Background

The dental care delivery system has been changing dramatically over the past several years. Diminishing health care financing having the most critical affect on the fundamentals of our traditional dental practice system. Demographic, changing patterns of dental disease, advancements in science and technology are only secondary variables in this transition. Managed care has evolved as a general concern for the dental profession and the dental industry. The officers and regents of the American College of Dentists (1996) define managed care as “a market mechanism for distributing oral health care resources” (Pertilli, 1998).

Managed care was intended to reduce the cost of health care delivery and increase its efficiency when it started. It was created by effort of insurance companies and providers seeking to improve the quality of health care provided to the people and delivering it in a cost effective manner, having in mind also improvement in all aspects of administrative and clinical services (Williams, 1999).

As capitation plans have evolved over the years in response to industry’s increased demand for managed dental care plans, several concomitant trends have added to the shift away from original concepts. One is health care’s shift from not-for-profit to for-profit plans. Second, the purchasers under increased pressure to control costs, have looked to managed care as a method to reduce expenditures overlooking concern of the preferences of their employees. Third, dentists felt the need of more patients to increase income, and by participating in prepaid plans that may satisfy that (Bramson, 1998).

In 1992 the American Dental Association (ADA) reported that there are 150 million Americans were without any dental insurance. Studies have shown that dentists and physicians hold significantly different opinions on financing and delivery of health care issues. ADA advocates the maintaining of current dental delivery and benefits system and increasing public spending for dental care for children, elderly and the poor. The Coalition of Oral Health representing dental schools, research groups, public health practitioners and specialty group providing all Americans with a basic package of primary and preventive oral health benefits (Bauman, 1996).

Direct Reimbursement & Managed Fee-For-Service (MFFS):

According to the U.S. government, the dental care marketplace is now a $ 47 billion industry, representing 4.5 % of the total U.S. health care market. The insurance industry will no longer accept that dentists independently determined different dental treatment plans and what is needed and what is not based on the traditional fee-for-service method. A lot is learned from managed medical care, and purchasers of health care benefits learned a lot from that experience and they are looking for new and innovative ways to provide quality dental services with reasonable costs under the new managed fee-for-service plan (War et al., 1997).

Direct Reimbursement (DR):

A method of providing benefits through which an employer reimburses employees directly for dental care expenses instead of purchasing insurance coverage or other administrative and oversight services from a third party (Wal et al., 1997a).
Managed Fee-For-Service (MFFS)

It is a method of payment under which the provider is paid for each procedure or service that is provided to a patient, but with certain provisions, which a firm or insurer establishes to control cost and quality. Typical cost and quality control mechanisms include dental plan design exclusions and limitations, professional claims review, and provider fee management (Wal et al., 1997a).

The American Dental Association (ADA) explains that “under a direct reimbursement plan, the employee and covered dependents visit the dentist of their choice, receive the necessary treatment, and pay the dentist’s bill directly to the dental office. The employee then presents a paid receipt or other proof of payments to the employer and is reimbursed for all or part of the expenses, depending on the benefits levels of the plan”.

The ADA supports direct reimbursement and advocates that it will reduce the administrative cost, and will allow for greater allocation of resources to go to direct care, and preserve consumer sovereignty with respect to the choice of provider and the type and level of dental care they receive. However insurance industry and many purchasers do not agree with that, in contrast they claim that direct reimbursement will ultimately increase costs and jeopardize quality of dental care delivered to the patient since it lacks control mechanisms under (ADA Manual, 1996).

Dental care delivery has a number of unique characteristics when it’s compared to medicine, which needs to be recognized. First, dentists largely practice in isolation. While the practice in medicine is hospital-oriented and physicians typically practice in a group settings, dentistry by and large, is practiced solo. Second, unlike physicians, dentists are almost exclusively owner-operators. Third, dental care is generally deemed to be more manageable from timing and financial perspective. While medical care is usually highly complex, costly, and often unpredictable, dental care is generally elective with relatively low, predictable cost.

The following Table represents basic funding differences between medical care delivery and dental care delivery in the U.S.

<table>
<thead>
<tr>
<th>Funding sources:</th>
<th>Government</th>
<th>Insurance</th>
<th>Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>39 %</td>
<td>50 %</td>
<td>21 %</td>
</tr>
<tr>
<td>Dental</td>
<td>4 %</td>
<td>42 %</td>
<td>53 %</td>
</tr>
</tbody>
</table>

Source: Health Insurance Association of America, 1994

Dental Plan Design:

The plan term design describe the attributes of a plan that determine the type and level of benefits covered. Typical plan design features include services covered (including frequency and age limitation), services not covered, and the level of consumer financial participation such as co-payments, deductibles, and maximum coverage.

A very popular plan design for over the past ten years with specific features is the “least expensive professionally acceptable alternative treatment”. To explain in more detail, when multiple, equally efficacious treatments for a condition exists, the plan will pay for the least expensive professionally accepted alternative treatment. In dentistry an example of this design will be when administrators need an assist in dealing with a provider (dentist) where the dentist’s behavior is known as “upcoding”. The dentist provides a more intense, expensive
treatment such as crown restoration when a less expensive alternative treatment would be just as, or more effective, such as dental filling (Wal et al., 1997a).

Under MFFS plans, employers, managers, and administrators typically cooperate to create a well-designed plan in an effort to efficiently guide the allocation of scarce resources to their highest valued use. They do that by creating incentives for Providers (dentists) to behave as perfect agents and for patients to behave as well informed. When these goals are met, you should expect a reduction in the transaction costs, and theoretically a more optimal mix and level of dental services are provided to the patient population.

These plan designs encourage patients to prefer preventive and diagnostic services over major restorative services. An example of that will be many plan encourage use of preventive and diagnostic services by covering them at 100%, while major restorative procedures may be covered at 50%. In MFFS plans, patients are encouraged to be more conscious when making consumption decision high cost dental procedure and high copayments services and will tend to question provider treatment recommendation for these services. This mechanism to change consumer behavior (patient) also has a behavior modification on the provider (dentist). Since in this plan providers are aware of plan design incentives and how the level of consumer financial participation affects the patient’s sensitivity to price. So providers (dentists) will have difficulty in recommending high cost, marginally beneficial services to patients.

Looking at direct reimbursement (DR) arrangements, plan design as it is currently defined does not exist. The benefits provided under a DR system are defined by the dollar amount of reimbursement only and clinical management through provider and patient plan design incentive are absent. So dentists acting as a provider have no plan design incentive to act as perfect agents. Since plan incentive design are eliminated under DR, the transaction costs will be higher than they would otherwise be (Wal et al., 1997a)(Meyer et al., 1996).

DR arrangements place the responsibility for the best use of limited dollars exclusively in the hands of employees/consumers, and thus the right of the consumer to choose the provider, type of dental treatment and level of dental care is preserved. Economists describe this “right to choose” issue as “consumer sovereignty”, which states “ in a perfectly competitive market where there is complete, symmetrical information and zero transaction costs, an optimal outcome will result if consumers are free to make all consumption choices”. However, consumer sovereignty does not apply in the dental care marketplace because of asymmetrical information and the principal-agent problem it creates. Therefore consumer sovereignty would apply to the dental care marketplace if dentists behaved as prefect agents.

Since consumers derive both outcomes (dental treatment) and process (how is dental care is delivered) utility (satisfaction) from the consumption of dental care services, the concept of consumer sovereignty is quite complex under DR arrangements. Because process utility preference are know only to the consumer, providers (dentists) may act as a perfect agents with respect to process utility simply by understanding and learning what type of process utility yielding behavior consumers desired such as pleasant atmosphere, certain attitudes and certain type of information (Wal et al., 1997b)(Meyer et al., 1996).

For the provider to act as a perfect agent, he or she will need to behave in such a way to maximize total consumer utility by allocating services between process utility by allocating services between process utility-yielding and outcomes utility-yielding activities. Dentist do have an incentive to act as imperfect agents, and a third-party pays perform economically beneficial services by monitoring and enforcing provider compliance with both implicit and
explicit agreements. It is these monitoring activities that place constraints on provider profit-maximizing behavior (Wal et al., 1997b)(Meyer et al., 1996).

Let’s examine the potential impact on provider income (dentist), and patient out-of-pocket expenses of both a managed fee-for-service MFFS plan design and direct reimbursement DR arrangements. In first plan design a MFFS 100/80/50 representing preventive/basic/restorative treatment respectively plan with a $ 1,000 annual maximum and $25 annual deductible where preventive and diagnostic services are exempted. If we look at Table I, the total revenue to the provider (dentist) is $2,076, here the shares paid by third party and patient are $1,000 and $1,076 respectively. The average price per unit (each unit represent an independent dental service) is $ 259.50 ($2,076/ 8 dental services) (Wal et al., 1997a)(Meyer et al., 1996).

In the second plan design a DR 100/80/50 representing preventive/basic/restorative treatment respectively plan with a $ 1,000 annual maximum, and the following level of reimbursement: 100% for the first $100 of expenses, 80% of the next $500, and 50% of the next $1,000. If we look at Table I, the total revenue to the provider (dentist) is $2,843. Here the share paid by the third party and patient $1,000 and $1,843 respectively. The average price per unit is $355.37 ($2,843/8 dental services).

If we to compare both plan, where we have an equivalent mix of services. The direct reimbursement (DR) plan results in greater revenue to the dentist by $767.00, and higher out of pocket cost to the employee by $767.00, and higher per unit price by $95.87 ($355.37-$259.50) (Wal et al., 1997a)(Meyer et al., 1996).

In the context of dental care marketplace, economic efficiency occurs when consumers are provided maximum value in exchange for the limited funds available for dental care services. The principle of profit maximization includes both the short run objectives of maximizing total revenue over total cost (TR-TC), as well as long run objectives of maximizing the net present value of the dental practice. According to economic theory. A provider will employ inputs (capital and labor) until the cost of the last unit of input is only just equal to the value it contributes to the last unit of production. This occurs when marginal factor cost equals marginal revenue product. The variables under direct provider control in any fee-for-service system that can be influenced to achieve profit maximization are: the number of treatments, the price of treatment, and the mix level of inputs employed. The cost of the inputs themselves are taken as given and they are beyond the control of the dentists (Wal et al., 1997b).

Using break-even analysis (Figure I) we can demonstrate how under Fee-for-service system the price of treatment and the number of treatments are both source of profit to the provider. By lowering total costs that will increase profit and that profit is maximized when the vertical distance between total revenue (TR) and total cost (TC) is maximized.

From a patient point of view, they expect to be able to get the care and services they required quickly and efficiently, and if they don’t get the value they expected, they go elsewhere. That is one of the principles of dynamic consumerism that is increasingly applied to health care in America. Employers preferred managed fee-for-service, since this kind of plan will cut their cost, improve quality, and provide better control over spending. From a dentist point of view the problem in dental health service delivery is accessibility and cost, a plan than address these issues and provide reasonable compensation for their service is what they are looking for. Insurance companies are looking to cut costs and improved quality of care, and managed fee-for-service plan serve that purpose.
A Dentist Opinion

I spoke with Dr. Margolis who lived through managed care in his multi-group specialty dental practice for over ten years, he speak from a rich experience. He is a pediatric dentist and has two nationally known HMO programs in his practice, one for ten years and one for eight years. He also has been a participant in PPOs programs and still a specialist-referral for several PPOs. Dr. Margolis see two problems with HMOs and PPOs in dentistry compared to medicine. The first is the percent overhead of the average general dental practice. “In today's well-run dental practice, overhead expenses are approximately 65%. The second problem is that in dentistry there are 80% general dentists and 20% specialists. Therefore, general dentists are, in some cases, performing procedures such as complex surgical extractions and endodontics that would normally be referred to the specialist. Why? To keep those dollars "in House" and not out of the office”. (Dr. F. Margolis, personal communication, on October 6, 2000).

Dr. Margolis have seen patients referred to him by PPO general dentists that should have been able to be taken care of by the general dentist. Why did the general practitioner dentist refer the patient (who lived 50 miles away) to him for routine caries on a 6 year old? “I think it is because it's more profitable for the general practitioner to perform crown and bridge than pediatric filling restorations. Also, when I called the managed care insurance carrier, the answer I received was that the general dentist felt the patient might be a behavior management problem. And, when questioned about the distance the patient had to travel, the answer was that according to the HMO contract with the employer, "within 50 miles" to see a specialist was the norm. I feel that direct reimbursement DR by employers and freedom of choice is a "win-win-win" situation for patient-employer-dentist. I disagree that the opportunity exists to mold managed care into a form that is acceptable to dentists." I also do not agree this is the way to improve the oral health of Americans on a cost-effective basis.” (Dr. F. Margolis, personal communication, on October 6, 2000).

Summary

Dentistry is not medicine. The two professions are vastly different. It’s frequently cited that dentistry has a long tradition of focusing on preventive care and so managed care programs are not needed to encourage prevention or early diagnosis and treatment. It is important for the dental profession to inform patients than many managed care plans achieve short-term saving at the expense of long-term health. The debate on dental care financing and delivery will be prolonged and will continue to evolve. Members of the dental profession should always have quality of dental care delivered to their patient as first priority.
<table>
<thead>
<tr>
<th>Dental Services</th>
<th>MFFS</th>
<th>DR</th>
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<tbody>
<tr>
<td></td>
<td>Charge</td>
<td>Allowed</td>
</tr>
<tr>
<td>Prophy</td>
<td>$106</td>
<td>$78</td>
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<tr>
<td>FMX</td>
<td>$74</td>
<td>$54</td>
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<tr>
<td>2 surface amalgam (2 independent services)</td>
<td>$86</td>
<td>$63</td>
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<tr>
<td>Gold crown</td>
<td>$669</td>
<td>$488</td>
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<tr>
<td>3 unit bridge (3 independent services)</td>
<td>$1,908</td>
<td>$1,393</td>
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<tr>
<td>Total (8 independent services)</td>
<td>$2,843</td>
<td>$2,076</td>
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</table>
References


Margolis F. Personal Communication, on October 6, 2000.


