University of Texas Medical Branch Institute for Bioethics & Health Humanities 2023 Conference & Call for Papers in

Reproductive Ethics

Research Report

PART II: Casualties of the Womb

An evidence based comparison of best practices in reducing Maternal Mortality within Women of Color in The State of Texas and Sub-Saharan Africa

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ABSTRACT

In 2017 an estimated 295,000 women worldwide died in largely preventable deaths during pregnancy and childbirth. Just under half of these, an estimated 130,000 deaths, occurred within African women in the countries of Sub-Saharan Africa. From 2018 to 2020, the State of Texas recorded the highest number of pregnancy related deaths of any state in the United States and the highest escalation of these deaths occurred amongst women of color whose Maternal Mortality Rate (MMR) is almost twice as high as that of white women and Hispanic women. This comparative study reports on trends in maternal mortality between the rising number of deaths amongst women of color in the State of Texas and the very high number of deaths in Sub-Saharan African women. Moreover, the data sets from the State of Texas and the African country of Nigeria will be used as a guide towards best practices in reducing maternal mortality and morbidity in African Women and women of color in Texas. This subset comparison utilizes *The World Health Organization (WHO) Application of ICD-10 to deaths during pregnancy, childbirth and the puerperium: ICD- 10 MM*, and the newly organized Chapter 18 ICD 11 codes in determining cause of death. This cause of death data is used to describe specific responses needed to reduce maternal mortality amongst women of color in the State of Texas and African women of Sub-Saharan Africa.

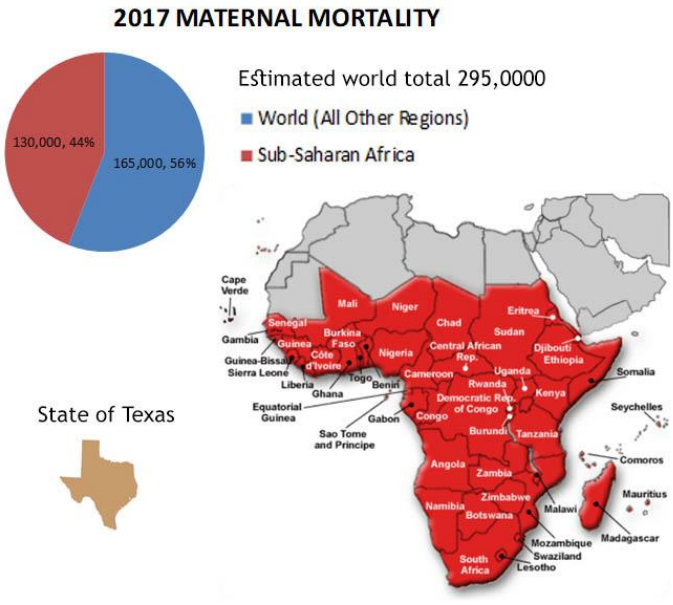

Figure 1: 2017 World maternal mortality estimates compared to the Countries of Sub-Saharan Africa.

(Note, the State of Texas is roughly the land size as Zambia and the population size of Ghana.)

INTRODUCTION

The World Health Organization (WHO) defines maternal mortality as "The annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy." The maternal mortality number and its associated Maternal Mortality Ratio (MMR) are two indicators of a woman's rights, her health and her economic and social status. These markers are also required in reproductive ethics discussions such Maternal Mortality. Pregnancy related deaths are considered largely preventable because the majority of their direct and indirect factors are immediately treatable and most often avoidable. This report represents maternal mortality by two metrics:

(1) the maternal mortality number = number of maternal mortality deaths (usually within a year) and

(2) the maternal mortality ratio (MMR) = (number of maternal deaths / number of live births) X 100,000.

The MMR is the risk of maternal death relative to the number of live births and it estimates the risk of a woman dying in a single pregnancy or in a single live birth. From 2017 to 2020 maternal mortality continued to remain very high amongst Sub-Saharan African women. For example, in 2017, Nigeria had an estimated 6,700 maternal mortalities, which is the 4th highest on the continent yet still 10,000 less deaths than the Democratic Republic of Congo. This Sub-Saharan region accounts for 44% of worldwide maternal mortalities. In the same time period, in the State of Texas, a highly developed low poverty region, pregnancy related deaths amongst women of color continually increased away from the state average. Texas also had the highest number of maternal mortalities in the United States with 254 over a three year period. This report examines maternal mortality trends in these two vastly different regions and investigates why deaths are extremely high in Sub-Saharan African women and steadily increasing in the State of Texas amongst women of color.

DATA COLLECTION

For the Maternal Mortality Data Sets in Africa, World Health Organization ICD 10 databases 4 and-5 for June 2021 representing the most completed and comprehensive data sets for Sub-Saharan Africa for the year of 2017 were downloaded. The datasets were imported into Microsoft Access and separated by the 46 selected countries of the Sub-Saharan Africa region. The compendium of the Chapter XV "O"codes Pregnancy, Childbirth and the Puerperium, which includes O98.5 for Covid 19 were also included. Additionally, pregnancy deaths by intentional harm, suicide, "X" codes, X60-X84, and pregnancy deaths from obstetrical tetanus, "A34" were included. The newly released 2022 ICD -11 Chapter 18 has downloaded as a comparison to the ICD 10 coding. Beginning in January 2022, the ICD 11 Pregnancy, Childbirth and the puerperium changed from Chapter XV to Chapter 18 and are now "J" codes that are more inclusive and specific in pregnancy related conditions. For better understanding and classification of these codes, the WHO Application of ICD-10 to Deaths During Pregnancy, Childbirth and the Puerperium: ICD-MM publication was consulted. This report represents the deaths in accordance with the ICD-10, Chapter XV classification and references the new 2022 ICD-11 corresponding codes. The WHO international data sets include estimates gathered by UNICEF, UNFPA, World Bank Group and the United Nations Population Division.

For the United States and State of Texas, separate data sets and reports from the National Vital Statistics (U.S.), National Center for Health Statistics, CDC Wonder and data sets from Presentations and Publications of the Texas Department of State Health Services Maternal Mortality and Morbidity Task Force for the most completed and comprehensive year of 2019 were consulted and referenced.

Context, data and statistics on Nigerian maternal mortality and morbidity was retrieved from studies conducted within several primary and tertiary health centers across Nigeria.

DATA: Maternal Mortality in Sub-Saharan Africa and the State of Texas

SUB-SAHARAN AFRICA COUNTRY	Population	2017 Maternal Mortality Numbers	MM Rate (Deaths per 100K live births)
Congo, Dem. Repub.	89,561,403	16,000	473
Ethiopia	114,963,588	14,000	401
Chad	16,425,864	7,300	1,140
Nigeria	**206,139,589**	6,700	**917**
Uganda	45,741,007	6,000	375
Cote d'Ivoire	26,378,274	5,400	617
Somalia	15,893,222	5,100	829
Niger	24,206,644	5,100	509
Kenya	53,771,296	5,000	342
Cameroon	26,545,863	4,700	529
South Sudan	11,193,725	4,500	1,150
Guinea-Bissau	1,968,001	4,400	667
Mali	20,250,833	4,400	562
Mozambique	31,255,435	3,100	289
Angola	32,866,272	3,000	241
Sierra Leone	7,976,983	2,900	1,120
Madagascar	27,691,018	2,800	335
Ghana	31,072,940	2,700	308
Guinea	13,132,795	2,600	576
Burundi	11,890,784	2,400	548
Burkina Faso	20,903,273	2,400	320
Zimbabwe	14,862,924	2,100	458
Malawi	19,129,952	2,100	349
Senegal	16,743,927	1,700	315

SUB-SAHARAN AFRICA COUNTRY	Population	2017 Maternal Mortality Numbers	MM Rate (Deaths per 100K live births)
Benin	12,123,200	1,600	397
Central African Republic	4,829,767	1,400	829
South Africa	59,308,690	1,400	119
Zambia	18,383,955	1,300	213
Mauritania	4,649,658	1,100	766
Tanzania, Unit. Repub.	59,734,218	1,100	524
Liberia	5,057,681	1,000	661
Togo	8,278,724	1,000	396
Rwanda	12,952,218	960	248
United States of America *	**331,002,651**	**754 (241 black)**	**20.1**
Congo	5,518,087	650	378
Gambia	2,416,668	520	597
Eritrea	3,546,421	510	480
Lesotho	2,142,249	310	544
Gabon	2,225,734	170	252
Namibia	2,540,905	140	195
Equatorial Guinea	1,402,985	130	301
Botswana	2,351,627	81	144
Comoros	869,601	72	273
Texas *	**29,145,505**	**†89 (22 black)**	**25 (46.5 black)**
Sao Tome and Principe	219,159	9	130
Mauritius	1,271,768	8	61
Cape Verde	555,987	6	58
Seychelles	98,347	1	53

* 2019 United States & Texas datasets obtained from CDC Wonder datasets

† 2021 & 2022 Texas DSHS released a smaller incomplete case cohort

Chart 1: 2017 Maternal Morality Numbers and Maternal Mortality Ratio for the 46 countries of Sub-Saharan Africa and the 2019 data sets for the United States and the State of Texas.

Nigeria has ten times the population of Texas and 60 times the number of deaths.

Nigeria's Maternal Mortality Ratio is 100 times higher than the State of Texas.

The number of women dying in Sub-Saharan Africa from pregnancy related deaths is beyond humanitarian crisis levels. The data shows that even in countries of relatively small populations, such as Liberia with 5 million people, estimated deaths are as high as 510 with an MMR over 1,000. These numbers are higher than all of the United States combined which has over 331,000,000 people.

DATA ANALYSIS: Part I: Texas Maternal Mortality Ratio Trends by Race/Ethnicity

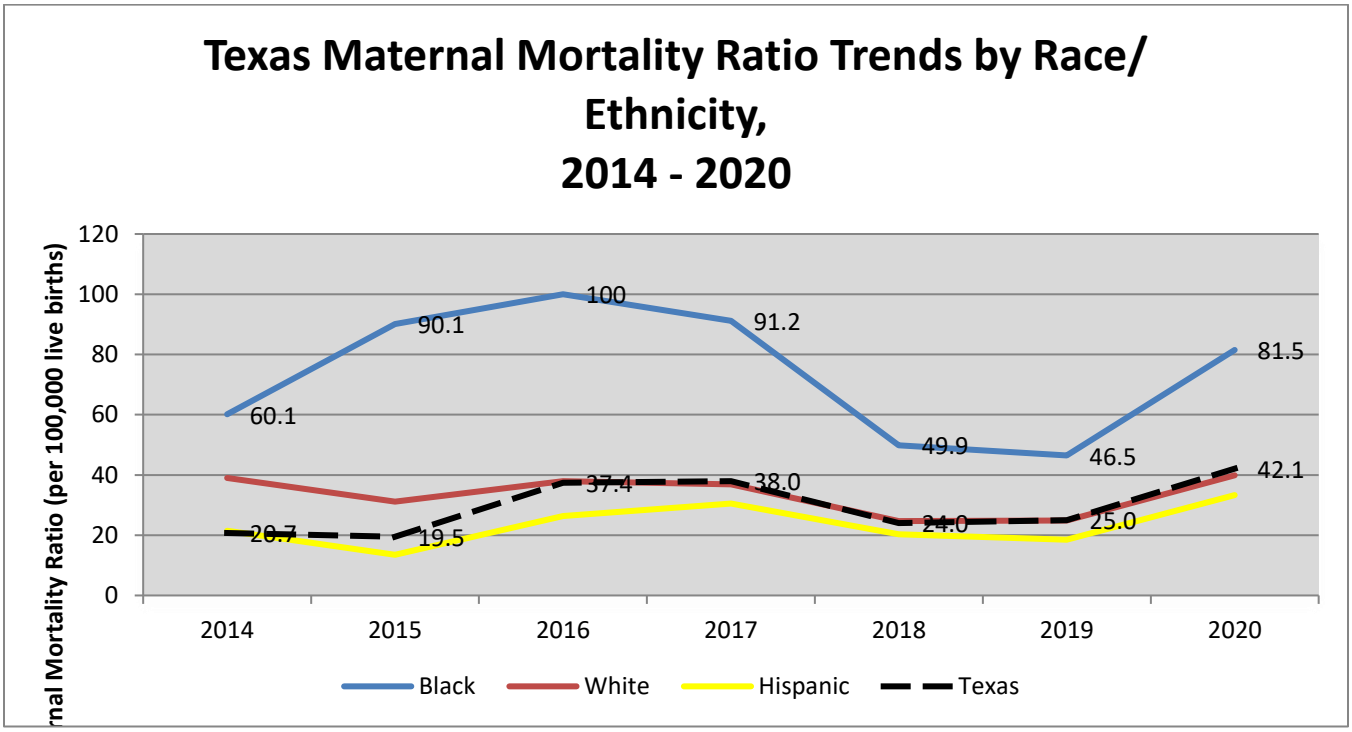

Figure 2: A Comparative analysis of Texas Maternal Mortality trends in Texas. Data gathered from Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Natality (and Mortality) on CDC WONDER Online Database. Data are from the Natality (and Mortality) Records 2016-2021, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. 2014 – 2015 MMR obtained from the Texas Department of State Health Services.

	2016		2017		2018		2019		2020	
	Deaths	Births	Deaths	Births	Deaths	Births	Deaths	Births	Deaths	Births
BLACK	49	48,562	44	48,252	24	48,144	22	47,326	38	46,643
WHITE	51	134,262	47	127,533	31	125,549	31	124,678	48	120,329
HISPANIC	49	185,605	54	177,246	36	177,461	33	177,920	58	174,091
TEXAS	149	398,037	145	382,042	91	378,617	86	344,604	155	368,183

In the State of Texas from 2004 to 2015, the number of deaths and the maternal mortality rate from women of color continued to gradually increase.

In 2015, in response to the awareness of the increase and disparities in maternal morbidity and mortality with women of color, several studies and initiatives lead to a decrease in maternal mortalities. This included a refining of classifications of maternal morbidity and care new protocols for women with preexisting hypertensive disorders focused on eclampsia and preeclampsia. From 2019 to 2020 maternal mortalities saw an increase in indirect causes associated with COVID-19, ICD – 10 code O98.5.

DATA ANALYSIS: Reproductive Ethics & Rights Indicators Cause and Effect

	REPRODUCTIVE ETHICS & RIGHTS : CAUSE AND EFFECT †						
SUB-SAHARAN AFRICA COUNTRY	I. Adult female **illiteracy** (%)	II. Density of nursing & midwifery personnel (per thousand)	III. Female Life Expectancy (Years)	SUB-SAHARAN AFRICA COUNTRY	I. Adult female **illiteracy** (%)	II. Density of nursing & midwifery personnel (per thousand)	III. Female Life Expectancy (Years)
Congo, Dem. Repub.	74.9	1.1	62	Benin	59.8	0.3	63
Ethiopia	58.6	0.7	68	Central African Republic	61.5	0.2	55
Chad	55.9	0.1	55	South Africa	60.2	1.3	67
Nigeria	**61.4**	**1.5**	**55**	Zambia	55.2	1	66
Uganda	63.9	1.2	65	Mauritania	61	0.9	66
Cote d'Ivoire	57.8	0.7	59	Tanzania, Unit. Repub.	62.3	0.6	67
Somalia	75	0.1	59	Liberia	60.6	0.5	65
Niger	55.2	0.2	63	Togo	69.2	0.5	61
Kenya	57.3	1.2	69	Rwanda	59.1	0.9	71
Cameroon	62.5	0.5	60	**United States of America ***	**14**	**16**	**81**
South Sudan	55.2	0.1	59	Congo	66.9	0.9	66
Guinea-Bissau	65.2	0.7	60	Gambia	60.5	0.6	63
Mali	58.6	0.4	60	Eritrea	66.6	1.4	68
Mozambique	69.2	0.5	63	Lesotho	28.9	3.3	57
Angola	69.3	0.4	64	Gabon	55.7	2.9	68
Sierra Leone	61	0.8	55	Namibia	53.2	2	66
Madagascar	53.4	0.3	68	Equatorial Guinea	71.4	0.5	59
Ghana	62.5	2.7	65	Botswana	46	2.9	72
Guinea	55.5	0.1	62	Comoros	58.7	0.6	66
Burundi	60.2	0.7	63	**Texas ***	**16**	**22**	**78.5**
Burkina Faso	58.8	0.9	62	Sao Tome and Principe	73.9	1.9	72
Zimbabwe	57.5	1.9	62	Mauritius	65.4	3.5	77
Malawi	60.1	0.4	67	Cape Verde	69.4	1.3	76
Senegal	65.9	0.5	69	Seychelles	43.9	4.5	78

† data complied by WHO and United Nations, Department of Economic and Social Affairs, Population Division

Maternal mortality and morbidity is generally lower in the presence of universal health care for women, skilled medical care, enhanced and enforceable reproductive rights and higher education choices for young women. These are also indicators of high reproductive rights for women. Conversely, reproductive rights are low and maternal mortalities are high where the following three factors are also low:

I-Adult Female Illiteracy: Low illiteracy rates are indicators of a stronger education system and empowerment which are reflected in better pregnancy outcomes included woman doctors and greater advocacy for maternal issues.

II-Density of Nursing & Midwifery personnel: Indications of a supportive ancillary health care in countries where the absence of quickly accessible highly skilled medical staff reduces maternal mortality can aid women's health by providing another touch during pregnancy and direct access to skilled medical care.

I-Females Life Expectancy: Countries where women live longer generally have lower maternal mortality rates. These women are generally more nutritionally and medically healthy and have more rights and controls over their reproductive health.

DATA ANALYSIS: WHO ICD-10 MM Coded deaths in Sub-Saharan Africa and the State of Texas

WHO Maternal Mortality Groups and Associated ICD - 10 MM Codes & (2022 ICD-11 Codes)	Sub-Saharan Africa	Nigeria *	Texas
GROUP 1: Pregnancies with abortive outcome : O00 - O07.6, A34 (JA00 - JA00.36, 1C14) Abortion, miscarriage, ectopic pregnancy, Hydatidiform mole, spontaneous abortion, medical abortion, failed attempted abortion and other conditions leading to maternal death and a pregnancy with abortive outcome. Obstretic Tetanus.	10%	7.7%	≥ 5%†
GROUP 2: Hypertensive disorders in pregnancy, childbirth and the puerperium : O11 - O16 (JA20 - JA2Z) Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium. [Pre-existing hypertensive gestational (pregnancy induced) proteinuria.] Pre eclampsia and Eclampsia. HELLP syndrome	16%	36.5%	8%
GROUP 3: Obstetric haemorrhage : O20 - O20.9, O43-O46.9, O67-O72.3 (JA40 - JA40.Z, JA8A.0 -JA8D.Z) Obstetric diseases or conditions directly associated with haemorrhage including early pregnancy, intrapartum to antepartnum and post partnum. Placental praevis.	24%	30.8%	25%
GROUP 4: Pregnancy-related infection and Sepsis : O23, O41,O86, O91 (JA62.Z, JA88.Z, JB40.Z, JB45.Z) Certain specified maternal disorders predominately related to pregnancy: Pregnancy-related, infection-based diseases or conditions of genitournary. Disorder of amniotic fluid, Puerperal sepsis, Infections of breast (associated with childbirth)	13%	17.3%	8%
GROUP 5: Other obstetric complications : O21.1, O22, O73, O87, O90, O88, X60-X84 (JB60 - JB6Z) Certain other direct obstetric conditions not included in groups to 1–4, Hyperemesis gravidarum, Venous complications deep phlebothrombosis, Obstetric embolism, puerperal psychosis, intentional self-harm (Suicide), mental health issues, diabetes in pregnancy, postpartum depression, complications of the puerperium.	7%		29% 17% Mental Health 12% Embolism
GROUP 6: Unanticipated complications of management: O29, O74, O89 (JA67.0, JB0C.0, JB43.0) Severe adverse effects and other unanticipated complications of medical and surgical care during pregnancy, childbirth or the puerperium	≥ 5%†		≥ 5%†
GROUP 7: (Indirect causes). Non-obstetric complications: O10, O24, O98 (JA20.0, JA63.0, JB63.0Z) Non-obstetric: pre-existing including conditions of Cardiac disease, hypertension, Endocrine, Gastrointestinal tract, Central nervous system conditions, Respiratory conditions, Genitourinary conditions, Autoimmune disorders, Skeletal diseases, Psychiatric disorders, Neoplasms..ie.Infections that are not a direct result of pregnancy.	29%	7.6%	13%

* Data from study conducted Depart. of Obstetrics & Gynaecology of University of Abuja Teaching Hospital (UATH), Gwagwalada, Abuja, Teaching Hospital 2014–2018.

†Data unreliable due to cumulative contributing conditions and classification errors

Note: Trends amongst the subset for women of color in the State of Texas is consistent with the overall state trends.

In the State of Texas, Group 5 – Other Obstetric Complications ICD Codes O21.1, O22, O73, O87, O90, O88, X60-X84 were the highest classifications of direct cause deaths. Puerperal psychosis, intentional self-harm (suicide) was very high in Texas. In the countries of Sub-Saharan Africa, these causes of deaths were extremely low.

In the countries of Sub-Saharan Africa, Group 3: Obstetric hemorrhage ICD Codes O20 - O20.9, O43-O46.9, O67-O72.3 lead in the direct causes of death. In the State of Texas, these were the second highest cause of death. In Nigeria, is Hypertensive disorders accounts for the highest deaths. Additionally, the indirect causes of death, usually attributed to pre-existing conditions that exasperate pregnancy contributed to a very high amount of deaths.

WHO Maternal Mortality Groups and Reducing Pregnency Related Deaths Sub-Saharan Africa (SSA) vs Texas
GROUP 1: PREGNANCIES WITH AN ABORTIVE OUTCOME
SSA:-**[WHEN]- Six weeks to delivery** -Increased prenatal visits and examinations with ultrasonography scans and magnetic resonance imaging (MRI) if needed. Quickly accessible highly skilled medical and obstrtics care for spontaneous abortion, medical abortion and ectopic pregnancy.
TEXAS:**-[WHEN]-12 weeks to delivery** -Access to affordable higly skilled abortion care.
GROUP 2: HYPERTENSIVE DISORDERS IN PREGNANCY, CHILDBIRTH AND THE PUERPERIUM
SSA:-**[WHEN]- 12 weeks to 4 weeks postpartum**. Standardize guidelines and enhanced protocols for recognizing and treating preeclampsia and eclampsia.
TEXAS: -**[WHEN]- 12 weeks to 4 weeks postpartum**- Same as SSA and to include guidelines on recognizing pain thresholds in women of color. Education of patients in recognizing significant changes health during and after pregnancy.
GROUP 3: OBSTETRIC HAEMORRHAGE
SSA: **-[WHEN]-20 weeks to 20 weeks postpartum**.-Frequent and advanced training of highly skilled medical and emergency doctors in handleing obstetric haemorrahage. Availibiliby of drug theraphies to reduce bleeding. Nursing and mid wife training in techniques used to reduce bleeding until skilled medical care.
TEXAS: **-[WHEN]-20 weeks to 8 weeks post partum. S**ame as SSA and to include surveillance past the 20 week definition
GROUP 4: PREGNANCY RELATED INFECTION AND SEPSIS
SSA: **-[WHEN]-12 weeks to 12 weeks postpartum**- Increased training in medical personnel in diagnosing and treating infection and sepsis disorders. Quickly accessible highly skilled medical and obstetrics care.
TEXAS:-**[WHEN]-12 weeks to 12 weeks postpartum.** Patient education in recognizing signs and symptoms.
GROUP 5: OTHER OBSTETRIC COMPLICATIONS
SSA: **-[WHEN]-12 weeks to 12 weeks to birth**- Increased training in medical personnel in diagnosing and treating vascular disorders.
TEXAS: **-[WHEN]- 20 weeks to one year**. A stronger focus on mental health programs, suicide prevention and decreasing intimate partner violence.
GROUP 6: UNANTICIPATED COMPLICATIONS OF MANAGEMENT
SSA: **-[WHEN]- 20 weeks to 8 weeks postpartum.** Increase in density of skilled general physicians in primary and tertiary care levels. Increased prenatal visits combined with enhanced and frequent re-training for nursing, midwives and doulas.
TEXAS:**-[WHEN]- 20 weeks to 8 weeks postpartum.**
GROUP 7: (Indirect causes). NON-OBSTETRIC COMPLICATIONS
SSA: **-[WHEN]- all prenantal to 42 weeks postpartum**. Easily accessible and affordable universal health care and health screening. A long term and robust treatment program for pre-existing conditions. Increased prenatal touches
TEXAS**:-[WHEN]- all prenantal to 42 weeks postpartum**
[WHEN] represents an approximate concentration of care during highest incidents of deaths

RESULTS

- In 2017, an estimated 295,000 women died in pregnancy and childbirth. 130,000 of those (44%) were African women in Sub-Saharan Africa countries. 6,700 women died in Nigeria, 754 in the U.S.

- Between 2018 to 2020, in the State of Texas, there were 245 maternal mortalities, the highest number of deaths of any US State.

- Women of color in the State of Texas typically account for 11% of live births and constitute more than 31% of maternal mortalities. Black women have the highest maternal mortality ratio (MMR) in the State of Texas in every year that is twice as high as white and Hispanic women that have 3x the number of births.

- In the State of Texas, pregnancy related deaths caused by intentional self-harm, suicide and homicide remain very high. In Sub-Saharan Africa and Nigeria, that number is much lower within a far greater number of deaths.

- In Texas, as in the United States, amongst women of color, cardiomyopathy (ICD Codes O90.3) and other cardiovascular conditions hypertensive disorders in pregnancy, childbirth, and the puerperium (ICD-10 codes O11 – O16) are among the two leading underlying causes of maternal mortality. Obstetric hemorrhage, with a variety of underlying causes and at different stages are also leading causes of death, ICD-10 codes O20, O43, O44-O46, O71-O72.

- Worldwide, in 2016, maternal mortality was the leading cause of death in young women between 15 to 29 years of age.

- In Sub-Saharan Africa, female life expectancy over 70 years is a strong indicator of a lower maternal mortality and higher reproductive rights.

- Stronger advocacy for women's reproductive health and ethics issues are also present in areas of lower illiteracy. In areas of lower women's illiteracy rate, lower maternal mortalities were recorded.

- In Sub-Saharan Africa, the highest number of deaths are from indirect causes that are aggravated by preexisting conditions which include barriers to consistent and skilled medical care, poor nutrition, lack of clean water and poor sanitation. Non-existent to ineffective policy support for women's education and reproductive health needs contribute to indirect causes as they increase illiteracy and suppress advocacy of reproductive health and ethics and decrease the availability of skilled medical care.

- The density of nursing & midwifery personnel, including a doula, in the absence of a skilled medical professional and training in emergency obstetric care is not a strong indicator of pregnancy related deaths.

DISCUSSION

The World Health Organization defines maternal mortality as being largely preventable in over 70 percent of cases because medical intervention can save lives. However, to sustain a lifesaving trend and reduction in deaths very specific programs for supporting women must exist beyond emergency obstetric care. The data stated herein revealed trends in deaths, reproductive health care and rights in the two very different population sets of Sub-Saharan African women and women of color in the State of Texas. The collection, coordination and use of data on maternal mortality in both Sub-Saharan Africa and the State of Texas exist under challenging circumstances with inconsistencies in how cause of death was determined and how deaths are recorded. These inconsistencies reveal trends in maternal mortalities rather than exact numbers. For example, in the State of Texas, maternal mortality surveillance had not received significant attention or funding for expanded studies since 2013. As a result, the State of Texas was not aligned with the World Health Organizations Sustainable Development Goals (SDG) for reducing maternal mortalities. The SDG and its predecessor the Millennium Development Goals (MDG) also emphasized a revision to the International Classification of Disease (ICD) coding for Pregnancy, Childbirth and the Puerperium ICD-10 Chapter XV which included a refined matrix for recording cause of death in maternal mortalities. The WHO SDG goal called for ending preventable maternal mortality (EPMM) by reducing the global maternal mortality ratio by 2030 to less than 70 per 100 000 live births. At the current levels of maternal mortalities in 2021, this goal will not be achieved. The MMR for the State of Texas is 89 and for the country of Nigeria it is 1,140. The WHO – ICD 10 has now transitioned to ICD-11 and this provides an opportunity for the State of Texas and the United States to improve the classification and recording of maternal mortalities.

For African women, areas of civil unrest, poor sanitation conditions, poor nutrition, food insecurities and a lack of preventive care before, during and after pregnancy combined with a lack of easily accessible highly skilled health care and diminished advocacy in reproductive health initiatives directly contribute to a women's poor

health and increases her chances of a pregnancy related death from pre-existing conditions. Untreated and undiagnosed pre-existing conditions increase deaths amongst African woman during and after pregnancy. Outcomes for African women who survive birth, sepsis and hemorrhage events past 20 weeks is very positive. By contrast, women in the State of Texas in the same time period have a higher number of deaths due to suicide and homicide. Extended emotional and psychological care and legal safety as a reproductive right is essential in reducing these deaths.

For both African women and women of color in the State of Texas, prenatal care that includes management of preexisting health conditions will reduce deaths. Additionally, access to skilled medical services in treating hemorrhaging, sepsis, hypertensive and cardiovascular obstetric emergencies will also greatly reduce deaths. This includes medically needed abortions conducted by a trained and highly skilled physician.

The data shows enhancing public policy on education in general and reproductive rights education and advocacy for women is critical in reducing these largely preventable deaths. In areas of higher access to education, advocacy and reproductive rights such as in the State of Texas, there are fewer pregnancies of young women between the ages of 15 – 19 and thus fewer deaths. For African women this number is very high. Legal protections for young women in this group and advocacies of their office is critical to lowering deaths in this category.

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In memory of Eunice Grace Rodriguez (1926 – 2019) born in Tobago and longtime UTMB Galveston nurse.

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