Backround: A dramatic increase of cesarean deliveries (CDs) in the United States from 5.8% in 1970 to 32.9% in 2009 has been reported. Considering the fact that the rates of both primary and repeated CDs in the industrialized countries are continuously rising, meta-analyses have shown that serious maternal morbidity progressively increased with the number of previous CDs. The increasing incidence of CD in the western world is consequently leading to a rising number of antenatal counseling of pregnant women with a history of previous CD. To counteract the increasing trend of cesarean deliveries, the concept of vaginal birth after cesarean delivery (VBAC) may represent an alternative.

Methods: In this study we analyzed data from 1,202,557 deliveries in Hesse, Germany from 1990 to 2012. In total, 131,629 births have been identified to have at least one CD in the patients’ medical history. We grouped the patients into three categories: vaginal spontaneous birth subsequent to CD, vaginal-operative birth subsequent to CD and repeated CD.

Results: After previous CD, 32.1% of the patients delivered spontaneously, 4.0% delivered vaginal-operative and 63.8% had a repeated CD. The rates changed from 40.4%, 7.5% and 52.1% in the year 1990 to 23.3%, 2.8% and 73.9% in the year 2012 for vaginal spontaneous births, vaginal-operative births and for repeated CDs respectively (p < 0.01). We noticed a decline of 17.1% and 4.7% in spontaneous births after cesarean and vaginal operative births respectively during the observation period. Notably, we report a dramatic increase of 21.8% of repeated CDs during the past 23 years (p < 0.01). With regard to the non-affected group including all deliveries, we observed a decrease of 17% in spontaneous deliveries from 1990 to 2012 (75.9% vs. 58.9%). Vaginal operative delivery rates changed from 6.9% in 1990 to 5.9% in 2012. Consequently, CD rates increased from 17.2% in 1990 to 35.2% in the year 2012 (p < 0.01) (Figure 1). The differences between all three subgroups were significantly different (p < 0.001).

Discussion: In the present analysis of over 1.2 Million women who delivered at geographically disparate institutions in the state of Hesse, Germany, the rate of VBAC decreased during the 23 years of follow up reaching almost the half of that in the year 1990 (26.1% vs. 47.9%). Cesarean rates in Germany have reached an all-time high. Two major conflicting problems influence the VBAC. On the one hand, the rising primary cesarean rate and on the other hand the risk of uterine rupture. Hereby a careful and appropriate patient selection is of utmost importance. Promotion of a trial of labor (TOL) after low transverse CD in those women who desire three or more children may increase the VBAC success rates and reduce maternal morbidity.