

## CHAPTER 2: LITERATURE REVIEW

### 2.1 The Sales Representatives, Pharmaceutical Companies and The Physicians

There was evidence showing pharmaceutical companies could influence physicians' prescribing behavior.

The interaction between sales representative, physicians and the pharmaceutical companies includes,

- 1 Sales representative meeting with physicians with requests for adding the drugs to the hospital formulary and changes in prescribing practice,
- 2 Pharmaceutical companies sponsoring continuing medical education (CME) preferentially to highlight the sponsor's drug(s) compared with other CME programs,
- 3 Physician attending sponsored CME events and accepting funding for travel or lodging for educational symposia and
- 4 Presentations given by pharmaceutical representative speakers to physicians. All these have been associated with non-rational prescribing (Wazana 2000).

In 1993, the Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure concluded that diuretics and (beta) blockers were preferred for initial drug therapy for high blood pressure. Nevertheless, in between 1992 and 1995, the prescriptions for diuretics and (beta) blocker decreased by 50 percent and almost 40 percent respectively, whereas prescriptions for calcium channel blockers increased by 13 percent (Siegel and Lopez, 1997). The committee made similar recommendations in its new report in 1997. These drugs continue to be the best-selling anti-hypertensive agents. Meta-analysis suggested that calcium channel blockers were inferior to diuretic in controlling hypertension and they were considerably more expensive. In short, the less effective drugs but more expensive were prescribed the most (Goodman 2001).

Chren and Landefeld (1994) did a research to correlate the physicians' drug request behavior and their interaction with the pharmaceutical companies. The research compared physicians who had requested additions to the hospital formulary with those who had made no such requests. The results showed that Physicians who had made requests were much more likely to meet pharmaceutical representatives. Physicians who had interactions with specific companies were more likely to request drugs made by these companies, rather than other companies.

Therefore, the pharmaceutical companies' representative (or promotion activities) seemed to influence the physicians' prescribing practice.

## **2.2 Pharmaceutical Companies Promotional Tools**

Pitt and Nel (1988) studied the general practitioners' perception on the relative influence of pharmaceutical companies promotional tools and interpersonal/ (and or) organizational factors on their prescribing decisions. The results showed that the most influential factors on their prescribing decisions were both interpersonal/ (and or) organizational in nature. They were previous experiences with the drug and recommendations made by colleagues (among doctors) in informal discussion. Both factors were not directly controllable by pharmaceutical companies' marketing strategy. The rest of the factors were directly controllable by the pharmaceutical companies. Those factors include

- 1 Sales calls made by pharmaceutical company representatives,
- 2 Seminars, conferences, lectures organized by pharmaceutical companies,
- 3 Advertisements in journals and magazines,
- 4 Sales promotional material received from pharmaceutical companies, such as small samples, calendars, diaries, pens, note pads and
- 5 Direct mail advertising.

Others factors mentioned in the open question were (according to importance),

- 1 Scholarly articles by specialists in scientific medical journals,
- 2 Product availability,
- 3 Credibility and reputation of company,
- 4 Price of the product to the patient and
- 5 Ease in remembering the brand name of the product.

The study also found that although it was not statistically significant, the informal discussions with colleagues tend to become less important the longer the doctor was in practice.

The study implied that although experience with the product and discussions with colleagues was not under the direct control of pharmaceutical companies, they could capitalize these knowledge by identifying the structure and strength of these influences. One strategy proposed was to encourage large-scale product trials (bringing about "experience with the product") in smaller, carefully selected markets than to mass-sample the whole market on a diluted scale. The selected markets should include the so-called opinion leaders who would then disseminate product/marketing information by means of word of mouth to other colleagues.

The study found that sales representatives were relatively low importance of influence. However the personal selling tool was still the best meant for making favorable impression to the general practitioners.

In another study investigated physicians' responses to different marketing media and promotional tactics used by pharmaceutical companies found that sales representatives were most useful, followed by drug sample and advertisement in medical journal. Direct mail, promotional faxes and promotional products were less useful (Spiller and Wymer 2002).

### 2.3 Source of Information for Physicians

Bauer and Wortzel (1966) researched into other studies related to the physicians' sources of information about drugs. One of the study found that physicians' preferred source of information in the ranking order was detail men (sales representatives), journal papers and articles, medical journal advertisements, direct mail, doctor conversations, drug samples, staff meeting in hospital and clinics and finally meeting in national conventions. It is interesting to note that the 3 out of the top 4 ranking were commercial source, only journal papers and articles, a non-commercial source ranked second. Another study about where the physician first heard about a new drug they recently adopted also gave the quite similar ranking, i.e. detail men (sales representative), journal and direct mail.

In another research, Evans and Beltramini (1985) examined the pattern of physicians acquiring the prescription drug information. The research found that physicians soliciting drug information from the following sources, journal articles, colleagues, conventions, sales representatives and pharmacist. Journal articles were the most likely source and pharmacist was the least likely. In contrary to the earlier study, this finding indicated that physicians preferred to solicit information from non-commercial source (journal articles, colleagues and convention) than commercial source (sales representative and pharmacist).

The more recent online survey found that physicians preferred source of information were advertisement in professional journal, followed by published research articles and then colleague (Medical Marketing and Media, 1999). Another study on physician found that medical books, medical journal, medical conference and symposia were found to be most useful (Spiller and Wymer 2002).

The evolving ranking of source of information for physicians has indicated a change in physicians' preference over the years. The preferred source has

changed from the early commercial source to the later non-commercial source.

## **2.4 Factors Influencing Prescribing Practice**

### **2.4.1 Sample**

Pharmaceutical companies often give samples, especially for new drugs or drugs that not yet available in the formulary of a hospital to gain exposure for their drugs. Supplying sample to physicians played a positive role in making choice between medications. Sample facilitating the matching of medication and patient by reducing cost of comparing drugs (Institute for Operations Research and the Management Sciences 2004).

In a survey using 3 different clinical scenarios, physicians were asked about their preferred choice of drug, use of sample and factors involved in prescribing the sample drug. Results showed that sample could influence a physician's decision to prescribe a drug, which was different from his preferred choice of drug. The most often motivator in prescribing a sample was avoiding cost to the patients (Chew, O'Young, Hazlet, Bradley, Maynard and Lessler, 2004).

Sampling served the roles of informative and increasing price sensitive of physicians. The tactic of sampling was more effective if the physicians have more self-pay patients. The prescribing behavior of a physician with more insurance coverage patients would be less likely to be influence by sample (Gonul 2001).

### **2.4.2 Advertisement**

Drug advertisements have been common in medical journal publications to create and maintain awareness physicians on the availability of therapeutic

option. Physicians often denied the influence of such advertisements on their professional judgment.

Physicians are generally in favor of advertisement of pharmaceutical products. The attitude of physician towards advertisement is a good predictor of prescribing behavior. Physicians who were attentive to advertisement were more likely to prescribe the advertised pharmaceutical product and responsive to patient's request for the advertised product (Petroshius, Susan, Titus, Philip, Hatch and Kathryn 1995).

Research showed that advertisements did associate with increase awareness and enhanced prescribing pattern. Sixty days after a quarterly advertising exposure, the physicians who could recall such advertisement and subsequently became prescribers of the drug advertised were more than those who did not recall such advertisement. Therefore, recognition of advertisement by physicians was significant in enhancing prescribing pattern of physicians (Walton 1980).

### **2.4.3 Clinical Papers**

The health care system currently placed emphasis on evident-based medicine. However, research showed that many clinical decisions made were not based on results derived from clinical trials (Packer, Milton, Miller and Alan 1999). Physicians responded not as rapid and as complete as might have been expected after the clinical paper was published. Stafford (2004) suggested that the physicians' respond to the clinical result was influenced by other factors, e.g. availability of generic form of the drug (lowering the cost of drug) and attention received by professional arena and public towards a clinical result related to the drug.

#### **2.4.4 Sales Representative**

Sales representatives' main job is to induce attitude and behavior changes in physicians (e.g. think more favorably towards a pharmaceutical product and prescribe the products). Generally, physicians perceived personally source of information (colleague and sales representatives) as more believable to non-personal source. In which, colleague was more believable compared to sales representatives. Positive information about a product was more believable compared to negative information (Beltramini, Richard, Sirsi and Ajay 1992).

"As access to doctors becomes increasingly difficult, a strong personal relationship is crucial for gaining access to high-prescribing physicians," said Chris Bogan, CEO of Best Practices, LLC. He further elaborated, "Consequently, the practices used by leading pharmaceutical sales representatives to build those associations are the companies' most valuable sales collateral." (Health & Medicine Week 2002). His word probably best described the vital business relationships between sales representatives, pharmaceutical companies and the physicians. The role of sales representatives was very vital for the pharmaceutical sales and marketing efforts (Health & Medicine Week 2002).

Creyer and Hrsistodoulakis (1998) examined the influence of marketing activities to attitudes of physicians towards the pharmaceutical industry in the United States, physicians' views on pharmaceutical sales representatives and factors influencing physicians perceptions of the industry. With regards to sales representatives, the study found that majority of the physicians believed sales representatives provided accurate information concerning medicine, but less than half of the physicians felt that sales representatives were trustworthy. However, there was still majority of physicians reported that sales representatives made positive impression.

On the other hand, physicians' perceptions on pharmaceutical companies were bad. Majority of the physicians felt that pharmaceutical companies do not understand their needs and majority of the physicians felt that

pharmaceutical companies' sales tactics were too aggressive and pushy. Furthermore, most physicians believed that pharmaceutical companies would do what was best for the company and worry about the consumer impact later.

Not all study showed that the sales representative was significant in influencing physicians' prescribing practice. Natalie Mizik concluded sales representatives had modest to very small influence in physicians' prescribing behavior. Her research involved study of 3 different drugs' prescriptions, the sales representatives visits to 74,075 American physicians over 24 months. From the number of sales representatives visits and the number of new prescriptions gained, she concluded that sales representatives had to make extra 0.6, 3.1 and 6.5 visits respectively just to persuade physicians to write one extra prescription. However, some derived different opinion out of this finding. Each new prescription will be followed by 2 or 3 round of refills and each will bring upward profit (\$50), furthermore sales representative can promote more than 1 drug during each visit. Therefore, every visit increased the market share of the drug (Randerson 2003).

#### **2.4.5 Colleague of Physician**

Information from colleague was the most believable form of pharmaceutical product information as compared to sales representative and advertisement. A pharmaceutical company should identify those influential physicians and convince them about the efficacy of their product, so that they could influence other physicians (Beltramini et al. 1992).

### **2.5 Ethical Issues in the Pharmaceutical Industry**

There are many ethical issues surrounding the pharmaceutical industry. In relation to this study is the drug marketer - physician relationship. Many



evidence showed that pharmaceutical companies' marketing tactics affect doctors' prescribing practices. These influences include,

- 1 Use "opinion leader" from within the profession to help promote their products (Liberati and Magrini 2003).
- 2 Sponsoring biomedical research and set the research agenda (Moynihan 2003).
- 3 Publication bias, selective publication and selective reporting of sponsored clinical trials (Lexchin, Bero, Djulbegovic and Clark 2003; Melander, Ahlqvist, Meijer and Beerman 2003).

Such influences were seen to be unethical and violated the trust between physicians and the patients. Recently, there were many campaigns that aimed to restore the trust, i.e. the US "No Free Lunch" campaign (Abbasi and Smith 2003), the American Medical Student Association's campaign "PharmFree" (Moynihan 2003) and World Medical Association guidelines (Mayor 2003). These campaigns among others encouraged physician not to see pharmaceutical sales representatives, not accepting sponsorship from pharmaceutical companies, prohibits gifts and meals from pharmaceutical companies and others steps aimed to detach the pharmaceutical companies from the physicians.

The pharmaceutical companies also reacted to the situation by establishing code of practices, e.g. the British ABPI code, the US PhRMA Guidelines, The Medicines Australia Code of Conduct for Healthcare Professional, etc.

Medicines Australia is a group representing 53 Australian drug companies developed the self-regulatory code of practice to govern the promotion and marketing of prescription drugs. The code was developed in collaboration with the Australian Medical Association and the Royal Australian College of General Practitioners. Under this code of practice, Australia drug companies can no longer engage doctors in promotions involving high-priced meals, expensive gifts, complimentary tickets to popular shows, luxury resorts, etc. Restrictions were imposed on the flight tickets, recreation activities, etc. The guidelines emphasized "simple and modest" in hospitality. The Medicines

Australia who imposed such strict self-regulatory code upon them said that they wanted the community to understand that the relationship between the doctors and companies was about healthcare and not entertainment (Pritchard 2003).

Therefore, the global pharmaceutical industry both the professional and the pharmaceutical companies are increasingly responsive to the unethical practices by established code and guidelines. The unethical practices of the pharmaceutical companies in promoting their product eventually will have to face the challenges from the code and guidelines.