when the identical chemical substance was sold under two different brand names.[29]

Most hospitals operate under the formulary system, which authorizes the hospital pharmacist to fill prescriptions with any generic equivalent of the prescribed drug, regardless of the brand name written by the physician. Such formularies operate under agreements involving the written consent of all resident physicians. In practice it also applies to visiting private physicians treating hospital patients. The drug trade associations have attempted to challenge this practice, but without marked success.[30] The lack of success here stands in marked contrast to the effectiveness of the campaign of the National Pharmaceutical Council in influencing state boards of pharmacy to adopt "substitution" laws. "Substitution" used to refer to the dispensing of a different chemical substance than the prescription required. The National Pharmaceutical Council undertook to influence state boards of pharmacy to adopt antisubstitution laws which defined substitution in terms of brand names. In 1953 only four states had any sort of antisubstitution laws, but by early 1959 the efforts of the National Pharmaceutical Council had increased the number to 44.[31]

Hospitals and dispensaries in the Armed Forces operate under the Military Medical Supply Agency, which purchases on the basis of competitive bids. The bids received often fall well below the wholesale price of the drug in some lines. The Veterans' Administration customarily enters into negotiations with individual suppliers, although it has also solicited competitive bids, particularly after the Military Medical Supply Agency had demonstrated how this could lower prices.

The market consists, in addition, of some 170,000 practicing physicians with the M.D. degree (allopathic physicians), 12,000 osteopathic physicians, and 16,000 veterinarians, all of whom act as purchasing agents for the drug consumer.[32] A vast selling effort is directed at these purchasing agents, primarily at the allopathic physicians, to create brand preferences which will result in the writing of brand-name prescriptions. The types of selling effort include (1) advertisements in over 300 medical journals, (2) direct mail advertisements, (3) the employment of chemists and pharmacists as highly trained itinerant salesmen, and (4) the sponsoring of medical conventions and meetings, in connection with the exhibition of wares. For the 22 largest firms in the ethical drugs industry, selling expenses were in 1958 the second largest component of costs, averaging 24.8 per cent of sales, as compared with a cost of goods sold of 32.1 per cent of sales. Average selling expenses were therefore 77.3 per cent of the cost of goods sold. Sixteen companies had a ratio of more than 75 per cent, nine had a ratio of more than 100 per cent, and four had a ratio of more than 150 percent. Total selling outlays amounted to about $3,200 per physician per year.[33]

The result of this volume of selling effort on the structure of the market has been to eliminate price competition except in the hospital and government bidding markets, and to substitute product differentiation and brand preference.[34] Any physician who wishes to put himself to the trouble of looking up the generic name of a compound advertised by brand name can write any prescription generically. The retail pharmacist may then fill the prescription with any available brand. For patented drugs there is little likelihood that there will be any great variation in price, although there are a few such instances.[35] For unpatented drugs, however, the unadvertised, generically named products of small firms may sell for 10 per cent or less of the price of the large firms.

[29] Text of Wayne County, Michigan circuit court opinion no. 301799, *id.*, pt. 21, at 11761–62.

[30] Memorandum 18 of the National Pharmaceutical Council, 1957, *id.*, pt. 21, at 11835–36.

[31] Subcomm. Report 236.

[32] Testimony of Dr. Austin Smith, Hearings on Administered Prices, pt. 19, at 10728.

[33] Data submitted by each firm to the Subcommittee. Subcomm. Report 31.

[34] The extent to which advertising, salesmanship, and the bestowal of free samples is regarded by drug makers as capable of creating lasting brand preference is indicated in an article by the vicee-president of Abbott Laboratories, where it is stated: "Practically the only ethical drug products whose sales will not be benefited greatly by sampling [the distribution of free samples] are the rare medicaments distinguished by advantages so great that in simple justice to the patient their actual use is called for." Downs, Advertising, in Drug Research and Development 485 (Smith & Herrick ed. 1948).

[35] Reserpine, a tranquilizer patented by CIBA, is sold under its brand name, "Serpasil," at a wholesale price of $4.50 per hundred .25 milligram tablets. CIBA has licensed several other firms, some of whom make sales of the bulk powder to small companies who in turn can undersell the large firms' advertised brands. The 1959 Drug Topics' Red Book listed 41 firms selling this product. Two firms were selling at over $4.00 per bottle (CIBA's $4.50 was the highest price), two were selling from $3.00 to $4.00 per bottle, two were selling from $2.00 to $3.00 per bottle, eleven were selling from $1.00 to $2.00 per bottle, and 24 were selling at less than $1.00 per bottle. The lowest price, Winsale's $0.45, was exactly 10 per cent of CIBA's price. Hearings on Administered Prices, pt. 18, at 10595.