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**DIRECT TO CONSUMER ADVERTISING AND
PRESCRIPTION CHOICE**

TOSHIAKI IIZUKA[†]

GINGER Z. JIN[‡]

This paper examines the effect of direct-to-consumer advertising (DTCA) of prescription drugs on doctors' choice of drug brands. Using antihistamines as an example, we show that DTCA has little effect on the choice of brand despite the massive DTCA expenditure incurred in this class. In contrast, promotional activities directed toward physicians have larger and longer lasting effects. These results, together with the market-expanding results shown in Iizuka and Jin (2005), suggest that DTCA is effective in increasing the aggregate demand per therapeutic class but does not affect doctor choice of prescription within a class. Therefore, DTCA may be viewed as a public good for all drugs in the same class.

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**VERTICAL INTEGRATION AND SHARED FACILITIES
IN UNREGULATED INDUSTRIES**

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In this paper we analyze the equilibrium market structure, following liberalization, of an industry involving an essential facility. Two alternative modes of market entry are considered, in conjunction with vertical integration, namely: (i) full entry, which means building a new and more efficient facility at a positive fixed cost; and (ii) partial entry, which means purchasing existing capacity from the incumbent at a fixed price per unit that is freely negotiated between the entrant and the incumbent. We show that vertical integration is a

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Direct to Consumer Advertising and Prescription Choice ^{*}

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Abstract

This paper examines the effect of direct-to-consumer advertising (DTCA) of prescription drugs on doctor choice of drug brands. Using antihistamines as an example, we show that DTCA has little effect on the choice of brand despite the massive DTCA expenditure incurred in this class. In contrast, promotional activities directed to physicians have a larger and long-lasting effects. These results, together with the market-expanding results shown in Iizuka and Jin (2005), suggest that DTCA is effective in increasing the aggregate demand per therapeutic class but does not affect doctor choice of prescription within a class. Therefore, DTCA may be viewed as a public good for all drugs in the same class.

1 Introduction

Traditionally, prescription drugs were marketed towards doctors, and direct-to-consumer advertising (DTCA) was limited. This is partly because DTCA on TV was prohibitively expensive: prior to 1997, any DTCA that contained both brand name and medical claims must disclose a “brief summary” of drug effectiveness, side effects, and contraindications. As a result, TV ads with these details were long and costly. In August 1997, the Food and Drug Administration (FDA) clarified that pharmaceutical firms can advertise brand name and indications on TV without a “brief summary.”¹ Following the clarification, DTCA expenditures increased substantially from \$800 million in 1996 to \$2.5 billion in 2000, which created an intensive debate on the

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¹DTCA still needs to include a “major statement” of the most important risks and refer consumers to other sources for more comprehensive information.

effects of DTCA. Proponents of DTCA emphasize the educational value of DTCA: many chronic diseases are under-diagnosed and under-treated, and DTCA can inform potential patients of the existence of such medical treatment. Opponents argue, however, DTCA may mislead patients into demanding heavily-advertised drugs, leading to inappropriate drug use and unnecessary purchase of expensive drugs.²

To understand the effects of DTCA on pharmaceutical demand, it is useful to consider the impact of DTCA in two steps. In the first step, DTCA may inform the public of the existence of the medication and thereby bring potential patients to the doctor. If true, DTCA expands the prescription drug market. Second, after the patient visits the doctor, DTCA may affect the doctor's prescription choice. For example, a patient who watched a TV commercial of a prescription drug may persuade the doctor to prescribe the medicine, even if it is not the appropriate one. Clearly, proponents of DTCA stress the potential benefit from the first step, and opponents of DTCA are concerned about the harm generated by the second step.

Our previous study (Iizuka and Jin, 2005) examined the first step by combining 1994 – 2000 drug-specific DTCA data with the 1995 – 2000 National Ambulatory Medical Care Surveys (NAMCS) and found that higher DTCA expenditures were associated with increased doctor visits. This paper contributes to the debate by examining the second step, i.e., whether DTCA affects physician prescription choice once the patient visits a doctor. We focus on the prescription of non-sedating antihistamines, one of the most heavily DTC-advertised classes. Utilizing the data above, we estimate a discrete choice model. We allow advertising to last long and estimate depreciation rates for the four types of promotional expenditures – detailing, medical journal advertising, free samples, and DTCA (the first three target doctors). We find that DTCA has a positive but not statistically significant effect on specific brand choices. In contrast, advertising directed to doctors has a much larger and long-lasting effect on the choice of prescription. Thus, the primary role of DTCA appears to bring potential patients to the doctor but not to affect the choice of prescription.

This paper contributes to the small, but growing literature that analyzes the demand effects of DTCA.³ Most of the existing evidence is based on aggregate data. Calfee et al. (2002) didn't find a significant effect of DTCA on new Statin prescriptions or renewals. Rosenthal et al. (2003) examined the aggregate sales data of five therapeutic classes and found that DTCA has a significant effect on total class sales but not on market shares within each class. Narayanan et al. (2004) examined the effect of DTCA and other marketing efforts on allergy prescriptions. They found that DTCA increases both category sales and brand share, but the latter effect is weaker

²Both sides of the debate are well documented. See Holmer (1999) and Holmer (2002) for a summary of the proponent's position, and Hollon (1999) and Wolfe (2002) for a summary of the opponent's position.

³Even a smaller collection of literature exists on the supply side of DTCA. This includes Rosenthal et al. (2002) and Iizuka (2004).

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