Case Summary 1/9

This case will help you understand:

How a less than optimally planned and executed diagnostic strategy can impact on a drug's revenue.

That the testing critical to a drug's use must be available without access barriers and adopted broadly by physicians.

That it is important to manage the messaging around the test/therapy.

Key messages:

Selzentry was the first new drug for several years to enter the HIV market and should have performed better but was impacted by an inefficient diagnostic strategy.

Pfizer and Monogram's failure to address several key issues around testing logistics, such as test performance and slow turnaround time, all directly impacted on sales, resulting in first year sales of $24m compared to a forecast of $150m.

Pfizer failed to effectively manage its partnership with Monogram, resulting in a poor market perception of Selzentry.

Key actions:

Understand diagnostic availability and adoption.

Understand the relevance and importance of a diagnostic strategy.

Invest time and thought in drafting and targeting the right messages.

Plan how to optimally manage your partners.

So What?

Selzentry was a new class of CCR5 HIV entry inhibitor.
It required a diagnostic test to determine a patient's CCR5 tropism status.
Around 69 per cent of HIV patients become CCR5 positive.
Revenue for the first year was forecast to be $150m.

Commentary

Selzentry was the first new drug for several years to enter the HIV market when it launched in 2007. It had a number of advantages and a major pharmaceutical company behind it (Pfizer) which rolled it out into key markets in just five months.

Selzentry is a CCR5 HIV Entry Inhibitor 2/9

----------------------------INDICATIONS AND USAGE----------------------------

SELZENTRY is a CCR5 co-receptor antagonist indicated for combination antiretroviral treatment of adults infected with only CCR5-tropic HIV-1.

- In treatment-naive subjects, more subjects treated with SELZENTRY experienced virologic failure and developed lamivudine resistance compared to efavirenz [see Microbiology (12.4) Clinical Studies (14.3].
- Tropism testing with a highly sensitive assay is required for the appropriate use of SELZENTRY (1).

Source: http://www.fda.gov

So What?

Monogram Biosciences developed a CCR5 assay called Trofile in conjunction with Pfizer.
Trofile could only be run in Monogram's laboratory in San Francisco.

Commentary

From Pfizer's agreement to invest in Monogram, their exclusive diagnostic partner, the chronology of events in the diagnostic market occurred quickly but was out of Pfizer's control.

Selzentry Launch: Off to a Good Start 3/9

Q2 06

Pfizer has agreed to invest $25m in Monogram and entered into a worldwide agreement to provide a CCR5 assay to coincide with Pfizer's launch of Selzentry, heralding the investment as a landmark partnership.

Q4 06

At the XVI International AIDS Conference Toronto, Monogram reported that four studies demonstrated the utility and clinical significance of its Trofile co-receptor (CXCR5 & CCR5) tropism assay.

Q4 07

Pfizer launches Selzentry.

Quest licenses Pathway Diagnostics SensiTrop CXCR5 & CCR5 assay.

Monogram makes Trofile CCR5 available in the US and EU.

Fair pricing coalition highlights "additional costs from testing" versus $29 per day or $10,585 per year.

The tropism test had estimated costs for "private payers: $1,800-$2,000 (negotiated based on volume, etc). A person will have to take this test at least once and perhaps more than once." Putting it all together, Selzentry's actual price "1st year is $12,585."

Q1 08

NY Times Feb 5, Pfizer, Schering-Plough HIV Drugs Fail on Test Glitch.

"The test is wrong in about 8 to 10% of patients initially screened to see if they are candidates for a CCR5 antagonist."
David Hardy, Director of the Infectious Disease Division at Cedars Sinai Medical Center, said in a telephone interview, "we're waiting to see if the next- generation test from Monogram will eliminate the errors."

Source: http://www.monogrambio.com http://www.thebody.com http://www.evaluatepharma.com http://www.bloomberg.com

So What?

Monogram Biosciences' business grew rapidly thanks to Pfizer's sales push on Trofile.
But at the same time there were significant test quality issues, erratic turnaround times (TAT), poor service and a high price associated with Trofile.
Trofile's poor performance held back Selzentry.

Commentary

Monogram's board decided to sell the company to LabCorp at a price lower than the total investment of around $140m, reflecting the difficulties in nurturing an early-stage diagnostic company.
In reality, Pfizer abdicated a lot of its responsibility to a diagnostic company it wrongly assumed knew what it was doing. Pfizer ultimately decided to combine forces with GSK, the market leader in HIV, to realize Selzentry's potential.

Selzentry Launch: Test-Related Problems Hit Selzentry Sales in its First Year on the Market 4/9

March 08

Monogram announces 2nd generation Trofile test. Data presented at the 15th Conference on Retroviruses and Opportunistic Infections showed that SensiTrop (Pathway Diagnostics) was not comparable to Trofile.

Monogram forecast revenue of more than $60m, compared to $43m in 2007, fuelled by Trofile sales.

Source: 15th Conference on Retroviruses and Opportunistic Infections

So What?

Pfizer did not invest enough in managing the partnership.
Its failure to do so directly impacted the market perception of Selzentry.

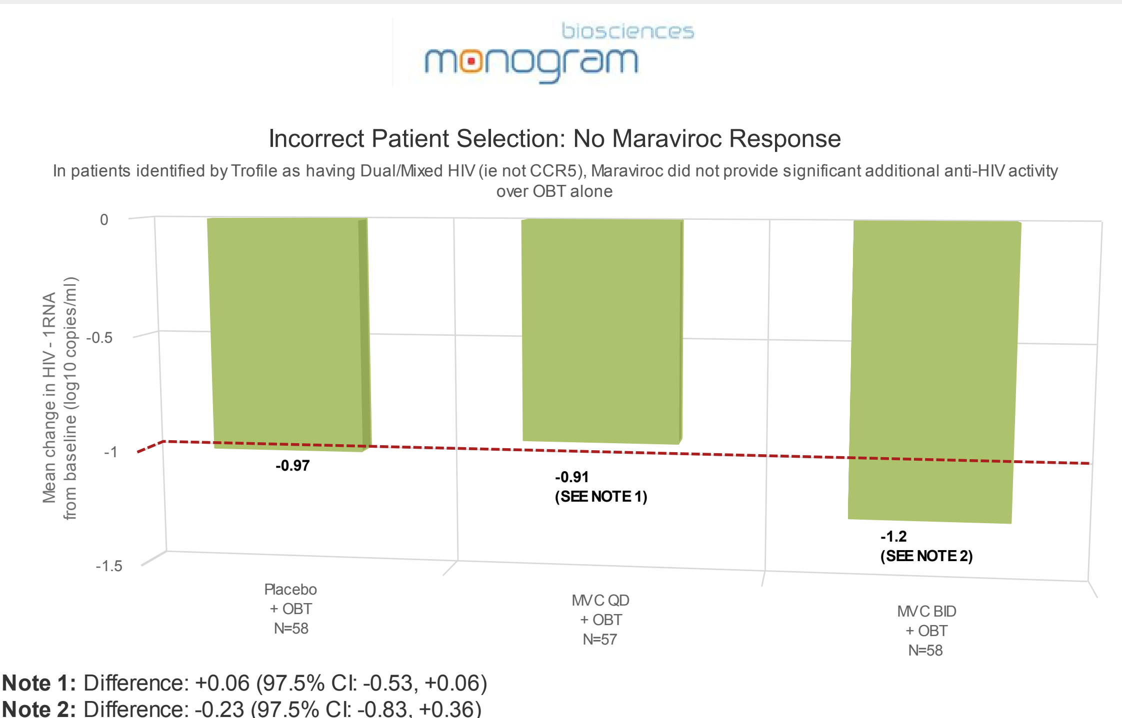
Commentary

Monogram presented data showing where Selzentry did not work to highlight the importance of its test.

So a diagnostic company was positioning Pfizer's drug in the market.

This shows how Pfizer failed to actively manage the relationship.

Pfizer Failed to Manage its Dx Partner Tightly and Effectively 5/9



Note 1: Difference: +0.06 (97.5% CI: -0.53, +0.06)
Note 2: Difference: -0.23 (97.5% CI: -0.83, +0.36)

Source: Lalezari J, et al. 14th CROI 2007.

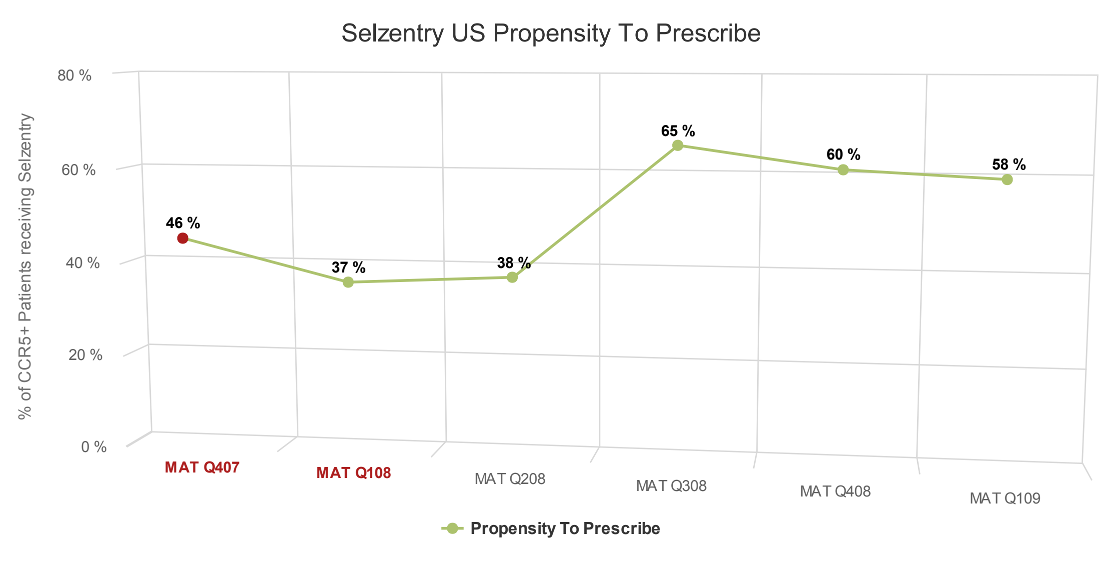
So What?

Of particular issue for Selzentry were the low levels of P2P (CCR5 positive patients offered Selzentry) in the critical early years.

Commentary

A combination of poor communication around the test and aggressive competitive positioning by Merck with their entry inhibitor meant that whilst patients were getting testing intially, 50 per cent were not receiving Selzentry. As test sensitivity and the integrated marketing of testing and treatment improved, these P2P rates were raised over an 18 month timeframe.

Propensity to Prescribe Selzentry 6/9



- **46%** Monogram Trofile and Pathway/Quest Sensitrope Assays Available
- **MAT Q407** Pfizer announce comparative test results undermining market confidence in results
- **MAT Q108** 2nd Generation Improved Sensitivity Tests Launched (2)

So What?

FDA approval was never sought for the Trofile test, posing potential future risks for Pfizer.

Commentary

Monogram's Trofile assay was in fact a laboratory service and not an in vitro diagnostic kit, so the test could only be run in one laboratory in San Francisco.

The choice of a partner with a laboratory service meant that a single lab had to serve all the key markets for Selzentry, thereby increasing costs and slowing the turnaround time for test results. Non-US customers had to send their samples to the US, creating an issue for local Pfizer management. Some doctors complained the process took up to eight weeks.

In addition, the companion diagnostic test was sold as a laboratory-developed test regulated under Clinical Laboratory Improvement Amendments (CLIA) and was not FDA-approved. The FDA continues to review each of these "laboratory centric" technologies on a case-by-case basis and retains the right to ask for the companion diagnostic test to be withdrawn from the market.

Trofile Test Use is Hampered by Very Complex Central Lab-Driven Logistics 7/9

trofile™ CO-RECEPTOR TROPISM ASSAY

Q: How do I get my samples picked up?
A: Call 800-777-0177. Monogram will dispatch a courier to your office. If you call before 1pm (your local time), the courier will arrive the same day for overnight delivery to Monogram. After 1pm, the pickup will be made the following day, but the sample should be maintained in the freezer during this time.

Q: Does Monogram have its own couriers?
A: Monogram provides contracted courier services for most geographical locations in the United States. These couriers are trained according to Monogram protocols that include IATAIDOT regulatory procedures, general handling protocol, and shipping procedures. Our couriers are outfitted with Monogram shipping kits for the transport of infectious and diagnostic specimens.

Q: Should I send samples with the courier if they are not fully frozen?
A: As stated above, our assay depends on proper sample collection and handling. Part of this includes ensuring that the sample is fully frozen BEFORE putting it on dry ice with the courier. It is possible that the flash freezing of putting a partially frozen or unfrozen sample directly on dry ice, could impact the quality of the sample.

Q: What is the contact info for shipping to Monogram?
A: Logistics Manager
Monogram Biosciences, Inc.
345 Oyster Point Boulevard
South San Francisco, CA 94080
650516-3638
receiving@Monogrambio.com

Source: http://www.trofileassay.com

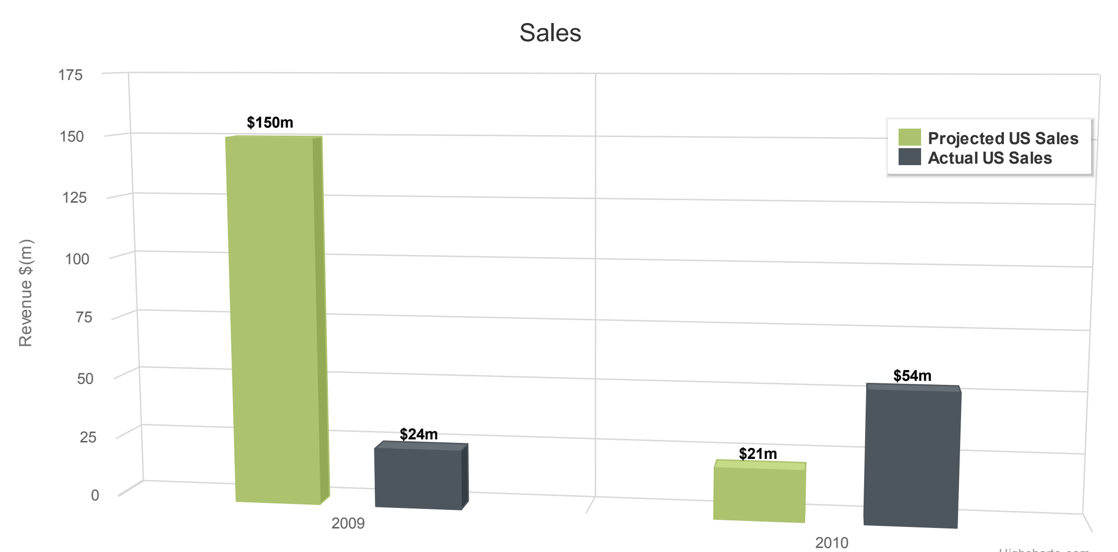
So What?

Selzentry was a poorly executed personalized therapy entry.

Commentary

Diaceutics analysis suggests that Pfizer lost an estimated $100m in revenues in the first year alone. While better execution may help to restore Selzentry's fortunes in the future, its history shows that the fortunes of drugs which rely on diagnostic tests can be held back by poor development of the diagnostic market.

Sales Forecast Versus Actual Sales 8/9



Source: http://www.gsk.com http://www.businesswire.com

Key Messages 9/9

Key messages:

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