1 Introduction

1.1 Background

An imaging ultrasound scan is widely used to estimate gestational age, investigate suspected pregnancy complications and monitor complicated pregnancies when they occur. In 2016, the World Health Organization (WHO) added a single ultrasound scan before 24 weeks of pregnancy to its list of recommended interventions for routine antenatal care (ANC) *(1)*. In most high-income countries, routine antenatal ultrasound screening has been standard practice for some time, often being conducted in both the first and second trimesters *(2)*. When conducted in the first trimester (up to and including 13 weeks and 6 days of gestation), an imaging ultrasound scan is aimed at confirming fetal viability, identifying the location of the gestational sac, establishing gestational age, determining the number of fetuses and, in the presence of a multiple pregnancy, assessing chorionicity and amnionicity; also, towards the end of the first trimester, nuchal translucency thickness is commonly measured in settings that offer screening for fetal chromosomal abnormalities *(3)*. Second-trimester ultrasound scans conducted between 18 and 24 weeks allow for more detailed examination of fetal anatomy and detection of fetal anomalies, provide information on the number of fetuses present, identify the location of the placenta and enable an estimate of gestational age *(4)*.

A 2015 systematic review on ultrasound scans before 24 weeks of pregnancy *(5)* and a qualitative review on women's views and experiences of pregnancy *(6)* informed the 2016 WHO recommendations on antenatal care for a positive pregnancy experience *(1)*. The ultrasound recommendation (B2.4) is: "One ultrasound scan before 24 weeks of gestation (early ultrasound) is recommended for pregnant women to estimate gestational age, improve detection of fetal anomalies and multiple pregnancies, reduce induction of labour for post-term pregnancy, and improve a woman's pregnancy experience." In the context of a new cluster-randomized randomized controlled trial (RCT) evaluating the impact of routine ultrasound scans in low-resource settings *(7)*, an independent Executive Guideline Steering Group (GSG) prioritized updating the 2016 recommendation. A new systematic review on routine ultrasound before 24 weeks of pregnancy has since been conducted *(8)*.

1.2 Rationale and objectives

As part of WHO's normative work on supporting evidence-informed policies and practices and its living guidelines approach, the Department of Sexual and Reproductive Health and Research (SRH) and the Department of Maternal, Newborn, Child and Adolescent Health and Ageing (MCA) undertook the updating of this recommendation. As the focus of the guideline is on routine antenatal ultrasound scan before 24 weeks of pregnancy, the guideline does not include evidence on the use of Doppler ultrasound as a fetal surveillance technique for a growth-restricted fetus.

1.3 Target audience

The recommendations in this global guideline are intended to inform the development of relevant national- and local-level health policies and clinical protocols. Therefore, the target audience of this guideline includes national and local public health policy-makers, implementers and managers of national and local maternal and child health programmes, concerned nongovernmental and other organizations, professional societies involved in the planning and management of maternal and child health services, health workers (including obstetricians, paediatricians, midwives, nurses and general medical practitioners), and academic staff involved in training health workers. (The recommendations are also to guide future research and assess existing practice.)

1.4 Scope of the guideline

This updated recommendation is relevant to all pregnant women and adolescent girls receiving ANC in any health-care facility or community-based setting, and to their fetuses and newborns. The guideline question was prioritized during the WHO 2016 ANC guideline development process. In 2019, the recommendation was prioritized for updating in the context of WHO's living guideline commitment. The outcomes of interests are, therefore, the same as those prioritized for the ANC guideline relevant to ultrasound scan interventions (Box 1).