



VIEWS AND REVIEWS

NURSE-MIDWIFERY IN THE UNITED STATES

IT IS FITTING that The American College of Obstetricians and Gynecologists devote critical attention to the status of maternity care in the United States. If, in fact, we are presently giving this care at a level commensurate with our national wealth and global status, we have cause for satisfaction.

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The illustration at the top of the page is "Two Doctors in Discussion," from *Treatise Against All Pestilence and Tainted Air* by Alonso Espina, published in 1518 in Valladolid, Spain. (The Bettmann Archive)

If, however, our obstetric care is less than adequate in any respect, it is necessary that this College ascertain the cause and suggest the remedies. An ideal solution to the problem must extend rather than restrict the province of the obstetrician, who has, and must retain, ultimate responsibility for mothers and their newborn infants. One remedy for the suspected deficits in maternity care is deputization by the obstetrician of some of his routine activities to skilled nurse-midwives. In arguing that the obstetrician needs such assistance, I shall first define the magnitude of the deficits by providing data in 3 crucial areas: manpower, scope of maternity care, and relative neonatal mortality. I then intend to demonstrate how the support and expansion of nurse-midwifery may be a long-range method of alleviating the shortages.

In 1964 I presented before this College a method of forecasting the needs of this country for obstetric manpower.⁴ Despite a decrease in the number of births during the past few years, this method has proved reasonably valid. The projections were based on the assumptions that births in the United States are attended by 3 basic groups: Diplomates of the American Board of Obstetrics and Gynecology, general practitioners, including some specializing in obstetrics, and hospital physicians, including those in municipal and governmental institutions. The personnel engaged in hospital practice are directly related to the "maternity gap," for in this group neither the qualifications of the attendants engaged in and responsible for obstetric care, nor the adequacy of the care is clearly known.

The division of obstetric personnel into these 3 categories is a preliminary requisite for estimation of the magnitude of the manpower problem. To predict the requirements of the future, it is necessary to estimate the number of deliveries expected in each of

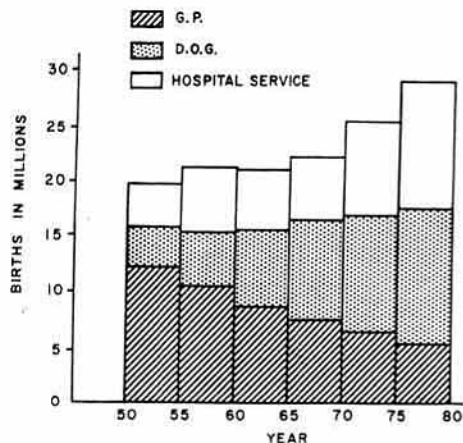


Fig. 1. Estimate of number of Diplomas of the American Board of Obstetrics and Gynecology projected to 1980.

these categories. Although projections are of necessity based on data that are assumptions, they nevertheless indicate, to competent forecasters, the order of magnitude of the problem. To estimate the future number of Diplomates of the American Board of Obstetrics and Gynecology, the numbers of specialists listed in the specialty board volumes for the past 16 years were tabulated. These figures indicate a steady, though slow, rise in the number of Diplomates. Because the biennial count indicates a rather uniform annual increment, a formula for projecting the number up to the year 1980 may be derived: $y = 323.9x - 13583$.

Figure 1 is a graph of this increment, and Table 1 shows the actual and projected numbers of Diplomates, as well as the magnitude of variation that may be expected. These projections are probably reliable because of the validity of past calculations, and because of the similarity of figures obtained in 1966 and those calculated from data in 1962. Although the present requirement of board certification for membership in this College may result in a slight increase in the annual number of new Diplomates for a short time,

* y is estimated number of diplomates; x is last 2 digits of the year.

there is no evidence that any large additional number of candidates will suddenly be produced; moreover, the medical schools to be completed between now and 1980 can hardly be expected to contribute to an increase in the number of qualified obstetricians and gynecologists available by that time. There is, furthermore, no evidence that our specialty will succeed in attracting a greater proportion of American medical students. At present, 7.3% of all residencies with about 850 first-year positions are in obstetrics and gynecology. However, 11% of the residency positions are vacant, and 27% are taken by graduates of foreign medical schools. These data indicate that we cannot expect more than 6-7% of American medical graduates to enter our specialty.¹

The precise number of deliveries conducted by qualified specialists in obstetrics is not known. Some have large practices; others, engaged in teaching or administration, perform only a small number of deliveries. A conservative, though possibly high, figure may be 200 deliveries per specialist per year. On the basis of data obtained in several cities, it seems reasonable to assume that in the 5-year period 1950-55, about 20% of the babies born were delivered on the ward services of community, municipal, and governmental hospitals. By subtracting these 2 assumed numbers from the total number of births, the approximate

TABLE 1. DIPLOMATES OF THE AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY 1962 AND 1966 PROJECTIONS TO 1980

Yr.	Real	Projection	
		1962	1966
1964	6244	6500	
1966	8600	7013	
1968		7526	8443 ± 818
1970		8039	9415 ± 949
1972		8552	9739 ± 1084
1974		9064	10308 ± 1221
1976		9577	11034 ± 1361
1978		10090	11682 ± 1501
1980		10602	12330 ± 1643

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TABLE 2. ESTIMATED BIRTHS BY ATTENDANT 1951-1980

Quinquennial	D.O.G.		G.P.		Hospital service		Total†
	No.*	%	No.	%	No.	%	
1951-55	3.4	17.3	12.3	62.4	4.0	10.3	19.7
1956-60	4.7	22.0	10.5	49.1	6.2	28.9	21.4
1961-65	6.5	30.5	8.9	41.8	5.9	27.7	21.3
1966-70	8.8	39.1	7.6	33.8	6.1	27.1	22.5
1971-75	10.1	39.3	6.5	25.3	9.1	35.4	25.7
1976-80	11.8	40.8	5.5	19.0	11.6	40.2	28.9

* Number of births in millions.

† Series B birth projection, U. S. Dept. of Commerce, 1964.

TABLE 3. COMPARISON OF 1963 AND 1966 PROJECTIONS OF ESTIMATED TOTAL BIRTHS AND DELIVERIES BY DIPLOMATES OF THE AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Quinquennial	Projected births			Projected deliveries		
	1963	1966	% error	1963	1966	% error
1961-65	22.5	21.3	5.6	6.2	6.5	4.8
1966-70	25.4	22.5	12.9	7.5	8.8	17.3
1971-75	29.4	25.7	14.4	8.8	10.1	14.8
1976-80	33.3	28.9	15.2	10.1	11.8	16.8

number of babies delivered by general practitioners can be derived (Table 2). Based on these assumptions as well as the Class B predictions of the United States Department of Commerce⁶ for predicted births and a quinquennial 15% decrease in the number of general practitioners, an estimated number of births in each category for each 5-year period up to 1980 may be calculated (Table 2 and Fig. 2).

The present predictions differ in several ways from those derived from data available in 1962. The current birth predictions of the Department of Commerce indicate that the 33.3 million births formerly projected for the 5-year period 1976-80 will probably be delayed until the next quinquennium (Table 3). As a result of the slightly increased number of Diplomates of the American Board of Obstetrics and Gynecology, the number of babies delivered by these specialists in the 5-year period 1976-80 will be almost 17% higher than the figure in our original projection. Despite these differences, the projections continue to show that the

extra number of deliveries gained by the specialists will just about equal the number lost by the generalists. The resulting "maternity gap" in 1976-80 thus appears to be approximately 40% of the total births. Its magnitude will depend solely on the number of births occurring during that period. The

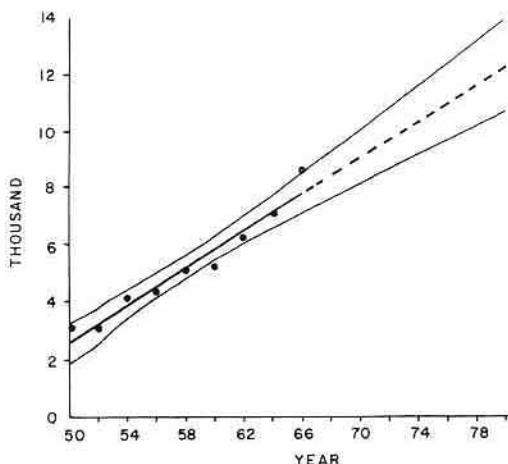


Fig. 2. Estimated number of births by attendant (1951-1980).

figures indicate an irremediable shortage in physician manpower.

One test of the quality of maternity care in the United States is provided by comparison of our neonatal mortality rates with those of other Western nations. We stand only tenth in this regard; moreover, the difference between our results and those of our nearest superior competitor has increased since 1953. Although all the countries under discussion have improved their neonatal mortality rates, our improvement has been less rapid. The infant mortality figures for 1965 show a decrease from 1961 of 2% for the United States. The comparable figure for Switzerland, which is next in order, is 14%^{2, 3, 5} In view of our national wealth, the excellence of our medical training, and the superiority of our facilities, these results are paradoxical.

Three explanations are commonly offered for our relatively low standing: (1) Our heterogeneous population, particularly the large proportion of Negroes which contributes greatly to our incidence of prematurity, renders comparison with predominantly white populations unjustified. (2) Our statistics are more accurate, and our definitions and criteria are different. (3) The difference in rates is small and inconsequential.

To counter these arguments, however, I must first point out that removal of non-white births from our data does not alter our relative standing (Table 4). Moreover, according to the National Bureau of Vital Statistics, there is no evidence that our data are collected with greater accuracy or care than in other countries of the Western world. On the contrary, my personal communications with responsible authorities in some of these countries lead me to believe that our data may in fact not be so accurate as those in Great Britain, for example. Finally, although the differences in neonatal mortality rates may be small, they are not inconsequential. We must compare our figures with those of Norway, which has the low-

TABLE 4. RELATIVE NEONATAL (UNDER 28 DAYS) MORTALITY RATES AMONG PEER COUNTRIES OF THE WESTERN WORLD

<i>Pos.</i>	<i>Country</i>	<i>Rate/1000 live births</i>
1	Norway	11.9
2	Netherlands*	12.0
3	Sweden	12.3
4	New Zealand†	12.8
5	Finland	13.7
6	Australia‡	14.3
7	England & Wales	14.3
8	Denmark§	14.8
9	Switzerland	15.6
10	United States	16.7

Exclusions:

* Amboinese living in camps.

† Maori.

‡ Full blood aborigines.

§ Greenland and Faroe Islands.

|| Nonwhite.

est rate. That country had 6.3 neonatal deaths per 1000 live births fewer than the United States. If we had equaled Norway, 25,000 more of our 4 million babies might have been saved.

There is no state in the Union with a white neonatal mortality rate as low as that of Norway; there are only 12 states with records better than those of our nearest competitor, and only 1 state is better in this regard than Great Britain, which is about half-way down the list. These data require no further amplification. In light of our tremendous advantages in financial resources and medical training, the only reasonable explanation seems to be a severe deficit in manpower, particularly in impoverished areas, where the natality risk is greatest.

Our strained manpower resources may be on the verge of further deterioration. We are witnessing an expansion of maternity services, occasioned not only by a predicted increase in the number of births, but also by a broadening scope of maternity care. We are becoming increasingly conscious of our deficits in maternity services in so-called poverty areas, and we are beginning to pro-

vide increased breadth of care, including education, to high-risk groups. We are starting to incorporate social sciences into obstetric teaching and maternity care. Some departments already have divisions of genetics and sociology, and a few are contemplating the addition of demographers. Teachers of obstetrics are keenly aware that broadening the base of obstetrics is necessary for survival of our specialty as a major academic discipline as well as for the increased requirements for total maternity care. The growth of family planning clinics is but one indication of the expanded scope of such care. The burgeoning of our Department's contraceptive clinic since 1958 is shown in Table 5. Three new patients registered in 1958; over 3000 registered in 1966. These figures, however, reflect inadequately the magnitude of the task confronting us, for the nearly 4000 registered patients represent 12,645 visits in 1966. The total number of visits to our clinic since its inception has been over 30,000. It is evident that neither our service nor any comparable obstetric unit can mobilize the manpower to deal with this additional number of patient-visits solely by recruiting new physicians or by increasing the burden of those already overtaxed.

We must ascertain to what extent nurse-midwives have alleviated the manpower

shortage. There are obviously too few of these women at present to affect the national situation appreciably, but in our own institution they have most efficiently eased the physician's burden. Our clinic serves an unusually large number of indigent patients, who are subject to all the increased risks inherently associated with poverty. Similar situations on a smaller scale confront many other cities in the United States. Our nurse-midwives have aided our doctors, always under direct supervision of a physician, in the labor and delivery areas, in the prenatal and postpartum clinics, and in the family planning clinic. As all of us responsible for residency training are keenly aware, there is an imbalance in large obstetric and gynecologic services between the number of major gynecologic operations and the number of deliveries. The number of residents that can be adequately trained is limited by the availability of major operations. Normal obstetrics is often deputed to the least experienced members of the house staff, to medical students, or to inadequately trained nurses. Could not specially trained maternity nurses perform these tasks more efficiently, freeing the specialists and specialists-in-training for more difficult tasks?

Our nurse-midwives have functioned under clearly stated regulations formulated by our institution and by the City of New York. There is not, and never has been, any question that the policy is determined by the physician and that the ultimate responsibility is his.

Tables 6 and 7 indicate that since 1963 nurse-midwives have administered care in the labor room and delivery areas to 18% of our patients, and prenatal and postpartum care to 5%. These services comprise duties usually divided between physicians and obstetric nurses. It is therefore obvious that the duties deputed by the obstetrician to the nurse-midwives result in a distribution of efforts that works in the

TABLE 5. STATE UNIVERSITY-KINGS COUNTY MEDICAL CENTER FAMILY PLANNING CLINIC

<i>Year</i>	<i>New patients</i>	<i>Visits*</i>
1958	3	
1959	29	
1960	23	(69)
1961	41	(122)
1962	130	(387)
1963	302	(900)
1964	1618	(4,820)
1965	3698	(11,017)
1966	3775	12,645
TOTAL	9619	30,055

* Figures in parentheses are only approximate.

TABLE 6. DELIVERIES PERFORMED BY THE NURSE MIDWIFERY SERVICE 1963-1966

Year	Total	Nurse-midwifery service	
		No.	%
1963	6996	1071	15.4
1964	6717	1391	20.7
1965	5984	1207	20.2
1966	5979	978	16.5
TOTAL	25,676	4647	18.1

TABLE 7. PRENATAL AND POSTPARTUM VISITS ATTENDED BY THE NURSE-MIDWIFERY SERVICE 1963-66

Year	Total	Nurse-midwifery service	
		No.	%
1963	30,629	1246	4.1
1964	28,987	1254	4.3
1965	25,743	1415	5.5
1966	25,399	1545	6.1
TOTAL	110,758	5460	4.9

interest of both the physician and organized nursing.

We have recently assigned postpartum patients who desire family planning to a special clinic staffed by nurse-midwives. These are patients in excess of the number required for teaching the house staff and medical students. In this clinic the routine postpartum examination is performed and the appropriate contraceptive information and materials are provided. The magnitude of this service is evident from the data previously cited. The efficacy of the nurse-midwifery service, particularly its acceptance by the patients, is reflected in the 30% increase in the number of postpartum visits. Most important for effective family planning among the indigent are the time and empathy that the nurse-midwives devote to their task. Physicians cannot afford to spend their time on these admittedly vital services.

The simplistic assumption that our maternity care is good because our maternal death rate is low and because we obstetricians personally may be doing a good job is as illogical as the conclusion that our automobiles are safe because they are pretty and powerful. Nobody denies the excellence of our specialists. We, in turn, must not deny the existing deficits in other areas of obstetric practice simply because we ourselves do not have the time to cope with them. With a calm, realistic attitude, we can design an approach that at once allows better utilization of our specialized skills and provides the needed care for those patients for whom the services of physicians are not presently available. Nurse-midwifery is a solution that deserves careful testing by the Fellows of this College, the specialists who determine the quality of maternity care throughout the United States.

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REFERENCES

1. AMERICAN MEDICAL ASSOCIATION. *Directory of Approved Internships and Residencies, 1966*, p. 9.
2. BUREAU OF VITAL STATISTICS. Personal communication.
3. CHASE, H. C. International comparison of perinatal and infant mortality: The United States and six West European countries. Presented at the Ninety-Fourth Meeting of the American Public Health Association, San Francisco, Calif., Nov. 3, 1966.
4. HELLMAN, L. M., and O'BRIEN, F. B. Nurse midwifery—an experiment in maternity care. *Obstet Gynec* 24:343, 1964.
5. "International Comparison of Perinatal and Infant Mortality: The United States and Six West European Countries." In *Vital and Health Statistics*. U. S. Department of Health, Education and Welfare, Series 3, No. 6, March 1967.
6. "Population Estimates." In *Current Population Reports*. U. S. Department of Commerce, Bureau of the Census. Series P-25, No. 286, July 1964.