Over the years, what started as a screening to determine which pregnant women were at risk of developing diabetes later in life has changed progressively into a screening for diabetes during pregnancy. From only screening women with risk factors, the medical community has moved to a universal screening for glucose intolerance during pregnancy. Recently, the push has been to expand this screening earlier in pregnancy and to identify ever milder forms of glucose intolerance. To address these controversial issues, the National Institutes of Health convened a consensus panel to review the evidence and make clinical and research recommendations. The panel statement is published in this issue of Obstetrics & Gynecology (see page 358).¹

The panel recognized the controversies around screening and the problem of inconsistent guidelines, from timing of screening to type of test to cutoffs for glucose levels. The panel also emphasized the dearth of evidence on which to base expanding the screening and definition of gestational diabetes mellitus (GDM). The panel identified the need to compare any of the newly proposed methods with the most prevalent method of screening in the United States (the two-step approach), particularly relating to maternal and neonatal benefit.

The major concern with expanding screening without adequate evidence of benefit is the unintended consequences. The panel highlighted the potential for harm from identifying more women with glucose intolerance during pregnancy, some of whom have even milder forms of intolerance than those identified using the current methods. A cascade of events is inevitable once a woman is labeled as having GDM. These include more frequent prenatal visits, more fetal and maternal surveillance, and more interventions, including induction of labor, late preterm birth, early term birth, and cesarean delivery. The increased resources that would be needed to provide additional care for the up to 18% of pregnant women who would be labeled as having GDM under the proposed one-step screening method could unintentionally divert resources from other components of prenatal care, potentially causing harm in other ways. All of these unintended consequences need to be evaluated before recommending changes to our current screening method because they have the potential to negate any purported benefit from earlier or more sensitive identification of glucose intolerance. When considering the overall effect of expanding the screening and definition of GDM, we need to keep in mind the additional burden in the postpartum and postnatal periods for the identified women and their children.

Although there is good evidence of an association over a continuum between glucose intolerance and adverse maternal and perinatal outcomes, the issue to address is whether intervention benefits all those
identified with glucose intolerance, including those at the milder end of the spectrum. The only level I evidence currently comes from identification and treatment of mild GDM using the 2-hour oral glucose tolerance test (OGTT) in Australia and the two-step approach in the United States, both performed in the third trimester. Unfortunately, there is no level I evidence that earlier screening is beneficial. Until such evidence becomes available, universal screening should not be expanded to earlier gestational ages.

Even the evidence in support of screening and treatment of mild GDM in the third trimester is tenuous. In the U.S. trial, the primary outcome, a composite of events, was not significantly different in the screened and treated group compared with the control group. The differences were in the secondary outcomes, such as reducing macrosomia and pregnancy-induced hypertension. In the Australian trial, there was a difference in the primary outcome, which was also a composite of serious perinatal outcomes (perinatal death, shoulder dystocia, bone fracture, nerve palsy, admission to higher level of neonatal care), and this difference was driven mostly by the reduction in shoulder dystocia. The benefit was at the expense of more inductions of labor and admissions to the higher level of neonatal care. The number needed to treat for benefit was 34 (34 women needed to be identified and treated to prevent one serious perinatal outcome), and the number needed to treat for harm was 11 for each of the unintended outcomes (for every 11 women identified and treated, one woman underwent an induction of labor and one newborn was admitted to a higher level of care). In addition to being marginal, the benefits in the two randomized trials were limited to the short term. Evaluation of long-term outcomes is needed urgently, including whether treatment in pregnancy improves the lifelong health of the child and mother.

In their review of overdiagnosis in medicine, Moynihan and colleagues include the 2010 International Association of the Diabetes and Pregnancy Study Groups recommendations to lower the threshold for diagnosis of GDM among the examples of conditions that suffer from overdiagnosis (the others include asthma, attention deficit hyperactivity disorders, and breast cancer). These authors mention that the drivers of overdiagnosis include technologic changes detecting ever smaller “abnormalities,” commercial and professional vested interests, conflicted panels producing expanded disease definitions and writing guidelines, legal incentives that punish underdiagnosis but not overdiagnosis, health-system incentives favoring more tests and treatments, and cultural beliefs that more is better, accompanied by faith in early detection unmodified by its risks. These drivers of overdiagnosis are very familiar to obstetric care providers in other areas where a screening test was introduced without adequate evaluation of its benefits and unintended consequences (e.g., continuous intrauterine fetal heart rate monitoring).

The debate about expanding GDM screening is reminiscent of attempts to overmedicalize subclinical thyroid and vitamin D deficiencies by recommending universal thyroid-stimulating hormone and vitamin D screening for all pregnant women without evidence of benefit. Although “the horse is out of the barn” for some of these screening tests, it is not too late for others. As the primary medical specialty responsible for the well-being of women, and as stewards of limited health care resources, it is incumbent on us not to fall to the drivers of overdiagnosis.

Obstetric care providers, as well as millions of women and children, are fortunate that the panel, free from bias or conflict of interest, carefully evaluated the data and concluded that we should continue what we are currently doing, the two-step approach. The panel did not recommend a specific glucose level cutoff for screening or diagnosis. However, given that the evidence of benefit from screening and treatment in the U.S. population comes from only one trial, it would be wise to follow the same criteria as the trial. Women between 24 0/7 weeks and 30 6/7 weeks of gestation who had blood glucose concentrations between 135 mg/dL and 200 mg/dL 1 hour after a 50-g glucose loading test completed a 3-hour, 100-g OGTT after an overnight fast. Mild GDM was defined as a fasting glucose level of less than 95 mg/dL and at least two timed glucose measurements that exceeded 180 mg/dL for the 1-hour value, 155 mg/dL for the 2-hour value, and 140 mg/dL for the 3-hour value. Women with glucose levels higher than 200 mg/dL on the 50-g glucose loading test or fasting glucose levels of 95 mg/dL and higher on the 3-hour OGTT were not eligible for randomization because they were deemed to have more than mild GDM. For these women, it is reasonable to treat them as having GDM.

Margaret J. Wheatley warns that “[w]ithout reflection, we go blindly on our way, creating more unintended consequences, and failing to achieve anything useful.” Clinicians are trained to identify and treat diseases. It is easy to be tempted to perform a test or a procedure based on rationales that chase assumptions and circumstantial evidence. However, without adequate evidence of benefit, the default always should be to resist that temptation.
REFERENCES


