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2020 POGS report on obstetrical and gynecological indicators of health care

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Abstract:

BACKGROUND: The POGS committee on nationwide statistics uses an electronic census platform called the POGS nationwide statistics system (PNSS) to collect the statistical data on obstetric and gynecologic health indicators.

OBJECTIVES: The article aims to present 2020 data gathered and compare these with the 2019 census. Obstetrical and gynecological indicators of health care and preliminary data on COVID-19 cases are reported.

METHODOLOGY: This cross-sectional study reports the data generated from the submissions of POGS-accredited hospitals from January to December 2020, through the PNSS.

RESULTS: The number of accredited hospitals that submitted their census with 100% compliance is 94%. There was a total of 329,972 number of cases reported, 92% were obstetric cases. Live birth rate was the highest in the National Capital Region at 33.5%, with the highest age-specific birth rate in the 25–29 age group. Most live births were term pregnancies. Adolescent birth rate was 6.45 per 1000 women. Cesarean section rate, stillbirth rate, neonatal mortality rate, and perinatal mortality rate were higher than 2019. The maternal mortality ratio was 121.6 per 100,000 live births. There were 2,858 cases of confirmed COVID-19 infection. There were 26,164 gynecologic admissions, with the most common diagnosis being abnormal uterine bleeding. The most common gynecologic procedures performed were hysterectomy, salpingo-oophorectomy, medical management, and blood transfusion. Majority of the deaths from gynecologic cases had gynecologic malignancies and among these, cervical cancer (19%) had the greatest number of deaths.

CONCLUSION: Obstetric and gynecologic admissions are lower compared to last year. A deterioration in obstetrical indications can be seen and explanations for this occurrence must be explored further. Preliminary data on COVID-19 cases was likewise presented. Timely and accurate statistics will help us define the areas we need to improve on, as well as the unmet needs of our patients.

Keywords:

Census, health indicators, POGS report

Introduction

The POGS nationwide statistics system (PNSS) is a nationwide, web-based, electronic census platform developed by the POGS Committee on Nationwide Statistics in 2018. The registry uses the Serious MD system, and all

POGS-accredited institutions are required to input their daily or monthly census. Aggregate data are automatically and safely stored in a cloud portal. Real-time reports can be generated from the portal and may be accessed by POGS member institutions.

The POGS committee on nationwide statistics reported and analyzed the data on health indicators for obstetrics and gynecology for 2019 and was published

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last year.^[1] The present article will report on the data generated for year 2020.

It has the following objectives: Present data gathered through the PNSS for the year 2020, compare these data with last year's data, discuss obstetrical and gynecological indicators of healthcare, and report preliminary data on COVID-19 cases.

Methodology

This is a cross-sectional study that shall report obstetrical and gynecologic data generated from submissions of POGS-accredited hospitals from January to December 2020, through the PNSS.

All census from the period of January 1, 2020, to December 31, 2020, submitted by POGS accredited hospitals, both for training and service, under the Serious MD program were included. Data collection was similar to the one described previously.^[2]

Data entry for 2020 was closed for submission last June 2021 and additional patient entries dated 2020 were no longer included. Frequencies, tabulations, and graphs were used when possible. Comparison of data for 2020 versus 2019 was done.

When applicable, data from the POGS nationwide census for 2020 were compared to the Department of Health (DOH) statistics for 2019.^[2] DOH has not released any official report for 2020 census, as of press time.

Operational definitions

- Age-specific birth rate: Number of live births in a specific age group divided by the female population in that age group $\times 1000$
- Adolescent birth rate (ABR): Number of births to females age 15–19 years old per 1000 women
- Births by cesarean section (CS): Percentage of births by CS among all live births
- Stillbirth rate: Number of stillborn neonates per 1000 neonates born (both live births and stillbirths)
- Neonatal mortality rate: Number of neonatal deaths per 1000 live births
- Perinatal mortality rate: Number of stillbirths plus neonatal deaths per 1000 total births
- Maternal mortality ratio (MMR): Number of maternal deaths that result from the reproductive process per 100,000 live births.

Results

The number of accredited hospitals that submitted their census with 100% compliance for 2020 was 158 (out of 168), thus 94% of accredited hospitals had full compliance. Compliance is defined as the submission of

any data from patients admitted from the hospital every month. The completeness or accuracy of the admissions per month cannot be confirmed by the system.

There are approximately 2700 health-care institutions in the country with recorded births for the year 2020, and more than 50% are privately-owned lying-in or birthing centers.^[3,4] POGS has 168 accredited hospitals and represents only 6.2% of health-care institutions with recorded births.

For 2020, there was a total number of 329,972 cases reported, which is roughly 10% lower than the total number of reported cases for 2019 (365,947 total cases). Ninety-two percent of the total reported cases were obstetric cases, whereas 7.9% were gynecologic cases.

Obstetrical cases

Obstetric admissions

There were a total of 303,808 obstetric admissions recorded for 2020, with the most number of admissions seen during the first 2 months of the year. Henceforth, there seems to be a downward trend in obstetric admissions [Figure 1].

Live births

There were 263,923 live births reported for 2020. The distribution of live births per region is seen in Figure 2. The POGS data show that the highest number of live births was seen in National Capital Region (NCR) (33.5%) followed by Region 11 (11.1%) and Region 3 (10.4%).

The month of January tallied the highest number of live births for 2020, followed by February and March [Figure 3].

The distribution of live births based on the age group of the mother is shown in Figure 4. The highest number of live births was seen in the 25–29 age group followed by 20–24 years and 30–34 years. The age-specific birth rates were the highest in the 25–29 age group [Figure 5].

The DOH Health Statistics reported the ABR at 34 per 1,000 women in 2019.^[2] The ABR based on 2020 POGS nationwide statistics is computed at 6.45 per 1000 women. The percentage of women who gave birth within this age group is 12.36%.

Figure 6 and Table 1 show the distribution of live births according to gestational age. Most live births were from term pregnancies (79.4%), 16.4% were preterm births, and 4.1% were postterm pregnancies. Almost half of the preterm babies ($n = 19,637$) were severely premature (<28 weeks).

Cesarean section rates

The births by CS is computed by the percentage of births by CS among all live births.

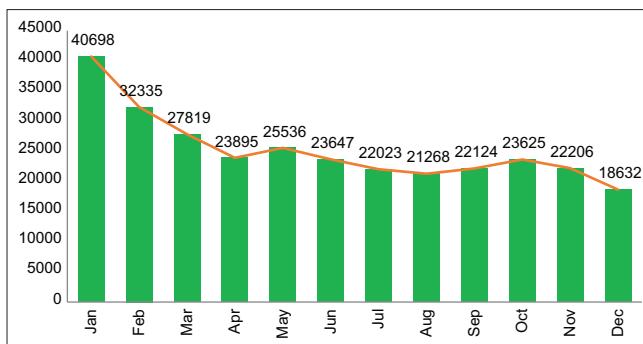


Figure 1: Obstetric admissions per month, 2020 (actual numbers reported)

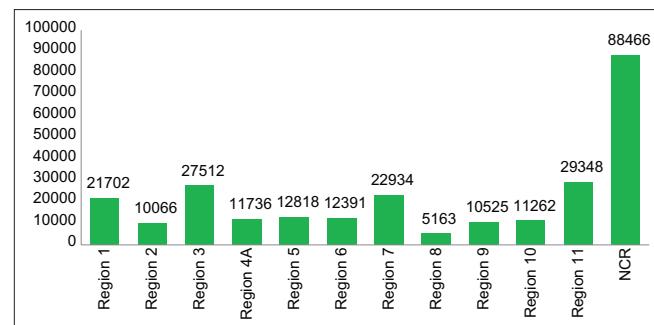


Figure 2: Distribution of live births per region, 2020 (actual numbers reported)

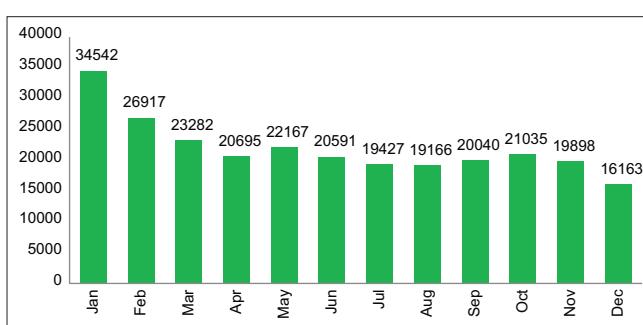


Figure 3: Distribution of live births per month, 2020 (actual numbers reported)

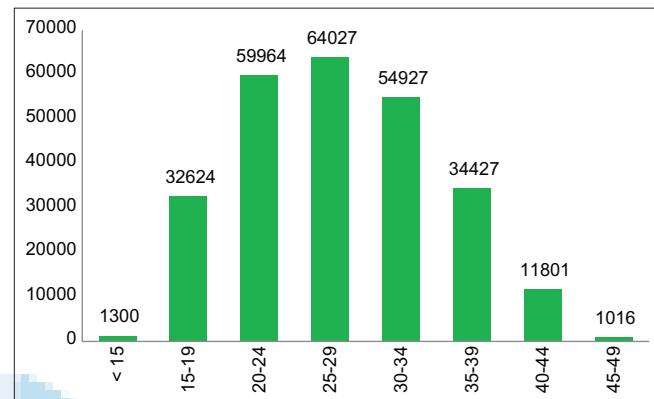


Figure 4: Distribution of live births by the age group of mother, 2020 (actual numbers reported)

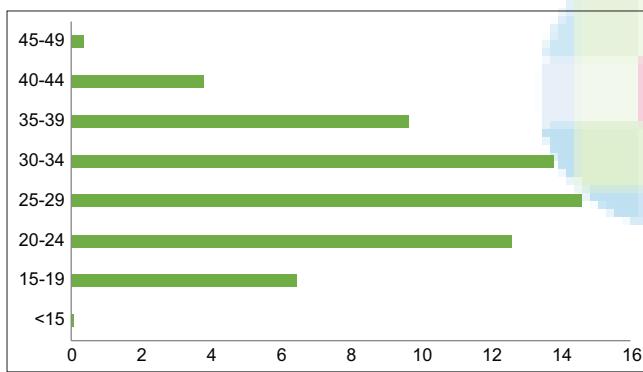


Figure 5: Age-specific birth rate, 2020

Table 1: Percentage of live births by age of gestation

AOG (weeks)	Percentage
<28	7.4
28-32	1.7
33-36	7.3
37-41 (term)	79.4
≥42 (postterm)	4.1

AOG: Age of gestation

There was a total of 95,642 CS procedures reported for 2020, with an overall CS rate of 36.24% [Figure 7]. The primary CS rate is the number of first CS among all live births which is 22.5%.

Overall CS rates per region are shown in Figure 8. Region 6 tallied the highest overall CS rate (43%), followed by Regions 8 and 11 at 42%. Region 9

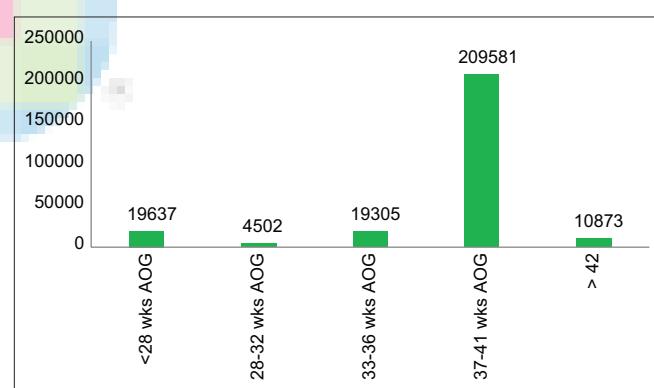


Figure 6: Distribution of livebirths according to age of gestation, 2020 (actual numbers reported)

registered the lowest CS rate at 24%. NCR, which has the most hospitals included and the highest number of live births, registered a 37% overall CS rate. Figure 9 shows the distribution of primary and repeat CS rates per Region.

Figure 10 shows the indications for cesarean delivery. The three most common indications were dysfunctional labor (38%), nonreassuring fetal status (34%), and malpresentation (21%). The most common dysfunctional labor pattern was arrest in cervical dilatation.

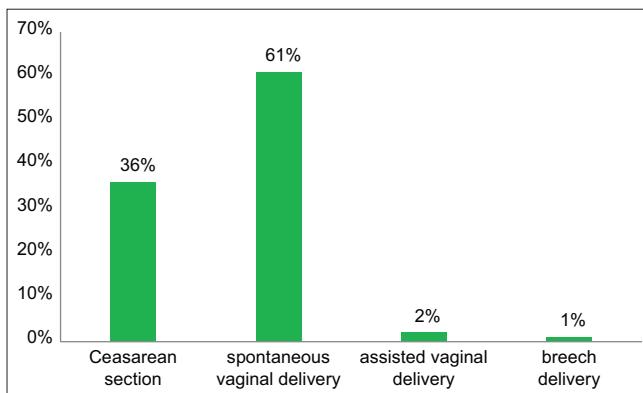


Figure 7: Livebirths according to mode of delivery, 2020 (%)

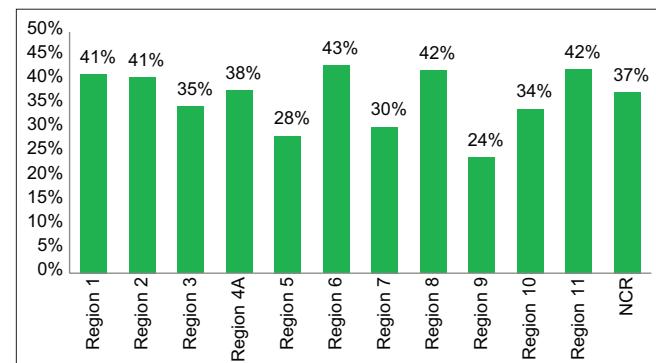


Figure 8: Overall cesarean section rates per region, 2020 (%)

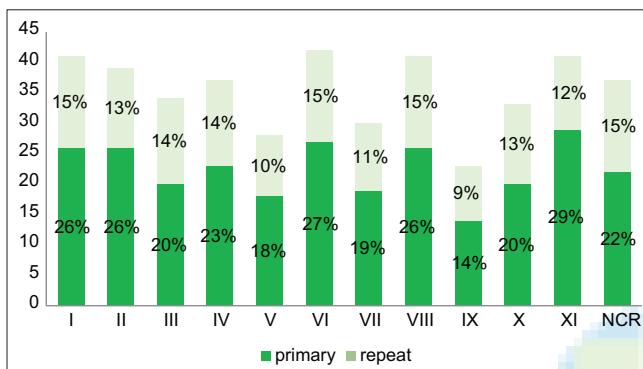


Figure 9: Primary and repeat cesarean section rates per region, 2020 (%)

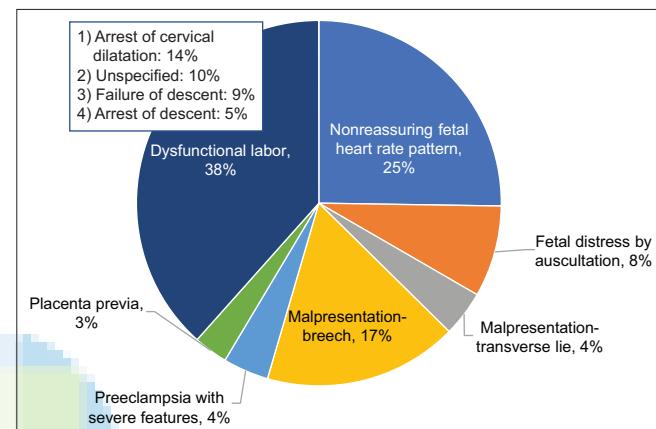


Figure 10: Indications for cesarean section, 2020 (%)

Measures of obstetrical care

The following vital statistics were considered measures of obstetrical care:

- Stillbirth rate
- Neonatal mortality rate
- Perinatal mortality rate
- MMR.

The stillbirth rate is the number of stillborn neonates per 1000 neonates born, which includes both live births and stillbirths. There were 5058 reported stillbirths with an overall stillbirth rate of 18.8 per 1000 neonates born. Stillbirth rates were calculated per region as shown in Figure 11. Region 9 had the highest stillbirth rate at 26.72, followed closely by Region 10 (26.28). Region 1 had the lowest number of stillbirths.

The neonatal mortality rate is the number of neonatal deaths per 1000 live births. There were 987 neonatal deaths with an overall neonatal mortality rate of 3.74 per 1000 live births. Region 8 had the highest neonatal mortality rate at 7.94 per 1000 live births, followed by Region 2 (6.56) and Region 6 (6.05). Region 9 showed the lowest neonatal mortality rate at 2.47 per 1000 live births [Figure 12].

The perinatal mortality rate is the number of stillbirths plus neonatal deaths per 1000 total births. There were

6045 perinatal deaths with an overall perinatal mortality rate of 22.39 per 1000 total births.

Figure 13 shows the perinatal mortality rate per region. Region 10 had the highest perinatal mortality rate at 29.81 per 1000 total births, followed by Region 9 (28.24) and Region 6 (26.95). Region 1 tallied the lowest perinatal mortality rate.

The MMR is the number of maternal deaths that result from the reproductive process per 100,000 live births. There were 321 maternal deaths recorded for 2020, giving an overall MMR of 121.6.

Figure 14 shows the MMR across the different regions. Region 8 had the highest MMR for 2020. Regions 3 and 9 reported the lowest MMR.

Figure 15 shows the top 3 causes of maternal mortality for 2020: Medical complications, hemorrhage, hypertension, and others.

COVID-19 data

There were 2,858 cases of confirmed COVID-19 infection among the obstetric admissions, with a reported 1.1% case-fatality rate. Majority of

these patients were diagnosed at term (66.9%). Fifty-four percent of these COVID-19 pregnant patients delivered spontaneously (54%), while 43% were delivered through CS. However, there were no data available regarding severity classification of confirmed COVID-19 patients at the time admission, nor status of COVID-19 infection among neonates born from COVID-19-infected mothers. A more detailed or comprehensive data gathering regarding COVID-19 admissions is suggested for the succeeding year's census.

Gynecologic cases

Figure 16 shows the volume and trend of gynecologic admissions for 2020. There were a total of 26,164 gynecologic admissions.

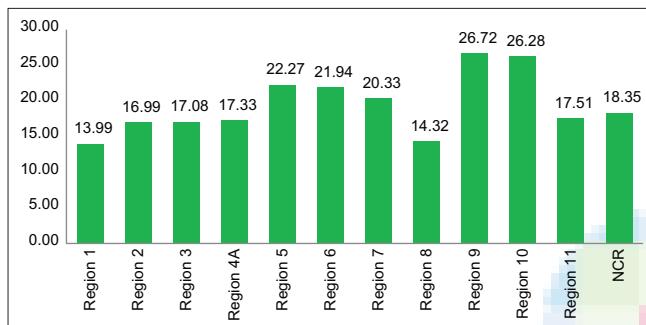


Figure 11: Stillbirth rate per 1000 neonates born per region, 2020

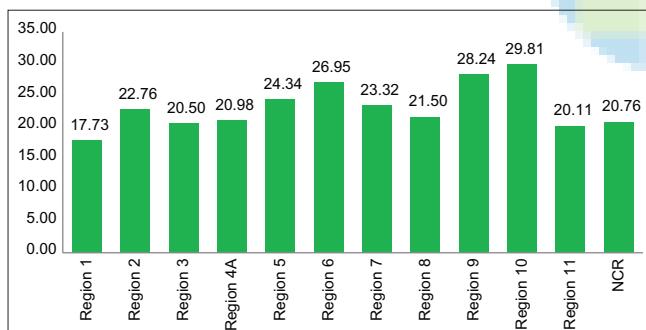


Figure 13: Perinatal mortality rate per region, 2020

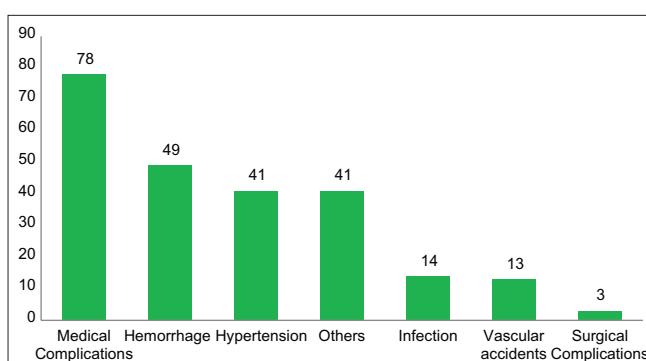


Figure 15: Causes of maternal mortality (actual numbers reported)

Figure 17 shows the 10 most common gynecologic diagnosis on admission for 2020. The most common indication for admission was abnormal uterine bleeding (AUB), which was equivalent to 26.6% of all gynecologic admissions. This was followed by gynecologic malignancies (26.2%) and benign lesions of the uterus (21.4%). The most common etiologies for AUB were AUB-L, AUB-E, AUB-P, and AUB-M.

A total of 6,487 malignancy cases were reported for 2020. The most common malignancies were ovarian cancer (39.3%), followed by cervical cancer (33.5%) and then cancer of the corpus (20.5%) [Figure 18].

A total of 20,899 gynecologic procedures were performed for 2020. Figure 19 shows that the most common gynecologic

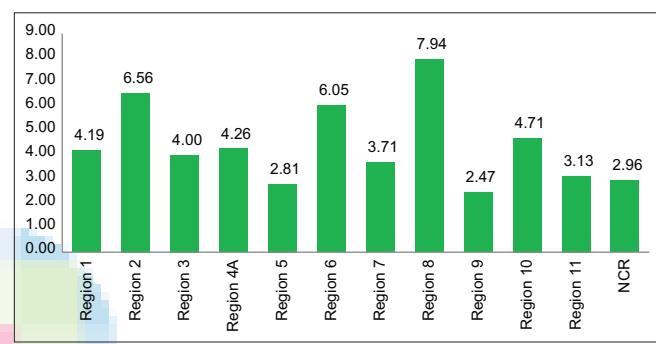


Figure 12: Neonatal mortality rate per region, 2020

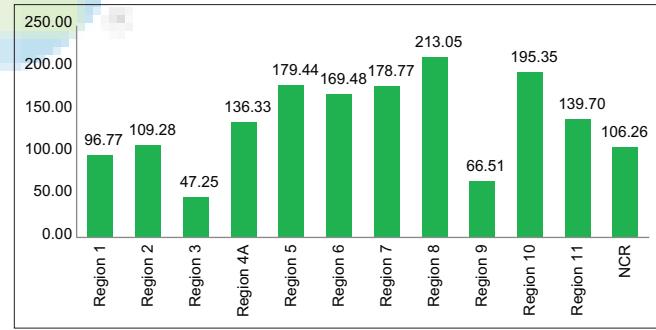


Figure 14: Maternal mortality ratio in the different regions

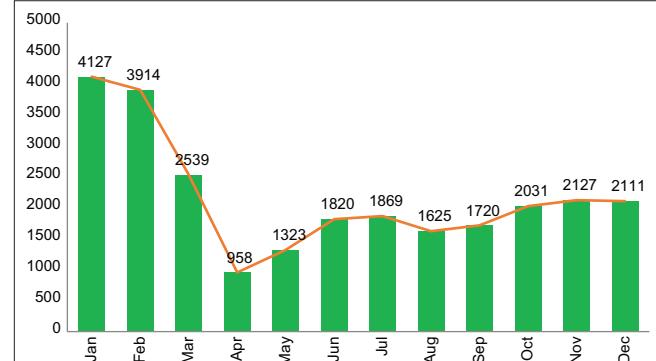


Figure 16: Gynecologic admissions per month, 2020 (actual numbers reported)

procedures done. These include hysterectomy, which comprise 17.2% of the total gynecologic procedures, followed by salpingo-oophorectomy (15.1%), medical management, and blood transfusion (13.1%).

There were 409 deaths tallied from gynecologic cases. Most of the mortalities were caused by gynecologic malignancies (58.4%), followed by medical complications (19.1%), and hemorrhage (12%) [Figure 20]. Among deaths in patients with the gynecologic malignancies, the most common diagnosis was squamous cell carcinoma of the cervix (33%) [Figure 21].

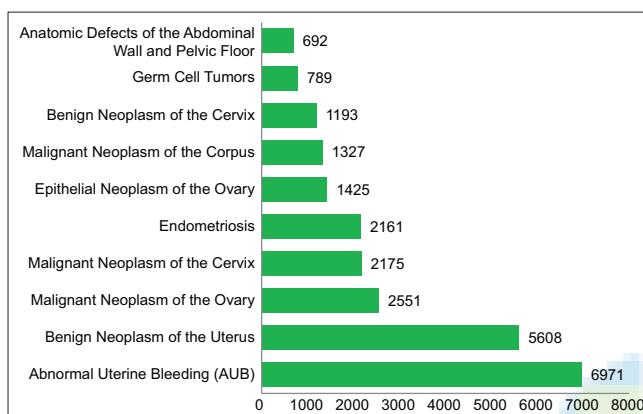


Figure 17: Top 10 common gynecologic diagnosis, 2020 (actual numbers reported)

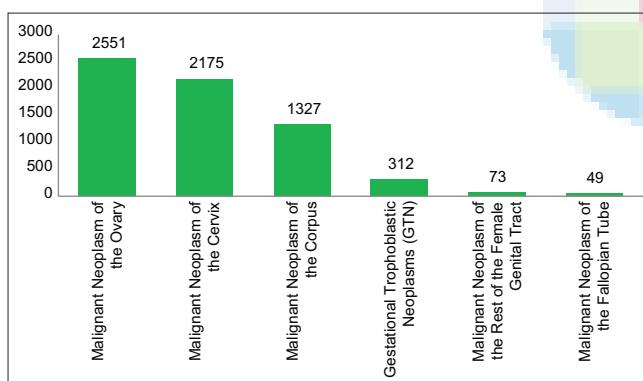


Figure 18: Malignant diseases of the genital tract, 2020 (actual numbers reported)

Discussion

A total number of 329,972 cases are reported for 2020, which is roughly 10% lower than the total number of reported cases for 2019 (365,947 total cases). This represents only 15.77% of all live births reported by the DOH Health Statistics for 2019.^[2] It is important to remember this point due to its implications on generalizability and its potential utility for policy-making.

The DOH Health Statistics registered 1,673,923 live births in 2019, which was equivalent to a crude birth rate of 15.6 births per thousand population.^[2] On the average, about 4,586 babies were born daily. This is equivalent to about 191 babies born per hour or approximately three (3) babies born per minute.

Figure 1 shows a downward trend in obstetric admissions from January to December 2020. With the declaration of nationwide, large-scale restrictions due to the first wave of the COVID-19 pandemic starting mid-March of 2020, some POGS-accredited major institutions were converted to COVID-19 hospitals, and some hospitals operated at <50 percent capacity due to shortage of hospital staff. These reasons may have led to a precipitous decline in non-COVID-19 admissions starting at the end of the first quarter of 2020.

The first 2 months of 2020 had higher admission rates compared to the same months of 2019. However, the rest of 2020 shows a downward trend [Figure 22] in obstetrical admissions likely an effect of the COVID-19 pandemic. In April 2020 and onward, the obstetrical admissions were lower compared to the same month the previous year. The difference in the number of admissions between 2020 and 2019 became larger in the last 4 months of the year (September to December) compared to the first few months when the pandemic was just starting (April to Jun).

The highest number of live births was seen in NCR followed by Region 11 (Davao) and Region 3 (Central

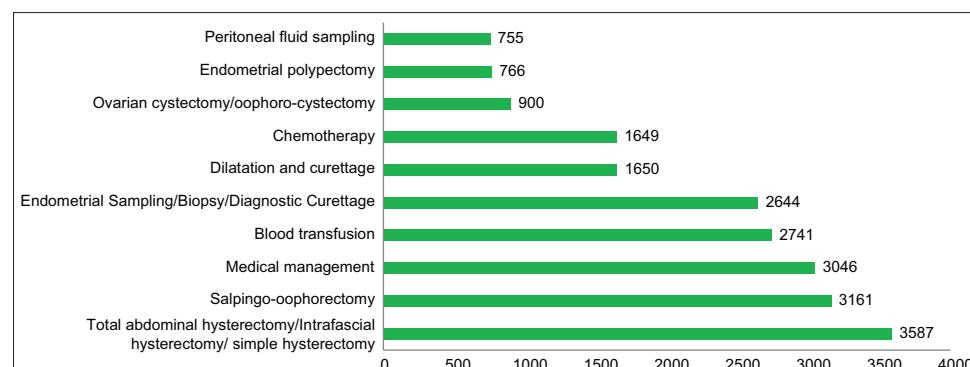


Figure 19: Number of gynecologic procedures/management, 2020 (actual numbers reported)

Luzon). This can partly be explained by the higher number of hospitals registered in these regions.

The highest percentage of live births is seen in the 25–29 years' age group followed by 20–24 years and 30–34 years. This result is expected since women have highest fecundability at this age range. The age-specific birth rates are highest in the 25–29 years' age group. These results are consistent with 2019 data presented by DOH.

The ABR based on 2020 POGS nationwide statistics is 6.45 per 1000 women, which is lower than the ABR reported from POGS 2019 data [Figure 23].

Almost half of the preterm babies born in 2020 were severely premature (<28 weeks), which portends very poor neonatal survival. This number underscores the financial and emotional burden on affected families, especially during the time of the COVID-19 pandemic and economic lockdown in 2020.

Overall, CS rate for 2020 was 36.24%, this is a higher CS rate compared to the POGS 2019 data which showed an overall CS rate of 32.86% [Figure 24]. Both figures are 2–3x higher than the WHO recommended ideal CS rate of 10%–15%.^[5] Primary CS rate overall is 22.5%, which is slightly higher than 2019 POGS primary CS rate of 21.4%.

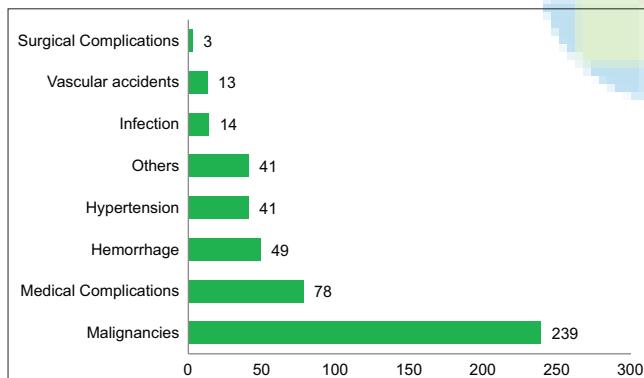


Figure 20: Causes of gynecologic mortality, 2020 (actual numbers reported)

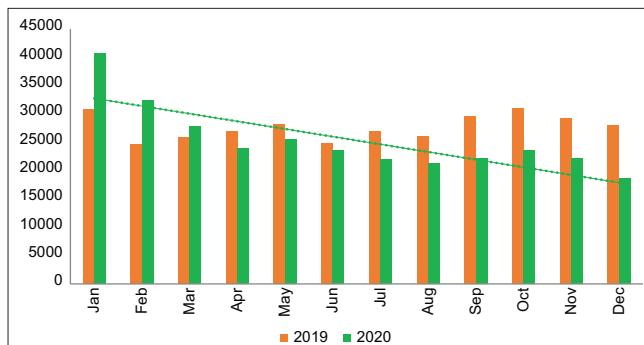


Figure 22: Comparison of obstetric admissions per month, 2019 and 2020

The top 3 most common indications for CS were dysfunctional labor, nonreassuring fetal status, and malpresentation similar to the data tallied from the 2019 POGS nationwide statistics. The new dystocia guidelines released by POGS in 2021 may help standardize the diagnosis of dystocia patterns and help stem the increasing nationwide CS rates.

The overall stillbirth rate, neonatal mortality rate and perinatal mortality were higher compared to the 2019 census (18.8 per 1000 neonates vs. 14.73 per 1000 neonates; 3.74 per 1000 live births vs. 3.68 per 1000 live births; 22.39 per 1000 total births vs. 18.35 per 1000 total births) respectively [Table 2].

The MMR for 2020 was 121.6, which is significantly higher than the recorded MMR for 2019 which was 81.72. In comparison to national data, the DOH reported a total of 1458 maternal deaths for 2019, giving a MMR of 87.1.^[2]

The top causes of maternal mortality for 2020 were medical complications, hemorrhage, hypertension, and others. Hypertension and hemorrhage have been the top causes of maternal death in local and international literature. In comparison, the DOH Philippine health statistics for

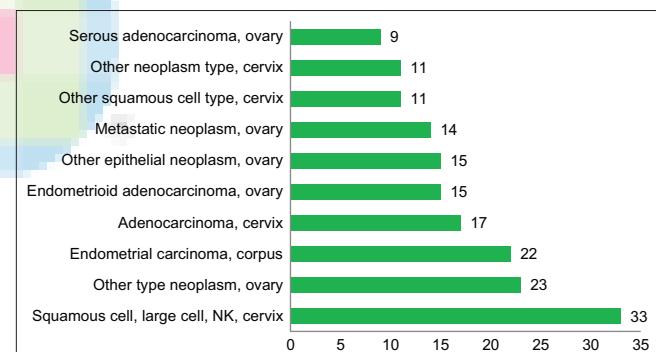


Figure 21: Mortality from gynecologic malignancies, 2020 (actual numbers reported)

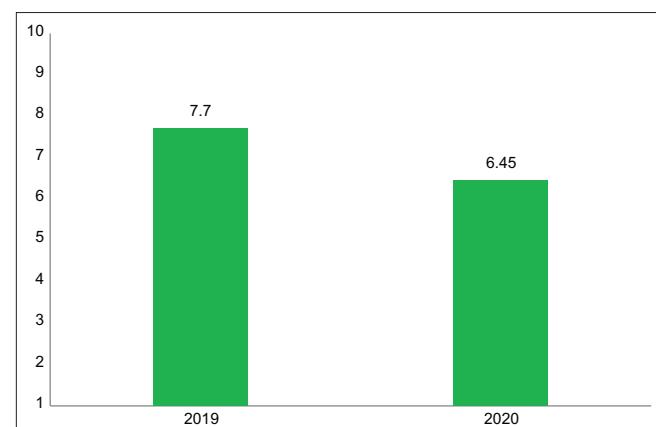


Figure 23: Adolescent birth rate for 2020 versus 2019

Table 2: Summary of obstetrical healthcare indicators, 2020 versus 2019

	2020	2019	Remarks
Total live births	263,923	275,345	-4.1%
Adolescent birth rate (per 1000 women aged 15-19)	6.45	7.7	-1.25
Preterm births (%)	16.4	14.3	+2.1
Percentage CS among live births	36.24	32.86	+3.38
Primary (%)	22.5	21.4	+1.1
Stillbirth rate per 1000 neonates born	18.8	14.73	+4.07
Neonatal mortality rate per 1000 live births	3.74	3.68	+0.06
Perinatal mortality rate per 1000 total births	22.39	18.35	+4.04
Maternal mortality ratio per 100,000 live births	121.6	81.72	+39.88

+: Increase in rate from 2019, -: Decrease in rate from 2019, CS: Cesarean section

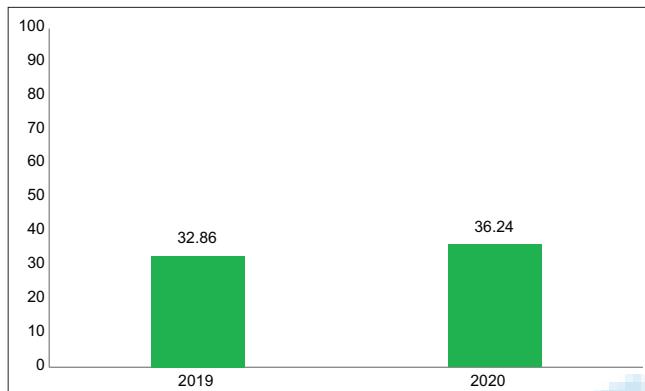


Figure 24: Overall cesarean section rates POGS data 2019 versus 2020

2019^[2] reported the top three causes of maternal mortality as eclampsia, gestational hypertension, and other maternal diseases complicating pregnancy and childbirth. Further examination of those entered as others should be done.

COVID-19 obstetric cases contributed only 1.08% of total OB admissions. No data were available regarding severity of classification of confirmed COVID-19 patients at the time admission. A higher CS rate of 43% was seen among COVID patients. There was incomplete data regarding status of COVID-19 infection among neonates and perinatal outcomes of COVID-19-infected mothers. A more detailed or comprehensive data gathering regarding COVID-19 admissions is suggested for succeeding year's census.

With a decrease in obstetric admissions, a deterioration in obstetrical indicators is seen reflected in a higher CS rate, stillbirth rate, neonatal mortality rate, perinatal mortality rate, and MMR. A possible explanation could be a decrease in admissions of normal pregnancies with mostly high risk pregnancies seeking consult in tertiary hospitals. The reason behind the deterioration of these obstetrical indicators needs to be established so proper safeguards can be in place. The impact of COVID on pregnancy outcome still has to be evaluated.

There is a huge drop in the total gynecologic admissions for 2020 equivalent to a 34.5% decline from the number

of cases in 2019. This is despite fewer hospitals included and a lower compliance rate noted for 2019 POGS data (135 hospitals, 91.8% compliance rate). This is similar to the declining trend noted for the total obstetric admissions [Figure 22]. The cases maybe lower due to suspension of elective surgeries and other noncritical medical services attributed to the surge of COVID-19 cases and concomitant shortage of hospital staff. This significant decline in hospitalization rates of gynecologic cases could portend substantial harm to public health if patients defer care for life-threatening conditions, such as AUB and cancer.

For 2020, the total number of malignancy cases (6487) is 13.4% lower than the total number of gynecologic malignancies reported for 2019 (7495). The top 3 malignancies are similar to the data tallied from 2019. The most common is ovarian cancer, followed by cervical cancer, and cancer of the corpus. In the global statistics for cancer^[6], cervical cancer is the most common gynecologic malignancy followed by uterine cancer then ovarian cancer. The POGS Nationwide Statistics data do not reflect the international and even local cancer registries since most cases of cervical cancer in the Philippines are diagnosed at advanced stages requiring concurrent chemoradiation, which does not require admission. This maybe the reason why these data are not reported in this registry. Ovarian malignancy is the top 1 gynecologic malignancy in the POGS Nationwide Statistics since surgery is the primary treatment of ovarian cancer requiring admission.

The total gynecologic procedures for 2020 (20,899) is 12% lower than the total number of gynecologic procedures for 2019 (23,694). Medical management and blood transfusion are two of the top procedures tallied for 2020. This is expected, as AUB is listed as the most common indication for gynecologic admission.

Conclusion

The data collated through the POGS PNSS were presented and obstetric and gynecologic health indicators for year 2020 were reported and compared with 2019. A decrease

in admissions were seen together with a decline on obstetrical health indicators. It is imperative that reasons behind these decline be investigated.

Entries on COVID-19 cases are presented, but data on severity classification and perinatal outcomes are lacking. These vital information may contribute to policy-making, planning and implementation of health programs and basic services, monitoring and evaluation.

Limitations

Due to the complexity of obstetrical and gynecologic statistic system, this paper has several limitations. The POGS Nationwide Statistics includes only hospitals accredited by POGS, which only accounts for 7.1% of all health-care facilities. Lying-in clinics and hospitals not accredited by POGS are not included in the PNSS. Limitations include difficulties in compliance and accuracies in the reporting of data and may affect the integrity of the data. There is also note of a lack of standardization of terms and procedures and overlapping of procedures.

Recommendations for future activities

A more comprehensive data collection for COVID-19 cases should be done for the succeeding census. This vital information may augment the government's data on health indicators and may contribute to policy-making, planning and implementation of health programs and basic services, monitoring and evaluation.

It is also recommended that more information be included such as vaginal birth after CS, maternal comorbidities, and causes of neonatal deaths. More detailed gynecologic registry in subspecialty areas

may likewise be considered. Developing a registry for outpatient consultations may be explored.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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