



# PULSE

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## ANTENATAL RURAL ULTRASOUND PROGRAMME

A Pilot Intervention in Dhading District, Nepal

### MAIN POINTS

From mid-June 2011 (Ashad 2068) to mid-July 2012 (Ashad 2069) a pilot programme provided 6,358 ultrasonography scans (USG scans) to pregnant women in all parts of the large district of Dhading in central Nepal. The programme successfully screened 60% of pregnant women in the district and identified 125 obstetric complication cases. The women with complications and their families were advised on the best course of action and most were referred to a higher level health facility. The failure to identify and manage such complications can lead to the death of mothers and newborns, especially in remote areas.

The prospect of free USG scans attracted many women for antenatal check-ups and enabled women with limited finances to access the service. Previously they had to pay at least Nepalese rupees NPR 500 (\$6) for a USG scan at a hospital plus travel costs.



The portable ultrasound machine in use at a health facility in Dhading, August 2012

### ANTENATAL RURAL ULTRASOUND PROGRAMME

The improved provision of antenatal care promotes safe motherhood. One element of antenatal care unavailable to most women in remote and rural areas is ultrasonography scans of the foetus (known in Nepal as video x-rays). It is recommended that all pregnant women undertake scans for the early detection and management of complications and foetal abnormalities. A number of initiatives by non-governmental organisations are underway in remote areas of Nepal, including Solukhumbu, to provide this service using portable USG machines. In mid-2011, the Family Health Division decided to formally pilot the use of this technology in Dhading and Mugu districts. This report relates the experiences from Dhading.

In March 2011 four nurses (ANMs) from Dhading were trained on the use of portable USG machines. Two portable and one desk USG machine (made by SonoSite, USA) were provided to Dhading District Health Office. These machines weigh about 3.5 kg with charger and accessories, have rechargeable batteries and cost about NPR 1 million (\$12,000) each. The nurses found that fully charged machines could make about 50 scans. In Mugu the machines are recharged via solar panels where mains electricity is not available.

An orientation meeting with local stakeholders planned the provision of this service across the district. The service began in June 2011 with three trained nurses visiting health facilities on antenatal clinic days and scanning antenatal mothers. The nurses interpreted the scans to identify problem cases, which are referred on to either the district hospital or the Maternity Hospital in Kathmandu.

## PROGRAMME ACHIEVEMENTS

A review by the Central Regional Health Directorate found that in 2011/12 more than a half of pregnant women in Dhading had received an ultrasound scan from the programme free of cost. The service had covered all 50 VDCs. Half of these VDCs are remote or relatively remote. The nurses counselled antenatal women and advised health workers for appropriate action including referrals. They maintained a register, gave reports to scanned women, kept written records of all scans, and informed health facilities and the district health office (DHO) about complicated cases.



The service proved very popular and was much appreciated by local women:

"The video x-ray attracted us to the health facility where we get all kinds of services for pregnant women."

"My sister-in-law used to go Kathmandu for check-up during pregnancy; but I luckily have all services at my doorstep."

In 2011/12 the programme provided 6,358 USG scans. A total of 125 complicated cases were identified of which 59 were referred from health facilities to the district hospital and 13 cases from the district hospital to the Maternity Hospital in Kathmandu for case management. The remaining women were advised to have an institutional delivery. Eighty-seven percent of the 6,358 scans were second or third trimester scans as most women come for antenatal check-ups only from their second trimester.

The trained nurses were found to be skilled in carrying out and analysing the scans as their identifications of complicated cases were all confirmed at referral hospitals and no false reports found. The nurses told how almost all the women who had been referred on had informed them by phone about the treatment recommended by the referral hospitals.

Table 1: Information on rural USG scans carried out in Dhading, mid-June 2011 to mid-July 2012

Timing of scans:	No.
First trimester	794
2nd/3rd trimester	5,564
<b>Total</b>	<b>6,358</b>
<b>No. of complicated cases identified</b>	<b>125</b>
Complicated cases referred on to a higher level facility:	
Breech after 36 weeks	8
Transverse lie up to 36 weeks	7
Placenta praevia	4
Intra-uterine foetal deaths	4
Hydatidiform mole, multiple pregnancy, foetal anomaly, Intra-uterine growth restriction (2 each)	8
Other complications	28
Total referred cases:	
Total above cases referred to Dhading District Hospital	59
Total above cases referred to higher level hospitals	13

The programme is on-going in Dhading and Mugu in 2012/13 and is being extended to other districts. In October 2012 and March 2013 a further 24 nurses from remote districts were trained with support from Unicef and the INGO One Heart. The government has provided several machines that these nurses are now using at their health facilities in remote districts.

The 12-month-long programme provided good value for money carrying out 6,358 scans and providing antenatal support at a cost of NPR 1.5 million (\$18,000) including staffing and training costs but excluding equipment costs, to give a per scan cost of NPR 236 (\$2.84).

## RECOMMENDATIONS

1. Direct this service more to poor and marginalised people and remote areas by carrying out evidence-based site selection.
2. Provide a budget for regular monitoring and technical support by the DHO and the district focal person.
3. Improve the mechanism for formally following up on the progress of referred cases.
4. Verify more scans carried out in the field, especially ones where no problems were identified (possible false negatives).
5. Provide more resources, including more trained personnel, to extend the provision of this service.
6. Provide power back-up (probably solar panels) for areas where mains electricity is unavailable.

### MoHP and NHSSP contributions

The Family Health Division of the Department of Health Services provided the USG machines, training and budget for this initiative. NHSSP furnished advice and guidance to the programme.

NHSSP (Nepal Health Sector Support Programme) is funded and managed by DFID and provides technical assistance to the Nepal Health Sector Programme (NHSP-2). Since its inception in January 2011, NHSSP has facilitated a wide variety of activities in support of the NHSP-2 objectives, covering health policy and planning; health financing; human resource management; essential health care services (EHCS); gender equality and social inclusion (GESI); procurement and infrastructure; and monitoring and evaluation. For more information visit our website: [www.nhssp.org.np](http://www.nhssp.org.np)