

Newborn Home Visits

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A randomized controlled trial was conducted comparing home visits with office visits by physicians to families with newborns within the first two weeks of life. Results showed that physicians were significantly more satisfied and rated their relationship with the family significantly higher after home visits than after office visits. Fathers were present at 50 percent of the home visits compared with 26 percent of office visits ($P < .05$). Mothers in the home visit group rated caring for their baby as significantly easier than the office visit group. There was no difference in infant immunization rate or number of well-child visits, although infants in the home visit group had significantly more visits to their own physician. The mean length of visit was 33 minutes (not including travel time) for home visits and 23 minutes for office visits. Physicians were better able to note home environment and family interactions during home visits. This study supports the view that home visits by physicians enhance the physician-family relationship.

Recently there has been increased interest in the use of the physician's house call.^{1,2} Home visits are advocated for initial assessments,³ management of acute illnesses,¹ and continuing care of the chronically ill person outside the hospital.⁴ The arguments in support of physician home visiting are persuasive but are often based on anecdotal evidence.^{3,5} Few studies have actually compared home with office visits.

A randomized controlled trial was conducted to

test several hypotheses about the benefits of home visits over office visits. Families with a newborn were chosen for study. The newborn period is a crucial time for families because of stresses resulting from uncertainties of parenting and role changes within the family.

In comparing a standard office visit with a physician home visit, an attempt was made to answer the following questions: Would a home visit result in (1) an increased feeling of satisfaction by the physician, (2) an increased knowledge of the family by the physician, (3) an increased feeling of support and confidence by the mother, (4) a stronger bonding between the family and the physician, and (5) a greater satisfaction with the practice by the family?

In addition to answering these questions, it was

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hoped that descriptive information about home visiting would be obtained and an educational experience for residents in the practice would be provided.

Methods

The study was carried out from November 1980 to July 1982 at the Duke-Watts Family Medicine Center, a residency training site for 39 family medicine residents. The practice has about 100 deliveries a year, and the patients represent a cross-section of the community; 28 percent are black, 75 percent are self-paying.

Residents caring for obstetrical patients were told of the project and invited to participate. They agreed to allow their patients to be randomized to either home visit or a standard office visit to be made within the first two weeks after birth. Physicians could withhold or withdraw patients from the study for medical or social reasons. To ensure approximately equal numbers of home and office visits, the names of each resident's patients were drawn from an individual envelope, and the numbers were balanced every six draws. About the 38th week of pregnancy patients who were assigned to home visits were asked by their physician whether they would agree to a home visit instead of the initial newborn office visit. Final arrangements for the home visit were made prior to discharge from the hospital. Participating physicians, therefore, were not blinded to the group in which their patients belonged. However, neither they nor the patients were informed of the outcome variables that were being measured. Excluded from the study were families who were known to be taking babies to other practitioners (pediatricians, health department) and families of babies who had medical complications that altered the well-child visit routine.

At the first home visit each resident was accompanied by one of the faculty investigators (AC or SG). This support was intended to provide residents with an educational incentive for participation in the project. The faculty investigators offered feedback to residents after the visit but did not give advice on the structure or content of the visit beforehand. Faculty did not attend any of the office visits.

At the conclusion of both home and office vis-

its, residents completed a questionnaire providing information on family members present at the visit, length of the visit, how satisfied they were with the visit, how satisfied they felt the mother was with the visit, a rating of the resident's relationship with the family after the visit, information or insights they had obtained, and any comments.

At the four to six weeks' postpartum visit, mothers in both groups were asked to complete a questionnaire that covered the following areas: attitudes about caring for the baby, personal supports in caring for the baby, and perceptions about the relationship with the physician. They completed the form as part of routine postnatal assessment and were not aware of the hypotheses being evaluated.

At eight months a family chart audit was conducted. The data obtained from the audit included number of immunizations recorded, visits by the baby, and new family members registered in the practice since the first newborn visit.

Results

Only three of the 35 eligible physicians refused to participate in the study. The three stated that they were already making home visits on all their newborns and did not wish to deprive any of their patients of this service. Only two patients eligible for randomization were withheld from allocation by their physician.

During the study period 93 patients were eligible for the study. Ten dropped out for the following reasons: care of baby transferred to another provider (1), mother refused home visit (3), and visit not made within time period or not by primary physician (6). Forty patients were randomized to home visit, 43 to office visit. By chance some physicians had all their patients randomized to one group, which left no home-office pairing for comparison for eight patients in the home visit group and five patients in the office group. The results for the total sample of all visits were analyzed as well as the subset for which each resident had made at least one home and one office visit. Results were similar for both samples and therefore are reported only for the total sample.

There was no significant difference between the home visit and office visit groups for maternal age, years of maternal education, or number of prenatal

Table 1. Summary of Most Frequent Comments Recorded by Residents About Home Visits**Advantages**

1. Able to focus on mother and her problems
2. Could see home environment
3. Observe role (or lack) of father in care of infant
4. Observe sibling interactions
5. Reduce feeling of physician as authoritarian figure
6. Strengthen relationship with mother
7. Home visits more convenient for patients
8. Patients appear more relaxed in home setting

Disadvantages

1. Unable to weigh baby
2. Occasionally too many family members were present so that the interaction was artificial

visits. Those families randomized to home visit, however, did have significantly more children than those in the office visit group.

Physicians were significantly more satisfied ($P < .05$) and rated their relationship with the family significantly higher ($P < .05$) after home visits than after office visits. There was no difference in physicians' perception of maternal satisfaction with the visit between the two groups.

There was a significant difference in length of visit measured by time spent with patient (not including travel time) in the home visit group compared with the office visit group. Mean length of visit for home visit was 33 minutes compared with 23 minutes for office visit ($P < .001$).

Fathers were present at 50 percent of home visits compared with 26 percent of office visits ($P < .05$). Siblings and other family members were also more likely to be present at home visits ($P < .001$). Table 1 lists the most frequent remarks recorded by residents concerning home visits. Most residents felt that they were able to focus on the mother and her concerns to a greater degree during home visits; in office visits the focus was on the physical examination of the newborn. Most residents commented that seeing the home environment was very informative. Noting the cleanliness, sleeping arrangements, and warmth of the home gave residents a much more vivid and real-

Table 2. Mean Number of Newborn Office Visits During Eight Months Following Initial Visit

	Home Visit (n = 37)	Office Visit (n = 43)
Total visits	5.7	4.7
Well visits	3.8	3.3
Sick visits	1.9	1.4
Visits to own physician	3.4*	2.8

* $P < .05$, Student's *t* test

istic picture of the social conditions of the family. Many residents were able to observe interactions between other family members, noting problems with sibling rivalry or the help of a supportive father. Several residents mentioned the difficulty with not being able to weigh the baby, especially for breast-fed infants when there was a concern about adequate milk production.

Thirty-five mothers in the home visit group and 32 in the office visit group completed the six weeks' postpartum questionnaire. The home visit group rated caring for the baby as easier than the office visit group ($P < .05$) and rated books more helpful than the office visit group ($P < .001$). There was no significant difference in any of the other responses. Overall, the responses were positive in both groups, ranging from mean scores of 4.1 to 6.9 on a 7-point scale.

The family chart audit conducted eight months following the first newborn visit revealed no significant difference in immunization rate; 65 percent of the infants in the home visit group and 62 percent of the office visit group had three diphtheria, pertussis, tetanus vaccines and oral polio immunizations recorded by eight months.

Table 2 shows a comparison of follow-up office visits for the two groups. The difference in the mean number of well-child visits was not statistically different, but the home visit group averaged one additional visit for the total visits during the eight-month follow-up period ($P = .06$). Infants who received a home visit had a significantly greater number of visits to their own physician ($P < .05$). No difference was found in the number of new family members who enrolled in the practice during the follow-up (mean for both, 0.3).

Discussion

Five hypotheses about the benefits of home visiting were tested. The first concerned physicians' satisfaction. Residents' satisfaction ratings were significantly higher with home visits; however, before the study began, residents had expressed some bias toward home visiting. This initial bias might well have influenced their ratings of personal satisfaction. The faculty support at the initial home visit may also contribute to the higher ratings for home visits.

An increase in the physician's knowledge about the family was measured by comparing the new information recorded by each resident on the postnatal visit questionnaire. As one might expect, new information from the physicians making home visits included more comments about the home environment. Less predictably there were also more comments about family members' interactions, suggesting that additional knowledge about the family's dynamics was gained during the home visit.

Maternal comfort and feeling of support were measured by several questions in the six-week postpartum questionnaire. Home visit mothers rated caring for the baby as significantly easier than did the office visit mothers. This question was intended to measure the confidence and support the mother felt and indirectly assess the physician-patient relationship. Unfortunately, by chance the home visit group had higher parity, and one could argue that the mothers were more experienced, thus accounting for their increased ease. Overall, the mean scores for both groups were high and reflect the difficulty of obtaining an accurate patient satisfaction measurement.

The relationship between the family and the physician was estimated by the number of family members present at the visit and the number of follow-up office visits to the family's personal physician. This hypothesis is the one the study most strongly supports. One half of the home visits had fathers present compared with one fourth of office visits. This increased attendance by the fathers is partially related to the time of day during which most home visits were made. Other factors such as convenience and viewing the home visit as unusual and, therefore, an important event probably also contributed. Presence of the father at the initial postpartum contact with the physician acknowledges the father's contribution to child rear-

ing and gives him an opportunity to ask questions and be involved in the care of the newborn and mother. There is an indication that a stronger physician-family bond was formed in that more follow-up visits of the home-visit infants were made to their own physician.

It was expected that increased confidence in the health care facility might result in freer use of the services. Home visit infants did have a greater number of total visits, but this could be interpreted in different ways. The infants might have been more sickly. They had more siblings and might have had more exposures to acute illnesses than the office visit group. Alternatively the home visit mothers might have felt more comfortable about going to see their physician and sought help earlier in the course of an acute illness.

Time spent with the family was 30 percent longer in the home visit group, which could be seen as a positive finding; however, if the travel time is added to the mean length of visit of 33 minutes, it might be viewed as a negative aspect adding much time to an already busy schedule.

As always when dealing with subjective areas of patient satisfaction and good physician-patient relationship, tools for measurement seem woefully inadequate. Further, to attribute outcomes occurring over a period of eight months to a single home visit might be unrealistic. As an educational experiment, however, this study was a success; the residents enjoyed participating and felt they learned a great deal about home visits. The results support the benefits of home visits in the area of environmental assessment and involvement of the father and other family members during this important time. One must be cautious, however, in interpreting the results as proof that a physician's home visit in the newborn period is clearly superior to an office visit in all cases.

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