

# **Session 19**

# **AICM: Age-specific Abortion Estimates**

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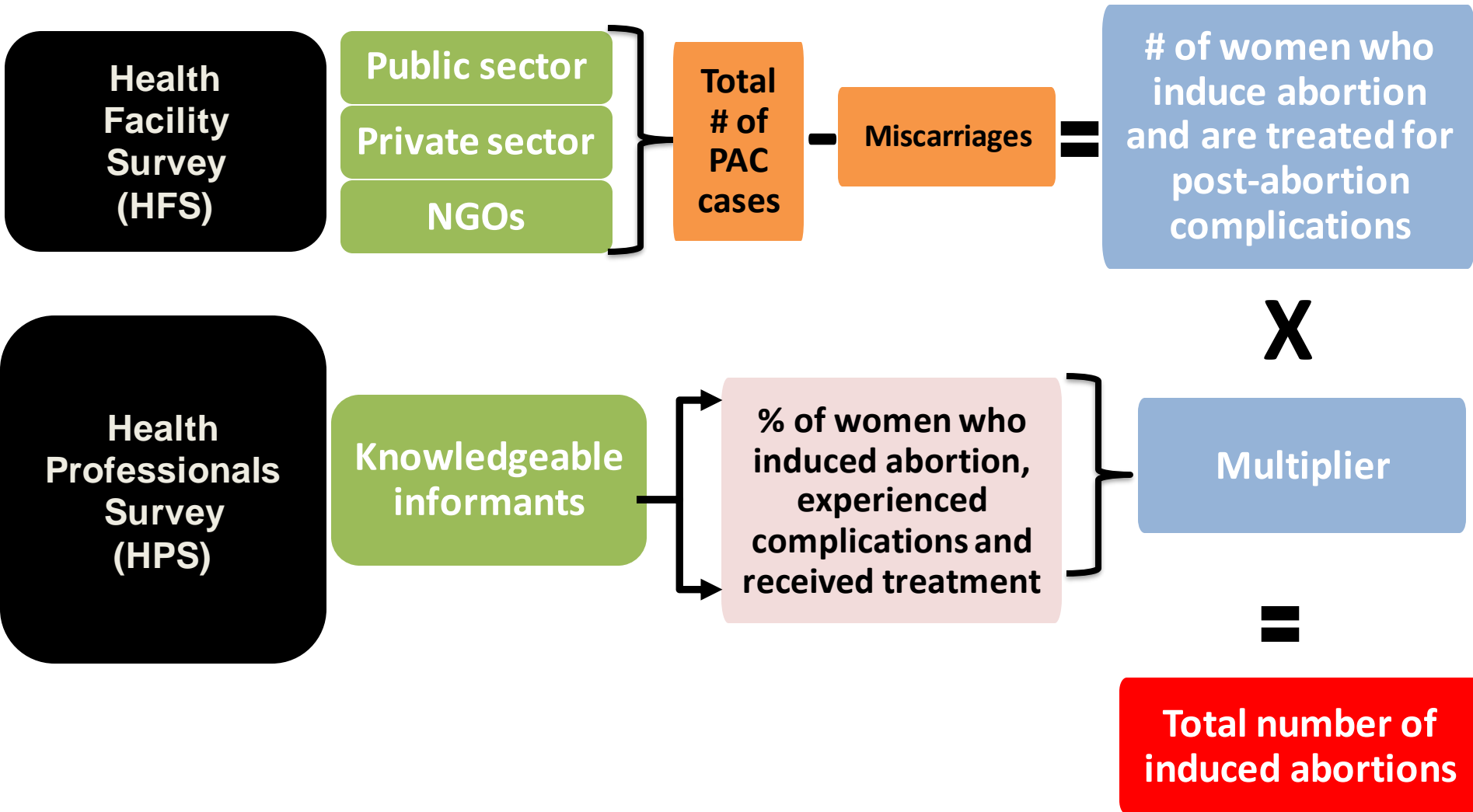
## **Revision: AICM Key Sources of Data**

- **Health Facility Survey (HFS)**
- **Health Professionals Survey (HPS)**

and

- **Prospective Morbidity Survey (PMS)**

# Revision: OVERVIEW OF TYPICAL AICM



## Revision: Hypothetical example of calculation

103,322 women  
hospitalized for post-  
abortion complications  
(HFS or HFS & PMS)

29% of women are treated  
for complications: multiplier  
(HPS)

Subtract an estimated 36,349 late miscarriages

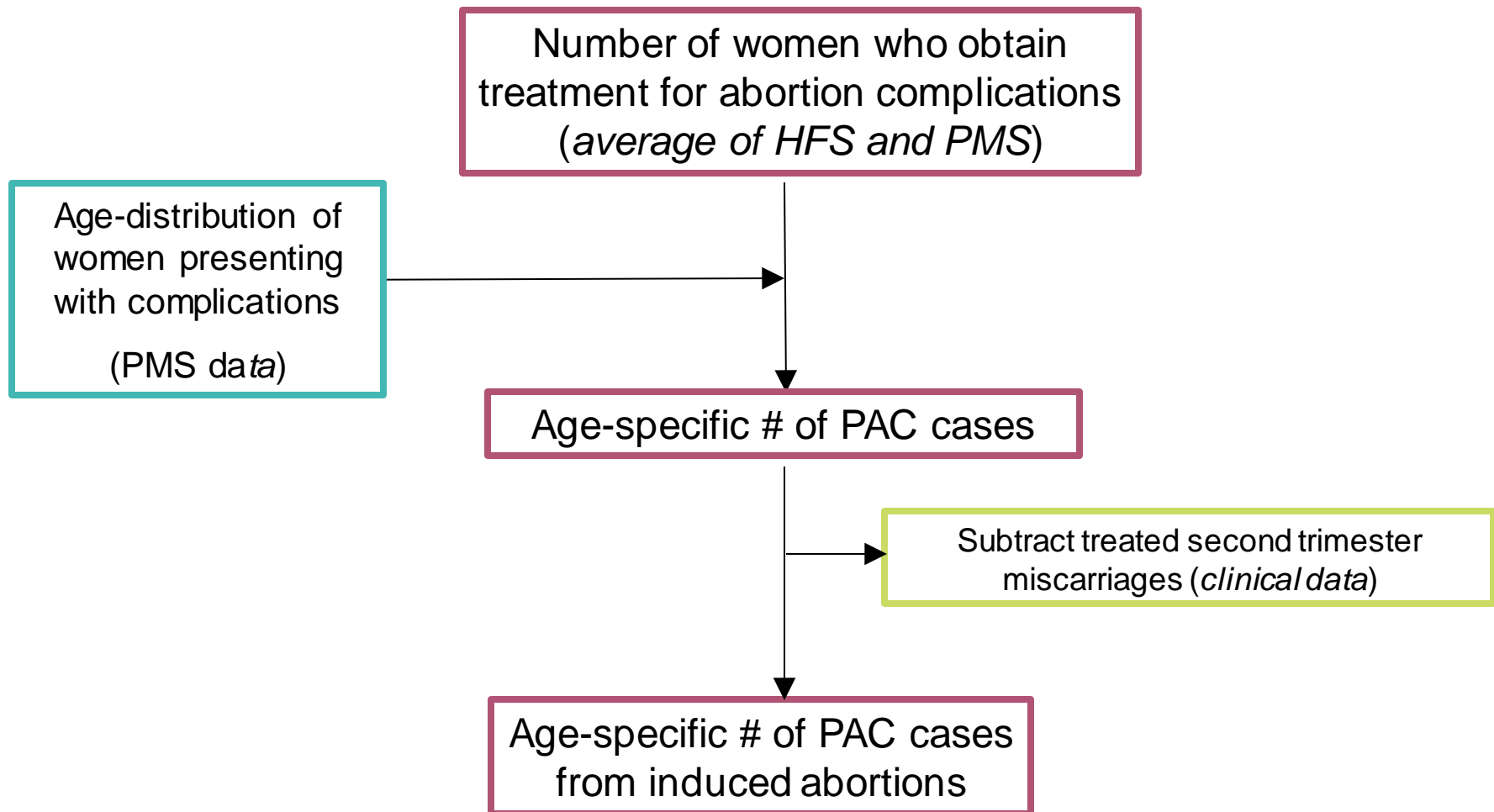
66,973 cases of  
complications were due to  
induced abortions

**X**

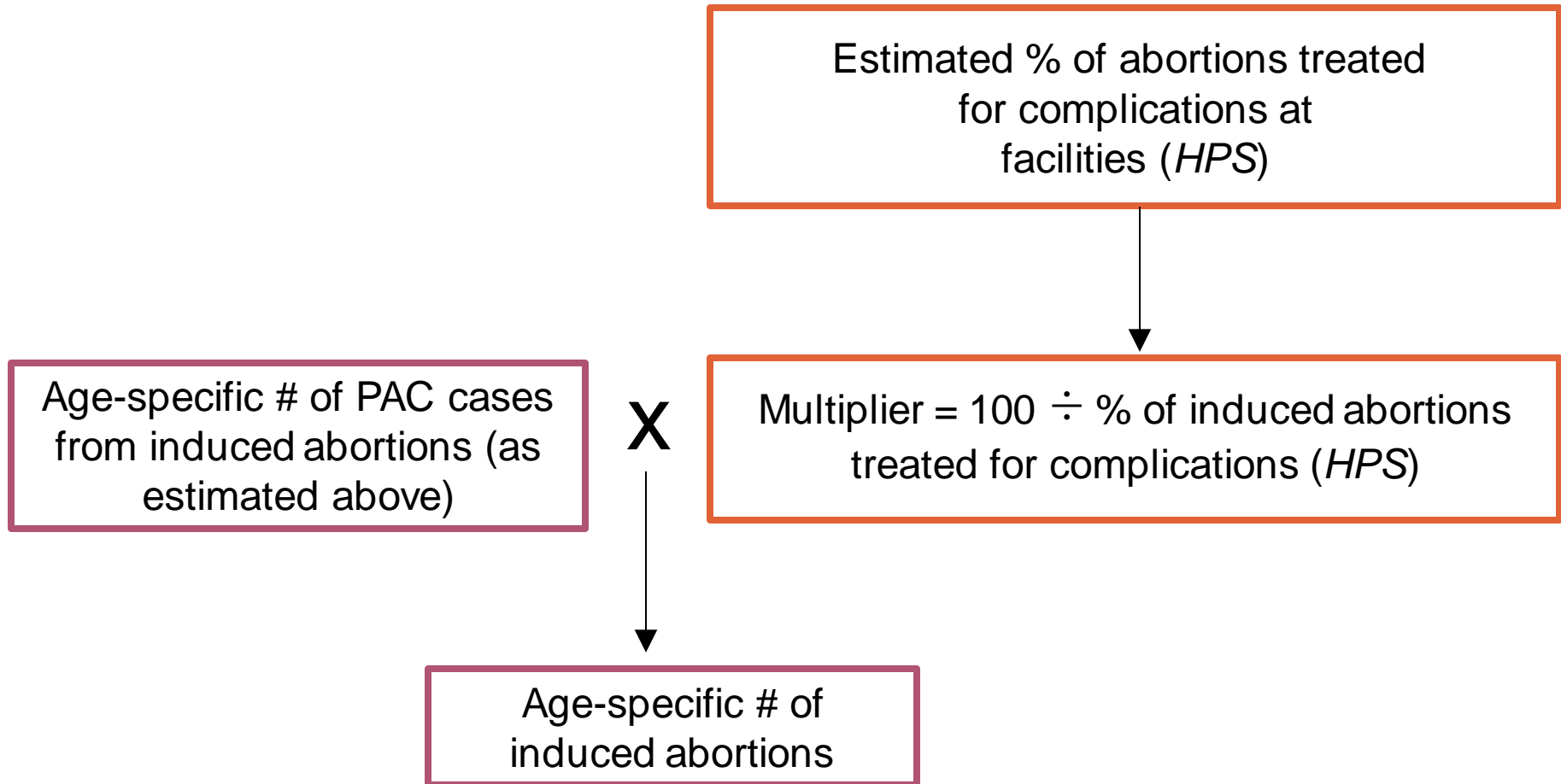
MULTIPLY =  $100/29.02=3.45$

An estimated 231,057 induced abortions  
(=  $66,973 * 3.45$ ) annually

# Estimating Age-specific Number of PAC Cases



# Estimating Age-specific Number of Abortions



## Two assumptions to estimate number of cases due to miscarriages

- Most miscarriages which will require health facility care (admissions) are late miscarriages (13-22 weeks gestational age).
  - Clinical studies on the biological pattern of miscarriages suggest that late pregnancy losses account for 2.9% of all recognized pregnancies or 3.4% of all births.

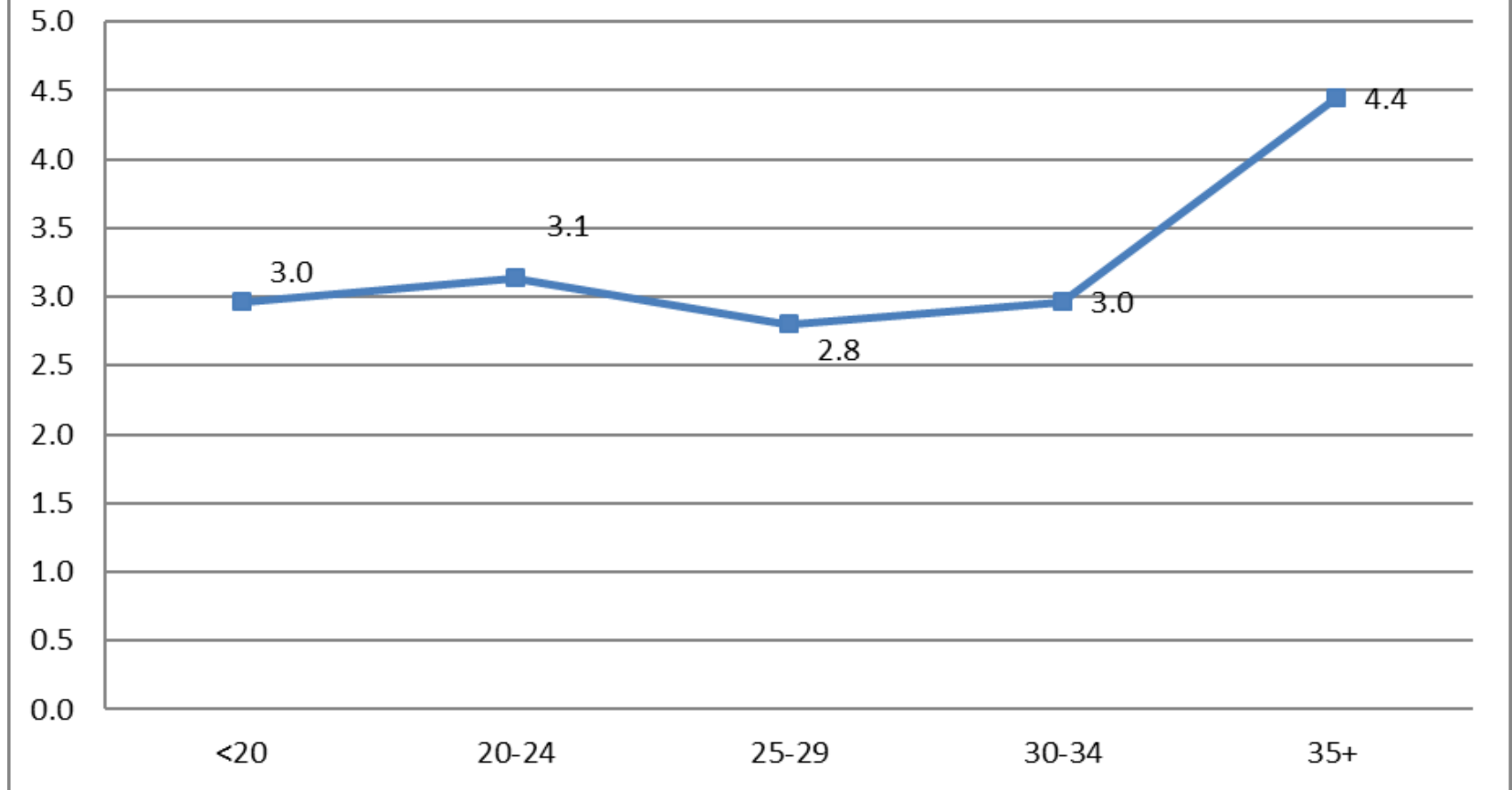
# Life table of spontaneous abortions by weeks of pregnancy, all women

Week	Number spontaneous abortions	Entering study during week	Women at risk at beginning of week	Women-days at risk during week	Ave. daily rate of Ab (per 100,000)	Remaining pregnant	Spontaneous abortion
5	2	137	-	264	757.6	100,000	14,390
6	2	424	135	2,018	99.1	95,233	10,105
7	10	1,144	557	6,682	149.7	94,182	9,102
8	21	2,518	1,691	18,565	113.1	93,177	8,122
9	37	3,561	4,188	39,356	94.0	92,419	7,368
10	73	3,890	7,672	65,224	111.9	91,790	6,733
11	161	4,029	11,489	78,426	174.7	91,086	6,012
12	174	3,509	15,357	117,887	147.6	89,982	4,859
13	137	3,035	18,692	139,630	98.2	89,057	3,871
14	100	2,372	21,690	157,963	63.1	88,441	3,202
15	98	1,704	23,862	172,035	57.0	88,050	2,772
16	75	1,218	25,468	181,967	41.2	87,701	2,385
17	72	893	26,661	189,023	38.1	87,447	2,101
18	62	730	27,432	194,169	31.9	87,215	1,841
19	69	570	28,100	198,272	34.8	87,020	1,621
20	62	496	28,601	201,583	30.8	86,807	1,380
21	55	393	29,032	204,368	26.9	86,621	1,168
22	58	366	29,370	206,525	28.1	86,458	981
23	55	300	29,667	208,482	26.4	86,289	788
24	41	272	29,922	210,199	19.5	86,130	604
25	42	211	30,153	211,548	19.9	86,012	468
26	42	230	30,322	212,798	19.7	86,892	329
27	59	165	30,510	213,845	27.6	85,775	193

**Source:** Harlap S et al., A life table of spontaneous abortions and the effects of age, parity and other variables, in: Hook EB and Porter I, eds., Human Embryonic and Fetal Death, New York: Academic Press, 1980.



## Miscarraiges per 100 live births (13-22 weeks)



**Source:** Sully, E., Dibaba, Y., Fetters, T., Blades, N., & Bankole, A. (2018). Playing it safe: legal and clandestine abortions among adolescents in Ethiopia. *Journal of Adolescent Health, 62*(6), 729-736.

## **Two assumptions to estimate number of cases due to miscarriages**

- Not all women with late miscarriages will seek care in a health facility.
  - We assume that the proportion of women who have complications from late term miscarriages who will receive treatment is equivalent to the proportion of pregnant women who deliver in health facilities or do not because it is not customary or unnecessary to do so.

## Obtaining proportion of women who did not deliver in health facilities but likely to seek PAC

Tanzania example, TDHS, 2010		
Reasons for not delivering at facility (%)	Mainland	Zanzibar
Cost too much	7.63	
Facility not open	1.82	
Too far/no transport	41.69	
Don't trust/poor service	1.7	
No female provider	1.22	
Husband/fam didn't allow	2.53	1.16
<i>Not necessary</i>	18.31	33.7
<i>Not customary</i>	9.4	6.38
Not necess/custom/ husband doesn't allow:	30.24	41.24

## Annual number of births

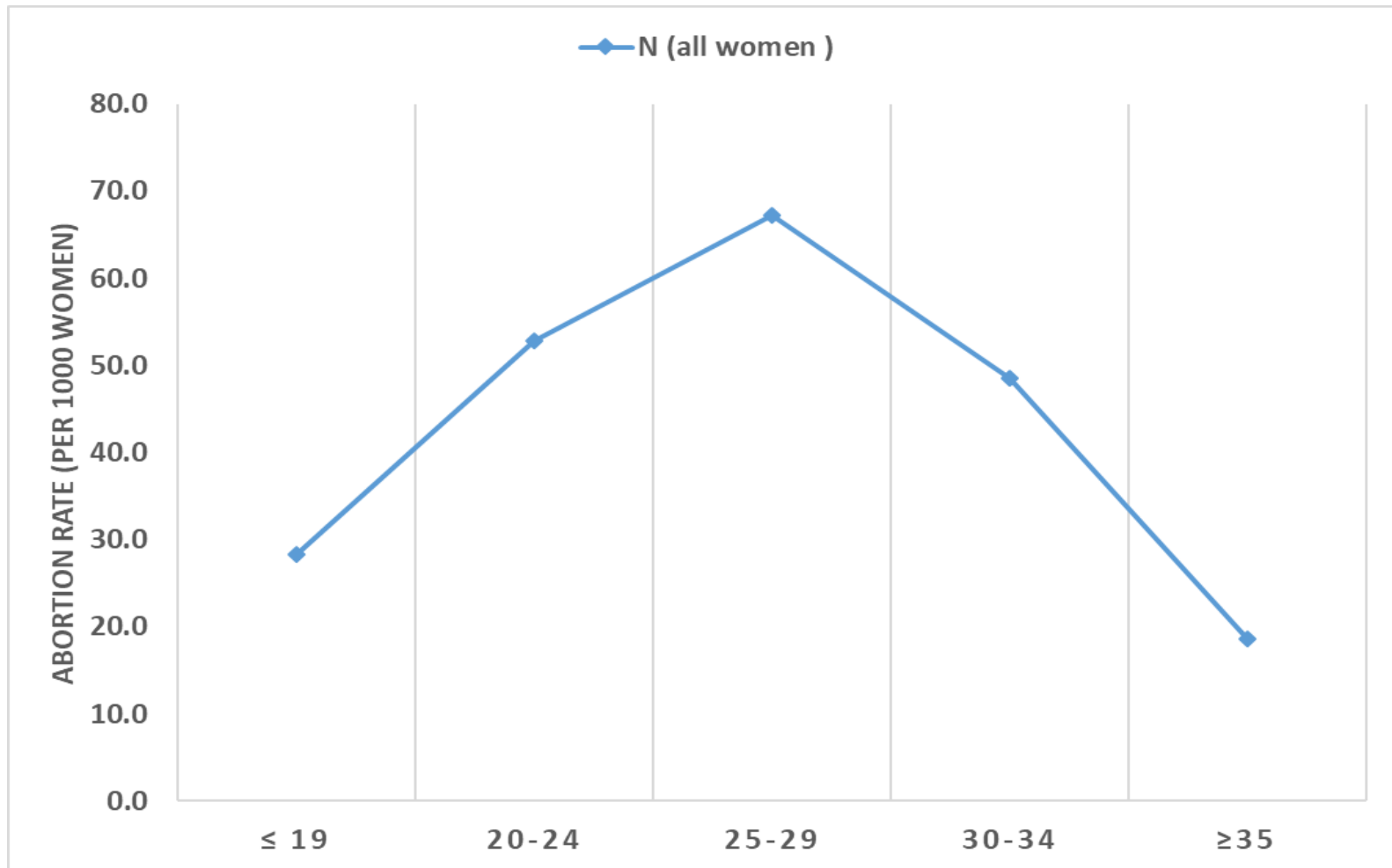
<b>POPULATION AND BIRTHS ESTIMATES, Tanzania</b>				
<b>Age</b>	<b>ASFRs (DHS 2010)</b>	<b>Female pop 2012 (TNBS)</b>	<b>Births by age group (2012)</b>	
15-19	119	2,295,319	273143	
20-24	262	2,093,249	548431	
25-29	250	1,789,025	447256	
30-34	206	1,485,372	305987	
35-39	160	1,219,682	195149	
40-44	71	924,316	65626	
45-49	22	759,147	16701	
<b>TOTAL 15-49</b>	<b>5.34</b>	<b>10,566,110</b>	<b>1852294</b>	
TNBS = Tanzania National Bureau of Statistics				

# Results

# Steps in calculating age-specific rates, Uganda

Indicator	National	Age Groups				
		≤ 19	20-24	25-29	30-34	≥35
Number of complications treated -- HFS estimate	<b>128,682</b>					
Age distribution from PMS		<b>0.176</b>	<b>0.281</b>	<b>0.263</b>	<b>0.160</b>	<b>0.121</b>
Number of complications treated by age	128,695	22,648	36,121	33,830	20,538	15,558
Number of live births, 2013 (from women 15-49)	1,560,111	268,866	486,069	370,676	244,274	190,226
Percent delivered at health facilities	<b>65.5</b>	<b>71.0</b>	<b>65.5</b>	<b>65.5</b>	<b>65.5</b>	<b>58.5</b>
Spontaneous miscarriages per 100 live births	<b>3.41</b>	<b>2.96</b>	<b>3.14</b>	<b>2.80</b>	<b>2.97</b>	<b>4.45</b>
Indirect estimate of # late spont miscarriages (%late miscarr*births)	53,200	7,962	15,260	10,378	7,244	8,459
Number of spontaneous miscarriage cases treated in hospital	34,846	5,655	10,002	6,802	4,748	4,948
Number of Induced Abortion Complication cases treated in hospital	93,836	16,993	26,119	27,029	15,790	10,609
Multiplier from HPS	<b>3.37</b>	<b>3.37</b>	<b>3.37</b>	<b>3.37</b>	<b>3.37</b>	<b>3.37</b>
Total number of induced abortions, 2013 Sum of age-groups	316,228 <b>325,343</b>	57,267	88,023	91,087	53,213	35,754
Number of women 15-49 (in 000s), 2013	8,050,254	2,018,513	1,665,762	1,355,800	1,096,382	1,913,797
Abortion Rate per 1000 women 15-49	39.3	28.4	52.8	67.2	48.5	18.7
Abortion Ratio (number of abortions per 100 live births)	20.3	21.3	18.1	24.6	21.8	18.8

# Age-specific abortion rates among all women, Uganda 2013



# Abortion rates by age and exposure

Indicators	≤ 19	20-24	25-29	30-34	≥35
<b>ALL</b>					
# of women	2,018,513	1,665,762	1,355,800	1,096,382	1,913,797
# of Births	268,866	486,069	370,676	244,274	190,226
<b>SEXUALLY ACTIVE (Ever)</b>					
%	45.3%	92.0%	99.2%	99.2%	99.8%
N	915,194	1,531,835	1,344,411	1,087,172	1,910,352
<b>SEXUALLY ACTIVE (last 12 months)</b>					
%	37.3%	83.4%	90.3%	87.9%	78.4%
N	752,905	1,389,246	1,224,016	963,720	1,500,034
<b>NUMBER OF ABORTIONS</b>	57,267	88,023	91,087	53,213	35,754
<b>ABORTION RATE (per 1000 women)</b>					
N (all women )	28.4	52.8	67.2	48.5	18.7
N (sexually active)	62.6	57.5	67.8	48.9	18.7
N (sex ≤12 mnths)	76.1	63.4	74.4	55.2	23.8
Abortion ratio (per 100 live births)	21.3	18.1	24.6	21.8	18.8



# Age-specific abortion rates by sexual exposure, Uganda 2013

