

# PRENATAL MOBILE SELF-OPERATED HOME ULTRASOUND SERVICE IMPACT ON BIRTH OUTCOMES

Anat Pardo, Rachel Gomez-Tolub, Emilie Klochender Frishman, Monica Pailis, Ofri Samueloff, Or Lee Rak, Shiri Barbash-Hazan, Arnon Wiznitzer, Asnat Walfisch, Eran Hadar



SMFM 43rd Annual Pregnancy Meeting

Sackler Faculty of Medicine,  
Tel-Aviv University



Helen Schneider Hospital for Women  
Rabin Medical Center  
Beilinson Hospital



## OBJECTIVE

A leading HMO (Clalit Health Services, Israel) launched a home-ultrasound service (Pulsenmore's Ltd.) enabling parturients to perform a basic sonographic assessment and to have it interpreted by a clinician via asynchronous teleconsultation. Our aim was to examine whether the use of the device and its adjunct medical service can enhance pregnancy outcomes.

## Design

Retrospective cohort study between 2021 and 2023, comparing 4,460 women using Clalit's home ultrasound service with a control group of 102,707 pregnant women with an equal HMO status, who did not obtain this service. Demographic characteristics, obstetrical and neonatal outcomes were compared between the groups.

## RESULTS

Compared to the control group, women in the study group were older, more likely to be primiparous, had higher incidence of chronic illness, were more often considered to be at high risk pregnancy and were of higher socio-economic score as presented in the univariate analysis (Table 1).

Body mass index (BMI) did not differ between the groups, although more women in the study group had a normal BMI category.

Univariate analysis demonstrated no significant difference in early preterm birth (PTB <32 and <34 weeks gestation) and high risk for PTB<37 weeks gestation ( $p<0.0007$ ).

However, multivariate analysis adjusted by age, BMI, parity, socio economic score, and chronic illness demonstrated lower risk of PTB in the study group compared to controls at <37, 34 and 32 gestational weeks (adjusted OR 0.51, 95% CI 0.42-0.63 aOR 0.46, 95% CI 0.30-0.69, aOR 0.47, 95% CI 0.26-0.84, respectively) as well as lower risk of small gestational age neonates (aOR 0.64, 95% CI 0.49-0.83), birthweight <2500g (aOR 0.49, 95% CI 0.40-0.59) and <1500g (aOR 0.38, 95% CI 0.20-0.74).

## CONCLUSION

Prenatal mobile self-operated home ultrasound may provide a feasible solution for remote fetal surveillance. In a large-scale utilization, the service may potentially reduce the risk for adverse pregnancy outcomes.

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**TABLE 1: BASELINE CHARACTERISTICS AND ADVERSE PREGNANCY OUTCOMES, STRATIFIED ACCORDING TO PRENATAL UTILIZATION OF HOME ULTRASOUND**

Variable	Control n=102,707	Study n=4460	p-value
Maternal Age, years	32.0±5.4	32.5±4.9	<0.0001
Body Mass Index, Kg/m2:	24.6±4.9	24.5±4.9	0.2133
Underweight	2862 (7.01%)	276 (6.40%)	
Normal	21603 (52.91%)	2390 (55.41%)	
Overweight	10129 (24.81%)	1009 (23.39%)	0.0150
Obese	6239 (15.28%)	638 (14.79%)	
Primiparous	4643 (4.52%)	522 (11.7%)	<0.0001
Chronic Disease*	48167(46.9%)	2579(57.83%)	<0.0001
Socioeconomic Score (1-20)	4.9±2.6	6.0±2.5	<0.0001
High Risk Pregnancy **	4683 (4.56%)	341(7.65%)	<0.0001
Birth Week	38.0±1.7	39.0±1.7	<0.0001
Birth Weight, grams	3233.5±498.0	3191.5±482.9	<0.0001

Data presented as frequency, n (%) for categorial variables and mean±standart deviation (SD) for continuous variables

#Data for BMI was derived from 45,146 women from the entire cohort.

\*Chronic Disease- Asthma, Thrombophilia, Inflammatory Bowel Disease, Chronic Hypertension, Diabetes Mellitus, Thyroid Disorders, Lupus

\*\*includes: hypertensive disorders in pregnancy, gestational diabetes, amniotic fluid volume disorders and placental abruption