

ACHE-NORTH TEXAS CASE STUDY REPORT

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Executive Summary

Evaluation of the ABC health system's proposed facilities for expansion was conducted on the basis of selected factors. Detailed analyses were done using available financial and volume statistics. A weighted matrix was structured based on the evaluating factors like projected population growth, relative market share, operating margin, net revenue and cost of project. Additionally relevant market forces were also taken into consideration to finally rank these projects for investment. Since a major reason for expansion has been lack of open beds and capacity constraints, we have also included evaluation on the basis of inpatient volume as an important factor. The entire expansion project of ABC is directed towards increasing quality of care and access while maintaining costs. The recommendation in our ranking accounts for all these factors and helps to build ABC health system's position strategically and financially. Discussions involve transitioning ABC's expansion strategy from an asset management view to an operational strategy that would be effective in the long run.

After analyses, our rankings for sequencing of the expansion projects from the \$500million funds are:

1. Hospital C
2. Hospital B
3. Hospital G
4. Hospital D
5. Hospital A
6. Hospital F
7. Hospital E

Introduction

Health system is changing rapidly and hospitals are at the center of this change. The service area of ABC health system is projected to grow and the facilities of ABC need to expand to meet the growing demands. Each of the seven facilities mentioned in the case reflect variation in locality, stage of market development, volume of patients, and expected growth in the region although they are under the same health system banner and in a 150 mile radius.

Problem statement

ABC Health system, the largest healthcare delivery system in the nation needs to expand their facilities and their services due to projected volume expansion. The facilities currently have capacity constraints, lack of open beds and outdated infrastructure and equipment. ABC health system needs to gauge the expansion projects of seven facilities to allocate funds from a \$500 million pool.

Factors taken into consideration

1. Financial data
2. Market Forces

From the given set of tables with Volume and Financial statistics, we have interpreted information regarding hospitals with profitable operating margin, highest volume of patients, expected growth in the region, relative market share and net revenue retained by the facilities. Based on these figures, we have constructed a Weighted Matrix to weigh our priority factors and rank the hospitals based on them (Ouye).

This decision making tool evaluates the hospitals based on specific criteria that we have weighted by importance. This tool is important since it treats the criteria independently, helping to avoid emphasis on an individual criteria. It has helped by serving as a baseline that will directly influence the sequencing of projects to be invested in.

The factors taken into the Weighted Matrix are listed below:

1. Population growth
 - Patient volume in every hospital is influenced by the number of people in that region. An increase in population will only increase the incidents of hospital visits and thus population growth is an important factor to judge increase in patient volume. A hospital needs to expand its facilities to cater to this growth. The population growth considered reveals a figure over the next three years in most cases.
2. Relative Market share
 - The higher the market share of a hospital, the higher the chances of expanding services to the existing customers and roping in new customers based on already existing patient-base and reputation. We computed relative market share by dividing the facilities' market share by the closest competitor. This creates a uniform way to compare market share. We believe this factor is important as a hospital with a high relative market share has already made its image and is building up to meet the demands placed by the customers and competitors. A reputed facility adds to the brand image created by ABC health system and in most cases to the net revenue as well.
3. Operating margin
 - Investing in a hospital with a higher operating margin would positively impact the total cash flows of the facility and the ABC health system. A profitable health system needs the right amount of investment to expand and compete with hospitals in the region. It also indicates the efficiency of the management in utilizing its resources and is a major factor for ranking the projects.
4. Net revenue
 - In order to factor the financial breadth of each hospital, we have used net revenues to indicate how much money the facility is bringing in before expenses. Facilities that are bringing in the most revenues should be on the forefront of expansion efforts.
5. Cost of expansion
 - As we have an allocated budget for expansion given by the ABC health system, the cost of expansion of each project is an important evaluating factor. A lower investment project cost in a promising or unstable hospital comes with a lower risk on return.

Our evaluating factors are chosen based on our judgment of importance to each hospital and to add to the financial and strategic position of ABC health system. Each

hospital is also assessed to add to the mission, vision and in some cases a facility's long standing service to its region. In this regard, we have ranked the hospitals in Table 1.

Table 1. *Weighted Matrix Analysis*

Factors	Weight	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E	Hospital F	Hospital G
Population Growth	17	1	1	4	2	5	1	5
Relative Market Share	22	5	3	3	3	3	1	1
Operating Margin	25	3	4	4	4	1	5	5
Net Revenue	20	1	5	4	1	1	5	2
Project Cost	16	5	4	5	4	5	1	2
Total	100	302	347	394	284	276	280	304



- Ranked 1 - Hospital C
- Ranked 2 - Hospital B
- Ranked 3 - Hospital G
- Ranked 4 - Hospital A
- Ranked 5 - Hospital D
- Ranked 6 - Hospital F
- Ranked 7 - Hospital E

In order to assign each facility a 1-5 score for each factor, we calculated the range of each of the factors and then derived brackets on scale of 5. These brackets were created by dividing the range by 5. The number derived after dividing the range is then added to the minimum for the rank 1, doubled and added to the minimum for rank 2, tripled and added to the minimum for rank 3 etc. A higher score is given to a higher value for all factors except Project Cost; the higher the project cost the lower the score. The final score is given by finding the bracket that contains the given raw number. This data is seen in Table 2.

Table 2. Bracket Ranges and Statistical Data on each Factor

Column1	Relative Market Share	Project Cost	Average Net Revenue	Average Margin	Population Growth
Hospital A	4	\$20,800,000.00	\$21,688,888.89	-0.83%	2
Hospital B	2.5	\$60,000,000.00	\$321,484,189.72	3.73%	3
Hospital C	2	\$38,000,000.00	\$264,061,111.11	1.57%	10
Hospital D	2.5	\$65,000,000.00	\$58,855,113.40	3.13%	5
Hospital E	2	\$15,000,000.00	\$15,497,584.54	-6.90%	15
Hospital F	1	\$175,000,000.00	\$350,023,617.82	5.63%	2
Hospital G	0.6	\$130,000,000.00	\$173,852,705.56	6.60%	15
Minimum	0.6	\$15,000,000.00	\$15,497,584.54	-6.90%	2
Range	3.4	\$160,000,000.00	\$334,526,033.28	13.50%	13
Range/5	0.68	\$32,000,000.00	\$66,905,206.66	2.70%	2.6
Bracket 1	1.28	\$47,000,000.00	\$82,402,791.20	-4.20%	4.6
Bracket 2	1.96	\$79,000,000.00	\$149,307,997.85	-1.50%	7.2
Bracket 3	2.64	\$111,000,000.00	\$216,213,204.51	1.20%	9.8
Bracket 4	3.32	\$143,000,000.00	\$283,118,411.16	3.90%	12.4
Bracket 5	4	\$175,000,000.00	\$350,023,617.82	6.60%	15

Upon establishing the baseline rankings obtained by the weighted matrix, we considered other qualitative facts given by the case. Since the system is experiencing capacity constraints and inpatient volume is one of the major reasons for contributing revenue to the hospital, we looked at the volume data given for each facility. The system overall is in need of inpatient capacity beds and each project is weighed upon keeping in mind their expansion plan for inpatient capacities. We calculated the growth of inpatient volume overall and noticed that all the facilities had overall growth but when comparing the facilities, three levels were apparent. This data is shown below.

	A	B	C	D	E	F	G
Inpatient Growth 2008-2009	-1.36%	5.61%	3.59%	1.00%	NA	2.29%	22.08%
Inpatient Growth 2009-2010	4.86%	6.82%	9.33%	13.52%	94.75%	4.50%	10.84%
Growth on Comparison Basis	Moderate	High	High	High	(Relative)	Moderate	Very High

The inpatient growth factor has thus been taken into consideration for the final analysis and every hospital planning a dedicated inpatient facility combined with high inpatient volume growth is considered to be more deserving of their specific project.

In addition to projects that directly increase inpatient capacity, we looked at each individual project and judged it fairly in comparison to its facility and the other projects. Hospital A is sitting very dominantly in its market with a 4:1 market share advantage. However the facility is lacking the consistent brand image of ABC with outdated facilities and needs remodeling. All the projects were judged independently based on the qualitative benefits to the hospital and ABC.

We ran the simulation with many different weights to ensure that we were seeing the correct the picture of how the facilities should be ranked. Even by changing the weights, very little variation among the rankings were seen.

Final Recommendation

On the basis of all the factors given in the case and taking the additional qualitative factors into consideration, our final expansion recommendations are as follows:

- Hospital C
- Hospital B
- Hospital G
- Hospital D
- Hospital A
- Hospital F
- Hospital E

Project Effects on Cost/Quality/Access



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ABC is investing a lot of money into projects in order to deliver higher quality care, improved access, and reduced costs. By following our strategy of investing in projects based on the facilities that are the strongest and display a specific need for their project, ABC will improve access and quality across the spectrum of their customer base.

As hospitals attempt to form an Accountable Care Organization, ABC should be focusing on creating a patient centric business model. All of the projects will increase quality and access however ABC cannot fund all possible projects. Our ranking accounts for this patient centric model by addressing ABCs inpatient capacity problem. By focusing on increasing inpatient beds, ABC can increase quality and customer satisfaction by not having patients waiting in the Emergency Department and hallways as they wait for beds.

By remodeling older facilities and investing in new buildings, ABC can take advantage of new technologies in utilities, materials, and medical equipment in order to lower costs and increase efficiency. These cost-cutting projects are essential to increasing income which can then be distributed to the patient through other projects or programs.

Recognizing how these projects will affect future costs, quality, and access is critical in order for ABC to remain on a patient centric model.

Discussion

Our recommendation is based on the information given and is open to some debate. ABC is following an asset management strategy in both running their company and allocating capital. This strategy is unsustainable given the economic and political climate of healthcare today. We recommend that ABC transitions into an operational strategy in which each hospital works towards the excellence of the entire system and the community. In such a scenario the hospital

system would push money towards centralizing all its goals by creating service lines that are present throughout all facilities in the system.

ABC should be investing in this strategy and become a future minded company by preparing for industry changes. When PPACA (Patient Protection and Affordable Care Act) goes into effect in 2014, ABC needs to have strengthened its physician relationships across all its facilities to bring in referrals. Hospital systems are taking a stand on their markets and physician networks by investing in facilities and buying up competition. ABC should look to its specialty strengths and build on these to create a service line that cuts across all facilities. For example, Hospital B is planning a dedicated orthopedic hospital. Instead of this facility just benefiting Hospital B, ABC should create a service line across the entire system that leads into this new specialty center.

By ABC moving to an operational strategy, the patient also benefits. Instead of simply having their local hospital where quality and service might not be as good compared to market facilities, the patient can now expect to receive the same service and care as he would at the largest facility. ABC will easily be able to market an integrated, system-wide service line to potential patients as this is the same experience they expect at other large businesses.

If provided with more information such as physician networks, specialty strengths, and brand perception, we would be able to provide an operational strategy recommendation based on all these factors and the current financial and market information.

If we were able to look at ABCs financials, it is likely that their cost structure is unsustainable. Although these facilities show growth and positive income margins, ABC must transition to an operational strategy as recommended to prepare its company for increased costs, competition, and uncertain payer structures that are sure to come in the future.

Conclusion

ABC is running a profitable company in uncertain times and is continuously investing in its facilities. By allocating capital based on performance, need, and relative market conditions, our recommendation will lower ABCs' risk while increasing profits, brand image, and quality care.

ABC needs to prepare itself for a changing industry by transitioning to an operational strategy by creating service lines that benefit all facilities. Willingness to invest and focus on long-term change and comprehensive quality integration from top to bottom are essential for ABC Health System.

References

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