



Economic Effects of COVID-19 on Oncology and Gastroenterology Research and Development



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Introduction

The recent COVID-19 pandemic brought world-wide changes as scientists turned their focus to finding a treatment or cure for this deadly virus. Expanding on a recent article from The Conversation (Pfeiffer, 2021), our group set out to see if other fields of research and development were affected by the push to eliminate COVID-19.

We completed an event study regarding change in research and development expenses in the quarters before and during the pandemic. Our hypothesis was that the increased focus on COVID-19 took valuable resources, namely financial (Cornish 2021), away from other medical research companies.

Method and Techniques Used

- We used horizontal and vertical analysis to compare the 2019 and 2020 10Qs and 10Ks of 14 different companies. We omitted Q1 research from both years due to the volatility that occurred in all fields in early 2020.
- We focused our financial analysis on profitability and liquidity ratios.
- We also observed the average changes in revenue and research and development expenditures while keeping quarter 2 of 2019 as the base for comparisons.

Breakdown of Companies Analyzed

COVID-19 Companies

- Adaptive BioTechnologies*
- Gilead Sciences*
- Regeneron Pharmaceuticals*
- Altimune Inc.
- Inovia Pharmaceuticals
- Translate Bio Inc.
- Vaxart Inc.

Gastrointestinal Companies

- Arena Pharmaceuticals
- Intercept Pharmaceuticals
- Ironwood Pharmaceuticals

Oncology Companies

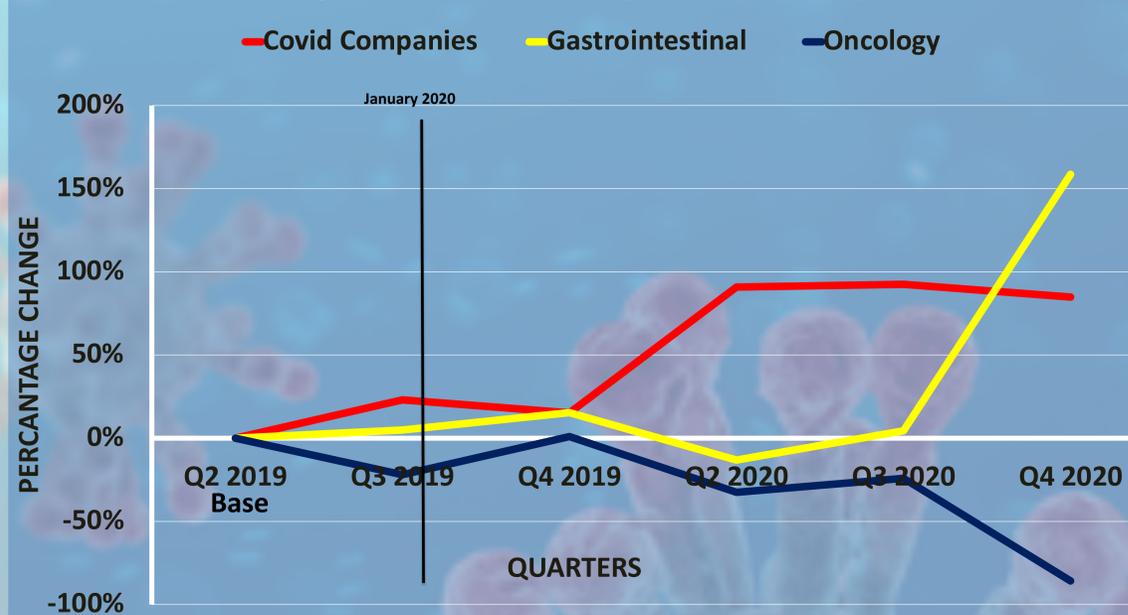
- Infinity Pharmaceuticals
- Merrimack Pharmaceuticals
- Spectrum Pharmaceuticals
- Viracta Therapeutics

*Treatments Approved

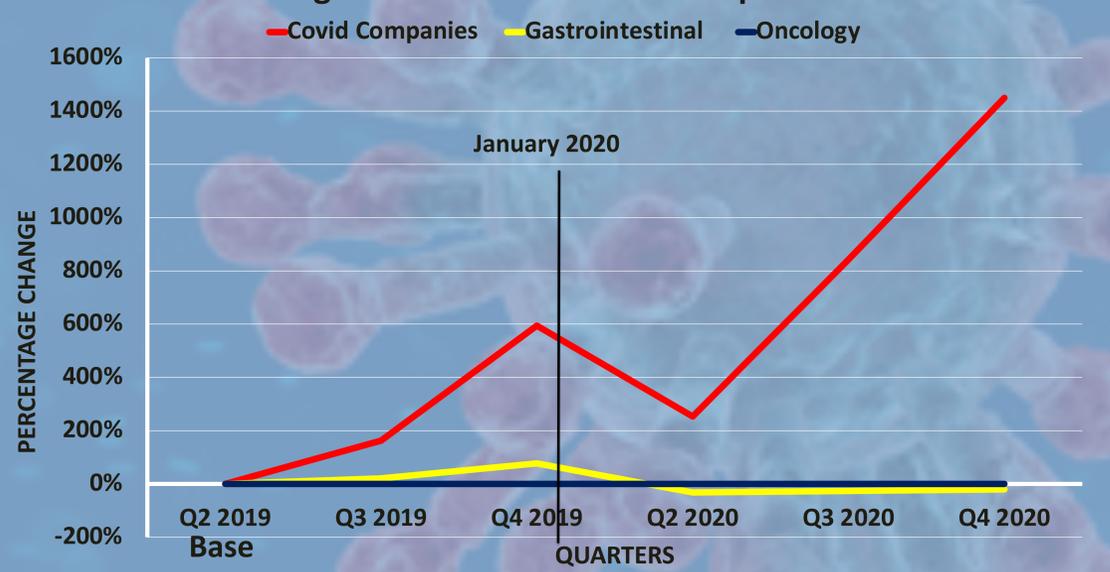
References

- Cornish, Lisa (2021). Who's funding the COVID-19 response and what are the priorities? *Devex*. Retrieved from www.devex.com.
- "COVID-19 UPDATE: Community Wellness." Penn Medicine, www.pennmedicine.org/news/internal-newsletters/happenings/2020/april/covid.
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- Lee, Jaimy. (2020). These 23 companies are working on coronavirus treatments or vaccines- here's where things stand. *MarketWatch*. Retrieved from www.marketwatch.com.
- All financial analysis for companies are from Bloomberg Terminal, accessed March 10, 2021.

Percentage Growth in R&D Expenditures compared to base



Percentage Growth in Revenues compared to base



Results and Discussions

- COVID-19 focused companies had a debt to asset average of 15.09 for 2019 and 2020 combined. The non-COVID companies averaged 39.42 for the same period.
- COVID-19 focused companies had a debt to equity average of 80.69 for 2019 and 2020 combined. The non-COVID companies averaged 331.22 for the same period.
- From 2019 to 2020, companies focusing on COVID-19 related research saw an average revenue growth of 842%, while gastroenterology and oncology focused companies saw a 9% decrease in revenues.
- Research and development expenditures for COVID-19 focused companies grew 93% from 2019 to 2020, while the sample of non-COVID-19 companies decreased spending by 12% in the same period.
- The most noticeable growth in revenue was seen by Translate Bio Inc. with a 5433% increase from 2019 to 2020.
- Alternatively, Arena Pharmaceuticals experienced a 100% decrease from 2019 to 2020.
- However, because of our small sample size, Arena Pharmaceuticals is driving the average R&D expenditure for gastrointestinal companies in Q4 2020. The small sample size is a limitation for the study.

Conclusion and Recommendations

From our research, we concluded that it does appear that the recent increase of focus on companies researching viral and respiratory due to the COVID-19 pandemic has resulted in a negative financial change for companies researching oncology and gastroenterology. A deeper look would be needed to verify these results within the field, as well as within other fields. This information is very useful to the field, for if the pandemic continues, changes would be made to ensure that these other fields are able continue moving forward in their work and research.

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Timeline of Major U.S. Events During COVID-19 Pandemic

