RADIO FOR DOMICILIARY MIDWIVES

An Experimental Trial

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AMBULANCE STAFF, MIDWIVES AND GENERAL medical practitioners give the public a seven-day week, 24-hour day service, which covers a large area of territory. Emergencies may occur at any time, communications are often difficult, wasteful mileage (double tracking near to a place that has recently been visited) may cause delay to a particular patient and also waste valuable staff time. Radio has been used on ambulances for years with great effect. It seemed probable that the domiciliary midwifery service, which has some points in common, could also be assisted by radio communications.

Operation of service without radio

Patients have the telephone number of their own midwife and two on call, their doctor and the area nursing officer (office and home). At week-ends, hospitals and doctors can telephone an ambulance depot (which has the phone number of the duty nursing officer).

In part of the area under review, a night rota has been organized. The local ambulance depot becomes the centre for night calls and patients are requested to use this phone number between 6 p.m. and 8 a.m. The ambulance depot can contact the night duty midwife and, if she is not available, other midwives.

In spite of all these arrangements, there are many circumstances where improved communication is needed.

Emergency calls. The most numerous of these difficulties is that of the relative trying to contact a midwife either at the commencement or during labour. It is impracticable for a district midwife to be with the patient for the whole of a long labour and she has to make difficult judgments on when to leave the patient and carry out other vital work. The patient and relatives become anxious and, with present means of communication, the midwife has to give the patient more time than she would have to do if communications were improved. When calls from patients at the commencement of labour come to the area nursing officer (because no local midwives can be contacted), the calls are particularly difficult to deal with during morning office hours as midwives are out on their rounds for four or five hours. Often the area nursing officer has to go out in her car and find a midwife or she attends the case herself. When the patient's relative

fails to contact any midwife at week-ends and telephones the nursing officer who is required to stay by the telephone during the whole week-end, there can be great difficulties in contacting a midwife.

The most serious emergencies are those where the midwife requires the doctor, obstetric flying squad, ambulance or hospital bed; and they include postpartum haemorrhage, difficult and abnormal labour requiring obstetric assistance—retained placenta, perineum requiring suture and the need for incubators for premature and shocked babies. Sometimes a doctor may urgently require a midwife. Ambulances with a maternity case in transit (or about to be collected for transit) may urgently need a midwife. There have been several serious cases in this category.

Other situations. Hospitals sometimes give very short notice of early discharge and telephone the nursing officer on duty at week-ends who may have difficulty in notifying the appropriate midwife. There are a number of situations where a midwife wishes to obtain relief as quickly as possible.

The experimental operation of a two-way radio with some midwives

The area provided town and country districts where different problems could arise and contained an ambulance depot which already had experience of handling midwives' calls (through a night and week-end rota system).

Two-way radio sets were installed in midwives' cars. The ambulance depot was fitted with a selective calling instrument which gave two-way communication with a range of about 15 miles in the midwives' car sets. The midwife can immediately call the ambulance depot on her radio and they can telephone the general practitioner, the hospital for a bed or flying squad. Meanwhile the midwife can give all her attention to the patient.

The midwife can be reached by radio from the ambulance depot while she is in her car, whether moving or stationary. If the midwife leaves her car and goes into a home, the radio is set to sound the horn.

The sets were detachable and could be changed from car to car. In all 12 midwives have had the radio but only four sets were used at first, the maximum number of sets in use at any one time was ten.

Calls which were made during the experimental period. These have been summarized in the table. It was found that the radio calls could be classified essentially in accordance with the problems of communication which were known to exist before we started to use radio. The figures opposite each midwife give the number of months she was on the radio but it must be noted that, owing to early operational difficulties, not all this time was equally effective.

Patients' relatives requesting midwives. These 72 calls were part of the process of the patient obtaining a midwife under emergency conditions and they were most effective. The following two are good examples:

One day when the superintendent nursing officer was on week-end duty, she received a call from a doctor at 12.15 p.m. to say that a baby had been born and a midwife was needed immediately. The patient's own doctor could not be found and all the midwives were out. By the use of the radio, it was possible to

contact a midwife within five minutes and she went to the patient immediately.

On a week-day morning, the area nursing officer received four emergency calls between 10 a.m. and 12.30 p.m., from patients' relatives who had been unable to contact their local midwives. Three patients were in strong labour and one was a case of miscarriage. It was possible by the use of radio to divert midwives to all four patients. If radio had not been available, the area nursing officer would have attended the first patient herself and it would have been very difficult indeed to obtain midwives for the other patients.

Calls from midwives

For doctor. The medical reasons were four cases of postpartum haemorrhage, two breech presentations in labour, four cases of foetal distress, three cases where doctor was required to suture perineum, three cases where doctor wished to be present at the birth which was imminent.

For flying squad. Of the six calls for the flying squad, five were for patients with severe haemorrhage and shock. In one case a doctor was also obtained by radio and in four cases a doctor was already present. The midwife gives details of the blood group which is passed on to the hospital while the ambulance is on its way to collect the flying squad and the correct blood. Four transfusions were given at home, before the patients were transferred to hospital. The flying squad reached the patient very quickly, one case in ten minutes, in two cases in 15 minutes, in another in 16 minutes and in the fifth case, the interval between a midwife calling the ambulance and the arrival of the squad and commencement of transfusion was only 20 minutes, despite a journey of nine miles. The sixth call was for a patient with retained placenta.

For incubator and oxygen. The two calls for the ambulance oxygen apparatus were for collapsed babies. In one case, it was for a badly shocked premature baby needing incubator transport to hospital. The other baby, subsequently found to be hypoglycaemic, became cyanosed and the midwife radioed for a doctor and ambulance. Both arrived very quickly and after the successful administration of oxygen, the baby was transferred to hospital.

For hospital admission. The ten obstetric cases were three breech presentations, three prolonged labour, one antepartum haemorrhage, one postpartum haemorrhage, one foetal distress and one unbooked patient (with no antenatal care or preparation) in advanced labour. The eleventh case was a non-obstetric emergency.

Other situations where quick communication is desirable

Night duty midwife requires relief. Where there is a night rota system the night duty midwife goes off duty at 8 a.m. If she is attending a patient in advanced labour and is on the radio, it is much easier to ask for a midwife relief than to send a messenger to telephone for relief. By radio, she is able to pass more precise information.

Midwife going off duty at other times. These calls occur when the day midwife goes off duty, i.e. at 6 p.m., or at the commencement of her half-day off duty. For many years, midwives have been tied to their districts for 24 hours a day, six days a week. It is most important that, when going off duty, she should be relieved in good time.

Night duty midwife available for other calls. The night rota system covers an area of approximately ten miles in an east to west direction and five miles north to south. When a night duty midwife completes her work at one house, if she is on radio, she contacts the ambulance depot personnel, through whom all patients' calls are channelled, to inquire if she is required elsewhere; e.g., at 5.30 a.m. a midwife had completed the nursing at one delivery, radioed the ambulance depot and was directed to another patient in labour. After one hour, at 6.30 a.m. having given the necessary treatment and reassured this patient, she was able to leave her. She was then directed to a third patient. At 7.45 a.m. this patient being in advanced labour, she radioed for a day duty midwife to relieve her. All this was accomplished without the midwife returning to her home which was on the perimeter of the area covered, thus saving considerable mileage and time.

Nursing officer to midwife—new early hospital discharges. Sometimes short notice is given by hospitals for patients who have been discharged and who require a visit by the domiciliary midwife during the morning; when the message is received the nursing officer has been able to contact the midwife while she is on her district, thus saving a special visit later.

Midwife asking for road directions. A midwife who is undertaking relief work on an unfamiliar district sometimes needs to ask for reliable road directions. The ambulance personnel usually have the necessary information.

Walkie-talkie sets

Suitable walkie-talkie radios only became available towards the end of the trial. These can be taken by the midwife into the patient's bedroom and are completely independent of car batteries and car aerials. We have not been able to have a continuous experiment with them but those midwives who have seen them prefer these sets to car radios. The disadvantage is the limited range—average about five miles. It would be desirable to have a dual system using the walkie-talkie for those midwives within range and the car radio for those midwives situated in places behond the range of the walkie-talkie sets. Both could work in relation to the same transmitting station.

Area offices as radio centres during office hours

During the trial, the ambulance depot was only just able to handle the extra calls and they caused some difficulty at peak hours. It will be appreciated that it is not only answering the radio which is involved but some radio calls involve several telephone calls to hospital and doctor. There is also the problem of quick contact with the area office involving further telephone calls. For these reasons, it would be desirable for the radio to be operated from the area offices during office hours.

It will be seen from the information already set out that the radio has been found to be very useful:

1. It gives all patients at home a much greater sense of security and more effective means of calling the midwife. This sense of security is much greater than can be shown by the number of calls made.
2. It enables the midwife to obtain easier and quicker contact with ambulance

RECORD OF RADIO CALLS DURING EXPERIMENTAL PERIOD

Midwife	*Number of months on radio*	*Number of births during these months*	*Emergency calls*							*Other situations were quick communication is desirable*				
			Patient's relative phones ambulance depot or nursing officer (a few of these calls were via patient's doctor who had been contacted directly by the patient)		*Midwife to ambulance (several of these calls requested more than one service but only the numbers of radio calls is shown)*				*Ambulance to midwife*	*Night duty midwife requires relief (going off duty)*	*Midwife going off duty (at other times)*	*Night duty midwife available for other calls*	*Nursing officer to midwife new early hosp. dis.*	*Midwife asking for road directions*
			Radio call to mid.											
			Direct from amb. depot	*Via N.O. and amb. depot*	*For G.P.*	*For flying squad*	*For incubator or minute-man*	*For hospital admission*						
Town midwives														
A —District midwife	12	45		7	1		1			25		7		12
B —District midwife	22	96	5	11	2	4				30	1	12		5
C —District midwife	14	89		5	1			1		12	2	20		6
D —District midwife	10	45		3						2	1	8		
E —District midwife	22	121	1	12						30	1			10
F —District midwife	5	27		1	1			1	1		1	4		
G—District nurse/midwife ..	22	64		20	10			4		15	10	37	2	12
Country midwives														
A—District nurse/midwife/ health visitor	22	28		4							14		4	10
B —District nurse/midwife ..	21	56		1	1	2	1	2			2			10
C —District nurse/midwife ..	17	36		1	1			1			2			4
D —District nurse/midwife	18	53						1						
E —District nurse/midwife/ health visitor	10	20		1	1			1						
Total	195	680	6	66	18	6	2	11	1	114	34	88	6	69

for premature baby incubators and resuscitators and with the hospitals for inpatient beds or the flying squad. The ambulance depot can also telephone the general practitioner.

3. It aids the general operation of the domiciliary midwifery service:
   (*a*) By allowing the midwife more flexibility in temporarily leaving patients in labour.
   (*b*) By enabling midwives going off duty to notify the conditions of their cases needing immediate attention.
   (*c*) By saving midwives' time and mileage by a midwife being able to make radio contact and inquire about other cases in the district she is in. Also by preventing the attendance of several midwives following multiple telephone calls.
   (*d*) By making the best use of the midwives who become more flexible during peaks of large numbers of births.
   (*e*) By aiding recruitment into the service.
4. Although this experiment is primarily on the use of the radio by midwives it has been found that, when the midwife is also a district nurse, time and mileage can be saved on purely nursing calls. Calls from patients and doctors requesting a district nurse often arrive after she has started on her rounds. A few of these calls are urgent. With the radio she can be directed to the patient needing attention who may live in the vicinity where the district nurse/midwife is working at the time.

For about 100 midwives over a county area, the cost could be about £45 each per annum. Mileage would be saved and much staff time, but the main purpose is to provide a more efficient service.

OUT OF THE PAST

ERNEST HART — A FORGOTTEN MAN

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"A MAN WHO WITH A NOBLER AMBITION and a loftier ideal, might have left the whole world his debtor for ever. He preferred a cheaper glory and he had his reward." (Obituary, *Practitioner* 1898.) Indeed! Let us look at this man a little closer.

Ernest Hart, the second son of Jewish parents was born at Knightsbridge in 1836. Qualifying at St George's Hospital in 1856, Hart became