV investment business case goes up to CEO Rob Davis because of various sensitivities involved.
* Adhocs
  + Vaxneuance and Vaxelis promotion channel investment strategies support using measured proxies.
  + NBE: max touchpoints and CEI inputs using various vendor channel Rx impact measurements and proxies for multiple vaccine brands in NBE portfolio
  + Helped develop IBC cases for various Gardasil HCC investments for Finance.
  + Engagement Impact Evaluation of CTAP initiative (through retrospective models) for Gardasil.
  + Innovative synthetic control methods used to evaluate CVS / Merck initiatives to quantify the Gardasil sales impact f such initiatives. This helped to guide the optimal discount discussions with CVS (i.e., drawing a line on CVS asks).
  + Helped design rural pilot for Vaccine confidence initiatives.
  + Other Gardasil initiatives supported: DMA Ranking for HCC targeting, Crossix frequency analysis to determine optimal HCC touchpoints by publishers,
  + Evaluated OBGYN vs PCP ROIs for Gardasil

1. **Chronic Care**

* Informed about $105MM investments in Marketing promotions across Diabetes, Belsomra and Verquo.
* Worked closely with core leadership team to formulate marketing and sales force promotion strategies to plan for Januvia LOE (now extended to 2026), Steglatro reduced investments and Belsomra promotions.
* DET Campaign Impact Analysis (Rx Impacts) and Campaign Planning
  + (ongoing) Evaluate Rx impacts by tactics, channels, vendors, and campaign groups for Belsomra – A more granular analysis of DET campaign impact on Rxs and ROIs.
* Rx Impact Assessments / Mkt Mix Models / Promotion Response Curves (PRCs)
  + Analyzed Rx Impacts and ROIs of both HCP and HCC marketing channels (including digital) and vendors through Marketing Mix models.
    - Verquo, Januvia family, Steglatro family, Belsomra
  + Sales Force (Details) PRCs for Januvia, Steglatro, Belsomra, Verquo
  + Guided multiple POC vendors to measure POC program ROIs and sales impacts. Provided measurement protocols for Gardasil and other Vaccine brands with POC programs.
  + Evaluated and Guided multiple adherence related program vendors to assess impacts to patient adherence to scripts
  + Test vs Control methods applied to measure impact of VERQUVO MMF and validated high revenue/ROI for certain vendors or channels within a brand
* Optimal Resource Allocations (Investment Prioritization Framework)
  + 2023 profit planning guidance and investment optimization support for Verquo, Januvia, Steglatro and Belsomra.
    - *includes HCC channels and HCP channels with ~$100MM investments*
    - These are in partnership with brand teams, media team, DET teams, vendors like Initiative, Solved and Crossix.
  + Addressed multiple ongoing 2022 and 2023 investment strategies and brand questions for all measured brands mentioned above. Of particular mention are
    - Januvia LOE planning scenarios – both early 2023 LOE and now approved 2026 LOE
    - Steglatro promotion (both marketing and sales force) pull back scenarios and convincing JV partner Pfizer on the strategy (to be completed this month)
    - Combining Diabetes and Belsomra promotion strategies into one to optimize cross brand investments and strategies
    - Guiding channel strategies to replace revenue lost from SF reduction through increased HCP and HCC digital channels – Januvia / Steglatro / Belsomra
    - Helped to form Verquo HCP and HCC promotion planning scenarios, first to identify and reinvest in highest performing channels and then to help address Bayer’s concerns on investment levels
* Adhocs
  + NBE: Determine initial max touchpoints for Januvia, Verquo, Steglatro using various vendor channel Rx impact measurements and proxies.

1. **Hospital / Specialty BU**

* Analyzed sales impacts and ROIs through MMM/ROI analysis for Bridion 2023 HCP promotions. Informed about $10MM budget for Bridion.
* Supported Bridion DET team to determine vendor level spend using Campaign Planning Tool.
* Guided HIV DET team to recommend best channels and determine overall impacts from various investments
* DET Campaign Impact Analysis (Rx Impacts) and Campaign Planning
  + Evaluate Rx impacts by tactics, channels, vendors, and campaign groups – A more granular analysis of DET campaign impact on Rxs and ROIs.
    - 2022 Brands (planned & ongoing with lower priority) – Dificid, Zinplava, HIV, Prevymis

1. **Patient Support Programs (Coupons/Vouchers)**

* Informed about $200MM+ investments in Patient Benefit program support (Coupon / eCoupons / Samples / Vouchers)
* <Sensitive> For Legal, Finance and Brand teams: Assessed scenarios related to impact to patients and business by pulling out coupons (or not pulling out) due to coupon related litigations for multiple brands. Fortunately, Merck won the litigation and further action was not needed.
  + Chronic Care BU: Belsomra, Verquo, Steglatro, Januvia
  + Oncology: Welireg
  + Specialty: Dificid, Isentress, Delstrigo, Pifeltro, Prevymis
* Developed Januvia LOE strategies for coupon and eCoupon program continuations. Analysis helped to stop eCoupon program and saved tens of millions of dollars in P&L bottom line.
* Ongoing consultations and analysis for Steglatro coupon / eCoupon strategies (i.e., when to pull back and/or to what patient segments)
* Helped design coupon offers (both coupon and eCoupons) for launch brands and forecasted their cost impacts to the bottom line. Ran multiple design scenarios to maximize patient benefit with manageable costs and to be competitive in the market. Brands include:
  + Lyfnua
  + Sotatracept (ongoing)
* Adhocs
  + Consulted and provided guidance for various coupon related business questions for multiple brands across Chronic Care, Hospital / Specialty, and Oncology BUs

1. **Strategic Initiatives**

* HealthMap:
  + Guided development of Net Impact analysis for HCC channels for Januvia.
  + Guided and evaluated net impact analysis for key Verquo consumer channels.
* Predicted engagement impacts or possible improvements from Content Hyper Personalization (CHP) and Content Tagging (CTAP) projects for Gardasil and Keytruda digital contents.
* Accelerate Initiatives: Helping to develop measurement protocols for various Accelerate initiatives (ex: tumor prioritization (n=1), splitters etc)

1. **Other Adhocs**

* Completed Adherence Curve update with Adheris and Truven as input to NPV update process with Finance
* Completed research of effects of IOS15 upgrade on email engagement counts and impact per email for ROI analyses

1. **Non-US Markets**

* Collaborating with Analytical Wizards, AP BAEs, and Global Digital Marketing teams to:
  + Support using Wiz tool for outside US Market Mix models
  + Provide blinded Gardasil and other vaccines US Rx Impact analysis to guide AP and other global markets.