



MARKET MONITOR™ Notes

CLINICAL DIAGNOSTICS

LABORATORY MARKET SEGMENTATION

Information Dynamics

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Introduction

MARKET MONITOR™ Notes are summary publications that focus on a particular issue or discipline within the clinical diagnostics industry. The data for this MARKET MONITOR™ Notes is taken from the 2006 Clinical Chemistry MARKET MONITOR™.

This issue of MARKET MONITOR™ Notes addresses the market segmentation scheme of those manufacturers serving the general chemistry and immunoassay market.

Segmenting Clinical Diagnostics

Perfect segmentation puts members of a group into categories based on similar characteristics that are of strategic market relevance.

Bed size remains an important variable. The American Hospital Association (AHA) provides an annual list of institutions by bed size. This allows for very accurate projections of descriptive statistics when calculated using bed size weighting factors. Bed size also provides a low cost means of targeting marketing efforts using the AHA list. Following this scheme there is no need for expensive account qualification routines.

However, bed size segmentation is not without flaws. Experience has shown that laboratories within the same bed size segment may differ significantly with regard to many variables. The correlation coefficient between bed size and chemistry volume, for example, is 0.59. A positive, but far from perfect relationship. The search for a perfect laboratory segmentation scheme continues.

Ultimately, the variables that we were looking for had to be relevant and important to our subscribers, but also had to be information that was readily available and easily collected via survey. In order to solve this conundrum, we asked laboratory decision makers to describe how their laboratory differs from seemingly similar laboratories at other hospitals. In the end, we decided to use annual general chemistry result volume as a primary indicator along with menu complexity as a qualifier.

Annual general chemistry result volume is an ideal primary indicator because it has a significant influence on several laboratory management issues. General chemistry test volume directly influences (1) the number of analyzers used, (2) analyzer throughput requirements, (3) staffing issues, and (4) automation/processing. Menu complexity

Over the years we have been asked to consider a wide array of market segmentation schemes with which to describe the behavior and attitudes of laboratory decision makers regarding the products used in their laboratories. Twenty-seven years of studying the clinical diagnostics market has made Information Dynamics uniquely capable of identifying optimum segmentation schemes.

as a qualifier uniquely addresses (1) the selection of immunoassay analyzers, (2) integration of general chemistry and immunoassay, (3) test menu, and (4) outreach and other management issues.

The Voice Of The Clinical Lab™ Segmentation

Using three categories each for general chemistry volume and menu complexity, we then divide the market into nine segments. This is the "Voice Of The Clinical Lab™" (VOCL) segmentation.

General Chemistry Volume Categories (A/B/C):

- A. Low Volume - Less than 250,000 general chemistry results reported per year
- B. Medium Volume - 250,000 to 999,999 general chemistry results reported per year
- C. High Volume - 1,000,000 or more general chemistry results reported per year

Menu Complexity Categories (1/2/3):

1. Basic Menu - High volume and/or STAT immunoassay capability (i.e. Cardiac, Thyroid, DOA, TDM)
 - Probably do not have secondary immunoassay analyzers
 - Higher send out volume
 - No outreach program
2. Basic+ Menu - Some non-STAT and/or low volume immunoassay capability (i.e., PSA, Fertility, Tumor Markers, Anemia)

3. Complex Menu - STAT, non-STAT, high and low volume immunoassay capability plus esoteric testing
- Requires additional departments and more secondary analyzers
 - No send out volume
 - Capable of a large outreach program
 - Increased staffing/management requirements

Number Of Facilities In Each VOCL Segment

Table 1, below, shows the number of short-term acute care hospitals in each “Voice Of The Clinical Lab™” (VOCL) market segment. This estimate is based on the American Hospital Association data for the year 2005 that includes 5,134 hospitals and data gathered via Information Dynamics’ Clinical Chemistry MARKET MONITOR™. It can be seen, for example, that approximately one of every ten short term acute care hospitals are found in the low volume, basic menu segment (A1). The largest segment in terms of the number of institutions in the universe is the low volume, basic plus menu segment (A2).

It should be noted that the categories with the fewest facilities, those designated as A3 and C1 demonstrate intuitively odd combinations of characteristics. A3 facilities are institutions with an annual volume of fewer than 250,000 general chemistry results, yet they maintain a complex in-house immunoassay menu capability. The C3 facilities are institutions generating at least 1,000,000 general chemistry results per year, but offer only a basic immunoassay menu.

What is the sales potential of each market segment? Table 1 presents the “value” of each segment in terms of annual volume of results reported by each segment for general chemistry and immunoassay testing. Also shown is the percent of total results contributed by each segment. The average annual volume of results for general chemistry and immunoassay are also indicated.

From this table we see that a disproportionately large percent of general chemistry volume is generated in the “high volume” institutions. High volume laboratories with a comprehensive immunoassay menu represent only slightly more than 13 percent of the facilities but generate almost 39 percent of the reported general chemistry results. The largest category in terms of the number of facilities is the “low volume” laboratory with a basic plus immunoassay menu that represents almost 23 percent of the facilities but only approximately 4 percent of the general chemistry results generated in the short term acute care hospital market.

A similar phenomenon occurs when you look at the contribution of immunoassay volume by market segment. The “top end” of the market is responsible for a disproportionately large percentage of immunoassay volume. Laboratories in the C3 segment represent approximately 13 percent of laboratories yet they generate almost 35 percent of the immunoassay result volume for this market. The A2 segment represents almost 23 percent of the institutions, but generates only 6 percent of the immunoassay results for this market.

TABLE 1 CONTRIBUTION TO TOTAL IMMUNOASSAY VOLUME BY MARKET SEGMENT									
	ANNUAL GENERAL CHEMISTRY VOLUME CATEGORY								
	A-Low Volume <250,000 Tests			B-Medium Volume 250,000-999,999 Tests			C-High Volume 1,000,000+ Tests		
	MENU COMPLEXITY CATEGORY								
	1-Basic Menu	2-Basic + Menu	3-Complex Menu	1-Basic Menu	2-Basic + Menu	3-Complex Menu	1-Basic Menu	2-Basic + Menu	3-Complex Menu
Segment Designation	A1	A2	A3	B1	B2	B3	C1	C2	C3
Number Of Accounts	519	1,164	158	386	998	708	129	383	689
Percent Of Accounts	10.1	22.7	3.1	7.5	19.4	13.8	2.5	7.5	13.4
Segment Total General Chemistry Requests Per Year (In 000,000)	46	136	24	188	529	433	239	673	1,424
Segment Share Of General Chemistry Volume (%)	1.2	3.7	0.6	5.1	14.3	11.7	6.5	18.2	38.6
Annual General Chemistry Volume Per Account (In 000)	88	117	151	487	529	610	1,850	1,758	2,066
Segment Total Immunoassay Requests Per Year (In 000,000)	5.5	17.9	9.2	13.9	44.6	75.2	10.7	31.5	110.2
Segment Share Of Immunoassay Volume (%)	1.7	5.6	2.9	4.4	14.0	23.6	3.4	9.9	34.6
Annual Immunoassay Volume Per Account (In 000)	10	15	58	35	44	106	82	82	159

Using The VOCL Segmentation Scheme For Brand Performance Measurement For General Chemistry

Now that you are familiar with the new Voice Of The Clinical Lab™ (VOCL) segmentation, the following questions may arise. Is market leadership a function of market segmentation? Does leadership position change between segments? Which manufacturers are the leaders within each segment? Table 2 and Table 3 begin to answer these questions.

Table 2 focuses on rankings of brands that serve the general chemistry segment of the hospital market. Rank is determined by share of accounts using each manufacturer's products as their primary general chemistry system. Primary systems are defined as those analyzers

performing the majority of a laboratory's general chemistry test volume.

Dade Behring's products seem to appeal to the widest variety of laboratories appearing as either first or second place in every segment. Dade Behring falls to second place in the C1 and C3 segments. This suggests that their product mix lacks elements that are uniquely required by high volume laboratories.

Beckman Coulter's market position tends to improve with increased general chemistry volume and menu complexity. This manufacturer is either first or second in the categories A3, B2, B3, C1, C2 and C3. Please note that the A3 category is rather unusual and includes a small number of institutions - only 158 laboratories overall.

TABLE 2 BRAND RANKING BASED ON SHARE OF PRIMARY GENERAL CHEMISTRY ACCOUNTS									
Brand Ranking	ANNUAL GENERAL CHEMISTRY VOLUME CATEGORY								
	A-Low Volume (<250,000)			B-Medium Volume (250,000-999,999)			C-High Volume (1,000,000)		
	MENU COMPLEXITY CATEGORY								
	1-Basic Menu	2-Basic + Menu	3-Complex Menu	1-Basic Menu	2-Basic + Menu	3-Complex Menu	1-Basic Menu	2-Basic + Menu	3-Complex Menu
	VOCL SEGMENT DESIGNATION								
	A1	A2	A3	B1	B2	B3	C1	C2	C3
1st	Dade Behring	Dade Behring	Beckman Coulter Dade Behring Ortho	Dade Behring	Dade Behring	Dade Behring	Beckman Coulter	Dade Behring	Beckman Coulter
2nd	Ortho	Ortho	-	Ortho	Beckman Coulter	Beckman Coulter	Dade Behring	Beckman Coulter	Dade Behring
3rd	Roche	Beckman Coulter	-	Beckman Coulter	Ortho	Ortho	Ortho Roche	Ortho	Ortho
4th	Beckman Coulter	Roche	Roche	Roche	Roche	Roche	-	Roche	Roche
5th	Alfa Wasserman	Alfa Wasserman	Olympus	Olympus	Olympus	Abbott Bayer	Bayer	Olympus	Bayer

Ortho, within the "Top 3" for all segments, seems to have a wide appeal among different types of laboratories. The strongest position for Ortho in terms of market leadership is in the low to mid volume segments where only Dade Behring demonstrates a better performance.

Roche's highest ranking is third in two of the nine market segments. As indicated in the Clinical Chemistry MARKET MONITOR™, Roche enjoys a much stronger position in the commercial laboratory segment of the general chemistry market than is the case within the hospital sector. Other firms appearing, but not dominating the "Top

5" general chemistry brands include (1) Abbott, (2) Bayer, (3) Olympus, and (4) Alfa Wasserman.

Using The VOCL Segmentation Scheme For Brand Performance Measurement For Immunoassay

Table 3, presented on the next page, shows the ranking of brands that serve the immunoassay segment of the hospital market. Rank is determined by share of accounts using each manufacturer's products as their primary immunoassay system. Primary systems are defined as those analyzers performing the majority of a laboratory's

immunoassay test volume.

It must be noted that the Clinical Chemistry MARKET MONITOR™ includes drugs of abuse and TDM in the immunoassay category although, in many cases, these tests are run on a general chemistry analyzer.

The inclusion of drugs of abuse and TDM volumes explains why systems such as Dade Behring's Dimension RXL are considered to be a primary immunoassay analyzer. In many laboratories, the limited immunoassay menu, which includes cardiac, TDM, thyroid, PSA and drugs of abuse results, accounts for the majority of the immunoassay results generated.

**TABLE 3
BRAND RANKING
BASED ON SHARE OF PRIMARY IMMUNOASSAY ACCOUNTS**

Brand Ranking	ANNUAL GENERAL CHEMISTRY VOLUME CATEGORY								
	A-Low Volume (<250,000)			B-Medium Volume (250,000-999,999)			C-High Volume (1,000,000)		
	MENU COMPLEXITY CATEGORY								
	1-Basic Menu	2-Basic + Menu	3-Complex Menu	1-Basic Menu	2-Basic + Menu	3-Complex Menu	1-Basic Menu	2-Basic + Menu	3-Complex Menu
	VOCL SEGMENT DESIGNATION								
	A1	A2	A3	B1	B2	B3	C1	C2	C3
1st	Dade Behring	Dade Behring	Abbott Beckman Coulter	Dade Behring	Dade Behring	Beckman Coulter	Dade Behring	Dade Behring	Bayer
2nd	Biosite	Beckman Coulter	-	Abbott	Beckman Coulter	Bayer	Beckman Coulter	Beckman Coulter	Beckman Coulter
3rd	Abbott	Abbott	Bayer Dade Behring	Beckman Coulter	Abbott	Abbott Dade Behring Ortho	Abbott Bayer	Abbott	Dade Behring
4th	Beckman Coulter Roche	Roche	-	Biosite	Roche	-	-	Bayer Roche	Abbott Ortho Roche
5th	-	Biosite Diagnostic Products Ortho	Ortho	Diagnostic Products Ortho Roche	Bayer Ortho	-	Roche	-	-

As is the case with general chemistry, Dade Behring has a strong position across all segments of the hospital immunoassay market. Dade Behring is ranked first, second, or third in all segments. It is interesting to note that Dade Behring's lowest rankings are in segments requiring a complex immunoassay menu. In these segments, A3, B3, and C3, Dade Behring is ranked third.

Higher volume laboratories with complex immunoassay menu requirements appear to prefer Bayer and Beckman Coulter immunoassay systems. Bayer enjoys the leadership position in the C3 segment, which generates more than 35 percent of the hospital based immunoassay request volume. Abbott is ranked among the "Top 3" firms in all segments with the exception of the C3 category.

In conclusion, the proposed segmentation scheme appears to be a viable approach for issues regarding strategic planning. Employing such a technique makes it possible to group customers with similar behaviors and attitudes. Such a scheme should be useful in (1) research that is aimed at the identification of the "needs of the customer", (2) evaluation of the size, "value", of the market for the products offered by the manufacturer, and (3) determination of the performance of each manufacturer with regard to product appeal among customers with similar needs.