

Virtual Health Application

- Our client is a multi-hospital health system located in metropolitan areas across Minnesota. They have developed a mobile application to diagnose and triage patients, without having to see them in person.
- At this point, the application is a better option than anything owned by our competitors and it is projected to increase our market share by 10%.
- It is estimated that 30% of emergency medicine and primary cases can be handled through this application and not require the patient to present at a hospital.
- **What is the application's effect on total profitability?**

Information Provided Upon Request

- The population in our region is approximately 4 Million
- Our revenue is \$1 Billion per year
- Our system has 100,000 admissions per year which represents a 25% market share
- ED and primary care visits are 20% of our 100,000 total
- The cost per patient visit in person is \$5,000 while the cost of a virtual visit through the application is \$100.
- The revenue per patient visit in person is \$5,000 while the revenue is per virtual visit (in which a patient does not present) is \$500
- Incremental operational costs for the application are \$10 Million per year

What is the application's effect on total profitability?

- Use admissions as a proxy for market share, but visits are the driver of the profitability analysis
- In-person revenue and costs cancel out, so focus on the virtual interactions $(220,000 * 30% * 20%) = 13,200$ visits
- \$100 cost per visit, \$500 revenue per visit = \$5,280,000 profit

| | Before | After |
|-------------------------|---------------|---------------|
| Population | 4,000,000 | 4,000,000 |
| Admissions | 100,000 | 110,000 |
| In-Person Visits | 200,000 | 206,800 |
| App Visits (20%*30%) | - | 13,200 |
| In-Person Visit Costs | 1,000,000,000 | 1,034,000,000 |
| App Visit Costs | - | 1,320,000 |
| Total Costs | 1,000,000,000 | 1,035,320,000 |
| In-Person Visit Revenue | 1,000,000,000 | 1,034,000,000 |
| App Visit Revenue | - | 6,600,000 |
| Total Revenue | 1,000,000,000 | 1,040,600,000 |
| Profit | - | 5,280,000 |

- If operating costs are \$10 Million, we are better off without the new application

Is there any reason that the profitability analysis you just did may be flawed or may change in the future?

- Additional benefits may come from the free capacity provided by this application, in addition to the improved patient experience which is an important differentiating factor in healthcare
- Digital interactions like these provide our system with data, which we can use to learn about our customers. We may also be able to use this as an opportunity to partner with payors since services like these would be helpful to both the provider and the payor.
- Virtual health allows us to scale our operations without the investment in brick and mortar. We could also license the technology after proving the concept.
- Payment models continue to change, from fee for service to care management fees to bundled payments to shared savings to capitation. The more our incentives are tied to our costs, the more we want to keep patients out of the hospital, and use technology like this.

Assume that we are now paid \$1,000 per patient in our network (market share does not change) regardless of what services we provide or what our costs are

- Now we have $4 \text{ Million} * 25% * 110% = \$1,100,000$ in revenue
- Our revenue improves by \$100 Million based solely on increased market share
- The costs associated are the same as before, with an increase of $13,200 * \$100 + 6,800 * \$500 = \$35,320,000$
- Therefore we now make a profit of \$64,680,000

What conclusions can you draw about the virtual application?
What are your final recommendations to the health system in using it?

- Virtual health makes more sense when we are looking to control costs, and not as much when we are maximizing volume. As we move to population health and capitated payments, this platform should improve profitability.
- We need to think about the staffing model, do we staff this with physicians or can we use NPs/PAs? Could it be completely automated? Would patients pay extra for this or would it even be worth it for us to pay them to use it?