Changes to body mass index (BMI) and its recording following COVID-19 lockdown cessation in Wales on delivery suite

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Project Outline:

Aim: A service evaluation to assess documentation of BMI and the burden of raised BMI on Ysbyty Glan Clwyd labour ward. Has obstetric BMI changed following covid-19 lockdown?

Measures: An audit was completed in two cycles between 2019 and 2021 on 457 and 497 obstetric patients. Data was collected on booking and presentation BMI, documentation, maternal age, anaesthetic interventions and complications.

Conclusions: It is important to understand the prevalence of raised BMI and recognise this when planning for service provision across labour ward. Average BMI of obstetric patients is unchanged before and after covid-19 lockdown in our samples. However rates of obesity are increasing, care of obstetric patients with raised BMI is more complex, and combined with the covid-19 pressures this makes care of patients on labour ward more challenging than ever.

Background:

The association between increased BMI and complications is recognised and has implications for both obstetric and anaesthetic care[1,2]. There are recommendations from the associated Royal Colleges around management of obstetric patients with raised BMI[1,2].

Obesity is an independent risk factor for obstetric complications. This population has higher rates of pregnancy related illness such as preeclampsia and gestational diabetes, and obese pregnant women have higher rates of caesarean section[5]. Furthermore, anaesthetic related complications related to raised BMI include difficult IV access, difficult epidural placement with higher failure rates and difficult neuraxial blocks[6].

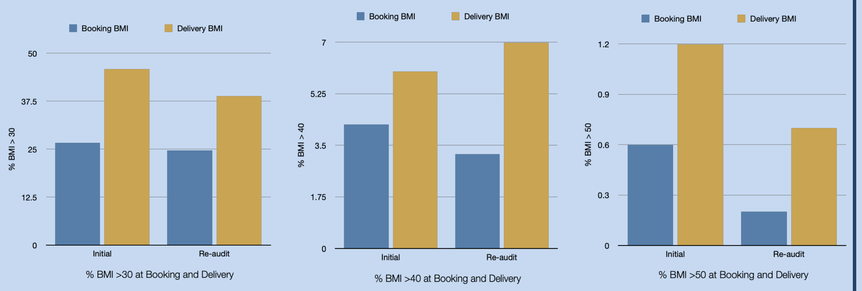
In Wales the most recent Health survey found 55% of adult females were overweight and 24% obese[3]. It is unknown exactly how the COVID-19 pandemic has impacted BMI of the obstetric patient population, but it has certainly presented many additional challenges across healthcare. It has exerted effects on labour ward with the need for isolation of patients with COVID-19 and impacted staffing with increased absences.

Methods:

The BMI records of 457 patients from 1/7/21 to 28/8/21 were collected and compared to the initial data collection of 497 patients from the period 1/12/19 to 1/2/20, . These time periods record data from before COVID restrictions, and then following the lifting of Welsh COVID lockdown. This was examined for BMI documentation, and compared to current recorded rates of obesity in Wales.

The compliance with recording was analysed against both RCOA and RCOG recommendations of 100% compliance[1,2]. The prevalence of raised BMI was compared between the two cycles.

	Initial % Patients (Number)	Delivery	Re-audit Booking	Re-audit Delivery
Number patients	497	497	457	457
BMI Recorded	98% (488)	87% (434)	97% (443)	82% (377)
BMI over 30	27% (133)	46% (228)	25% (113)	39% (178)
BMI over 40	4% (21)	6% (30)	4% (16)	7% (32)
BMI over 50	<1% (3)	1% (6)	<1% (1)	<1% (3)
Average BMI	27.4	31.3	27.1	31.1



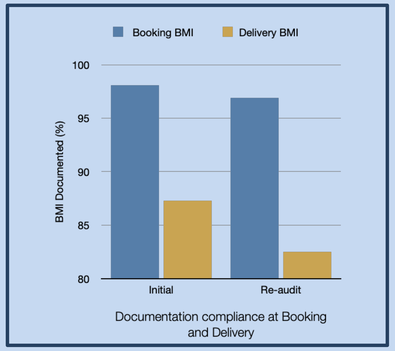
Charts showing % of patients within BMI categories >30, >40 and >50 at booking and delivery in both data cycles

Results:

Booking BMI was recorded in 443 patients out of total of 457 patients which was 97% of patients, whereas delivery BMI was only recorded in 377 patients out of a total of 457 patients, making this just 82% of patients. This falls below the recommended standard.

During the initial evaluation from December 2019 to February 2020, data on 497 patients, showed that average BMI at booking was 27.5 with a range of 15 to 55. At delivery average BMI was 31.3, ranging from 17.7 to 65.

During the second cycle mean BMI at booking was 27.1 with a range from 15.7 to 50.6. This was a small, but insignificant, change from 27.5. 130 patients had a BMI over 30, 16 patients had a BMI of above 40 and only 1 patient had a BMI of over 50. Mean BMI at delivery was 31.1 with a range from 17.3 to 54.3, 178 patients had a BMI of over 30, 32 patients had a BMI of over 40, and 3 patients had a BMI of over 50.



Discussion:

The RCOA and RCOG recommend that 100% of patients should have their BMI recorded[1,2]. Following previous audit and presentation the rates of documentation changed at booking from 98% to 97%. At delivery the rates of recording was lower, currently at 82% a change from 87% previously. The audit data was collected solely from the birth record book and did not include BMI recorded within patient notes or other locations. This fall in recording may represent the challenges associated with increasing numbers of patients on labour ward and issues arising from isolation and access to the scales in the labour ward.

The National Survey results in 2019/20 reports that in Wales 55% of the female population are overweight, with 24% being obese[3]. The obstetric Welsh Maternity and Birth Statistics from 2020 shows 25% of mothers were obese with a BMI over 30, and in BCUHB the rate was 28%, which is higher than the welsh average. Our results reflect local data with an increased prevalence of raised BMI compared to national data.

Whilst our sample does not show an increase or change in obstetric BMI during the Covid-19 lockdown period, it is known that the prevalence of obesity is increasing. Locally service adaptations have included introduction of a labour ward ultrasound machine with probes for IV access and epidural/spinal insertion. Trolleys are used to transfer patients directly from the room and within theatre as the operating table to minimise patient transfers, protecting staff from unnecessary manual handling. Patients with a BMI of 40 are seen and assessed within an anaesthetic clinic via referral from the obstetric team. Here patients are counselled on the implications of raised BMI and anaesthesia with plans recorded addressing IV access and anaesthetic interventions.

Conclusion:

It is important to document and evaluate BMI to understand the prevalence of raised BMI and recognise the increased burden this may present. We should aim to meet 100% compliance with BMI documentation.

Average BMI of obstetric patients is unchanged before and after covid-19 lockdown in our samples. However rates of obesity are increasing, care of obstetric patients with raised BMI is more complex, and combined with the covid-19 pressures this makes care of patients on labour ward more challenging than ever.[6]. This service evaluation has helped to identify and plan for service provision within labour ward and on the delivery suite.

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