however, compared with their 22% representation in the over-20 female population of British Columbia. In their recent tables[9] the annual screening rate fell from 67·2% of the female population aged 20-29, downwards through each decade to 12·7% of those aged 70 or over, which must clearly be unrepresentative of women in that age group. Therefore, without even considering the possibility that the disease progresses relatively rapidly at higher ages (which would reduce the numbers picked up by infrequent screenings), there is insufficient evidence to suggest that the yield of new preinvasive disease really falls in unselected women after age 60. One should also remember that screening also reveals substantial numbers of developing early invasive cancers in this age group.

Knox's[7] calculations indicate that to save the greatest number of lives from cervical cancer for a given number of tests distributed over a lifetime the tests should continue into old age. This is because, as shown in the figure, the age-specific death rate from this cause continues to rise until the highest ages.

It has to be recognised, however, that neither doctors nor their patients want screening to continue after a certain point. Regular screening, therefore, seems inappropriate after 70, though a first smear should always be taken from an unscreened woman who has been sexually active, at whatever age she presents.

Summary of recommendations

Age for beginning screening

25 for women presenting for contraception, pregnancy, or venereal disease;

30 if sexually active and not already tested.

Intervals between smears

Five-yearly intervals, or three-yearly intervals in those aged over 35 if resources permit;

A *first* smear in a woman aged over 35 should be followed by a second smear within a year to guard against false-negative error.

Age for cessation of screening

For those previously screened, 70;
No age limit for a first test.

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(*Accepted 6 April 1977*)

Letter from . . . Chicago

Sweet and sour pills

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British Medical Journal, 1977, **1**, 1518-1520

Everybody knows by now that on 9 March 1977 the Food and Drug Administration (FDA) earned the undying gratitude of generations of rats and mice by deciding to ban the use of saccharin; and that on the same day the Canadian government likewise moved to protect its own laboratory animals; so that the rodents of North America will henceforth lead a happier albeit unsweetened life, freed from the task of having to provide more circumstantial evidence that saccharin is hazardous to the health of American non-rodents.

It is perhaps less widely realised that the trouble with sweeteners is not new, and that it dates back to the earliest days of our solicitous FDA. In 1908 the FDA's first commissioner, Harvey W Wiley, announced that he wanted to look into the safety of saccharin. This led to difficulties with President Theodore Roosevelt, who eventually eased the crusading commissioner out of his job on the basis that "anyone who thinks saccharin is injurious to health must be an idiot." In 1970, however the bureaucrats struck back and banned the use of cyclamates, for causing papillary tumours in rats fed astronomical doses of sweeteners—this despite evidence that rats often develop spontaneous tumours. And now, almost 70 years after the initial skirmish over saccharin, the FDA has moved to vindicate its first commissioner by removing the last and only artificial sweetener from the American market.

The evidence precipitating the FDA's action was based on a Canadian study in which 14 saccharin-fed rats but only two controls developed bladder tumours. The administered dose has been compared to the equivalent of humans drinking 800 diet sodas a day for a lifetime. The FDA, however, had no choice, since the 1958 Delaney amendment requires that all food additives causing cancer in animals must be banned. But with Americans presently consuming more than 2 million kilograms of saccharin each year, the reaction to the ban was

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violent. Legislators were inundated with complaints. Dental, diabetic, and calorie-counting associations protested. People wrote outraged letters, and there were editorials about bureaucratic red tape, misguided zeal, administrative overkill, and interference with constitutional rights. "I can only conclude that the tobacco lobby is stronger than the saccharin lobby," wrote one irate lady. Why not ban guns and alcohol and speeding cars, asked others. At least one firm considered legal action against the FDA. The executive director of Sweet 'N Low, the largest saccharin manufacturer, declared that "any call for a ban on saccharin is an outrageous and harmful action based on flimsy evidence that has absolutely no bearing on human health." And he went on to deplore an act that "on the basis of one questionable experiment creates senseless damage to the public and to a $2 billion-a-year industry involving thousands of jobs."

Evidence was also mounting of a widening split between the public and various crusading consumer organisations favouring the ban. Non-cancerophobes began hoarding large amounts of saccharin in anticipation of the bitter days ahead. Under FDA rules it will be some three to four months before the ban goes into effect, but already Congress is under strong pressure to keep saccharin on the market. Several legislators are working to amend the Delaney clause. Senate and House subcommittees are holding hearings about saccharin. And Health, Education, and Welfare Secretary Califano has announced that his department will review the effects of the Delaney amendment. Perhaps public opinion will prevail. But, barring a decisive legislative or administrative switch, July will find millions of diabetic and weight-conscious individuals facing life sans saccharin.

Foreign medical practitioners

In what has been construed as an acute attack of protectionism or even xenophobia, the US last October took a "180-degree turn in policy in 90 days" by effectively slamming shut its gates against further entry of foreign medical practitioners. Specifically, the new law abolished immigration preferences for doctors, required the passing of parts 1 and 2 of the National Boards of Medical Examiners (or an equivalent test designed by the Secretary of Health, Education, and Welfare), and limited to two years the time foreign trainees could stay in the US—the intention being to end virtually all medical immigration by 1980. The provisions of the law, however, threatened to close the doors immediately, requiring as they did the prospective immigrant to pass a test that he was unable to take. This aspect of the law would effectively have crippled several large general hospitals almost completely staffed by foreign-trained residents. To prevent such "a substantial disruption of health care services" the former Secretary of Health, Education, and Welfare granted in January a one-year waiver of the provision requiring the passing of the National Boards.

Meanwhile, plans are being made to offer a new visa-qualifying examination in September in 16-20 as yet unnamed countries. The other provisions of the law, however, remain unchanged. Training posts for exchange visitors will increasingly be restricted; and the two-year stay clause will limit opportunities for training in the US since most residency programmes last three years. Many observers think that the new law is harsh and punitive and that the foreigners, welcome in times of need, are now being told to stay away from this land of opportunites.

Similar thoughts also occured during the crisis about the foreign-trained doctors—who for almost 30 years have provided services for the 11 000 inmates of Illinois's 28 State mental hospitals. Traditionally, mental hospitals have offered low pay and relatively unexciting working conditions, and have had to rely heavily on unlicensed foreign medical staff. The practice was legalised in 1952 by issuing "mental hospital certificates," or permits, allowing unlicensed foreign practitioners to work exclusively in State mental hospitals. The use of "permit doctors," however, has long been criticised as establishing a double standard of medical care, and in 1972 the State passed legislation requiring all doctors practising in Illinois to be licensed. The law, challenged in the courts by the unlicensed doctors themselves, was eventually upheld, and in January 1977 the first licensing examination was given. Some 127 unlicensed doctors took the test and failed, averaging less than 244 out of 800 possible marks, whereupon the newly elected Governor of Illinois had no choice but to suspend them temporarily from their jobs.

The suspension of nearly half of the hospital's staff created considerable difficulties. Remaining doctors worked 24-hour shifts in rotation to take up the slack, some fruitless attempts being made to recruit private doctors or volunteers. But the public reaction was mixed. Most newspapers, critical of the mental health department, wrote about shortchanging the "most vulnerable and helpless of citizens," and questioned the wisdom of allowing unqualified people to use dangerous drugs and endanger the community by releasing patients whom they regarded as "cured." Various mental health associations also came out against using foreign unlicensed staff in "an area where verbal communication is so important." But the president of the American Psychiatric Association wrote that American psychiatry and institutional psychiatry in particular owes a great debt to foreign doctors. One permit doctor wrote that he would pit his record and experience against any other doctor, but that he was too old to take tests, and that most Americans would be hard pressed to pass a licensing examination 20 years after graduation. The Governor of Illinois conceded that he would not like to take the bar exam after 18 years of law practice. Within three weeks the legislature passed emergency legislation extending the permits until the March 1978 examination. But many called the affair a tragic day and a psychotic nightmare, defending the doctors as dedicated and competent professionals who had given much of their lives to the mental hospitals but who just can't pass the exam, no matter what.

Year of the serpent

Another tragic day this February was the Chinese New Year's Day, the beginning of 4675, the year of the serpent—coming in the wake of the tiger, the rabbit, and the dragon, and recurring in twelve-year cycles. Serpent people, incidentally, are said to be wise, intuitive, attractive, lucky, compassionate, and decisive; and they include all persons born in years derived by subtracting multiples of 12 from 1977. This year the celebrations in Chicago were rudely interrupted by a gang of robbers who invaded the headquarters of a Chinese organisation, took $13 000 in cash and jewellery, pistol-whipped two of the guests, and humiliated the others by forcing them to disrobe. The burglars were thought to belong to the Black Ghost Shadows, a gang made up mostly of immigrants from Hong Kong. Unable to find jobs easily and rejected by the more affluent American-born Chinese, they have apparently drifted into crime and have staged an increasing number of burglaries and extortions against wealthy Chinese businessmen. So that, instead of enjoying their favourite sweet and sour pork, the New Year's revellers were forced to swallow a bitter pill.

Finally, to return once more to the activities of the FDA: within the past year it has banned chloroform from cough remedies, toothpaste, liniments, and food packaging for causing liver, kidney, and thyroid tumours in rats; is planning to phase out fluorocarbon propellants from aerosol sprays because of possible skin cancer and damage to the earth's ozone layer; has required new stringent warning labelling of birth-control pills; and is continuing to seek a ban on stilboestrol as a growth

stimulant for cattle and sheep. It may move against the Searle Company for allegedly withholding data on metronidazole and spironolactone, and has raised questions about the data on naproxen. While valuable drugs such as minoxidil, cimetidine, and newer beta-adrenergic blockers remain unapproved, the agency has become trapped in a pointless legal tangle about the useless cancer remedy Laetrile. Several courts have recently overruled the FDA ban on this compound, allowed several patients to use it, and ordered the agency to compile a public record and hold public hearings—which may provide a precedent for other legal actions by drug manufacturers. And, finally, the agency has banned the use of Red No 4 dye for causing bladder polyps in dogs, so that henceforth Maraschino cherries will have a dirty orange color—an unappetising though not necessarily bitter prospect for the aesthetically inclined non-canine Manhattan fancier.

Today's Treatment

Diseases of the urinary system

Treatment of glomerulonephritis by drugs—II

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British Medical Journal, 1977, **1**, 1520-1522

Lupus nephritis

One form of nephritis is worth separate consideration, because the prognosis has improved so much over the past 25 years—even if we are unsure exactly why (fig 1). The prognosis in the absence of steroids was 20% at five years; the introduction of antibiotics does not seem to have made much impact in the nephritis of systemic lupus erythematosus. During the next decade corticosteroids were employed to suppress the clinical manifestations of the disease, and during this period survival improved. Higher doses of corticosteroids were used in most patients with lupus nephritis over the next decade, with some investigators using immunosuppressive drugs in addition. Over the past seven years the combination of lower doses of steroids plus immunosuppressive agents has become common. During all this period survival increased.

To what extent can we attribute this improvement in survival to the drug treatment? Diagnosis of milder forms of the disease might contribute to the improvement overall, but lupus nephritis—especially the severe diffuse forms of nephritis when the patient is usually uraemic, nephrotic, or both—has shown a similar improvement. It is difficult to believe that these patients were being missed four times out of five in the early 1950s. The infective complications of lupus have, if anything, been made worse by immunosuppressive treatment, so that a non-specific effect on mortality from infection cannot be considered responsible. It seems likely that the improvement in prognosis has accompanied immunosuppressive treatment, although no controlled trials of no treatment versus corticosteroids were ever performed. Why should this be so when, in other forms of nephritis, no benefit seems to be seen? It may be that the florid B-cell overactivity found in systemic lupus erythematosus, with antibodies produced in great excess against various endogenous and exogenous antigens, may be the dominant feature of the disease, even if a *deficiency* of suppressor T lymphocytes may be a more fundamental event in the pathogenesis.

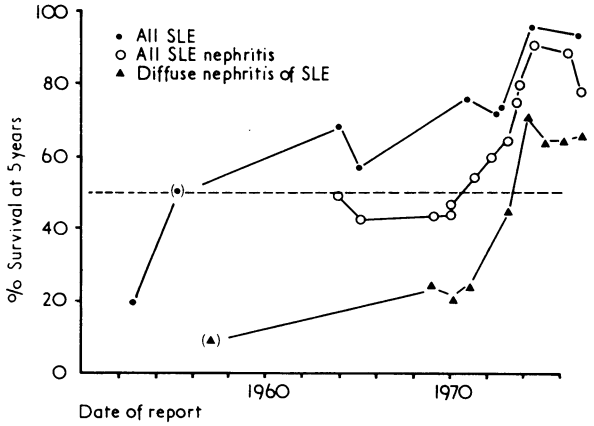

FIG 1—Survival of patients with systemic lupus, 1953-77. Actuarially calculated five-year survivals of published series.[1] Upper line represents data for all patients with lupus; second line, patients with lupus nephritis—that is, a subset of the first group; and lowest line survival of patients with biopsy evidence of severe diffuse lupus glomerulonephritis. Data for 1955 for all lupus are at four years and for 1957 for severe diffuse lupus nephritis two years (in brackets). From 1948 to 1953, corticosteroids were little used. From 1953 to 1964, corticosteroids in moderate doses (10-30 mg/day prednisone equivalent) were used in most units for short periods. From 1964 to 1970, higher doses (60 mg prednisone/day) were used for periods of six months or longer. From 1970 most units employed prednisone in lower doses and an immunosuppressant agent, either cyclophosphamide or azathioprine. Reproduced from *Renal Disease*,[2] with permission of the publishers, which see for detailed references.

Even so, we need to know whether the addition of immunosuppressive agents to the corticosteroid regimen has contributed anything. Is the further improvement in prognosis over the past five years attributable merely to more careful use of corticosteroids and avoidance of side effects? Analysis of causes of death in series of cases of lupus nephritis seems to show little change in pattern, apart from possibly more deaths from

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