11 Houssiau FA. Time to change the primary outcome of lupus trials. *Ann Rheum Dis* 2018; published online June 19. DOI:10.1136/annrheumdis-2018-213788.
12 Merrill JT, Neuwelt CM, Wallace DJ, et al. Efficacy and safety of rituximab in moderately-to-severely active systemic lupus erythematosus: the randomized, double-blind, phase II/III systemic lupus erythematosus evaluation of rituximab trial. *Arthritis Rheum* 2010; **62:** 222–33.
13 AstraZeneca. Update on TULIP 1 phase III trial for anifrolumab in systemic lupus erythematosus. https://www.astrazeneca.com/media-centre/press-releases/2018/update-on-tulip-1-phase-iii-trial-for-anifrolumab-in-systemic-lupus-erythematosus-31082018.html (accessed Sept 18, 2018).

FIGO position paper: how to stop the caesarean section epidemic

See **Series** pages 1341, 1349, and 1358

Worldwide there is an alarming increase in caesarean section (CS) rates. The medical profession on its own cannot reverse this trend. Joint actions with governmental bodies, the health-care insurance industry, and women's groups are urgently needed to stop unnecessary CSs and enable women and families to be confident of receiving the most appropriate obstetric care for their individual circumstances.

CS rates are increasing globally without any signs of slowing down. Worldwide rates have increased from about 6% in 1990 to 19% in 2014.[1] National rates in the northern part of Europe are still below 20%, whereas those in the southeastern part of Europe, China, and South America have increased to or above 50% of deliveries.[2] In north Africa the rate has increased from 5% to 28% and in Egypt has reached 50%, with persistent low overall population rates in sub-Saharan Africa (5%) and huge variations within countries.[1] In many low-income and middle-income countries, CS rates are too low in rural regions and in vulnerable groups, while rapidly increasing in urban areas. In other words, lack of access in some regions of the world or countries, and over intervention in other countries or in other parts of the same country: "too little, too late and too much too soon".[3] Given the linear increase in CS rates, it seems unlikely that the rising trend of CS can be reversed easily. The large variation in CS rates indicates that these rates have virtually nothing to do with evidence-based medicine.

WHO has indicated that every effort should be made to provide CSs to women in need rather than striving to achieve a specific rate.[4] At the same time, WHO has shown that at the population level, CS rates of more than 10–15% are unlikely to improve maternal or perinatal outcomes.[4] Others have found that the lowest rates of maternal and neonatal mortality may occur at a CS rate of around 19%.[5] Increasing CS rates are associated with short-term and long-term maternal and perinatal consequences, including direct maternal morbidity and mortality derived from anaesthetic and urological complications, bleeding, infection, and thromboembolism, with more respiratory problems in newborn babies because of iatrogenic preterm delivery, and with more autoimmune and obesity-related problems in offspring.[6,7] Consequences for future pregnancies include an increase in spontaneous preterm birth, uterine rupture, and abnormal placentation that may result in excessive maternal bleeding and/or need for hysterectomy.[6,7] In the USA, the increasing CS rate has, although weakly, been associated with an increase in maternal mortality.[8] Similarly, in some African countries CS is associated with a very high maternal and neonatal mortality and morbidity, partly because of absence of facilities for instrumental vaginal delivery, delay in doing the procedure, and inadequate facilities and skills.[9] Hospital-acquired sepsis with resistant organisms also contributes to adverse outcomes from surgery. The rise in CSs has to be stopped.

Drivers for the increasing CS rates can vary between countries and include a loss of medical skills to confidently and competently attend a (potentially difficult) vaginal delivery, as well as medico-legal issues. Additionally, important incentives exist in the comfort of planned daytime delivery compared with unplanned vaginal deliveries of varying duration, especially in private practices, and financial incentives for both doctor and the hospital.

Mother–baby friendly hospital-care arrangements, education, and preparation classes, and standardisation of protocols have thus far not been shown to result in significant reductions in CS rates. Adequate pain relief, improved privacy, and care in labour wards may be of help, but the only aspect that has consistently resulted in a significant reduction in CS rates has been an altered reimbursement model for doctors and hospitals

that favours vaginal delivery. This has been shown in Portugal following wide dissemination of information on the increased risks of CS,[10] as well as in governmental hospitals in Iran[11] and in a large hospital setting in Shanghai.[12]

With this FIGO position paper, we ask for the help of governmental bodies, UN partners, professional organisations, women's groups, and other stakeholders to reduce unnecessary CSs:

1 The delivery fees for physicians for undertaking CS and attending vaginal delivery should be the same, using a mean fee. This should also happen in private practice settings.
2 Hospitals should be obliged to publish annual CS rates, and financing of hospitals should be partly based on CS rates. Risk-adjusted CS rates should become available.
3 Hospitals should use a uniform classification system for CSs (Robson/WHO classification).[1,13]
4 Women should be informed properly on the benefits and risks of a CS.
5 Money that will become available from lowering CS costs should be invested in resources, better preparation for labour and delivery and better care, adequate pain relief, practical skills training for doctors and midwives, and reintroduction of vaginal instrumental deliveries to reduce the need for CS in the second stage of labour.
6 The situation in very low-income countries requires specific attention, considering that access to CSs is still insufficient in rural areas, whereas CSs seem to rise inappropriately in some urban areas and can be associated with substantial maternal morbidity and mortality.[9,14] Both situations are unwanted. In rural areas, adequate access to skilled care, to appropriate fetal surveillance, and to assisted births or operative delivery is essential.

Gerard H A Visser, Diogo Ayres-de-Campos, Eytan R Barnea, Luc de Bernis, Gian Carlo Di Renzo, Maria Fernanda Escobar Vidarte, Isabel Lloyd, Anwar H Nassar, Wanda Nicholson, P K Shah, William Stones, Luming Sun, Gerhard B Theron, Salimah Walani

Department of Obstetrics, University Medical Center, Utrecht, Netherlands (GHAV); Department of Obstetrics and Gynecology, Medical School-University of Lisbon, Santa Maria Hospital, Lisbon, Portugal (DA-d-C); Society for the Investigation of Early Pregnancy, New York, NY, USA (ERB); BioIncept, LLC, New York, NY, USA (ERB); Independent consultant, Geneva, Switzerland (LdB); Department of Obstetrics and Gynecology, University of Perugia, Perugia, Italy (GCDR); Department of Obstetrics and Gynecology, Fundacion Valle del Lili, Universidad ICESI, Cali, Colombia (MFEV); Ginecólogo Obstetra, Clinica Hospital San Fernando, Consultorio 6–8, Panama (IL); Department of Obstetrics and Gynecology, American University of Beirut Medical Center, Beirut, Lebanon (AHN); Department of Obstetrics and Gynecology, University of North Carolina, Chapel Hill School of Medicine, NC, USA (WN); Department of Obstetrics and Gynecology, Seth G S Medical College and K E M Hospital, Mumbai, India (PKS); Departments of Public Health and Obstetrics and Gynaecology, Malawi College of Medicine, Blantyre, Malawi (WS); Shanghai 1st Maternity and Infant Hospital of Tongji University, Shanghai, China (LS); Department of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town, South Africa (GBT); and Global Health Programs, March of Dimes Foundation, White Plains, NY, USA (SW)

g.h.a.visser@umcutrecht.nl

We declare no competing interests. This FIGO position paper on cesarean sections is an addition to the one published on Jan 23, 2007 and should be considered in conjunction with the previous one. This FIGO position paper has been written by The FIGO Committee for Safe Motherhood and Newborn Health and has been endorsed by FIGO, the International Confederation of Midwives, and the Women Deliver global action group.

For the **FIGO position paper** see www.figo.org

1 Betrán AP, Ye J, Moller AB, Zhang J, Gulmezoglu AM, Torloni MR. The increasing trend in Caesarean section rates: global, regional and national estimates: 1990–2014. *PLoS One* 2016; **11:** e0148343.
2 Boerma T, Ronsmans C, Melesse DY, et al. Global epidemiology of use of and disparities in caesarean sections. *Lancet* 2018; **392:** 1341–48.
3 Miller S, Abalos E, Chamillard M, et al. Beyond too little, too late and too much, too soon: a pathway towards evidence-based, respectful maternity care worldwide. *Lancet* 2016; **388:** 2176–92.
4 WHO. Statement on caesarean section rates. Geneva: World Health Organization, 2015. http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/cs-statement/en/ (accessed Sept 4, 2018).
5 Molina G, Weiser TG, Lipsitz SR, et al. Relationship between cesarean delivery rate and maternal and neonatal mortality. *JAMA* 2015; **314:** 2263–70.
6 Visser GHA. Women are designed to deliver vaginally and not by cesarean section: an obstetrician's view. *Neonatology* 2015; **107:** 8–13.
7 Blustein J, Liu J. Time to consider the risks of caesarean delivery for long term child health. *BMJ* 2015; **350:** h2410.
8 Moaddab A, Dildy GA, Brown HL, et al. Health care disparity and state-specific pregnancy-related mortality in the United States, 2005–2014. *Obstet Gynecol* 2016; **128:** 869–75.
9 Harrison MS, Pasha O, Saleem S, et al. A prospective study of maternal, fetal and neonatal outcomes in the setting of caesarean section in low- and middle-income countries. *Acta Obstet Gynecol* 2017; **96:** 410–21.
10 Ayres-de-Campos D, Cruz J, Medeiros-Borges C, Costa-Santos C, Vicente L. Lowered national cesarean section rates after a concerted action. *Acta Obstet Gynecol Scand* 2015; **94:** 391–98.
11 Sabet F, Shahshahan Z, Akbari M, Heshmati B. Caesarean section in Iran. *Lancet* 2016; **388:** 29–30.
12 Liu X, Lynch CD, Cheng WW, Landon MB. Lowering the high rate of caesarean delivery in China: an experience from Shanghai. *Br J Obstet Gynecol* 2016; **123:** 1620–28.
13 Robson M. Classification of cesarean sections. *Fetal Matern Med Rev* 2001; **12:** 23–39.
14 Litorp H, Kidanto HL, Rööst M, Abeid M, Nyström L, Essén B. Maternal near-miss and death and their association with caesarean section complications: a cross-sectional study at a university hospital and a regional hospital in Tanzania. *BMC Pregnancy Childbirth* 2014; **14:** 244.