

# Performance Metrics

For Multiple Clinic Management

**PRAGMATE**

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### Introduction

Convenient Care Clinics or Retail Clinics represent a quickly expanding venue of health care delivery. The clinics are located where the patients are – in retail locations. No appointment is needed and the clinics offer a set of health care services that keep the average visit time within 15 to 20 minutes. The number of the Convenient Care Clinics is expanding rapidly from hundreds at the end of 2006 to thousands projected by the end of 2008.

While the business model is simple, the retail care is a low margin business that relies on volume for profit. As operators open more clinics, the need for careful management will become ever more important. Given the large number of visits required, any inefficiency has manifold impact making even a small inefficiency significant. This means that detailed up-to-date knowledge of key operational metrics is the key to success.

The managers of multiple clinics need access to an easy-to-use tool that is specific to the industry and designed for ease of use, such as PE-1 (Performance and Efficiency) at [www.pragmate.com](http://www.pragmate.com).

*Remember: in order to manage something, you need to be able to measure it first.*

## Background

Majority of businesses already use software to process their transactions. The transaction software generates a lot of detailed data about the operation. While most of the business systems include reports, they focus mostly on the transactional aspects of the operation, and may not include the critical metrics necessary to measure operation efficiency.

The shortcomings in “legacy” reporting gave rise to a whole new class of software products - the Business Intelligence (BI) products. These applications provide the presentation of summary data in a user defined format by summarizing the information from the transaction detail.

For large businesses, BI is typically separate from the production systems. Not only does the contention for database resources between production and BI software cause performance problems, but it can also join information from multiple production systems making its independence necessary. Typically, the BI system operates within the scope of the enterprise Data Warehouse. The purpose of a Data Warehouse is to gather the information about all aspects of the enterprise into one, easy to access, information source. The goal is to present the management with a comprehensible presentation of the enterprise operation.

The introduction of Data Warehousing led to development of the Data Warehousing tools and specialized data mining tools such as OLAP (“On Line Analytical Processing”). The ETL (“Extract, Transform, and Load”) tools are used for interfacing production databases with the data warehouse. In highly sophisticated environments, BI operates on the Data Warehouse using OLAP (or similar technology) to present the information in a flexible, user defined manner.

Obviously, such infrastructure does not run without appropriate staffing levels. There is typically a group of IT professionals dedicated to managing and expanding the Data Warehouse and the BI environments.

The reason businesses invest into such complex and expensive BI infrastructure is simple: they have to! It is critical to have complete and timely access to critical business metrics. A manager with access to information is able to identify new trends, opportunities for improvement, and potential risks to the business performance. The availability of the information throughout the company makes the organization stronger and better able to react quickly to changes in the marketplace.

The operator of multiple clinics has similar problems – the increasing number of clinics makes it difficult to know which clinics perform better than others, to see why they are performing differently, and to recognize early which clinics require managerial attention.

## Solution

The key to implementing a successful BI solution is a valid project and sound methodology. There are three elements of a successful BI (Business Intelligence) solution.

1. The management must identify the process metrics.
2. The technology team must define the best presentation format.
3. The appropriate technology must be selected, procured, and implemented.

Most importantly, the knowledge of a metric is worthless unless it is used to improve the operation. The focus must be on metrics that can best respond to management action.

## Process Criteria

Some metrics are shared among all industries and some are industry specific. The purpose of the metrics is to quantify the performance in the most effective way for the industry. The “Six Sigma DMAIC” (Define, Measure, Analyze, Implement, and Control) helps in establishing the optimal set of metrics.

Management must define the process metrics and then measure it to understand its behavior. The best approach is to start with questions:

- **Is the clinic profitable?** The clinic profitability is easy to determine: the clinic is profitable when revenues exceed costs. The costs of clinic operation are relatively static – they do not vary substantially with the revenue. The revenues are the product of the number of clinics and the average per visit charge. The average charge is relatively stable. Therefore, the most important determinant of the clinic profitability is the number of patient visits.
- **How does the clinic perform compared to others?** Each clinic operates in somewhat different environment. It may be open for different hours, have more staff, and may be open for a different period of time (maturity). If the PPH (Patient Per Hour) trends upwards with the maturity level (number of months at the same location), then it is possible to determine the break-even point (PPH at which the revenues equal expenses for the clinic). If the break-even point is too far in the future, or the trend is downward, management action is required.
- **Can we project performance into the future?** The number of visits in a retail clinic follows a daily, weekly, and annual cycle. For example, the number of visits on Mondays will be different than the number of visits on Wednesdays. The ability to recognize these patterns provide the operator with the ability to plan the staffing accordingly.

## Process Metrics

To properly answer the questions posed earlier, we need to understand basic profit parameters. The profit of a clinic depends on the number of visits, average revenue per visit, and costs.

$$P = (V * R) - C$$

This formula defines profitability for a given period of time.

P = Amount of profit during the period

V = Number of Visits during the period

R = Revenue per Visit during the period

C = Costs during the period

The computation of profit is traditionally done on a monthly basis. In retailing, however, daily reconciliation is more common. Management can use the daily information to identify immediate trends and to act upon the knowledge much quicker.

## Revenue per Visit

Average visit revenue is determined by dividing total revenues by number of visits within certain timeframe. The operators can improve this number by focusing on proper coding practices. The variances introduced by inconsistent coding may be 10% - 15%. This is a respectable amount of money especially for operations with large number of visits. However, management is limited in its ability to substantially affect the amount of charge per visit by scope of services and by medical necessity limitations.

## Costs

Costs of the clinic operation include payroll, fixed costs of operating the clinic, and variable costs for supplies and medicines. Payroll is the largest segment of the operating costs. It is also a cost that is determined by the external factors such as the region of the country and relative availability of qualified personnel. The fixed and variable costs are relatively smaller, and with some exceptions do not vary much with revenue.

## Number of Visits

The number of visits is the most critical element. It depends on the maturity of the clinic and the cyclicity of the patient visits. Management efforts must focus on maximizing the number of visits. The Convenient Care Clinic is a business that works on volume. Management can increase the number of visits by skillful marketing, offering best selection of services, and ensuring that each customer leaves satisfied.

## Patients per Hour (PPH)

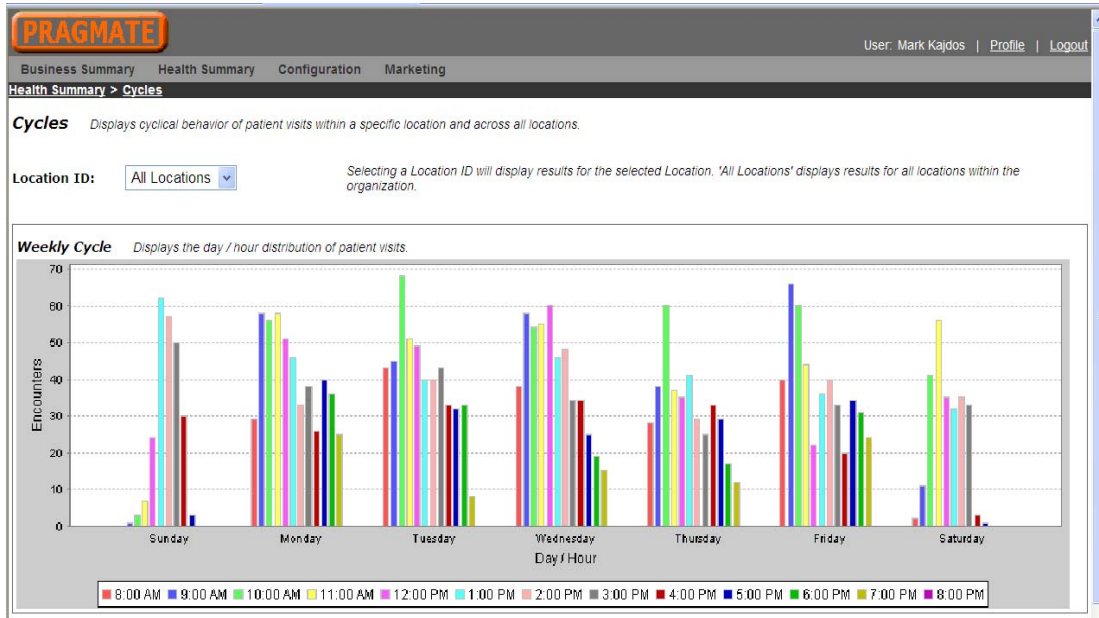
This is a computed parameter that associates the revenue parameter (visits) with a cost parameter (hours). PPH is a scalable measure of clinic performance. For example: By adding clinics, the number of visits increases, but PPH may decrease. Management based on PPH tracking has the best chance to succeed.

## Summary

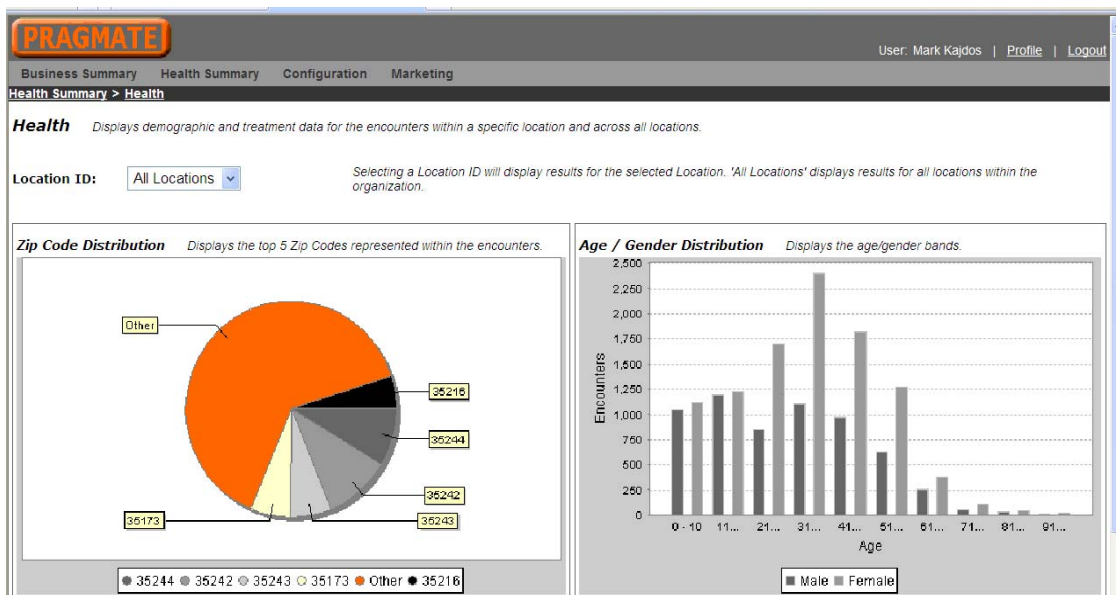
Management needs to focus on the parameter that has the greatest impact on revenue. In the Convenient Care Clinics it is the PPH. The BI solution with most potential will focus on PPH.

## Presentation of Metrics

Graphic presentation of complex data is sometimes the only way to see the proper relationships. The examples from the PRAGMATE product PE-1 show information graphically.



**For example:** the picture above shows the distribution of the visit counts over the days and hours of operation within the weekly cycle. Using this information, the operator can see where the utilization peaks and where it ebbs.



From the shape of the histograms, the operator may determine that late or early hours need more promotion. The picture above compares two important statistics about the patient population – where they come from and what is their age / sex distribution. This information is important for both service offering and for marketing.

**Note:** The images show the PE-1 presentation. For more information, visit [www.pragmate.com](http://www.pragmate.com).

## Process of Delivery

Once the metrics are identified, the technology team must define the best approach and form for delivering it. Simple manual reporting may be sufficient for a small number of clinics. As the clinic number increases, so does the requisite sophistication of solutions.

## Legacy Reporting

The information may be available in the form of standard reports generated from your transaction application. It may be viewed either in a static report format, or extracted and used in the spreadsheets. If the information is sufficient and comprehensive enough, this is the most economical solution. However, it is uncommon to find the appropriate metrics in legacy reports.

## Spreadsheets

The information may be also gathered and presented using a spreadsheet. The spreadsheet uses the information that is entered either manually or loaded from database, and presents the results either in the form of a pivot table or in the form of a chart. This approach is quick to implement and easy to change. At the same time, it is labor intensive, and it is not very stable (especially when the data increases in volume). At least one person in the organization must be heavily involved in the maintenance and development of this approach.

## BI Applications

The information may be gathered using a full-feature Business Intelligence application. This solution offers greater stability (it is able to handle large amounts of data), and it can be constructed to provide great flexibility in the presentation. It typically requires a team of trained individuals who understand the technical details of the BI application and is quite expensive both in terms of acquisition cost and in cost of ownership. In addition, since the general purpose BI application must support many requirements, it does not always produce the most efficient solution to the specific problem. BI's resource requirements may be quite high. This is a flexible, richly featured, and expensive approach.

## Specialized BI

This approach uses the BI solution that is specifically designed for the industry. This solution not only includes the industry specific metrics, it also provides the presentation of data in industry specific format. This technology does not require the user to endure an extensive design and implementation process. It does not need any staff to support, and its cost of ownership is lower than others. This approach may have slightly less flexibility, but it is highly effective with substantially lower cost of ownership.

The distributed nature of the Convenient Care Clinic business model places a high value on the ability to access the information over the internet. BI applications, both general and specialized, operate on the web and have excellent ease of access and high level of security.

## Selection of Technology

Operators of retail clinics will obviously choose solutions that deliver the most results for the least cost of ownership. The solutions range from legacy reporting to full scale BI solution – each has its advantages and disadvantages.

Selection criteria need to include:

- **Acquisition cost for hardware and software:** Cost of acquisition will be most significant for the full BI solutions that typically require dedicated server and server software. Cost will be minimal for legacy reporting and spreadsheets.
- **Implementation costs for design and initial implementation:** This will be substantial for BI solution and spreadsheet solution as these include the definition of metrics, design of presentation, and other labor intensive activities.
- **Support and maintenance costs:** These costs include the software support and the costs of the internal support staff. Sophisticated BI systems require trained staff to support internally or trained consultants to provide support for the platform. Training of the internal staff may be quite expensive.

The choice of technology platform (operating system, hardware, connectivity, etc.) will be influenced by the choice of delivery described earlier in this document.

- **Legacy Style Reporting:** In this case the choice of technology is clear – the vendor of the transaction system will determine the technological platform.
- **Spreadsheets:** In this case there is no real technology question as the spreadsheet solution runs on any PC that can connect to the data source.
- **BI Applications:** The BI implementation typically requires dedicated reporting server. The most important consideration is that the sophistication and flexibility translates into lower efficiency. The BI applications tend to be resource intensive, and they require a lot of computing power (and expense).
- **Specialized BI:** The specialized BI application does not require additional technology to operate as its “impact” on the production database is minimal primarily because it uses a separate, specialized “data warehouse”.

The key consideration in choosing the technology is the Cost of Ownership. More complex solutions will always lead to more costs both for acquisition and for operation. Keeping it simple means saving money!

## Summary

Using BI (Business Intelligence) in the management of the Convenient Care Clinics is not a question of “whether” but a question of “when”. The Convenient Care Clinic business model is a low margin, high volume business with retailing aspects. A close follow-up of the performance metrics is the key to the effective management.

To implement effective management methods using BI, the operators have several choices:

- **To build or to buy:** The answer to this question depends on what is available for purchase and at what cost. That must be compared to the full cost of developing the internally developed solution. For most business applications (practice management systems, accounting systems, etc.) this question was already resoundingly answered in the affirmative. The BI application is no different – the internally supported solution sounds viable until you start including the opportunity value and costs of internal staff that will be required for the development and support. The executive management needs to ask: “Are we in the software business or in the healthcare business?”
- **What approach to choose?** This document describes several options. The legacy reporting is the simplest but has limitations of content and accessibility. The spreadsheet solution is typically unstable and requires constant support. A full scale BI system is very flexible, but its cost of ownership is very high. A specialized BI system provides a reasonable level of flexibility and an excellent level of access at low cost of ownership.

Unless the organization desires to engage in the software development business, there are two choices – the legacy reporting or the specialized BI. The specialized BI has a number of benefits:

- **It is immediately available:** The selection of the important metrics was already made for your industry, and the system was designed to properly show the relevant information in the most effective way.
- **It requires minimal installation:** The properly designed, specialized BI does not require any data entry as its data are loaded directly from the transaction system. The specialized BI leverages the data that already exist.
- **Its cost of ownership is low:** By using the application in a SaaS (Software as a Service) model, there is no setup cost needed, and the vendor provides all maintenance for a monthly fee.

To learn more about the specialized BI for the Convenient Care Clinic industry, read about the **PE-1** product at [www.pragmate.com](http://www.pragmate.com). **PE-1** is an internet application providing timely and accurate metrics specifically designed for the operators of multiple clinic businesses.