EXERCISE INSTRUCTIONS BOOKLET

TRAINING: USING DATA TO MEASURE PRIMARY HEALTH CARE PROGRAM PERFORMANCE

India Primary Healthcare Support Initiative

MAY 2026 |

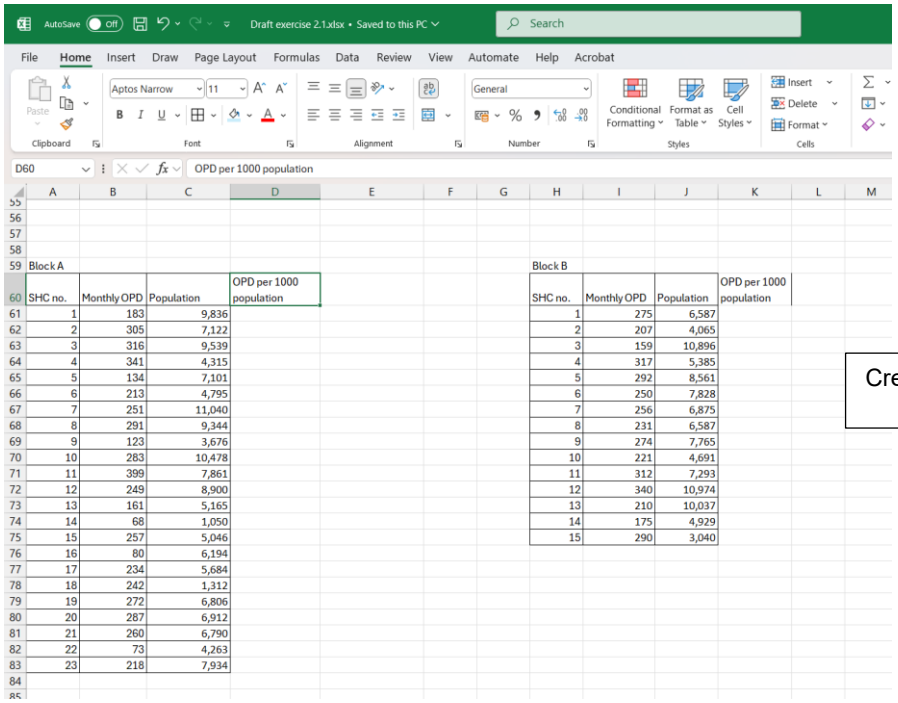
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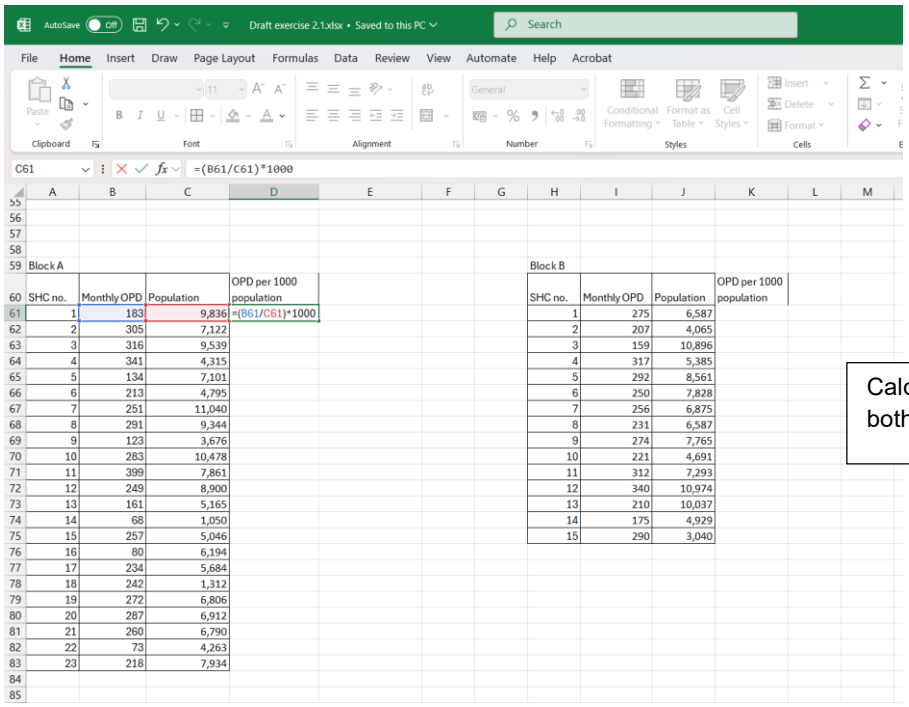
Module 2.1

Exercise 1: Describe a dataset

Step 1: Calculate OPD per 1000 population

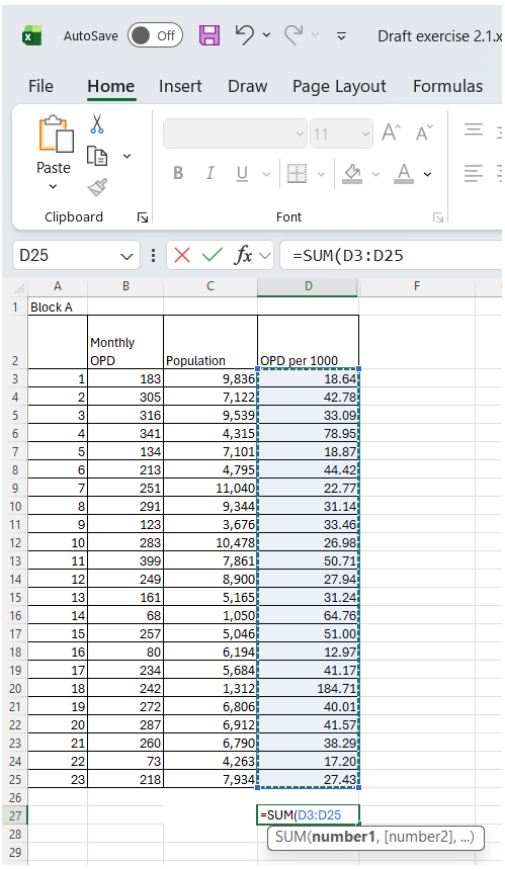
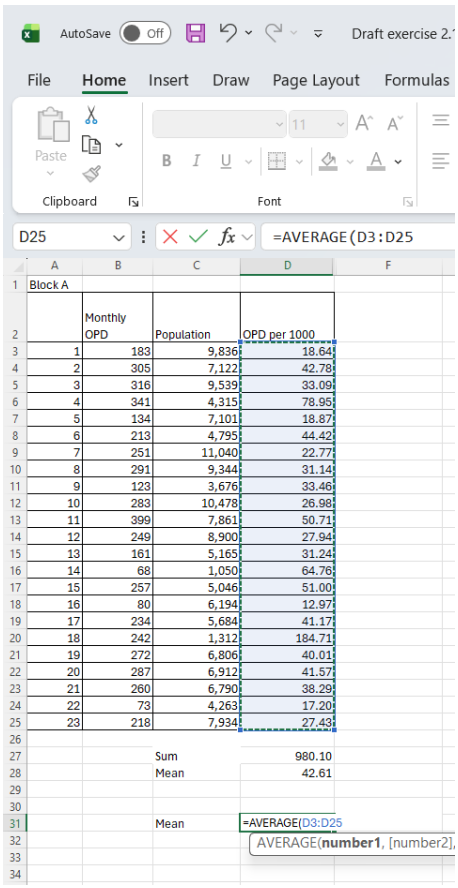


Create a column for OPD per 1000 population



Calculate the OPD per 1000 population for both the blocks

Step 2: Calculate the mean OPD per 1000 population for both the blocks

Mean= (Sum of OPD per 1000 population)/(number of facilities)	Excel formula: Mean= AVERAGE(range)
	

	Monthly OPD	Population	OPD per 1000
1	183	9,836	18.64
2	305	7,122	42.78
3	316	9,539	33.09
4	341	4,315	78.95
5	134	7,101	18.87
6	213	4,795	44.42
7	251	11,040	22.77
8	291	9,344	31.14
9	123	3,676	33.46
10	283	10,478	26.98
11	399	7,861	50.71
12	249	8,900	27.94
13	161	5,165	31.24
14	68	1,050	64.76
15	257	5,046	51.00
16	80	6,194	12.97
17	234	5,684	41.17
18	242	1,312	184.71
19	272	6,806	40.01
20	287	6,912	41.57
21	260	6,790	38.29
22	73	4,263	17.20
23	218	7,934	27.43

Step 3: Calculate the standard deviation (SD)

<u>First, we will calculate the SD for block A. Create another working sheet and copy the block A data in it.</u>

Steps for calculating SD:

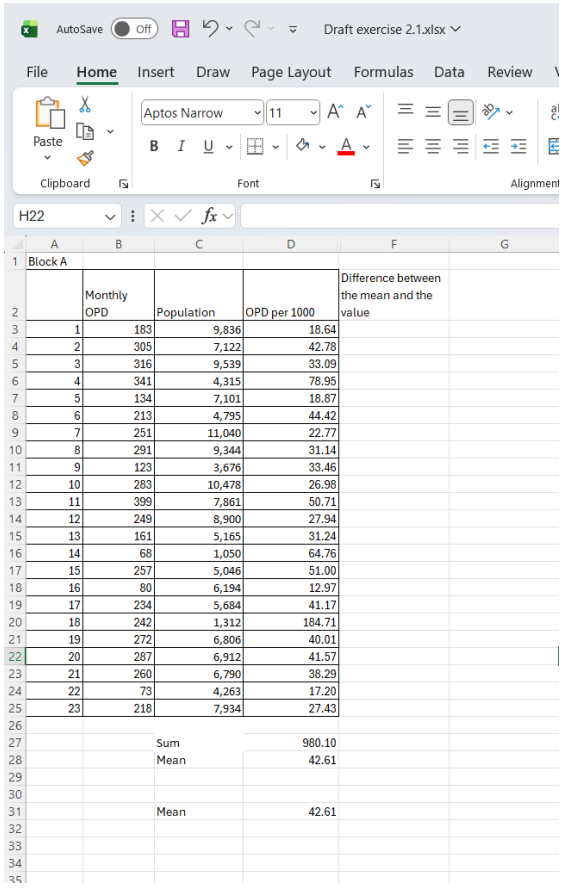
1. Calculate the mean of the dataset
2. Subtract the mean value from each value
3. Calculate square of differences
4. Add the square of differences
5. Calculate the average of squared differences (variance)
    a. Divide by (n-1)
6. Calculate the square root of the variance (SD)

$$Standard\ deviation = \sqrt{\frac{\Sigma(x_i - \bar{x})^2}{n-1}}$$

Where,

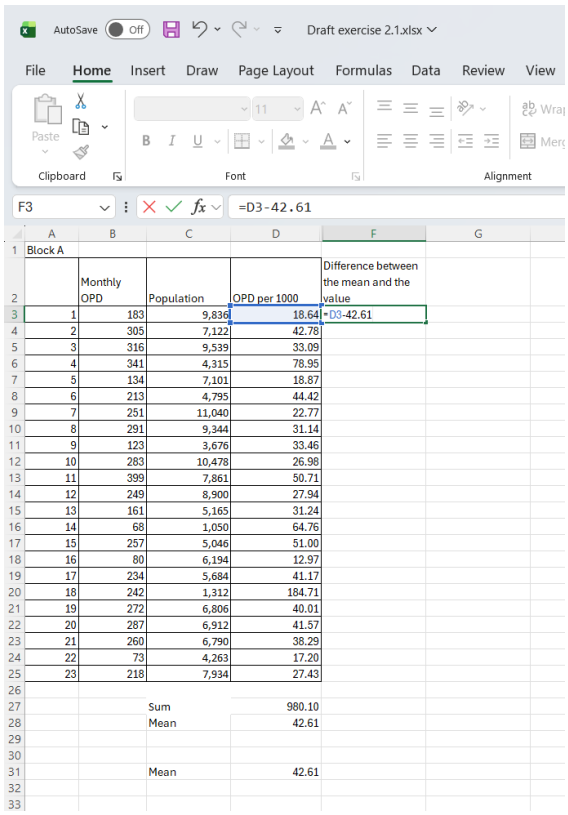
- x_i = value of ith observation
- $\bar{x}$ = mean of the sample
- n = number of observations

1. Subtract the mean value from each value



	A	B	C	D	F
1	Block A				
2		Monthly OPD	Population	OPD per 1000	Difference between the mean and the value
3	1	183	9,836	18.64	
4	2	305	7,122	42.78	
5	3	316	9,539	33.09	
6	4	341	4,315	78.95	
7	5	134	7,101	18.87	
8	6	213	4,795	44.42	
9	7	251	11,040	22.77	
10	8	291	9,344	31.14	
11	9	123	3,676	33.46	
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13	11	399	7,861	50.71	
14	12	249	8,900	27.94	
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16	14	68	1,050	64.76	
17	15	257	5,046	51.00	
18	16	80	6,194	12.97	
19	17	234	5,684	41.17	
20	18	242	1,312	184.71	
21	19	272	6,806	40.01	
22	20	287	6,912	41.57	
23	21	260	6,790	38.29	
24	22	73	4,263	17.20	
25	23	218	7,934	27.43	
26					
27			Sum	980.10	
28			Mean	42.61	
29					
30					
31			Mean	42.61	
32					
33					
34					

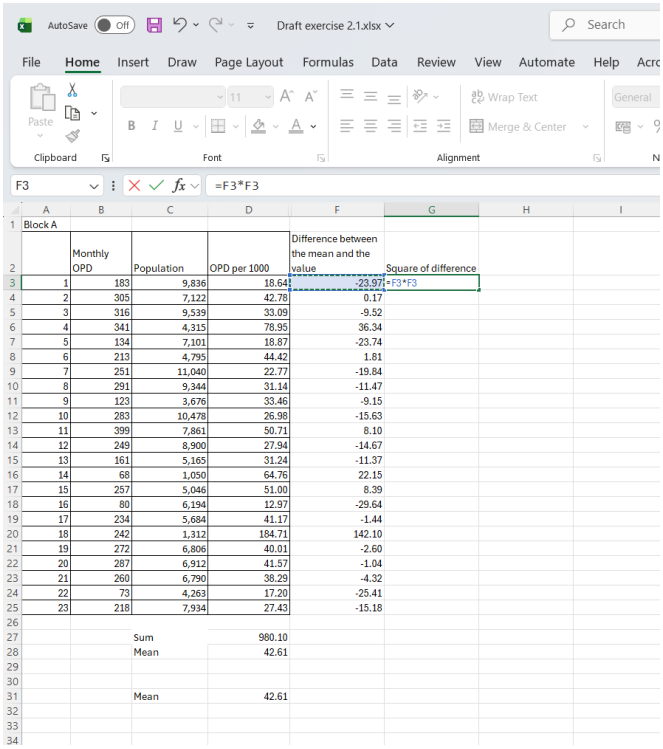
Create a new column for ‘Difference between mean and the value’



	A	B	C	D	F
1	Block A				
2		Monthly OPD	Population	OPD per 1000	Difference between the mean and the value
3	1	183	9,836	18.64	=D3-42.61
4	2	305	7,122	42.78	
5	3	316	9,539	33.09	
6	4	341	4,315	78.95	
7	5	134	7,101	18.87	
8	6	213	4,795	44.42	
9	7	251	11,040	22.77	
10	8	291	9,344	31.14	
11	9	123	3,676	33.46	
12	10	283	10,478	26.98	
13	11	399	7,861	50.71	
14	12	249	8,900	27.94	
15	13	161	5,165	31.24	
16	14	68	1,050	64.76	
17	15	257	5,046	51.00	
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19	17	234	5,684	41.17	
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21	19	272	6,806	40.01	
22	20	287	6,912	41.57	
23	21	260	6,790	38.29	
24	22	73	4,263	17.20	
25	23	218	7,934	27.43	
26					
27			Sum	980.10	
28			Mean	42.61	
29					
30					
31			Mean	42.61	
32					
33					

Calculate the difference

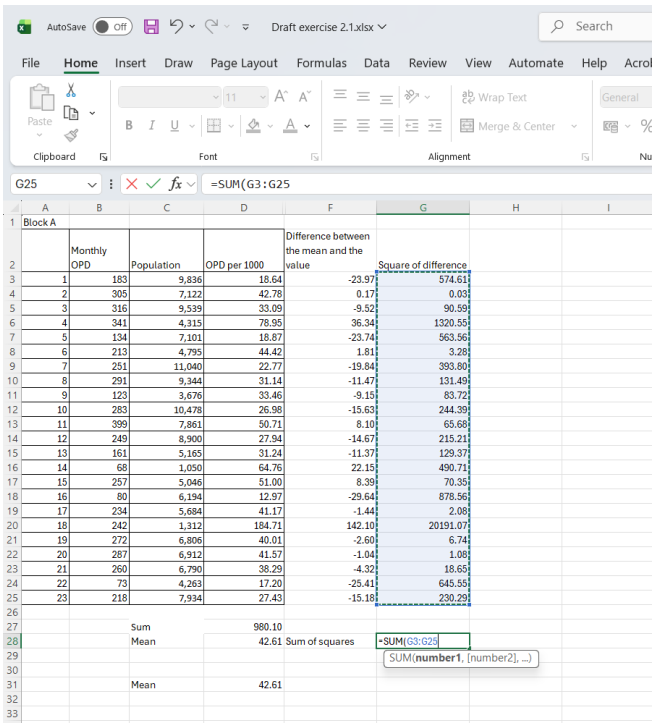
2. Calculate square of differences



	A	B	C	D	F	G
1	Block A					
2		Monthly OPD	Population	OPD per 1000	Difference between the mean and the value	Square of difference
3	1	183	9,836	18.64	-23.97	=F3*F3
4	2	305	7,122	42.78	0.17	
5	3	316	9,539	33.09	-9.52	
6	4	341	4,315	78.95	36.34	
7	5	134	7,101	18.87	-23.74	
8	6	213	4,795	44.42	1.81	
9	7	251	11,040	22.77	-19.84	
10	8	291	9,344	31.14	-11.47	
11	9	123	3,676	33.46	-9.15	
12	10	283	10,478	26.98	-15.63	
13	11	399	7,861	50.71	8.10	
14	12	249	8,900	27.94	-14.67	
15	13	161	5,165	31.24	-11.37	
16	14	68	1,050	64.76	22.15	
17	15	257	5,046	51.00	8.39	
18	16	80	6,194	12.97	-29.64	
19	17	234	5,684	41.17	-1.44	
20	18	242	1,312	184.71	142.10	
21	19	272	6,806	40.01	-2.60	
22	20	287	6,912	41.57	-1.04	
23	21	260	6,790	38.29	-4.32	
24	22	73	4,263	17.20	-25.41	
25	23	218	7,934	27.43	-15.18	
26						
27			Sum	980.10		
28			Mean	42.61		
29						
30						
31			Mean	42.61		
32						
33						
34						

Multiply the column value by the same value

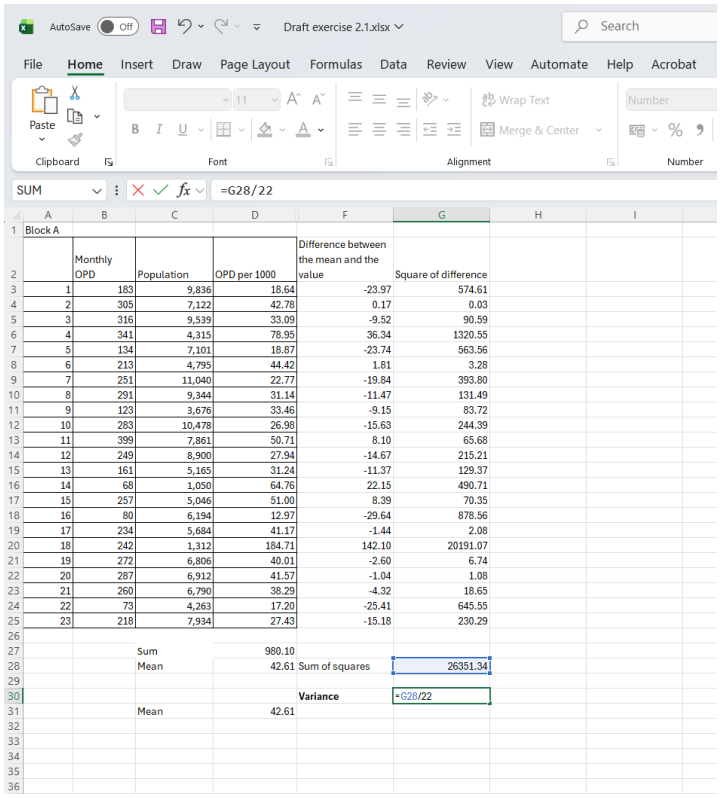
3. Add the square of differences



	A	B	C	D	F	G
1	Block A					
2		Monthly OPD	Population	OPD per 1000	Difference between the mean and the value	Square of difference
3	1	183	9,836	18.64	-23.97	574.61
4	2	305	7,122	42.78	0.17	0.03
5	3	316	9,539	33.09	-9.52	90.59
6	4	341	4,315	78.95	36.34	1320.55
7	5	134	7,101	18.87	-23.74	563.56
8	6	213	4,795	44.42	1.81	3.28
9	7	251	11,040	22.77	-19.84	393.80
10	8	291	9,344	31.14	-11.47	131.49
11	9	123	3,676	33.46	-9.15	83.72
12	10	283	10,478	26.98	-15.63	244.39
13	11	399	7,861	50.71	8.10	65.68
14	12	249	8,900	27.94	-14.67	215.21
15	13	161	5,165	31.24	-11.37	129.37
16	14	68	1,050	64.76	22.15	490.71
17	15	257	5,046	51.00	8.39	70.35
18	16	80	6,194	12.97	-29.64	878.56
19	17	234	5,684	41.17	-1.44	2.08
20	18	242	1,312	184.71	142.10	20191.07
21	19	272	6,806	40.01	-2.60	6.74
22	20	287	6,912	41.57	-1.04	1.08
23	21	260	6,790	38.29	-4.32	18.65
24	22	73	4,263	17.20	-25.41	645.55
25	23	218	7,934	27.43	-15.18	230.29
26						
27			Sum	980.10		
28			Mean	42.61	Sum of squares	=SUM(G3:G25
29						
30						
31			Mean	42.61		
32						
33						

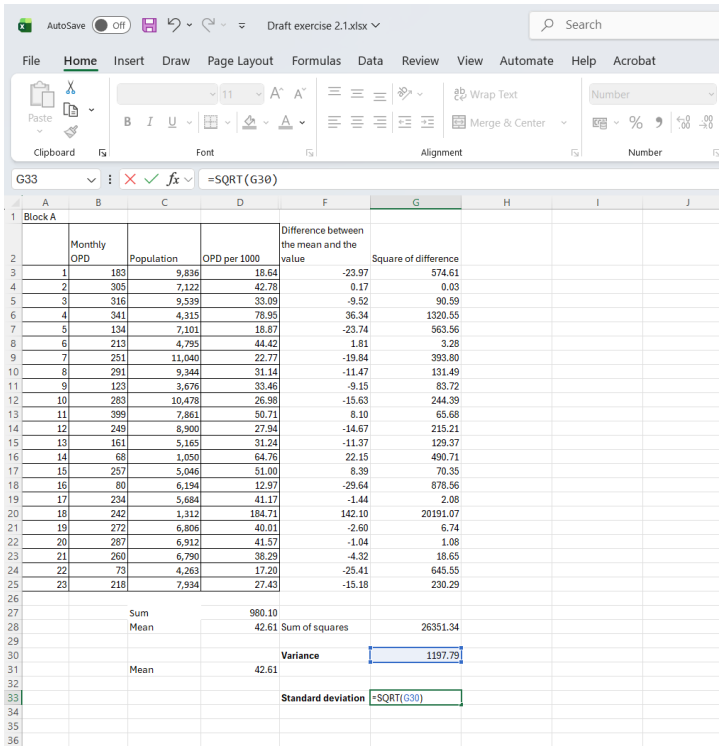
Use the function- SUM(range)

4. Calculate the average of squared differences (variance)
    a. Divide by (n-1), i.e. 22



	A	B	C	D	F	G
1	Block A					
2		Monthly OPD	Population	OPD per 1000	Difference between the mean and the value	Square of difference
3	1	183	9,836	18.64	-23.97	574.61
4	2	305	7,122	42.78	0.17	0.03
5	3	316	9,539	33.09	-9.52	90.59
6	4	341	4,315	78.95	36.34	1320.55
7	5	134	7,101	18.87	-23.74	563.56
8	6	213	4,795	44.42	1.81	3.28
9	7	251	11,040	22.77	-19.84	393.80
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16	14	68	1,050	64.76	22.15	490.71
17	15	257	5,046	51.00	8.39	70.35
18	16	80	6,194	12.97	-29.64	878.56
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20	18	242	1,312	184.71	142.10	20191.07
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22	20	287	6,912	41.57	-1.04	1.08
23	21	260	6,790	38.29	-4.32	18.65
24	22	73	4,263	17.20	-25.41	645.55
25	23	218	7,934	27.43	-15.18	230.29
26						
27			Sum	980.10		
28			Mean	42.61	Sum of squares	26351.34
29						
30					**Variance**	=G28/22
31			Mean	42.61		
32						
33						
34						
35						
36						

5. Calculate the square root of the variance (SD)



	A	B	C	D	F	G
1	Block A					
2		Monthly OPD	Population	OPD per 1000	Difference between the mean and the value	Square of difference
3	1	183	9,836	18.64	-23.97	574.61
4	2	305	7,122	42.78	0.17	0.03
5	3	316	9,539	33.09	-9.52	90.59
6	4	341	4,315	78.95	36.34	1320.55
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11	9	123	3,676	33.46	-9.15	83.72
12	10	283	10,478	26.98	-15.63	244.39
13	11	399	7,861	50.71	8.10	65.68
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18	16	80	6,194	12.97	-29.64	878.56
19	17	234	5,684	41.17	-1.44	2.08
20	18	242	1,312	184.71	142.10	20191.07
21	19	272	6,806	40.01	-2.60	6.74
22	20	287	6,912	41.57	-1.04	1.08
23	21	260	6,790	38.29	-4.32	18.65
24	22	73	4,263	17.20	-25.41	645.55
25	23	218	7,934	27.43	-15.18	230.29
26						
27			Sum	980.10		
28			Mean	42.61	Sum of squares	26351.34
29						
30					**Variance**	1197.79
31			Mean	42.61		
32						
33					**Standard deviation**	=SQRT(G30)
34						
35						
36						

Use Excel function SQRT(range)

Excel function:
Standard deviation for sample= STDEV.S(range)

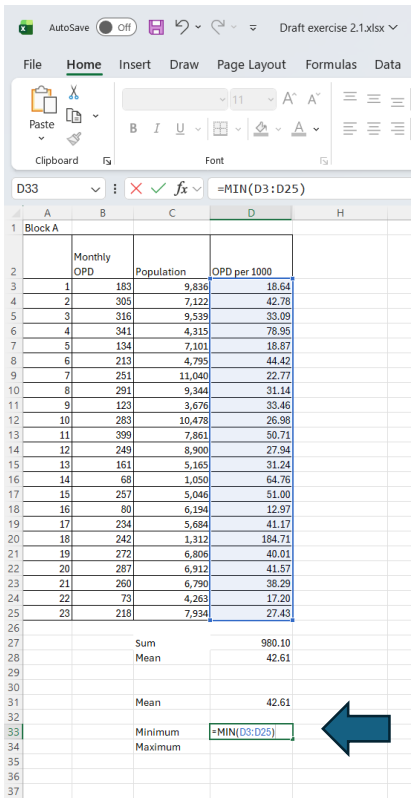
Calculate the SD for block B using excel formula

Step 4: Calculate the range

Excel formulae-

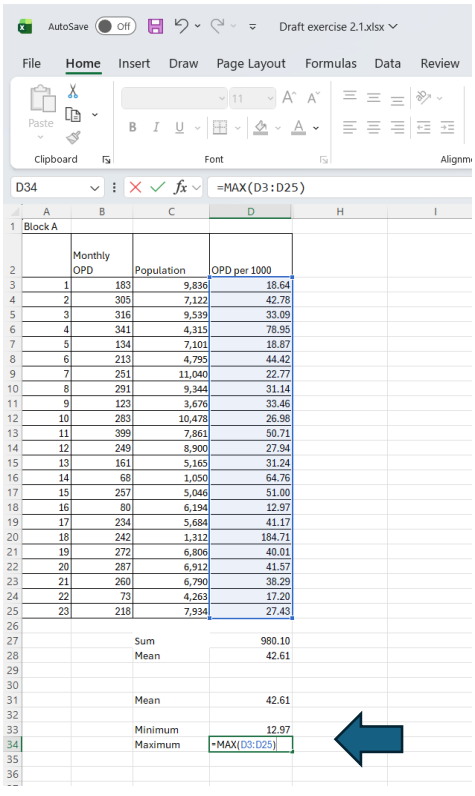
- Minimum = MIN(range)
- Maximum= MAX(range)

1: Find the minimum value



	A	B	C	D
1	Block A			
2		Monthly OPD	Population	OPD per 1000
3	1	183	9,836	18.64
4	2	305	7,122	42.78
5	3	316	9,539	33.09
6	4	341	4,315	78.95
7	5	134	7,101	18.87
8	6	213	4,795	44.42
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23	21	260	6,790	38.29
24	22	73	4,263	17.20
25	23	218	7,934	27.43
26				
27			Sum	980.10
28			Mean	42.61
29				
30				
31			Mean	42.61
32				
33			Minimum	=MIN(D3:D25)
34			Maximum	
35				
36				
37				

2: Find the maximum value

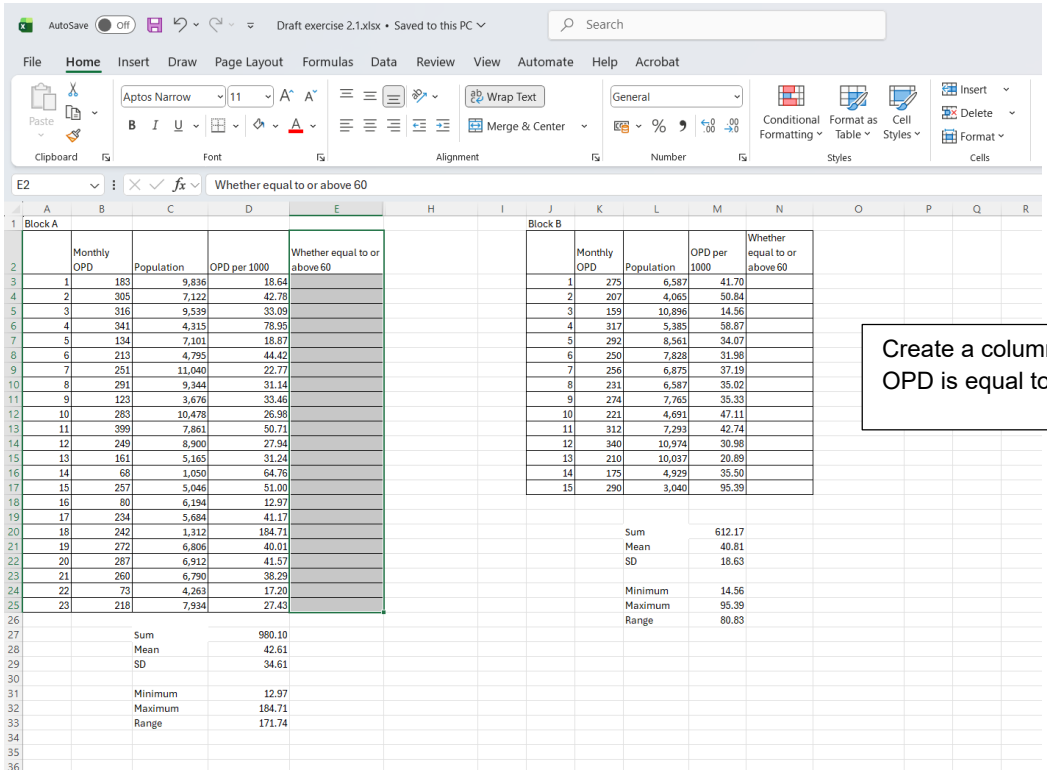


	A	B	C	D
1	Block A			
2		Monthly OPD	Population	OPD per 1000
3	1	183	9,836	18.64
4	2	305	7,122	42.78
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23	21	260	6,790	38.29
24	22	73	4,263	17.20
25	23	218	7,934	27.43
26				
27			Sum	980.10
28			Mean	42.61
29				
30				
31			Mean	42.61
32				
33			Minimum	12.97
34			Maximum	=MAX(D3:D25)
35				
36				

3. Calculate the difference between the two values

Range= Maximum- Minimum

Step 5: Applying the benchmark of at least 60 OPD per 1000 population



Block A

	Monthly OPD	Population	OPD per 1000	Whether equal to or above 60
1	183	9,836	18.64	
2	305	7,122	42.78	
3	316	9,539	33.09	
4	341	4,315	78.95	
5	134	7,101	18.87	
6	213	4,795	44.42	
7	251	11,040	22.77	
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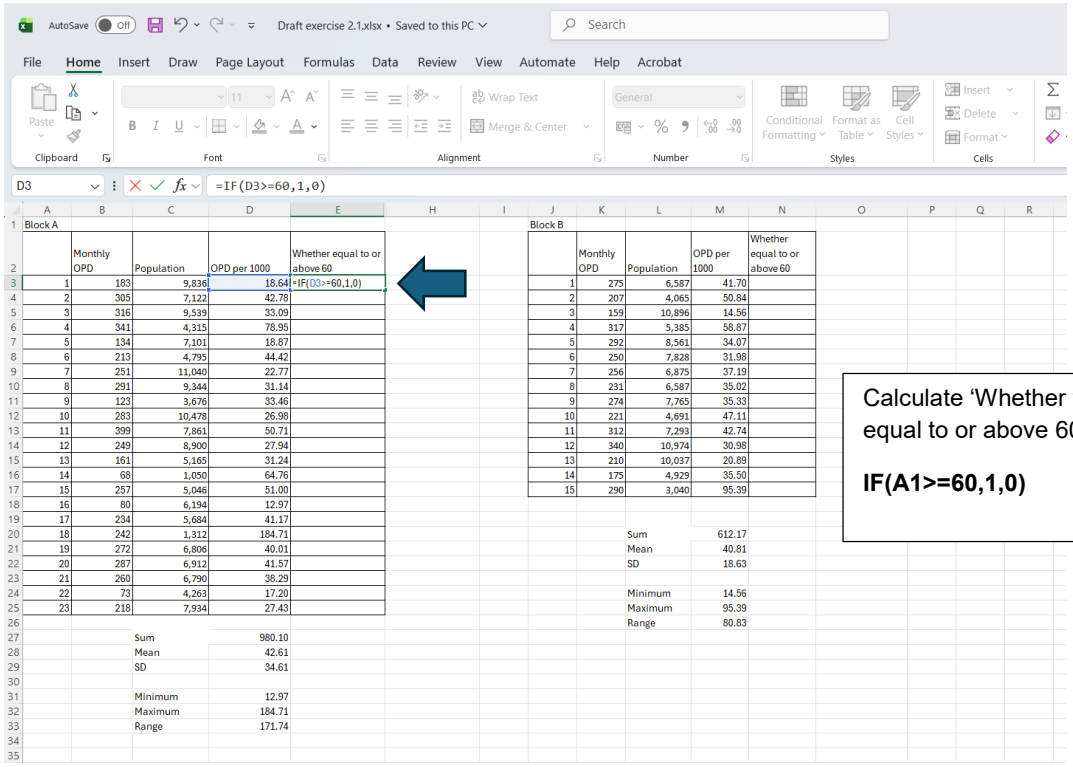
Sum	980.10
Mean	42.61
SD	34.61
Minimum	12.97
Maximum	184.71
Range	171.74

Block B

	Monthly OPD	Population	OPD per 1000	Whether equal to or above 60
1	275	6,587	41.70	
2	207	4,065	50.84	
3	159	10,896	14.56	
4	317	5,385	58.87	
5	292	8,561	34.07	
6	250	7,828	31.98	
7	256	6,875	37.19	
8	231	6,587	35.02	
9	274	7,765	35.33	
10	221	4,691	47.11	
11	312	7,293	42.74	
12	340	10,974	30.98	
13	210	10,037	20.89	
14	175	4,929	35.50	
15	290	3,040	95.39	

Sum	612.17
Mean	40.81
SD	18.63
Minimum	14.56
Maximum	95.39
Range	80.83

Create a column for 'Whether the per 1000 OPD is equal to or above 60'



Block A

	Monthly OPD	Population	OPD per 1000	Whether equal to or above 60
1	183	9,836	18.64	=IF(D3>=60,1,0)
2	305	7,122	42.78	
3	316	9,539	33.09	
4	341	4,315	78.95	
5	134	7,101	18.87	
6	213	4,795	44.42	
7	251	11,040	22.77	
8	291	9,344	31.14	
9	123	3,676	33.46	
10	283	10,478	26.98	
11	399	7,861	50.71	
12	249	8,900	27.94	
13	161	5,165	31.24	
14	68	1,050	64.76	
15	257	5,046	51.00	
16	80	6,194	12.97	
17	234	5,684	41.17	
18	242	1,312	184.71	
19	272	6,806	40.01	
20	287	6,912	41.57	
21	260	6,790	38.29	
22	73	4,263	17.20	
23	218	7,934	27.43	

Sum	980.10
Mean	42.61
SD	34.61
Minimum	12.97
Maximum	184.71
Range	171.74

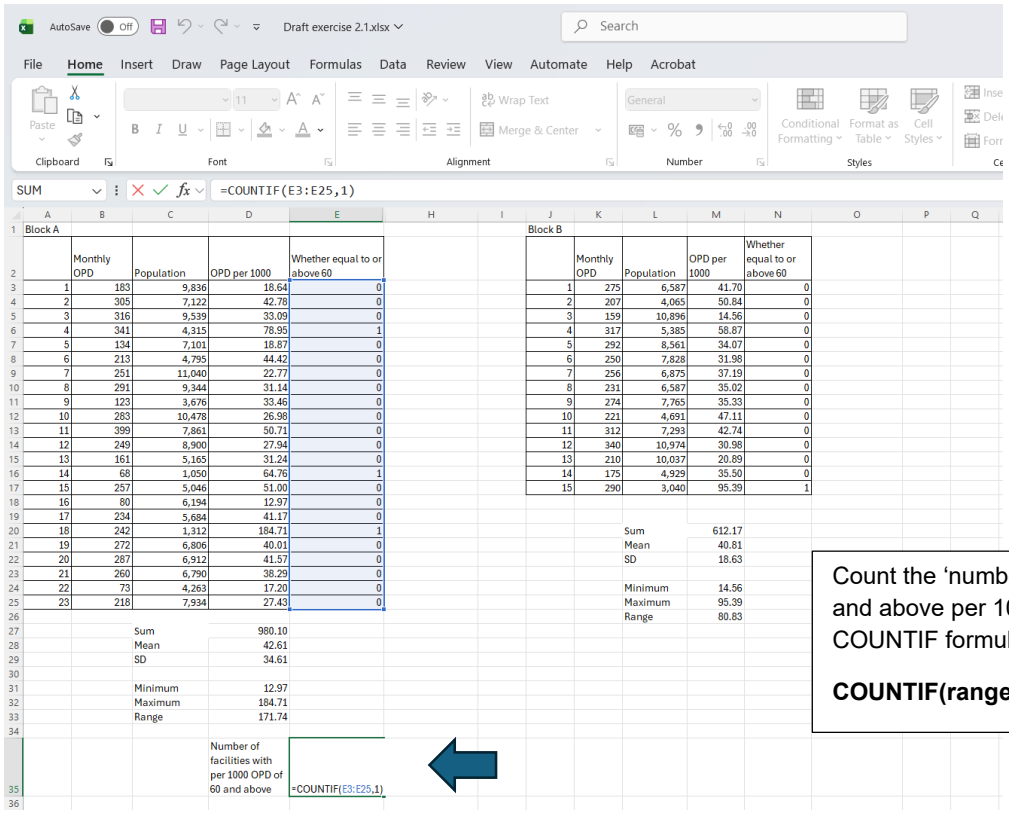
Block B

	Monthly OPD	Population	OPD per 1000	Whether equal to or above 60
1	275	6,587	41.70	
2	207	4,065	50.84	
3	159	10,896	14.56	
4	317	5,385	58.87	
5	292	8,561	34.07	
6	250	7,828	31.98	
7	256	6,875	37.19	
8	231	6,587	35.02	
9	274	7,765	35.33	
10	221	4,691	47.11	
11	312	7,293	42.74	
12	340	10,974	30.98	
13	210	10,037	20.89	
14	175	4,929	35.50	
15	290	3,040	95.39	

Sum	612.17
Mean	40.81
SD	18.63
Minimum	14.56
Maximum	95.39
Range	80.83

Calculate 'Whether the per 1000 OPD is equal to or above 60' using IF formula

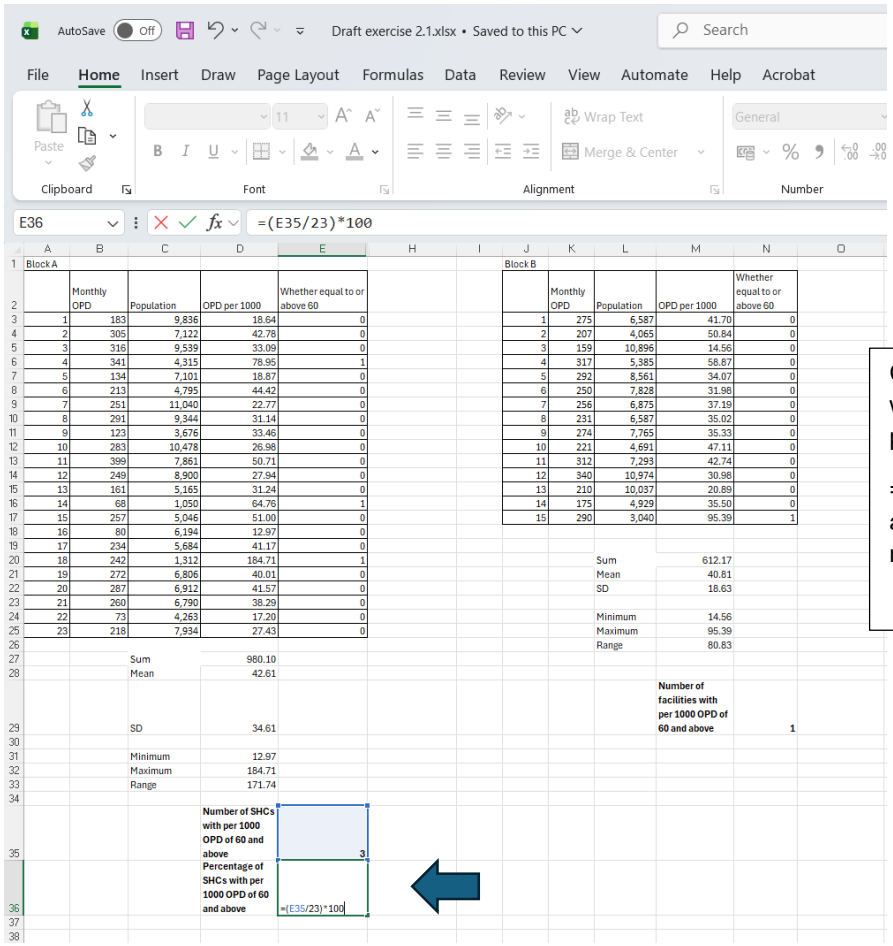
IF(A1>=60,1,0)



Count the 'number of SHCs with OPD of 60 and above per 1000 population' using COUNTIF formula

COUNTIF(range,1)

Step 6: Calculate the percentage of facilities with OPD of at least 60 per 1000 population



Calculate the 'Percentage of SHCs with OPD of 60 and above per 1000 population'

= number of SHCs with OPD of 60 and above per 1000 population/total number of SHCs

Present the findings in the table below:

Indicators	Block A	Block B
Average number of OPD per 1000 population at SHCs (SD)		
Range of OPD visits per 1000 population at SHCs		
Proportion of facilities with OPD of at least 60 per 1000 population		

Discussion questions:

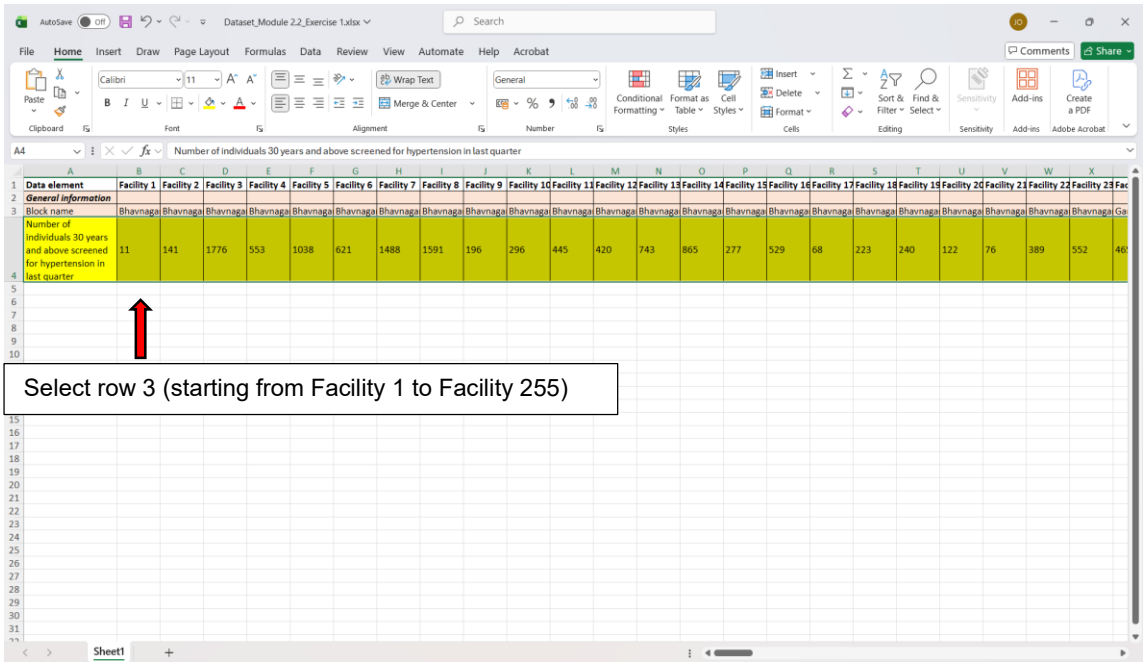
1. Is there a difference in the average number of OPD per 1000 population in these blocks?
2. What does the SD value indicate?
3. How is the variability in each block? Would you say the variability is high/low? Why? What could be some of the reasons?

Module 2.2

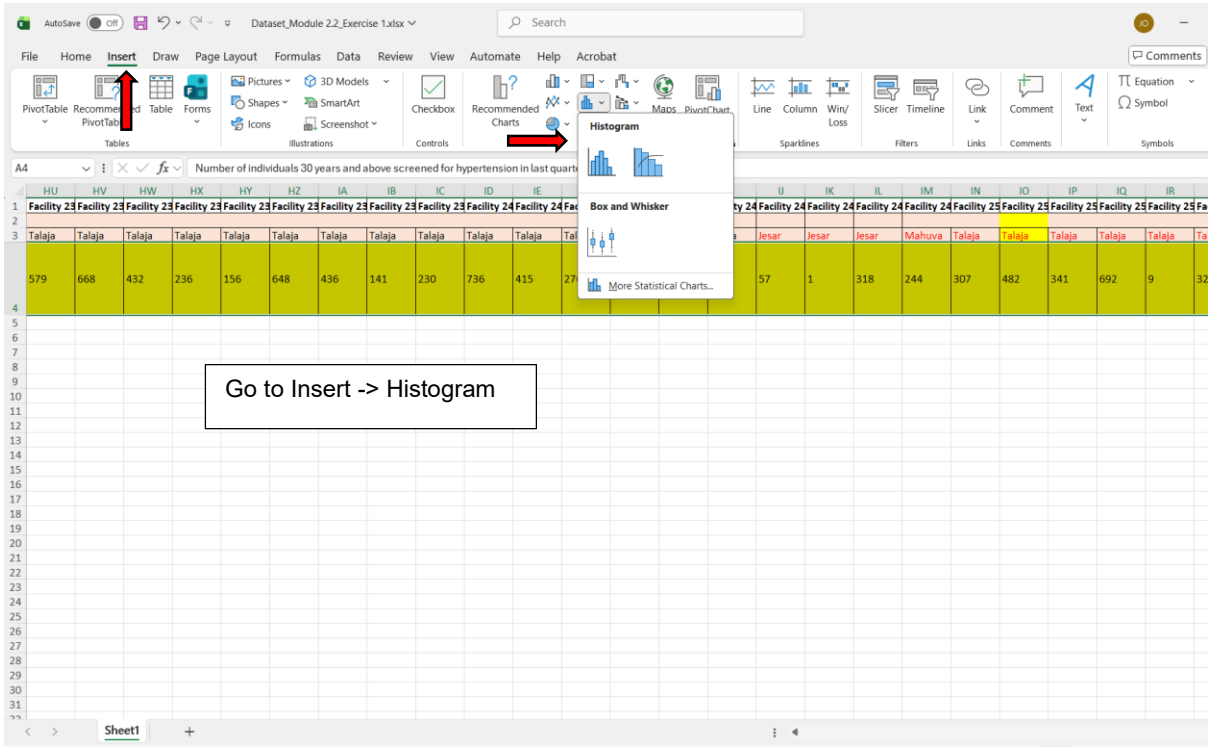
Exercise 1: Distributions - Constructing a Histogram

Goal: Analyse and visualize the distribution of individuals screened (30+ years) across health facilities.

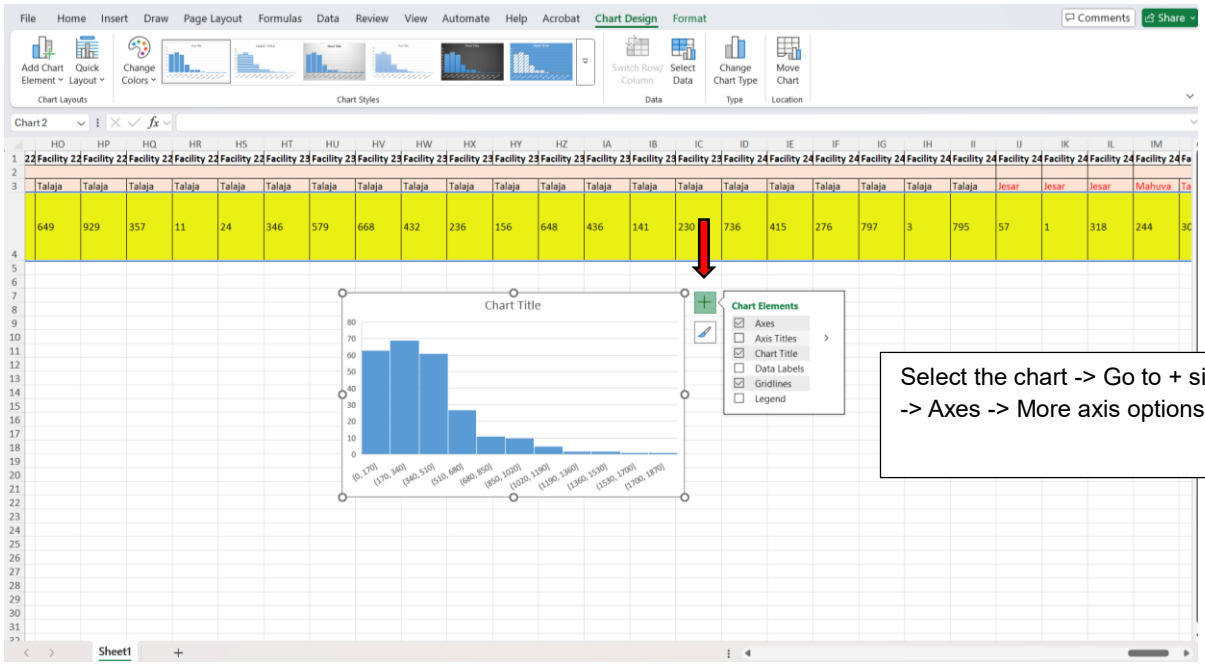
Step 1: Select your data

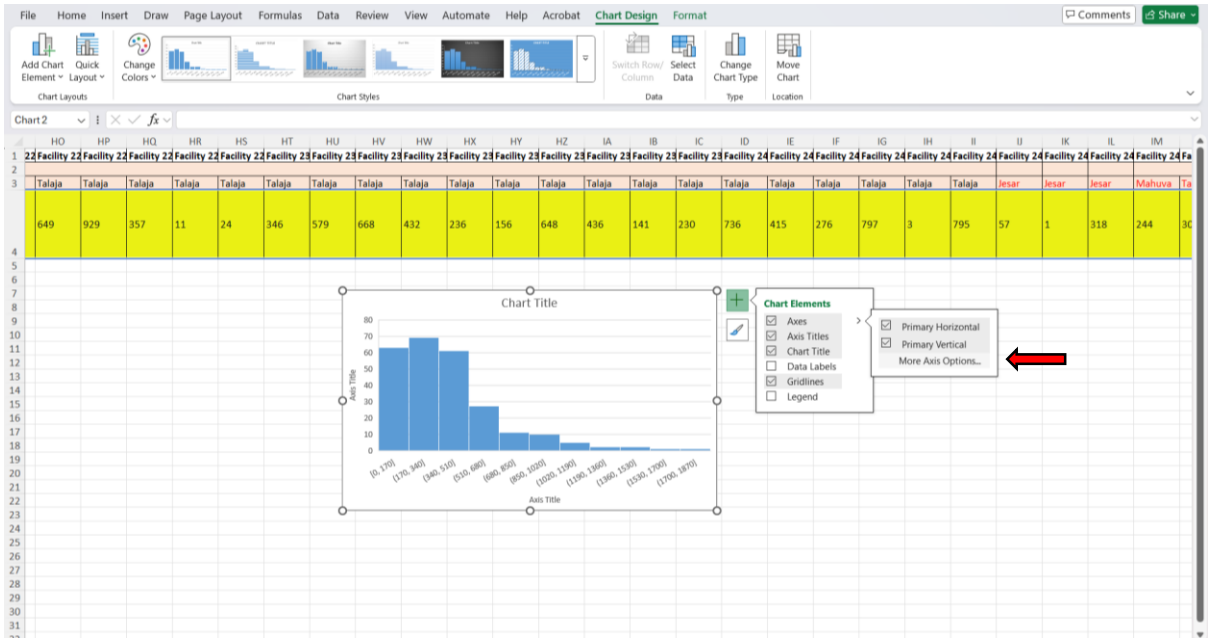


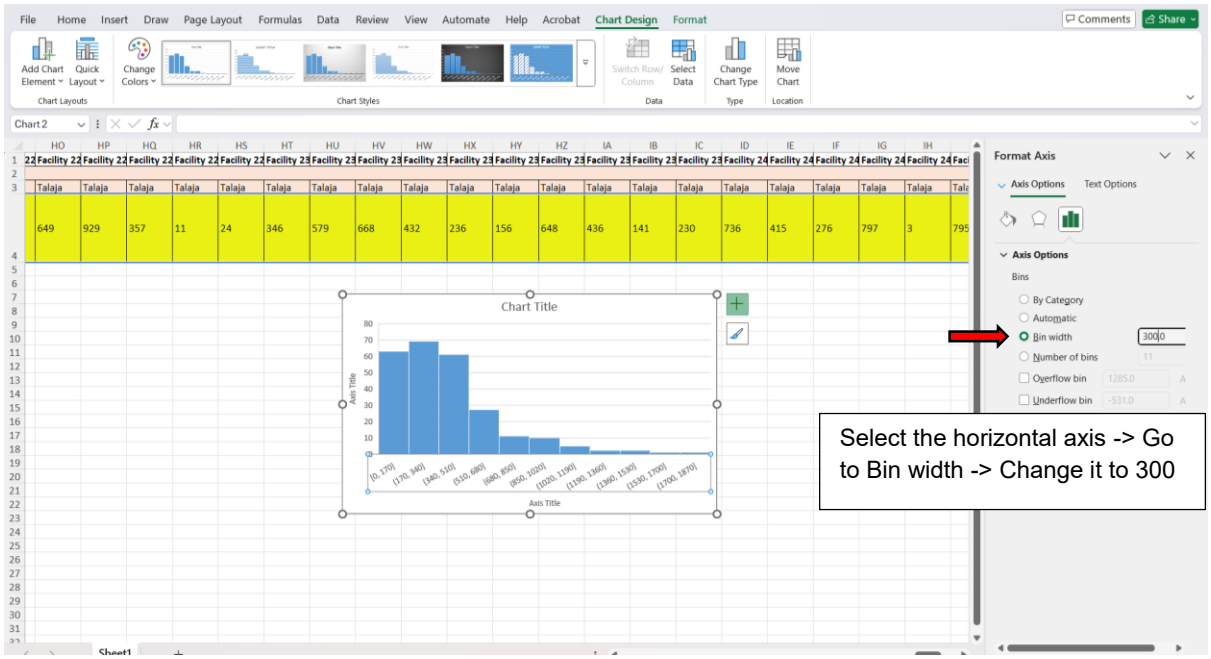
Step 2: Construct histogram



Step 3: Select class-intervals as per requirement







We selected 300 as the class interval, because maximum number is around 1800, so there will be six columns. Six columns will be presentable.

Step 4: Add chart title, and axis titles (using the chart elements function)

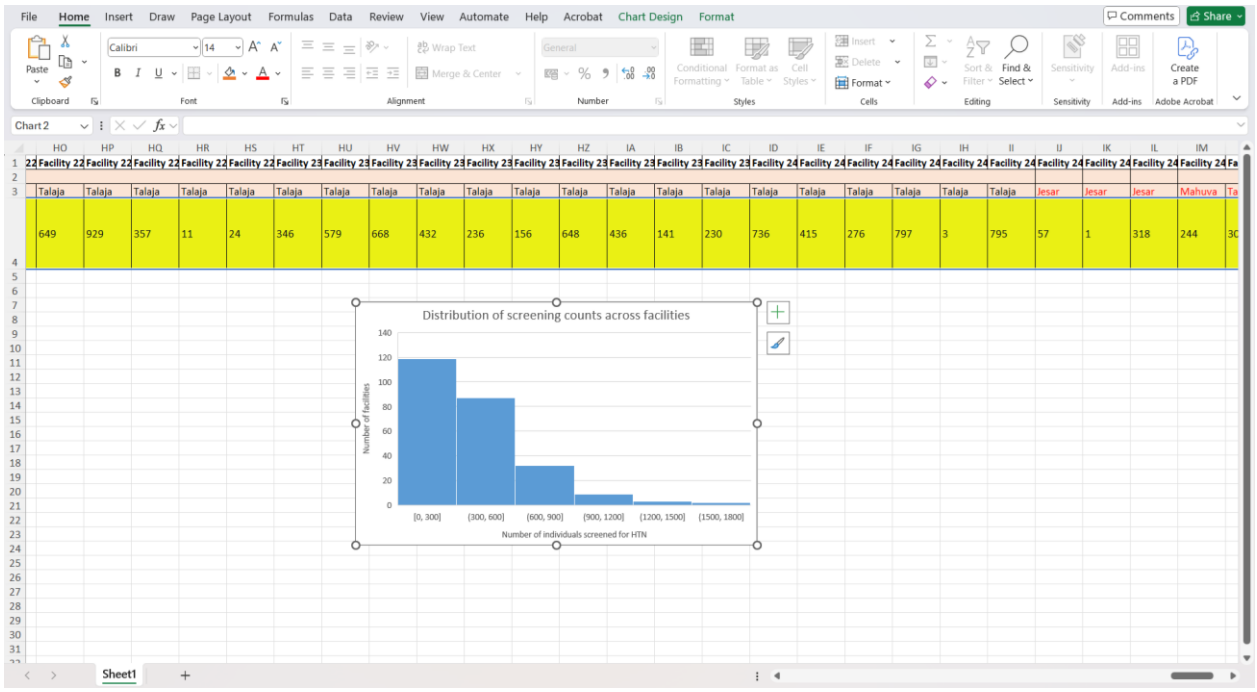


Chart title: Distribution of Screening Counts Across Facilities

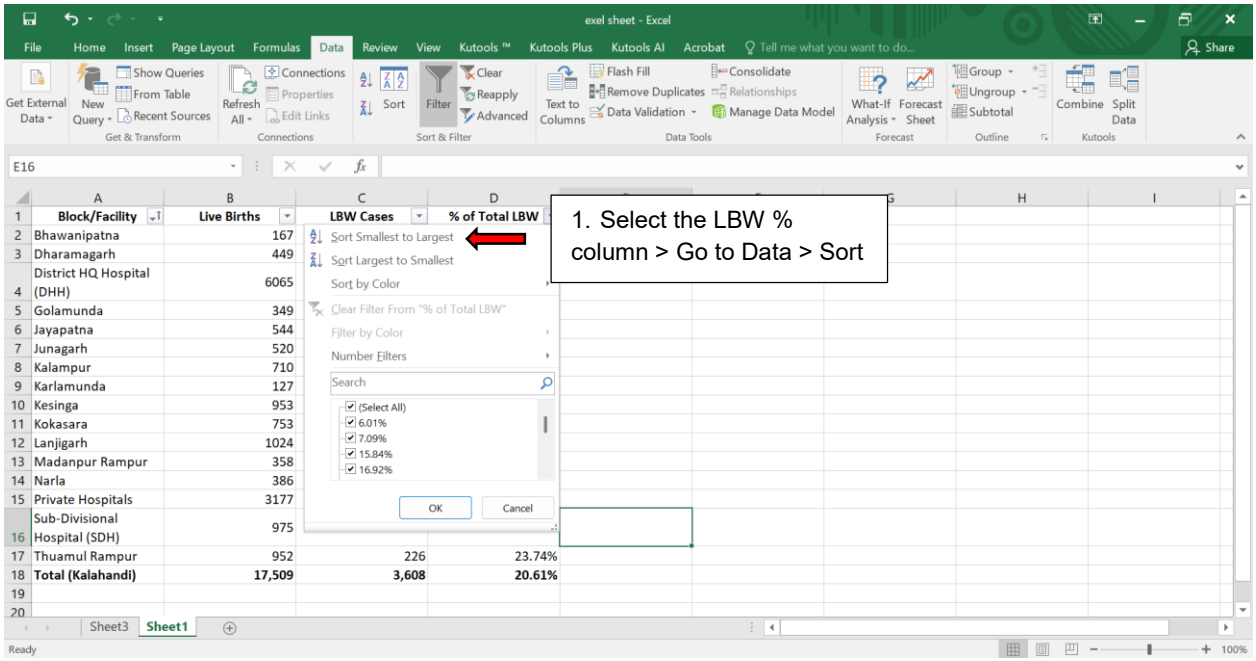
X-axis: Number of individuals screened for HTN

Y-axis: Number of facilities

Exercise 2: Distributions - Constructing a Box Plot

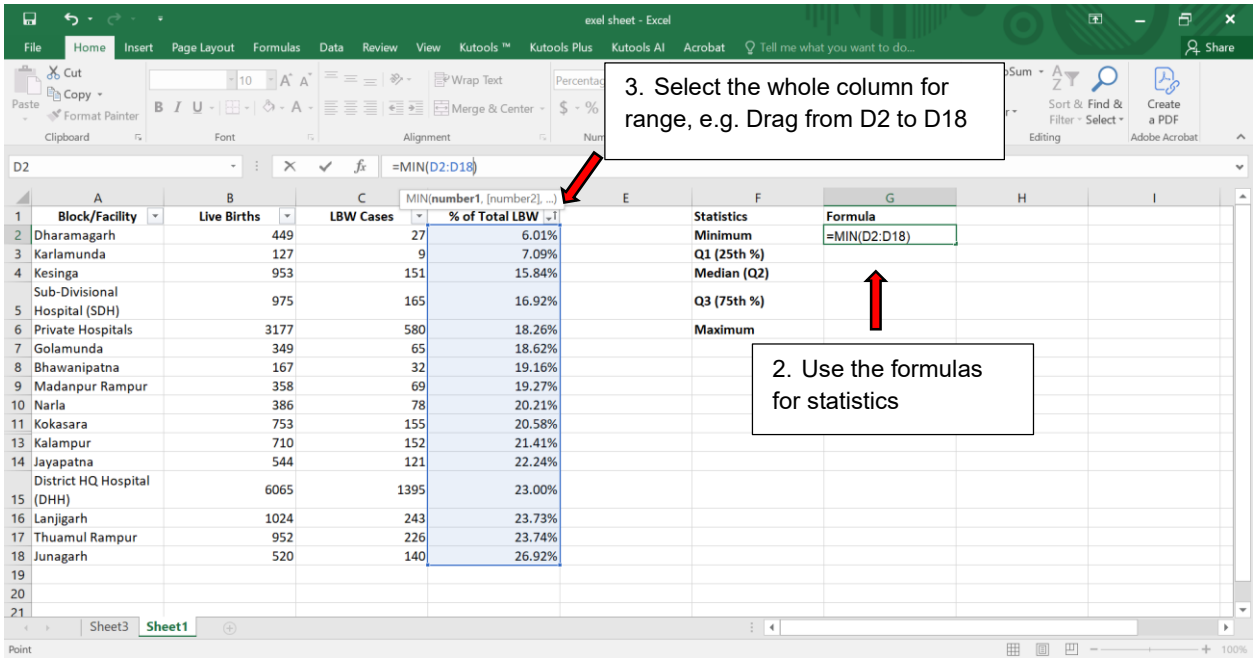
Exercise: Understanding LBW % Using Box Plot & Five-Number Summary

Step 1: Arrange LBW % Data in Ascending Order

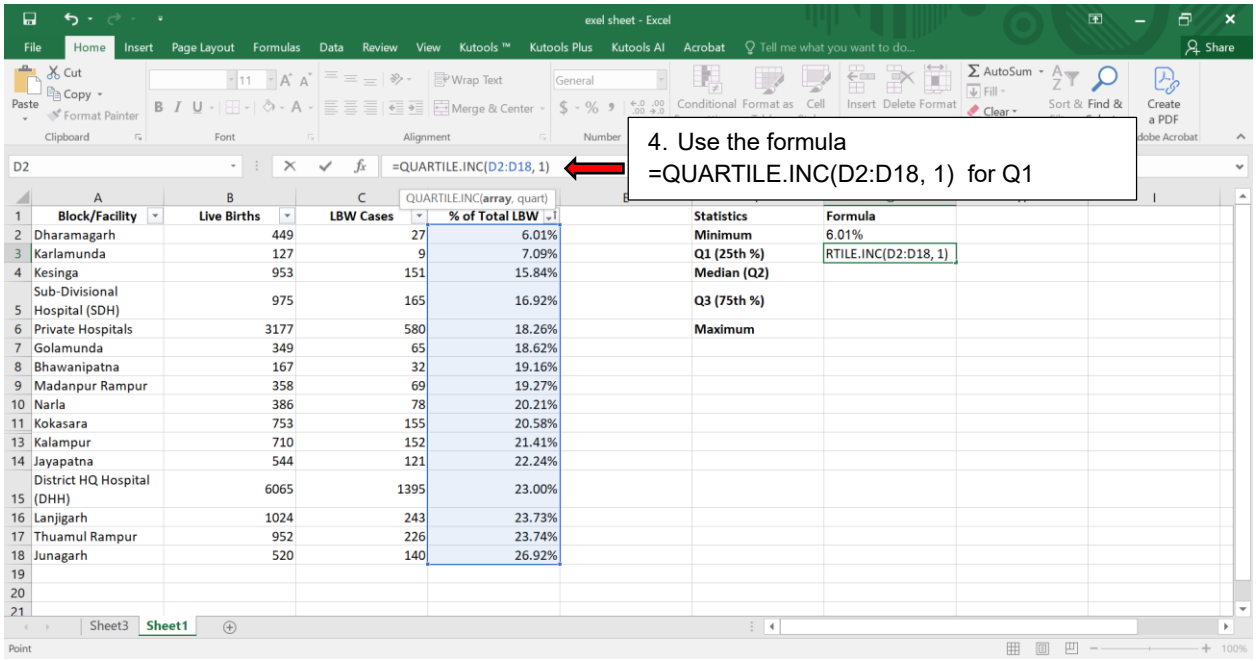


	Block/Facility	Live Births	LBW Cases	% of Total LBW
2	Bhawanipatna	167		
3	Dharamagarh	449		
4	District HQ Hospital (DHH)	6065		
5	Golamunda	349		
6	Jayapatna	544		
7	Junagarh	520		
8	Kalampur	710		
9	Karlamunda	127		
10	Kesinga	953		
11	Kokasara	753		
12	Lanjigarh	1024		
13	Madanpur Rampur	358		
14	Narla	386		
15	Private Hospitals	3177		
16	Sub-Divisional Hospital (SDH)	975		
17	Thuamul Rampur	952	226	23.74%
18	**Total (Kalahandi)**	**17,509**	**3,608**	**20.61%**

Step 2: Find the Five-Number Summary, Use Excel functions:



	Block/Facility	Live Births	LBW Cases	% of Total LBW	Statistics	Formula
2	Dharamagarh	449	27	6.01%	**Minimum**	=MIN(D2:D18)
3	Karlamunda	127	9	7.09%	**Q1 (25th %)**	
4	Kesinga	953	151	15.84%	**Median (Q2)**	
5	Sub-Divisional Hospital (SDH)	975	165	16.92%	**Q3 (75th %)**	
6	Private Hospitals	3177	580	18.26%	**Maximum**	
7	Golamunda	349	65	18.62%		
8	Bhawanipatna	167	32	19.16%		
9	Madanpur Rampur	358	69	19.27%		
10	Narla	386	78	20.21%		
11	Kokasara	753	155	20.58%		
13	Kalampur	710	152	21.41%		
14	Jayapatna	544	121	22.24%		
15	District HQ Hospital (DHH)	6065	1395	23.00%		
16	Lanjigarh	1024	243	23.73%		
17	Thuamul Rampur	952	226	23.74%		
18	Junagarh	520	140	26.92%		



	A	B	C	D	F	G
1	Block/Facility	Live Births	LBW Cases	% of Total LBW	Statistics	Formula
2	Dharamagarh	449	27	6.01%	Minimum	6.01%
3	Karlamunda	127	9	7.09%	Q1 (25th %)	RTILE.INC(D2:D18, 1)
4	Kesinga	953	151	15.84%	Median (Q2)	
5	Sub-Divisional Hospital (SDH)	975	165	16.92%	Q3 (75th %)	
6	Private Hospitals	3177	580	18.26%	Maximum	
7	Golamunda	349	65	18.62%		
8	Bhawanipatna	167	32	19.16%		
9	Madanpur Rampur	358	69	19.27%		
10	Narla	386	78	20.21%		
11	Kokasara	753	155	20.58%		
13	Kalampur	710	152	21.41%		
14	Jayapatna	544	121	22.24%		
15	District HQ Hospital (DHH)	6065	1395	23.00%		
16	Lanjigarh	1024	243	23.73%		
17	Thuamul Rampur	952	226	23.74%		
18	Junagarh	520	140	26.92%		
19						
20						
21						

Statistic Formula

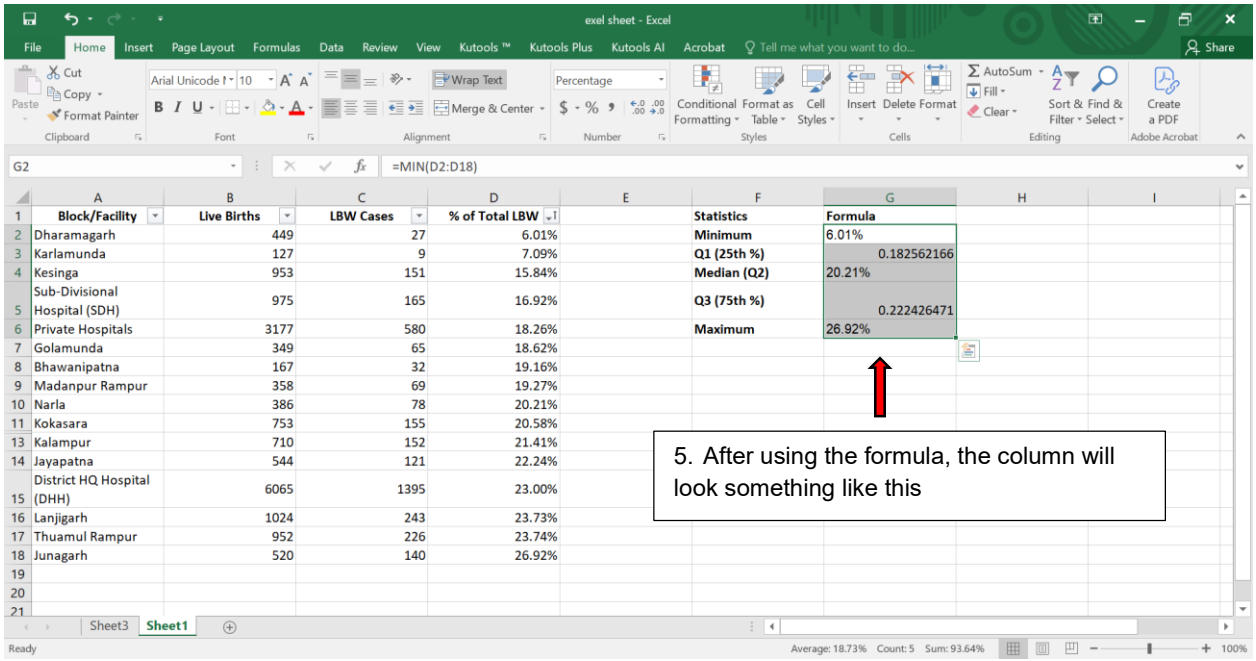
Minimum =MIN(range)

Q1 (25th %) =QUARTILE.INC(range, 1)

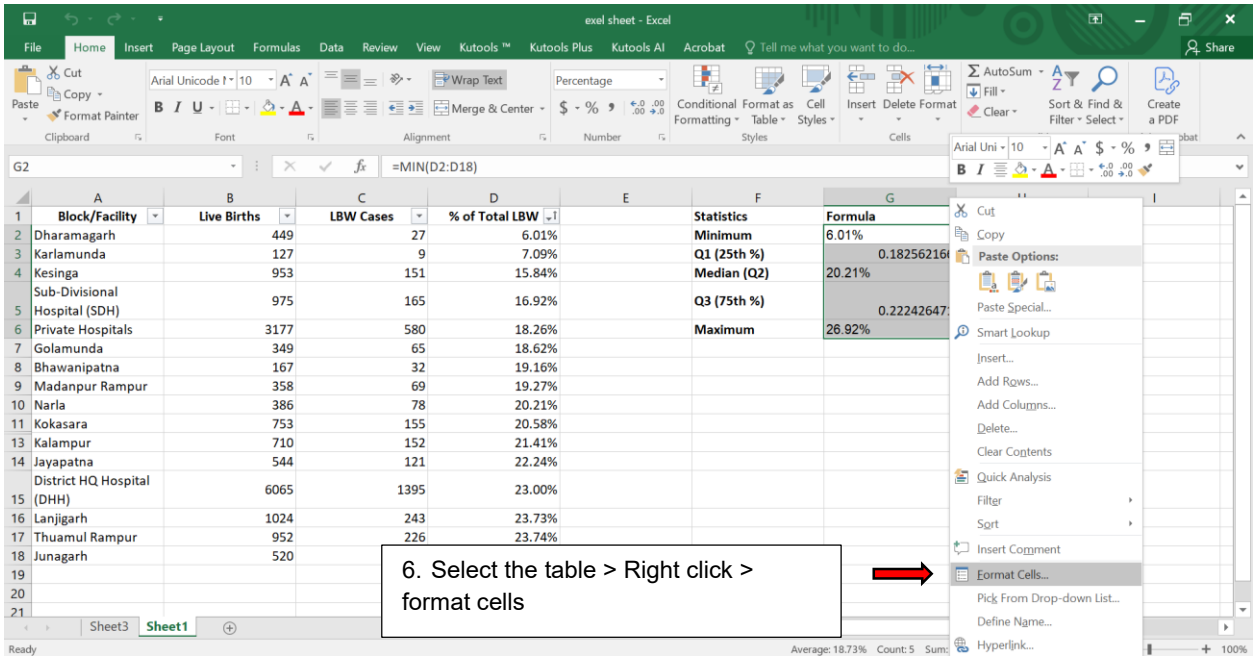
Median (Q2) =QUARTILE.INC(range, 2) or =MEDIAN()

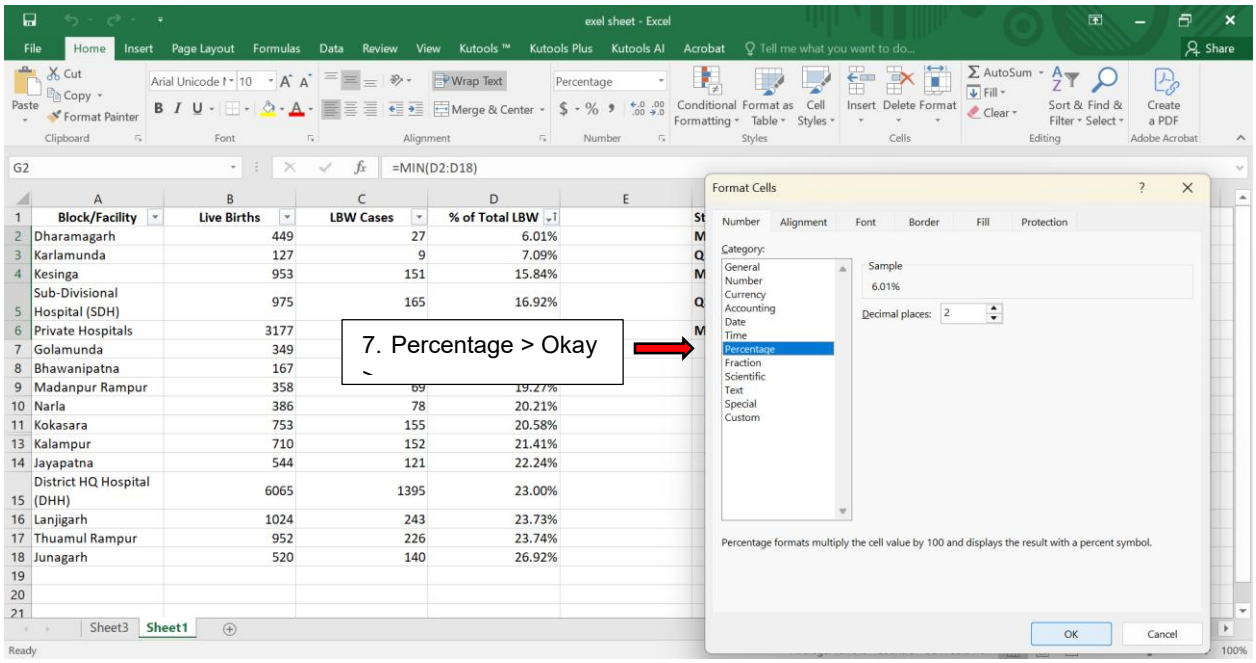
Q3 (75th %) =QUARTILE.INC(range, 3)

Maximum =MAX(range)

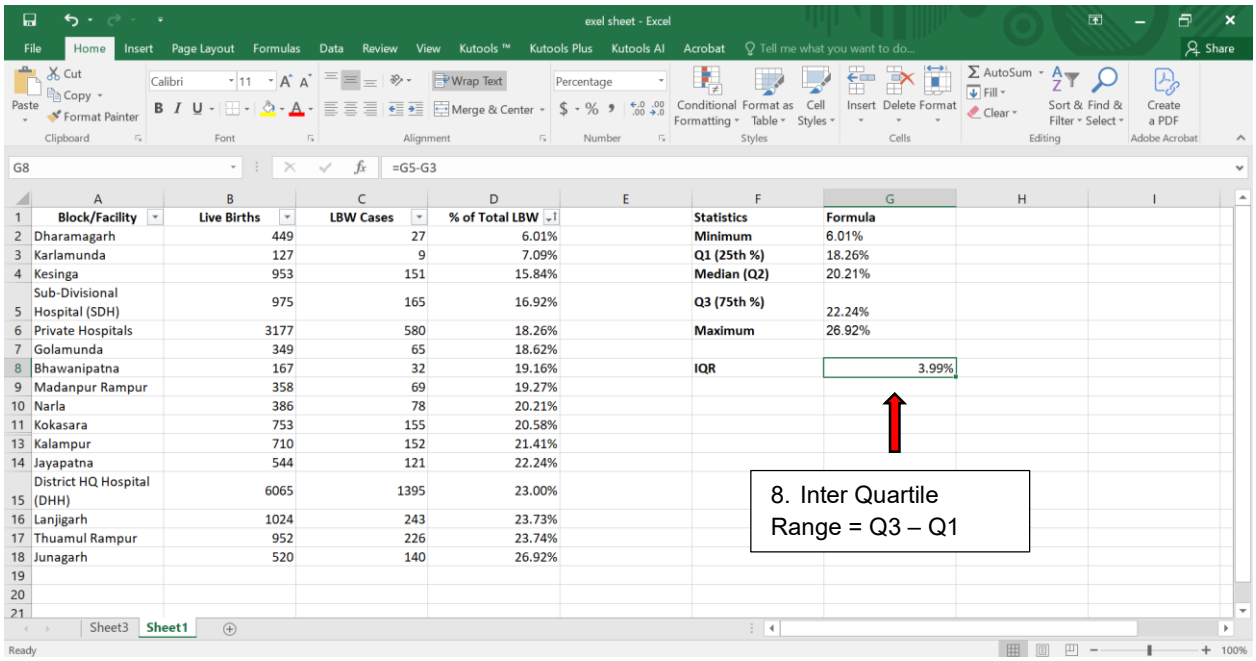


	A	B	C	D	F	G
1	Block/Facility	Live Births	LBW Cases	% of Total LBW	Statistics	Formula
2	Dharamagarh	449	27	6.01%	Minimum	6.01%
3	Karlamunda	127	9	7.09%	Q1 (25th %)	0.182562166
4	Kesinga	953	151	15.84%	Median (Q2)	20.21%
5	Sub-Divisional Hospital (SDH)	975	165	16.92%	Q3 (75th %)	0.222426471
6	Private Hospitals	3177	580	18.26%	Maximum	26.92%
7	Golamunda	349	65	18.62%		
8	Bhawanipatna	167	32	19.16%		
9	Madanpur Rampur	358	69	19.27%		
10	Narla	386	78	20.21%		
11	Kokasara	753	155	20.58%		
13	Kalampur	710	152	21.41%		
14	Jayapatna	544	121	22.24%		
15	District HQ Hospital (DHH)	6065	1395	23.00%		
16	Lanjigarh	1024	243	23.73%		
17	Thuamul Rampur	952	226	23.74%		
18	Junagarh	520	140	26.92%		
19						
20						
21						


exel sheet - Excel
6. Select the table > Right click > format cells
Format Cells...

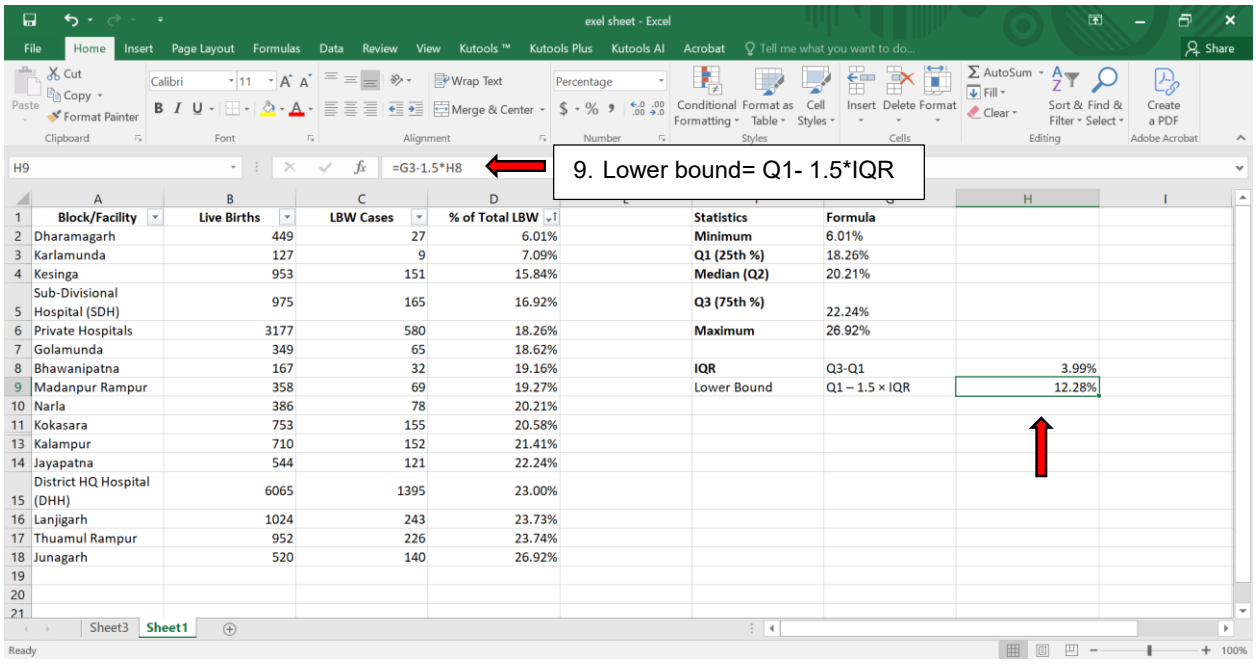

exel sheet - Excel
7. Percentage > Okay
Format Cells
Percentage
OK
Cancel

Step 3: Calculate the IQR (Interquartile Range)

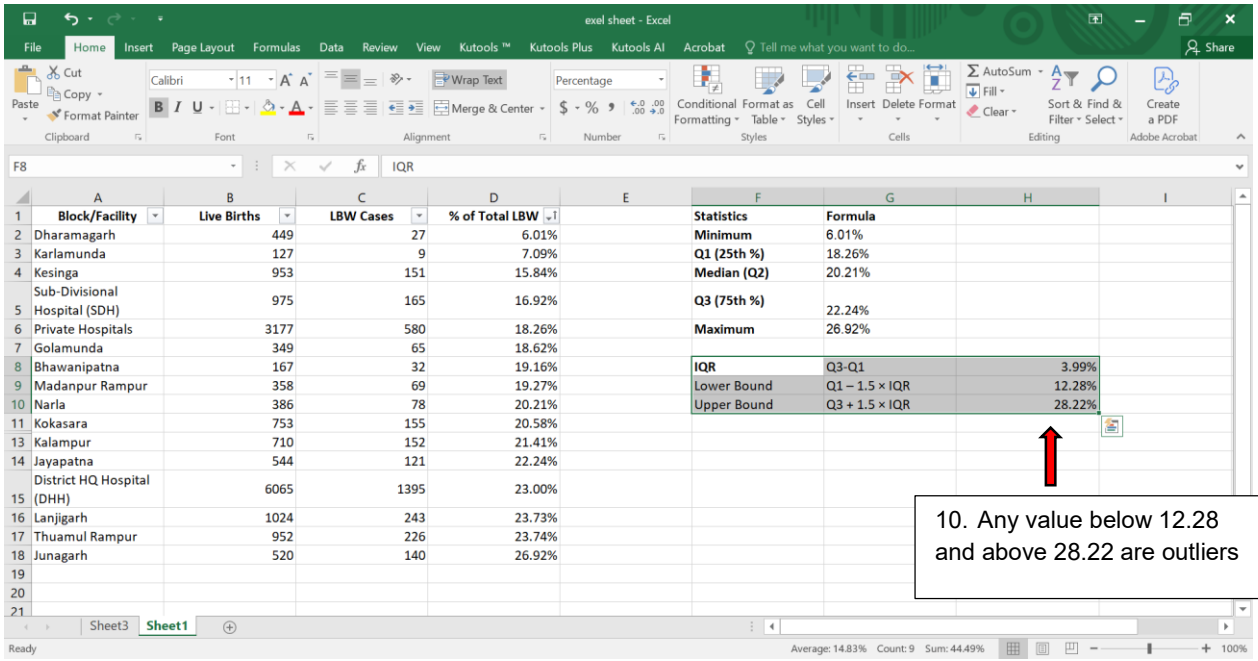


	A	B	C	D	E	F	G	H	I
1	Block/Facility	Live Births	LBW Cases	% of Total LBW		Statistics	Formula		
2	Dharamagarh	449	27	6.01%		Minimum	6.01%		
3	Karlamunda	127	9	7.09%		Q1 (25th %)	18.26%		
4	Kesinga	953	151	15.84%		Median (Q2)	20.21%		
5	Sub-Divisional Hospital (SDH)	975	165	16.92%		Q3 (75th %)	22.24%		
6	Private Hospitals	3177	580	18.26%		Maximum	26.92%		
7	Golamunda	349	65	18.62%					
8	Bhawanipatna	167	32	19.16%		IQR	3.99%		
9	Madanpur Rampur	358	69	19.27%					
10	Narla	386	78	20.21%					
11	Kokasara	753	155	20.58%					
13	Kalampur	710	152	21.41%					
14	Jayapatna	544	121	22.24%					
15	District HQ Hospital (DHH)	6065	1395	23.00%					
16	Lanjigarh	1024	243	23.73%					
17	Thuamul Rampur	952	226	23.74%					
18	Junagarh	520	140	26.92%					
19									
20									
21									

Step 4: Determine Outliers, Use the 1.5×IQR rule:

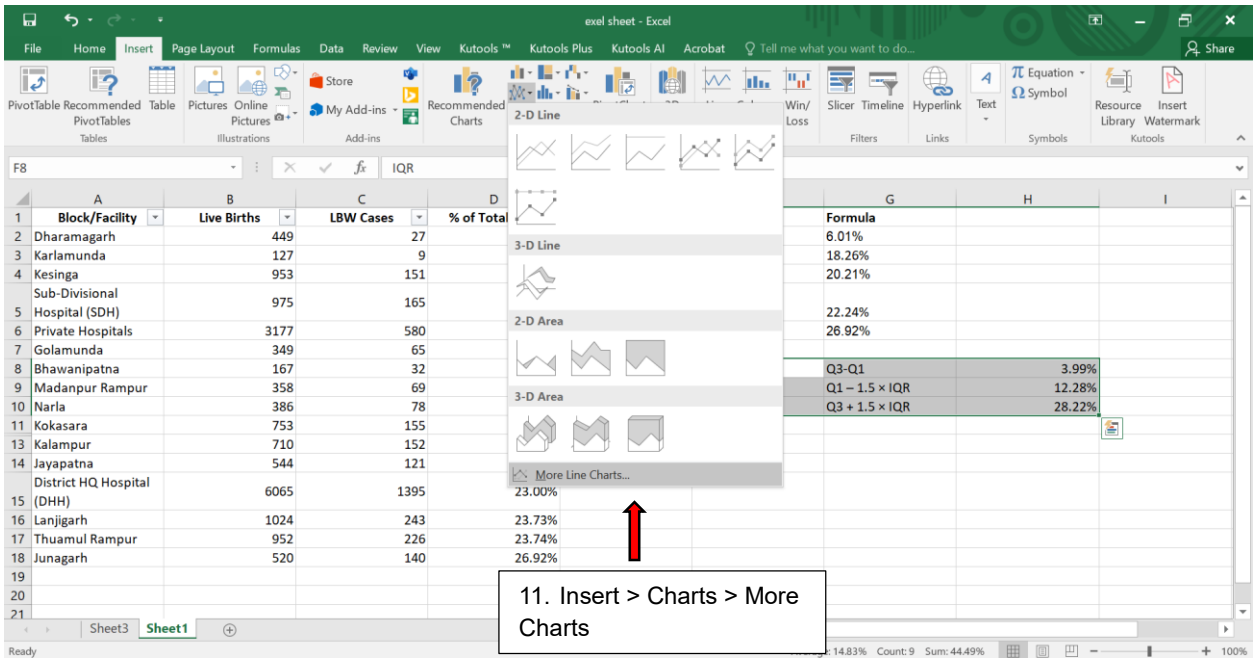


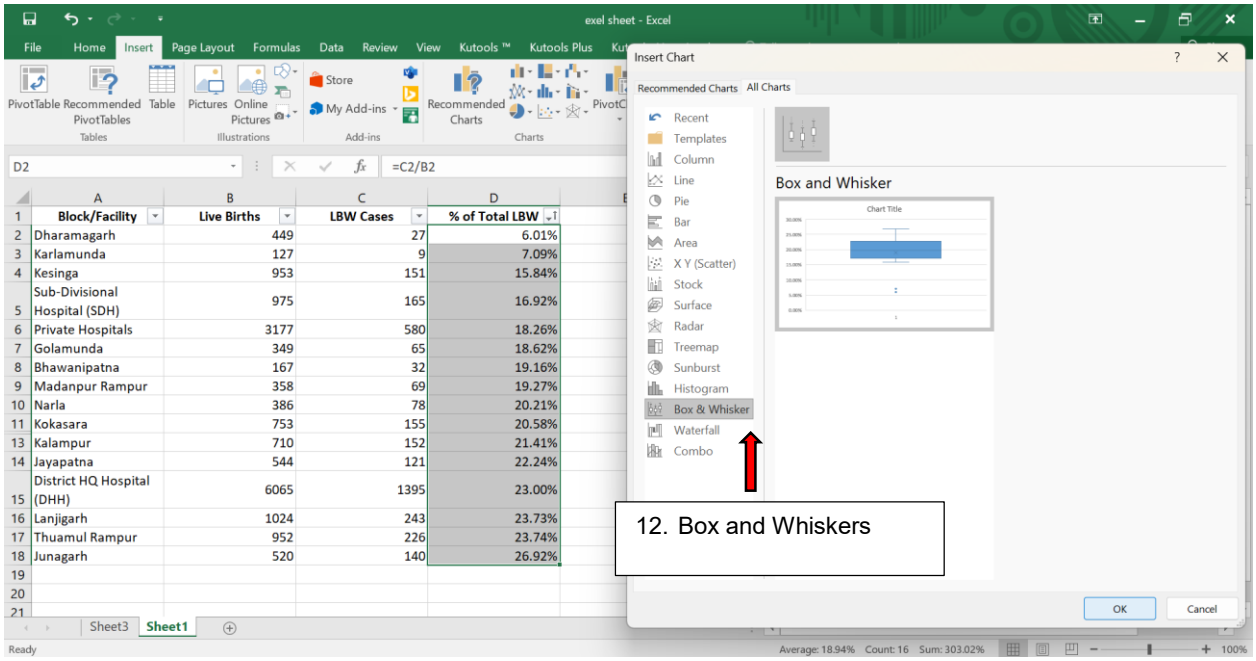
	A	B	C	D	E	F	G	H	I
1	Block/Facility	Live Births	LBW Cases	% of Total LBW		Statistics	Formula		
2	Dharamagarh	449	27	6.01%		Minimum	6.01%		
3	Karlamunda	127	9	7.09%		Q1 (25th %)	18.26%		
4	Kesinga	953	151	15.84%		Median (Q2)	20.21%		
5	Sub-Divisional Hospital (SDH)	975	165	16.92%		Q3 (75th %)	22.24%		
6	Private Hospitals	3177	580	18.26%		Maximum	26.92%		
7	Golamunda	349	65	18.62%					
8	Bhawanipatna	167	32	19.16%		IQR	Q3-Q1	3.99%	
9	Madanpur Rampur	358	69	19.27%		Lower Bound	Q1 – 1.5 × IQR	12.28%	
10	Narla	386	78	20.21%					
11	Kokasara	753	155	20.58%					
13	Kalampur	710	152	21.41%					
14	Jayapatna	544	121	22.24%					
15	District HQ Hospital (DHH)	6065	1395	23.00%					
16	Lanjigarh	1024	243	23.73%					
17	Thuamul Rampur	952	226	23.74%					
18	Junagarh	520	140	26.92%					
19									
20									
21									



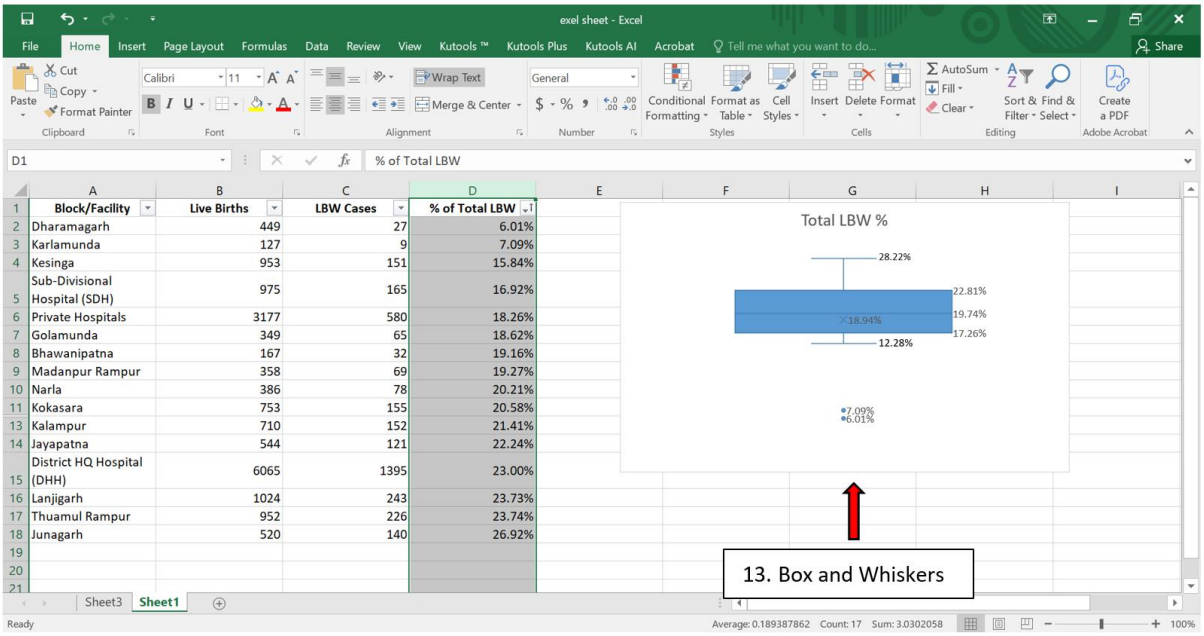
Block/Facility	Live Births	LBW Cases	% of Total LBW
Dharamagarh	449	27	6.01%
Karlamunda	127	9	7.09%
Kesinga	953	151	15.84%
Sub-Divisional Hospital (SDH)	975	165	16.92%
Private Hospitals	3177	580	18.26%
Golamunda	349	65	18.62%
Bhawanipatna	167	32	19.16%
Madanpur Rampur	358	69	19.27%
Narla	386	78	20.21%
Kokasara	753	155	20.58%
Kalampur	710	152	21.41%
Jayapatna	544	121	22.24%
District HQ Hospital (DHH)	6065	1395	23.00%
Lanjigarh	1024	243	23.73%
Thuamul Rampur	952	226	23.74%
Junagarh	520	140	26.92%

Step 5: Draw a Box Plot





	Block/Facility	Live Births	LBW Cases	% of Total LBW
2	Dharamagarh	449	27	6.01%
3	Karlamunda	127	9	7.09%
4	Kesinga	953	151	15.84%
5	Sub-Divisional Hospital (SDH)	975	165	16.92%
6	Private Hospitals	3177	580	18.26%
7	Golamunda	349	65	18.62%
8	Bhawanipatna	167	32	19.16%
9	Madanpur Rampur	358	69	19.27%
10	Narla	386	78	20.21%
11	Kokasara	753	155	20.58%
13	Kalampur	710	152	21.41%
14	Jayapatna	544	121	22.24%
15	District HQ Hospital (DHH)	6065	1395	23.00%
16	Lanjigarh	1024	243	23.73%
17	Thuamul Rampur	952	226	23.74%
18	Junagarh	520	140	26.92%

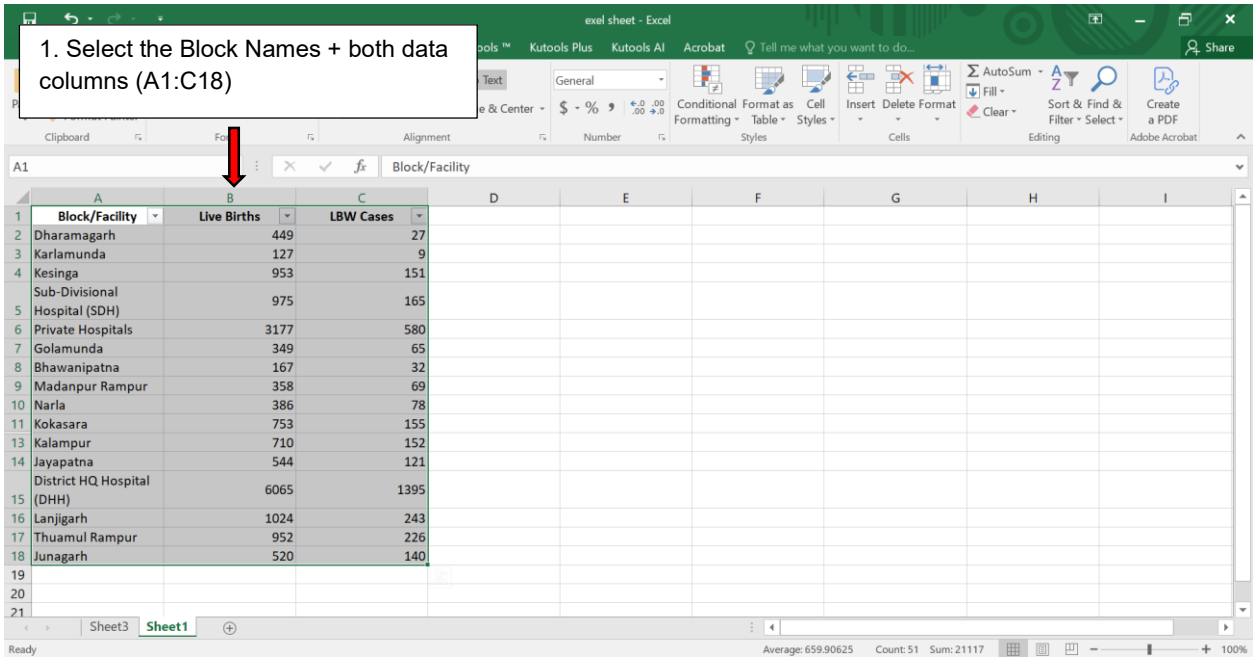


	Block/Facility	Live Births	LBW Cases	% of Total LBW
2	Dharamagarh	449	27	6.01%
3	Karlamunda	127	9	7.09%
4	Kesinga	953	151	15.84%
5	Sub-Divisional Hospital (SDH)	975	165	16.92%
6	Private Hospitals	3177	580	18.26%
7	Golamunda	349	65	18.62%
8	Bhawanipatna	167	32	19.16%
9	Madanpur Rampur	358	69	19.27%
10	Narla	386	78	20.21%
11	Kokasara	753	155	20.58%
13	Kalampur	710	152	21.41%
14	Jayapatna	544	121	22.24%
15	District HQ Hospital (DHH)	6065	1395	23.00%
16	Lanjigarh	1024	243	23.73%
17	Thuamul Rampur	952	226	23.74%
18	Junagarh	520	140	26.92%

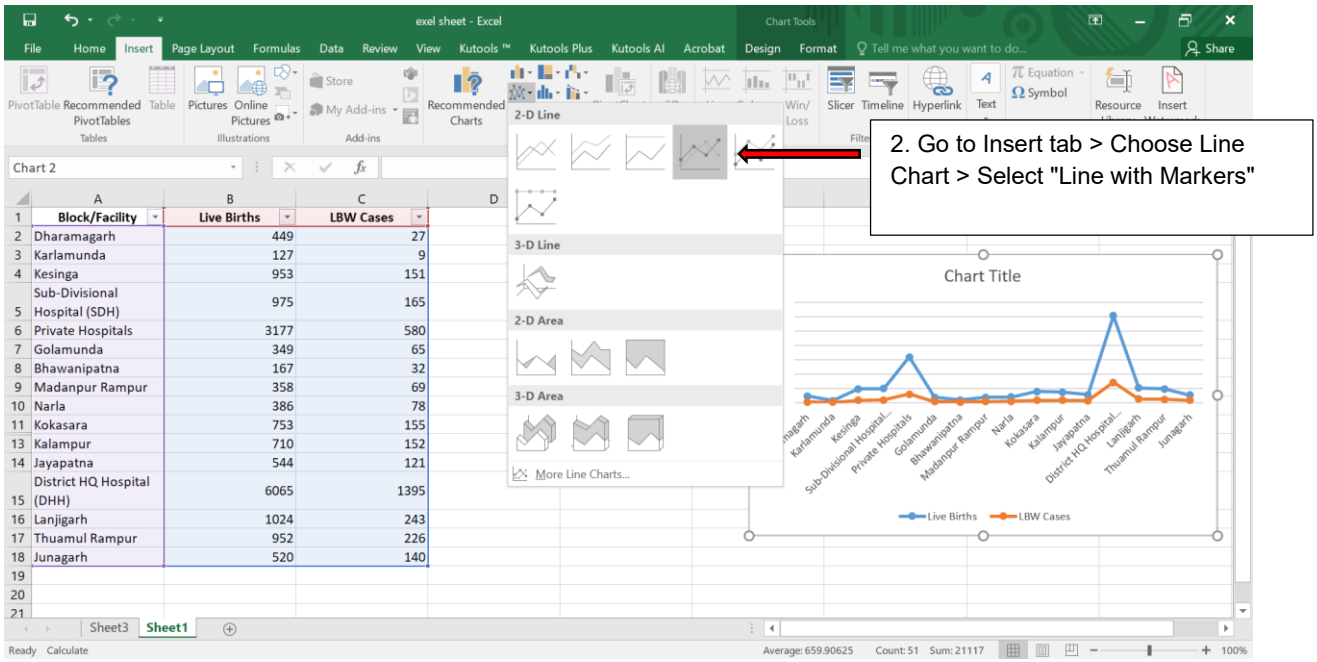
Exercise 3: Line Graph

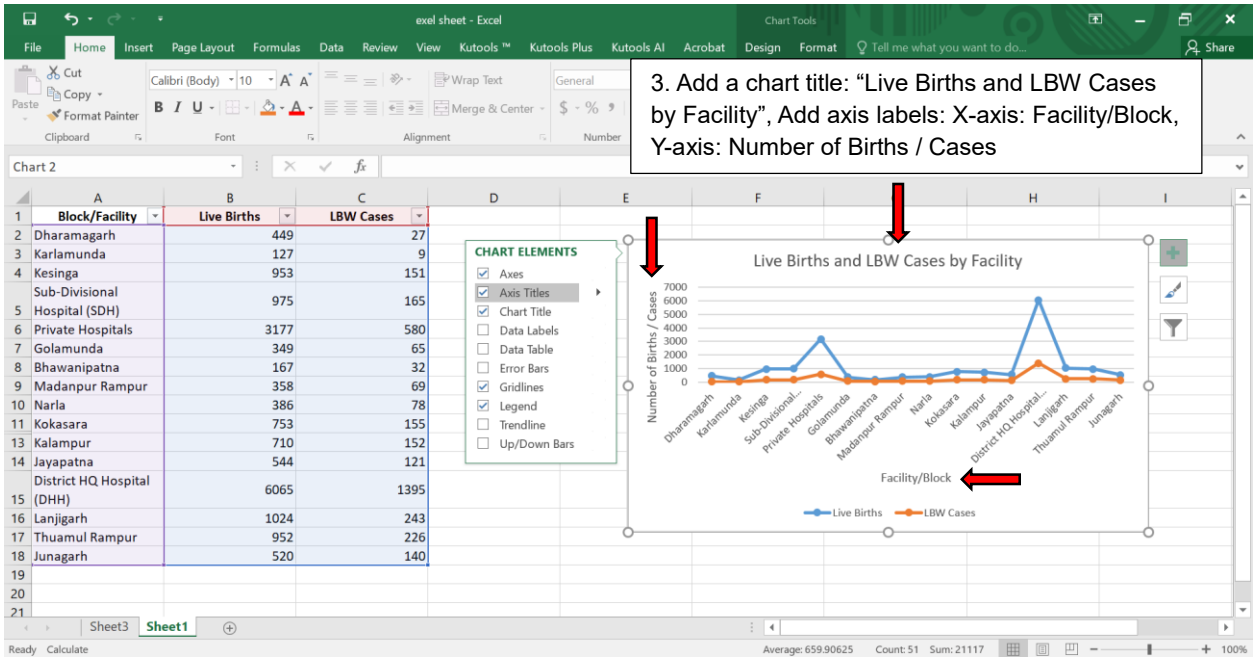
Total Births vs LBW Cases by Block

Step 1: Insert a Line Chart



Block/Facility	Live Births	LBW Cases
Dharamagarh	449	27
Karlamunda	127	9
Kesinga	953	151
Sub-Divisional Hospital (SDH)	975	165
Private Hospitals	3177	580
Golamunda	349	65
Bhawanipatna	167	32
Madanpur Rampur	358	69
Narla	386	78
Kokasara	753	155
Kalampur	710	152
Jayapatna	544	121
District HQ Hospital (DHH)	6065	1395
Lanjigarh	1024	243
Thuamul Rampur	952	226
Junagarh	520	140





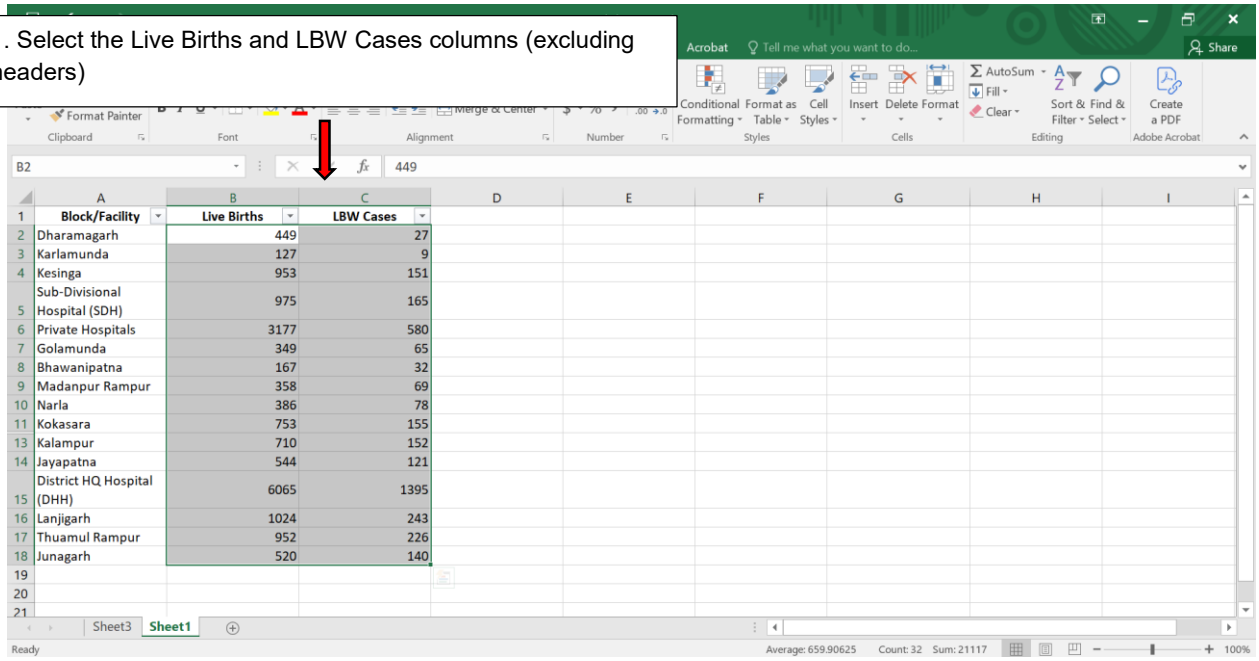
Block/Facility	Live Births	LBW Cases
Dharamagarh	449	27
Karlamunda	127	9
Kesinga	953	151
Sub-Divisional Hospital (SDH)	975	165
Private Hospitals	3177	580
Golamunda	349	65
Bhawanipatna	167	32
Madanpur Rampur	358	69
Narla	386	78
Kokasara	753	155
Kalampur	710	152
Jayapatna	544	121
District HQ Hospital (DHH)	6065	1395
Lanjigarh	1024	243
Thuamul Rampur	952	226
Junagarh	520	140

Exercise 4: Scatter Plot

Live Births vs. LBW Cases

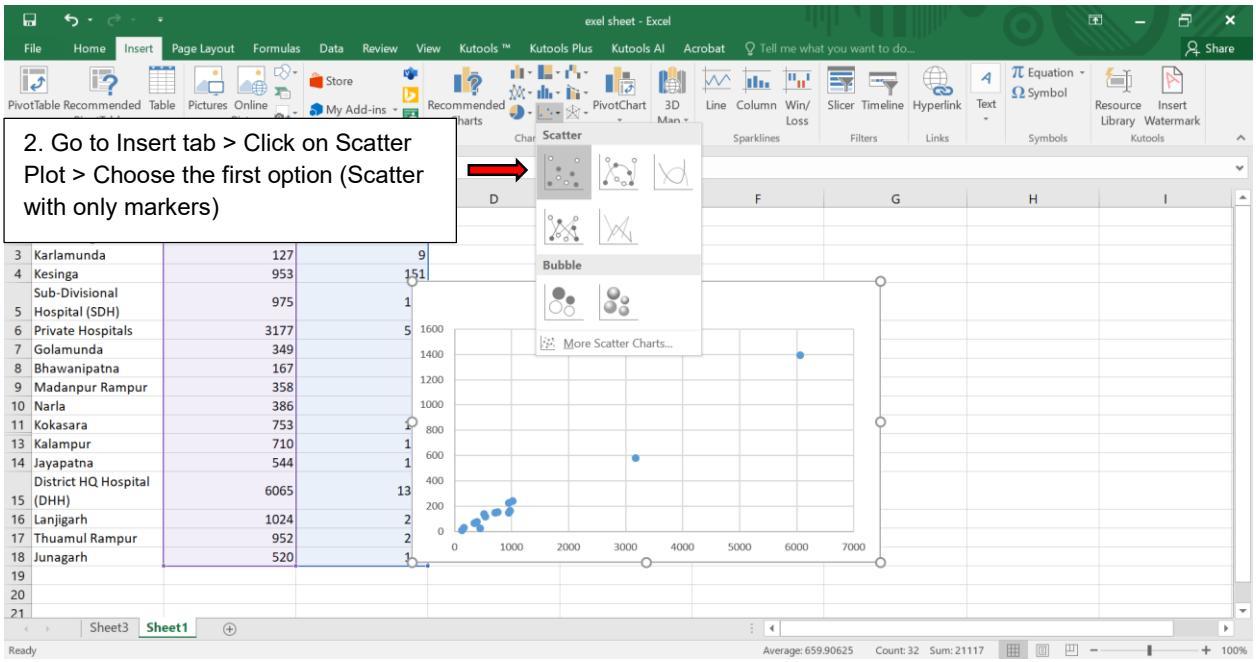
Step 1: Prepare the Data Table

1. Select the Live Births and LBW Cases columns (excluding headers)

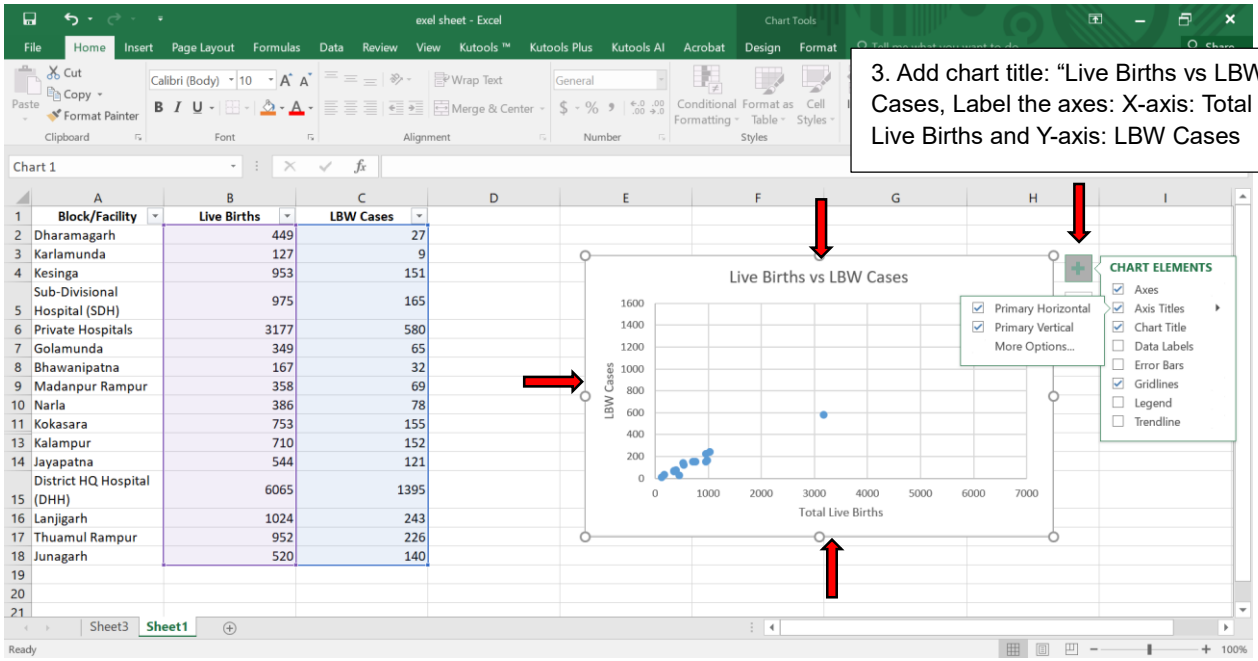


	Block/Facility	Live Births	LBW Cases
2	Dharamagarh	449	27
3	Karlamunda	127	9
4	Kesinga	953	151
5	Sub-Divisional Hospital (SDH)	975	165
6	Private Hospitals	3177	580
7	Golamunda	349	65
8	Bhawanipatna	167	32
9	Madanpur Rampur	358	69
10	Narla	386	78
11	Kokasara	753	155
13	Kalampur	710	152
14	Jayapatna	544	121
15	District HQ Hospital (DHH)	6065	1395
16	Lanjigarh	1024	243
17	Thuamul Rampur	952	226
18	Junagarh	520	140

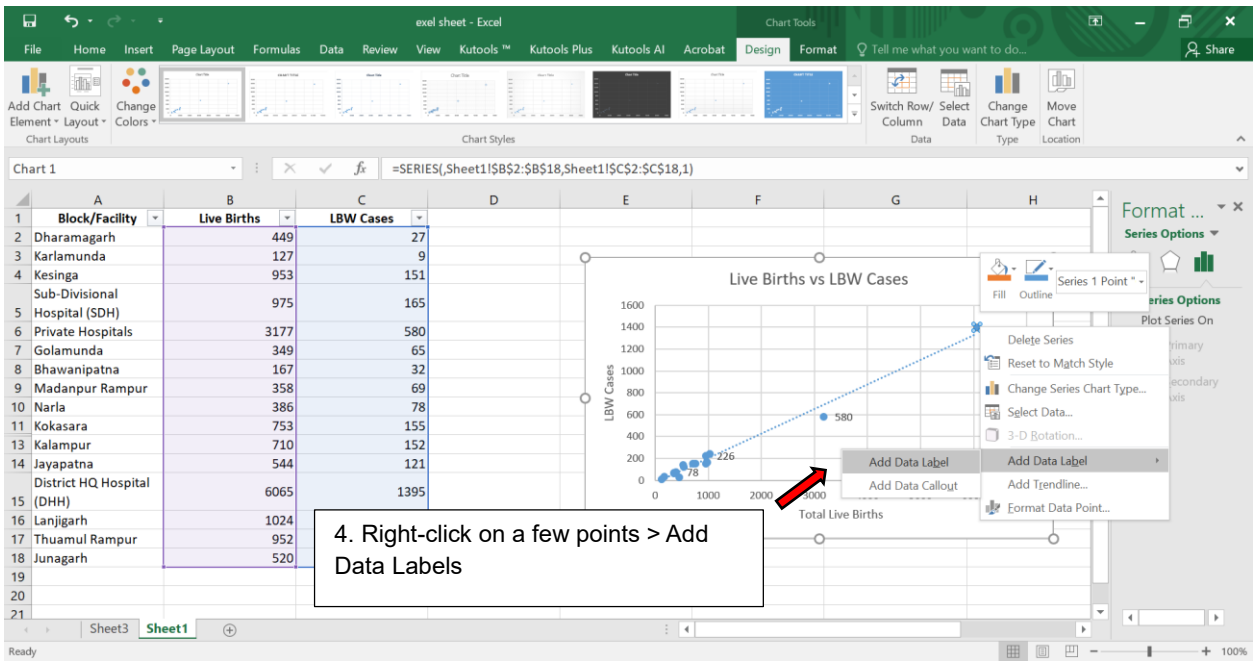
2. Go to Insert tab > Click on Scatter Plot > Choose the first option (Scatter with only markers)



Step 2: Format the Plot



Block/Facility	Live Births	LBW Cases
Dharamagarh	449	27
Karlamunda	127	9
Kesinga	953	151
Sub-Divisional Hospital (SDH)	975	165
Private Hospitals	3177	580
Golamunda	349	65
Bhawanipatna	167	32
Madanpur Rampur	358	69
Narla	386	78
Kokasara	753	155
Kalampur	710	152
Jayapatna	544	121
District HQ Hospital (DHH)	6065	1395
Lanjigarh	1024	243
Thuamul Rampur	952	226
Junagarh	520	140



Learning Outcome

By completing this exercise, participants will:

- Understand how to compare related indicators side-by-side
- Learn how to use multi-line graphs to detect patterns
- Generate insight for targeted improvement efforts

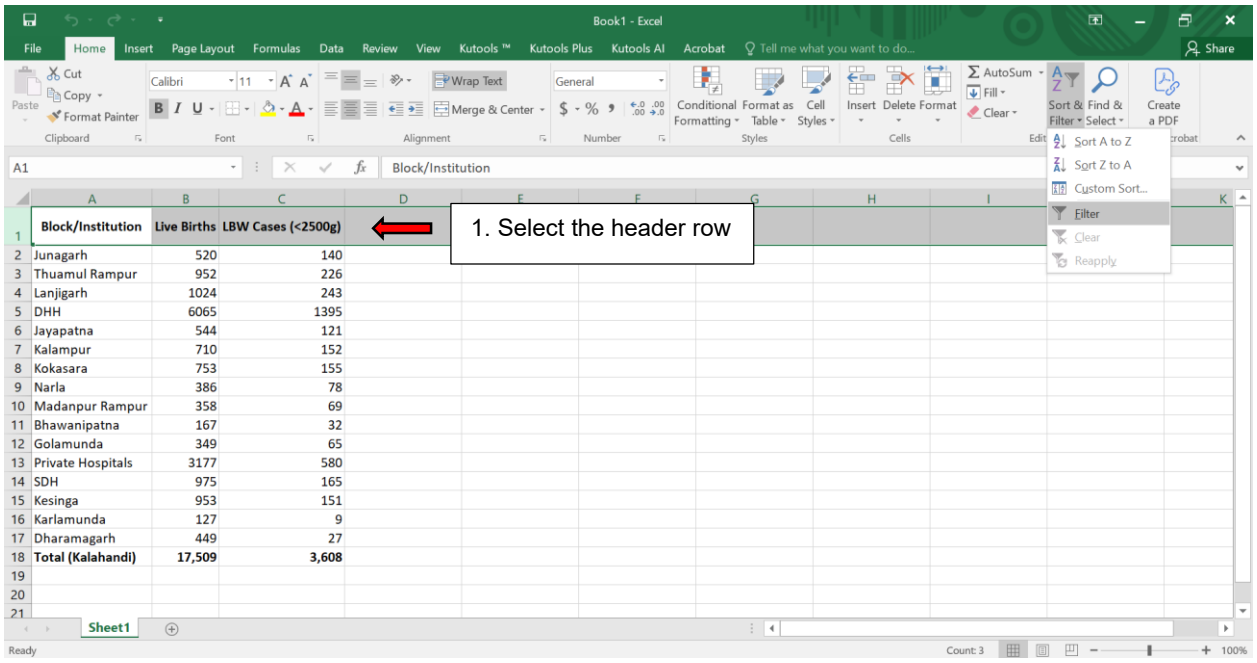
Module 2.3

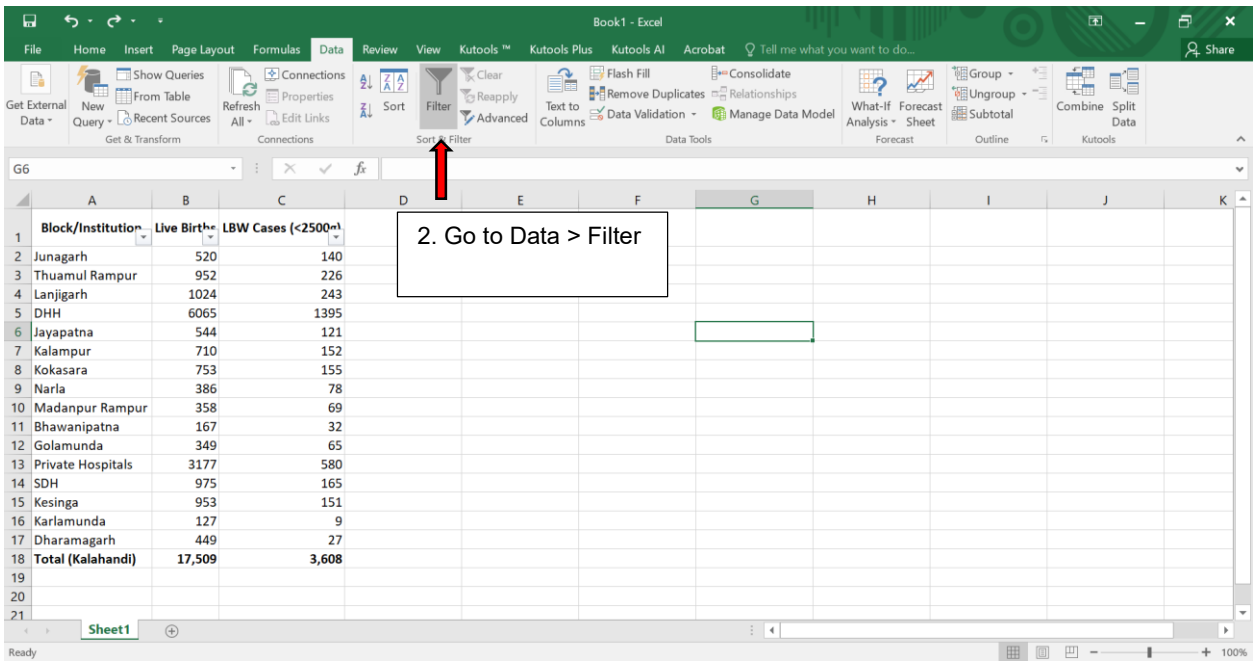
Exercise 1: Tables

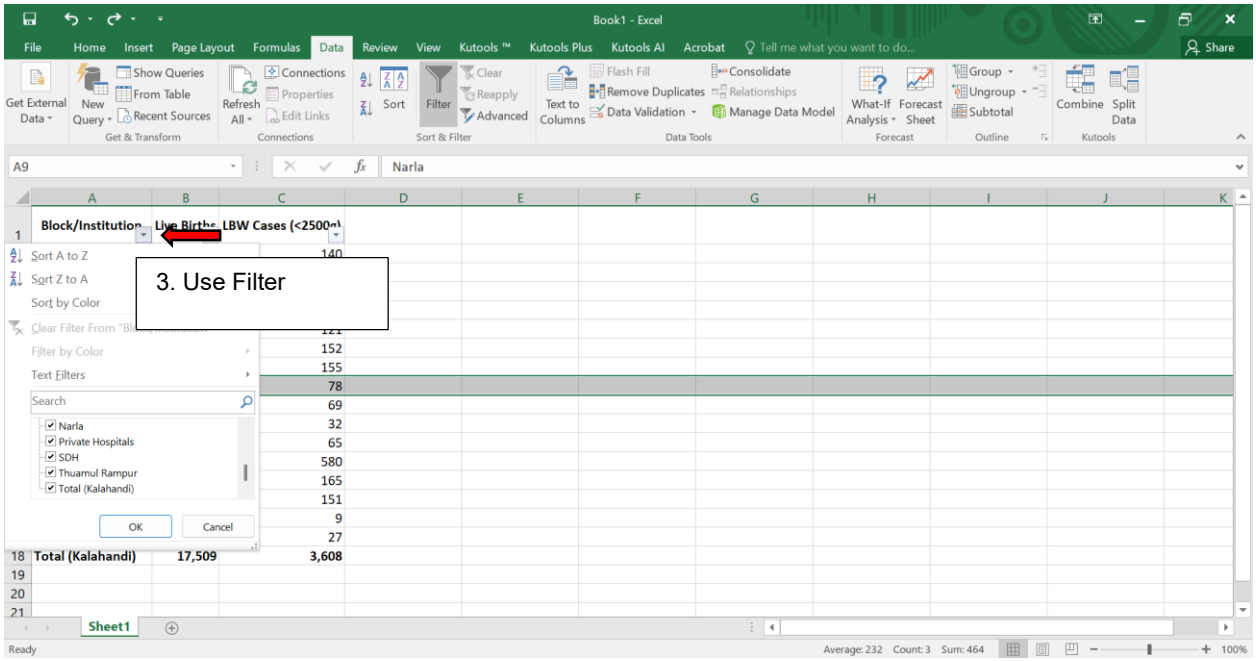
Task 1: Exploring the Dataset Visually

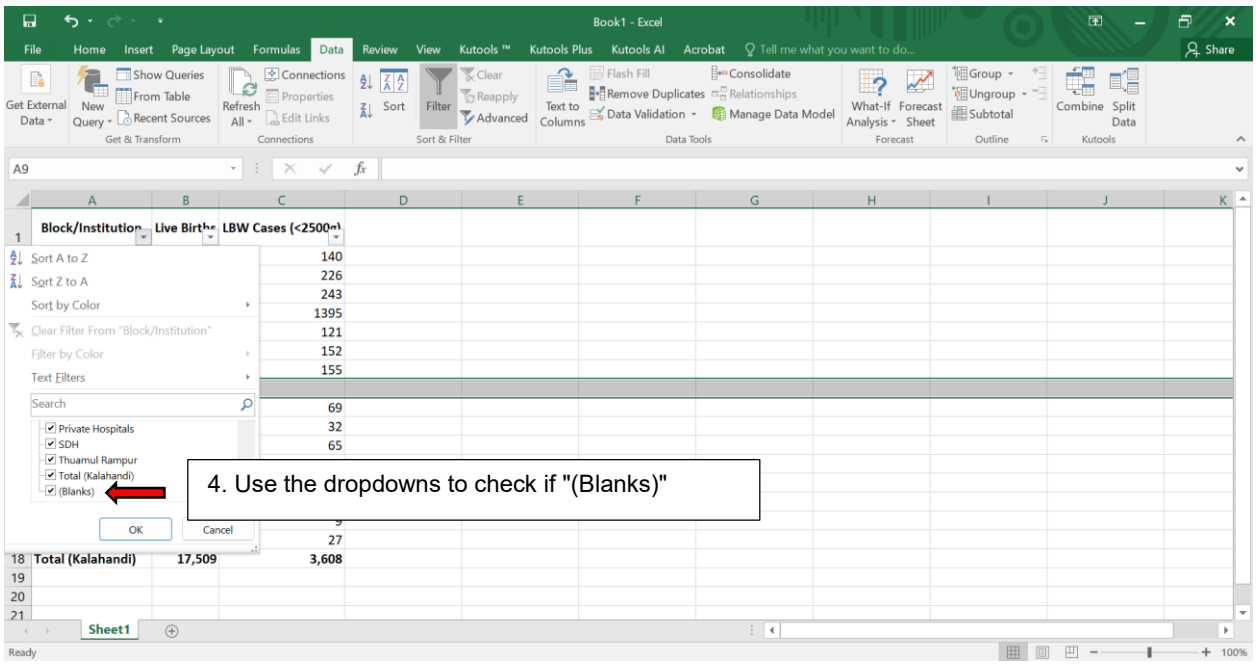
Goal: Detect unusual or missing values

- Open the Excel file containing the dataset of Blocks, Live Births, and LBW (<2500g):
- **Check for missing values:**

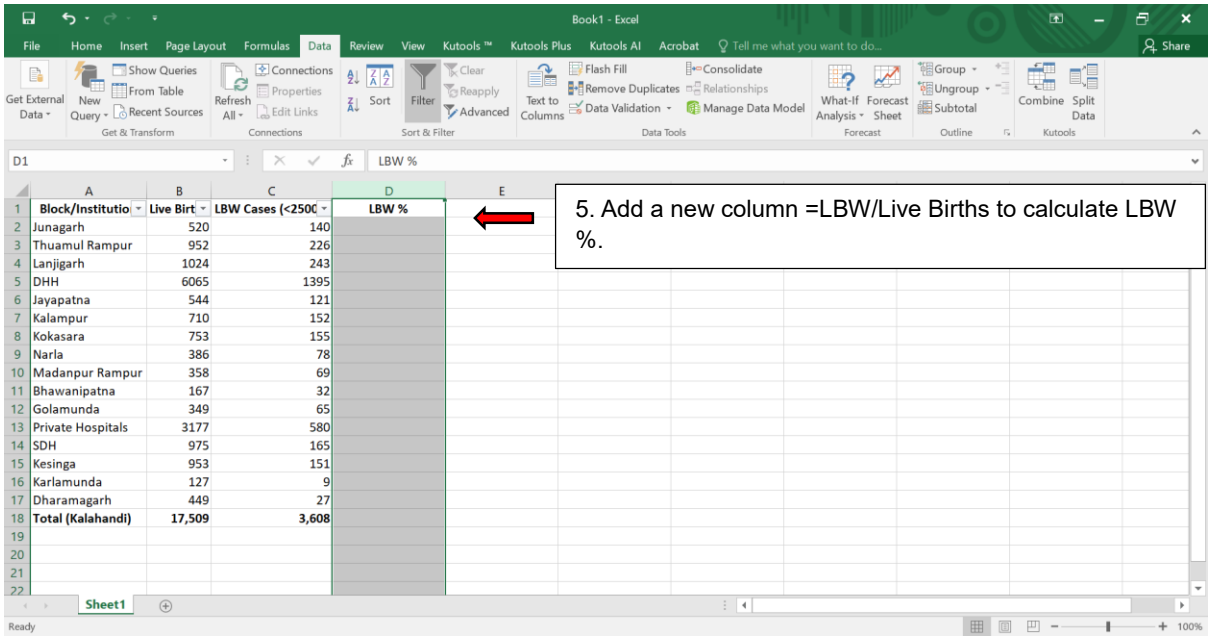




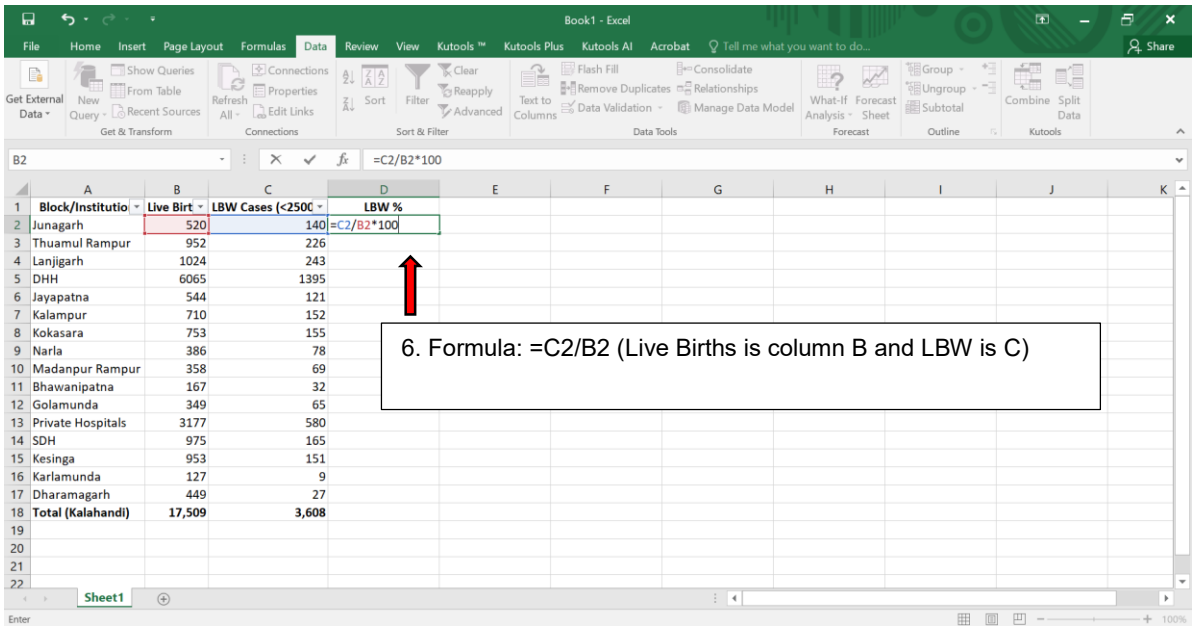




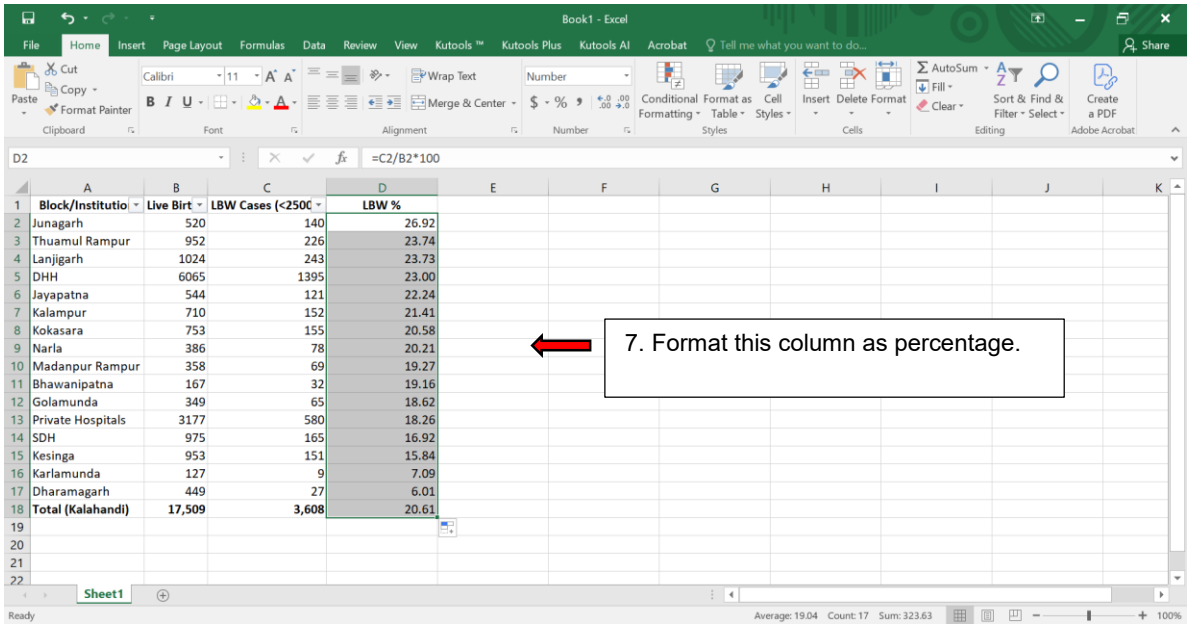
Scan for unusual numbers:



	A	B	C	D
1	Block/Institutio	Live Birt	LBW Cases (<2500	LBW %
2	Junagarh	520	140	
3	Thuamul Rampur	952	226	
4	Lanjigarh	1024	243	
5	DHH	6065	1395	
6	Jayapatna	544	121	
7	Kalampur	710	152	
8	Kokasara	753	155	
9	Narla	386	78	
10	Madanpur Rampur	358	69	
11	Bhawanipatna	167	32	
12	Golamunda	349	65	
13	Private Hospitals	3177	580	
14	SDH	975	165	
15	Kesinga	953	151	
16	Karlamunda	127	9	
17	Dharamagarh	449	27	
18	**Total (Kalahandi)**	**17,509**	**3,608**	



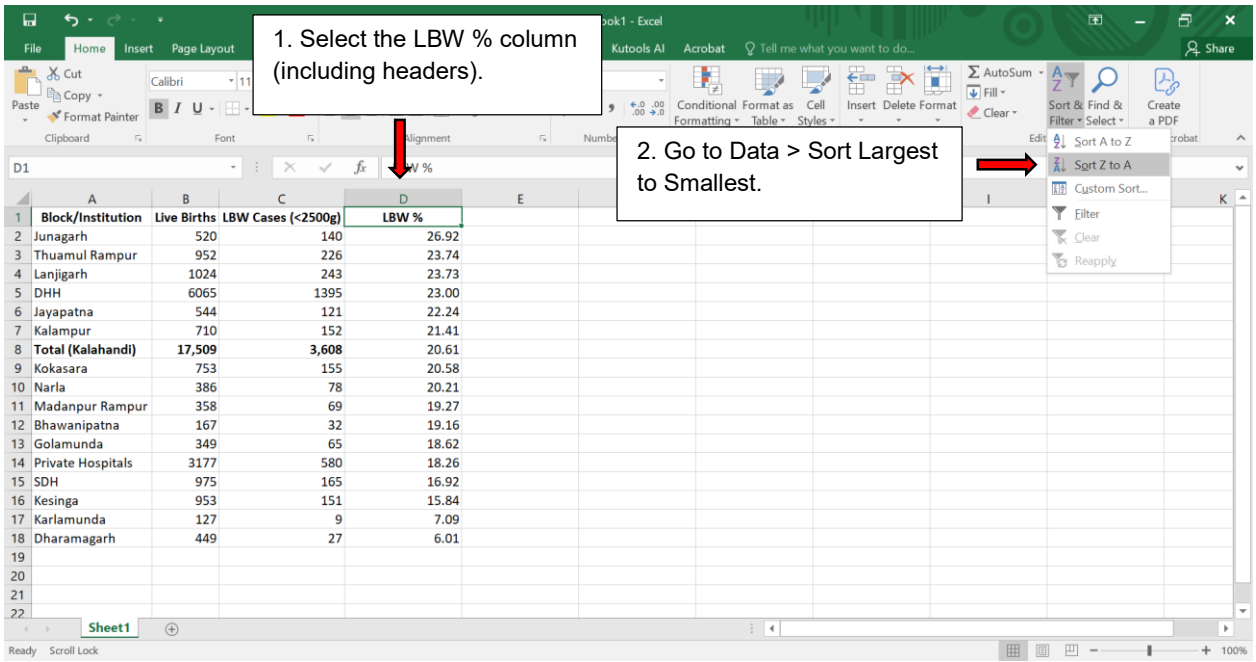
	A	B	C	D
1	Block/Institutio	Live Birt	LBW Cases (<2500	LBW %
2	Junagarh	520	140	=C2/B2*100
3	Thuamul Rampur	952	226	
4	Lanjigarh	1024	243	
5	DHH	6065	1395	
6	Jayapatna	544	121	
7	Kalampur	710	152	
8	Kokasara	753	155	
9	Narla	386	78	
10	Madanpur Rampur	358	69	
11	Bhawanipatna	167	32	
12	Golamunda	349	65	
13	Private Hospitals	3177	580	
14	SDH	975	165	
15	Kesinga	953	151	
16	Karlamunda	127	9	
17	Dharamagarh	449	27	
18	**Total (Kalahandi)**	**17,509**	**3,608**	



Block/Institution	Live Births	LBW Cases (<2500g)	LBW %
Junagarh	520	140	26.92
Thuamul Rampur	952	226	23.74
Lanjigarh	1024	243	23.73
DHH	6065	1395	23.00
Jayapatna	544	121	22.24
Kalampur	710	152	21.41
Kokasara	753	155	20.58
Narla	386	78	20.21
Madanpur Rampur	358	69	19.27
Bhawanipatna	167	32	19.16
Golamunda	349	65	18.62
Private Hospitals	3177	580	18.26
SDH	975	165	16.92
Kesinga	953	151	15.84
Karlamunda	127	9	7.09
Dharamagarh	449	27	6.01
Total (Kalahandi)	**17,509**	**3,608**	20.61

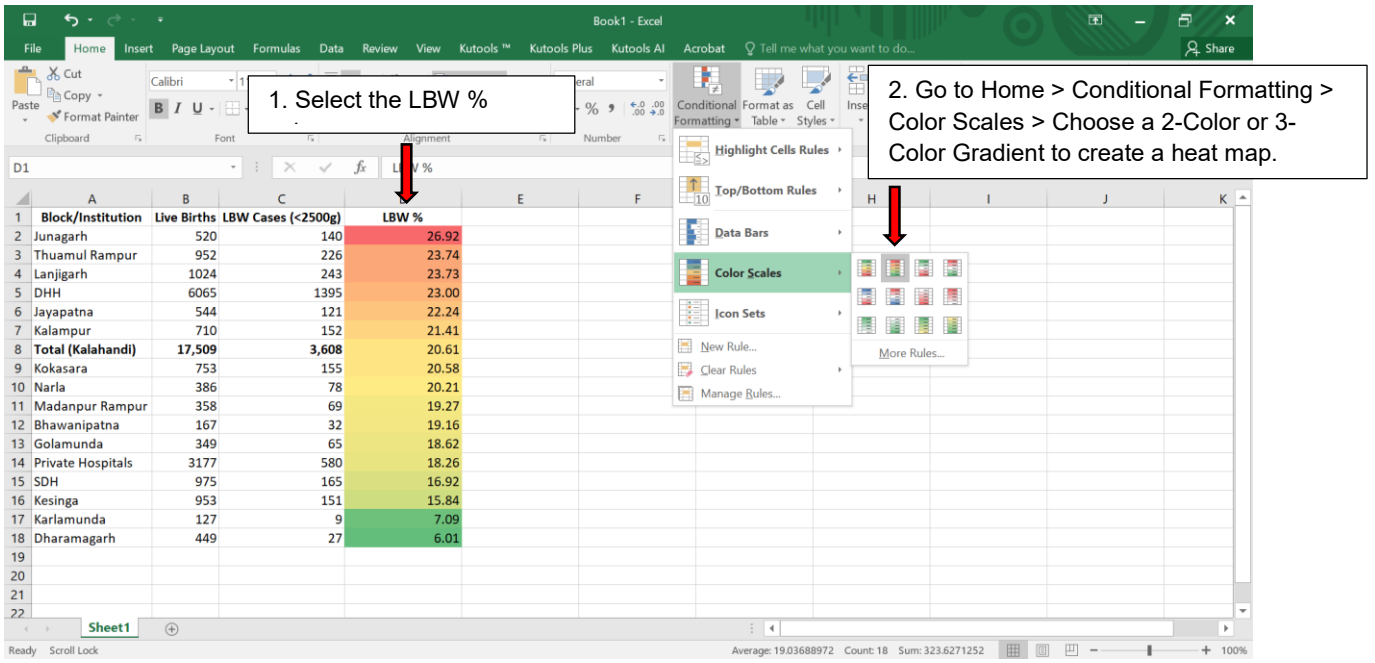
Task 2: Identify Best and Worst Performing Blocks by LBW %

***Goal**: Rank blocks by LBW % and use formatting to highlight patterns.*



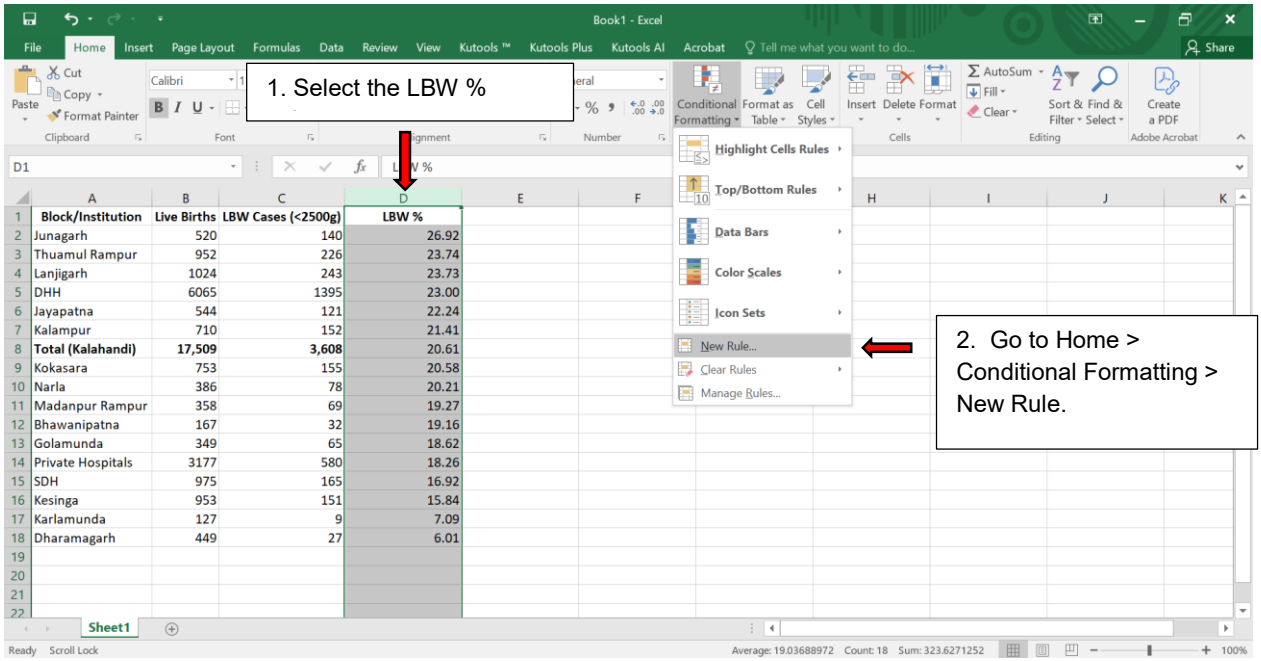
Block/Institution	Live Births	LBW Cases (<2500g)	LBW %
Junagarh	520	140	26.92
Thuamul Rampur	952	226	23.74
Lanjigarh	1024	243	23.73
DHH	6065	1395	23.00
Jayapatna	544	121	22.24
Kalampur	710	152	21.41
Total (Kalahandi)	**17,509**	**3,608**	20.61
Kokasara	753	155	20.58
Narla	386	78	20.21
Madanpur Rampur	358	69	19.27
Bhawanipatna	167	32	19.16
Golamunda	349	65	18.62
Private Hospitals	3177	580	18.26
SDH	975	165	16.92
Kesinga	953	151	15.84
Karlamunda	127	9	7.09
Dharamagarh	449	27	6.01

Highlight Best/Worst Performers:

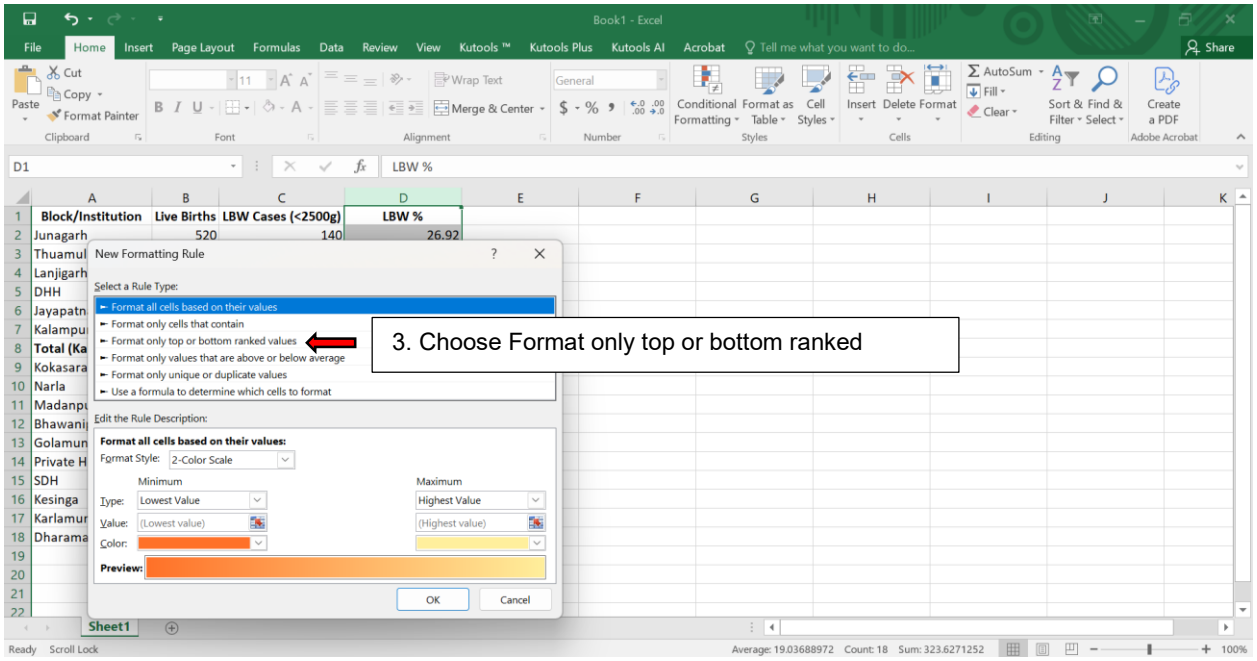


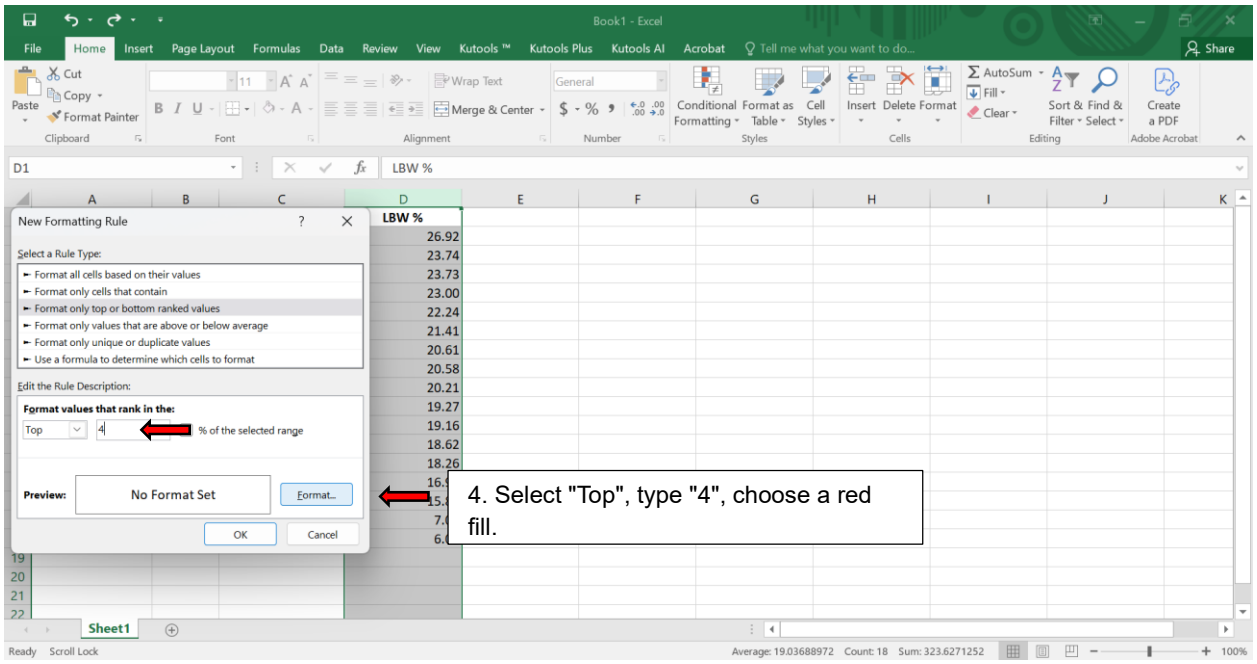
Block/Institution	Live Births	LBW Cases (<2500g)	LBW %
Junagarh	520	140	26.92
Thuamul Rampur	952	226	23.74
Lanjigarh	1024	243	23.73
DHH	6065	1395	23.00
Jayapatna	544	121	22.24
Kalampur	710	152	21.41
Total (Kalahandi)	**17,509**	**3,608**	20.61
Kokasara	753	155	20.58
Narla	386	78	20.21
Madanpur Rampur	358	69	19.27
Bhawanipatna	167	32	19.16
Golamunda	349	65	18.62
Private Hospitals	3177	580	18.26
SDH	975	165	16.92
Kesinga	953	151	15.84
Karlamunda	127	9	7.09
Dharamagarh	449	27	6.01

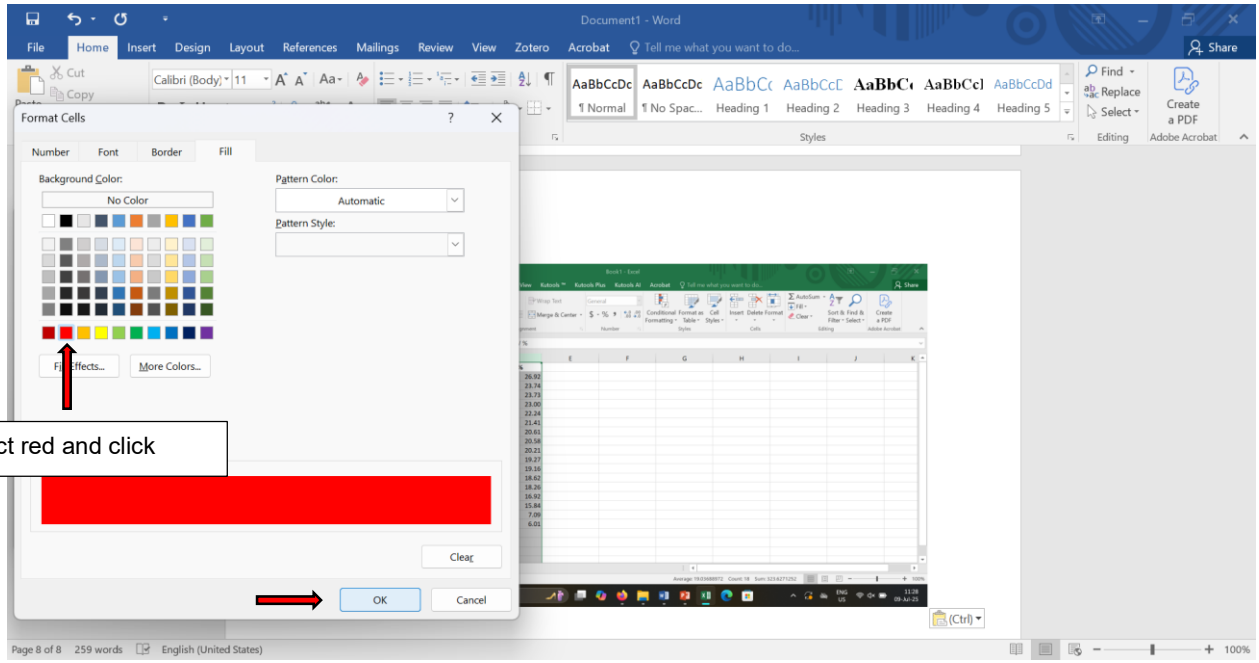
Task 3: Highlight Top and Bottom 4 Performing Blocks



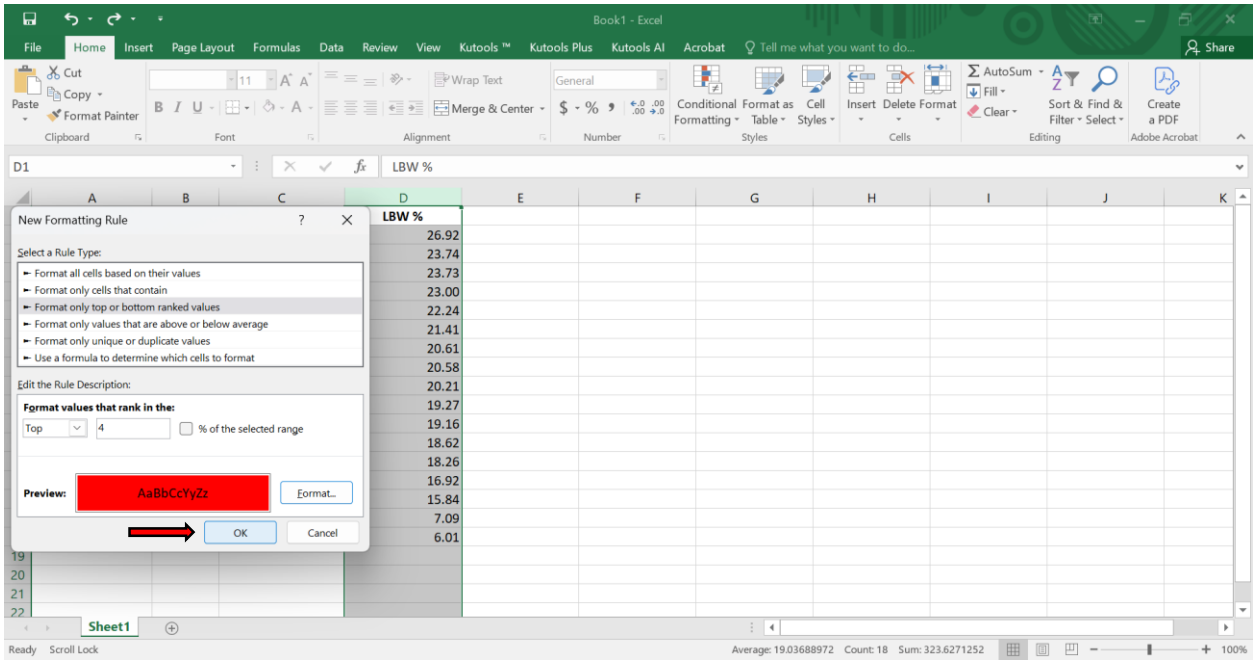
Block/Institution	Live Births	LBW Cases (<2500g)	LBW %
Junagarh	520	140	26.92
Thuamul Rampur	952	226	23.74
Lanjigarh	1024	243	23.73
DHH	6065	1395	23.00
Jayapatna	544	121	22.24
Kalampur	710	152	21.41
Total (Kalahandi)	**17,509**	**3,608**	20.61
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Narla	386	78	20.21
Madanpur Rampur	358	69	19.27
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Golamunda	349	65	18.62
Private Hospitals	3177	580	18.26
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Kesinga	953	151	15.84
Karlamunda	127	9	7.09
Dharamagarh	449	27	6.01

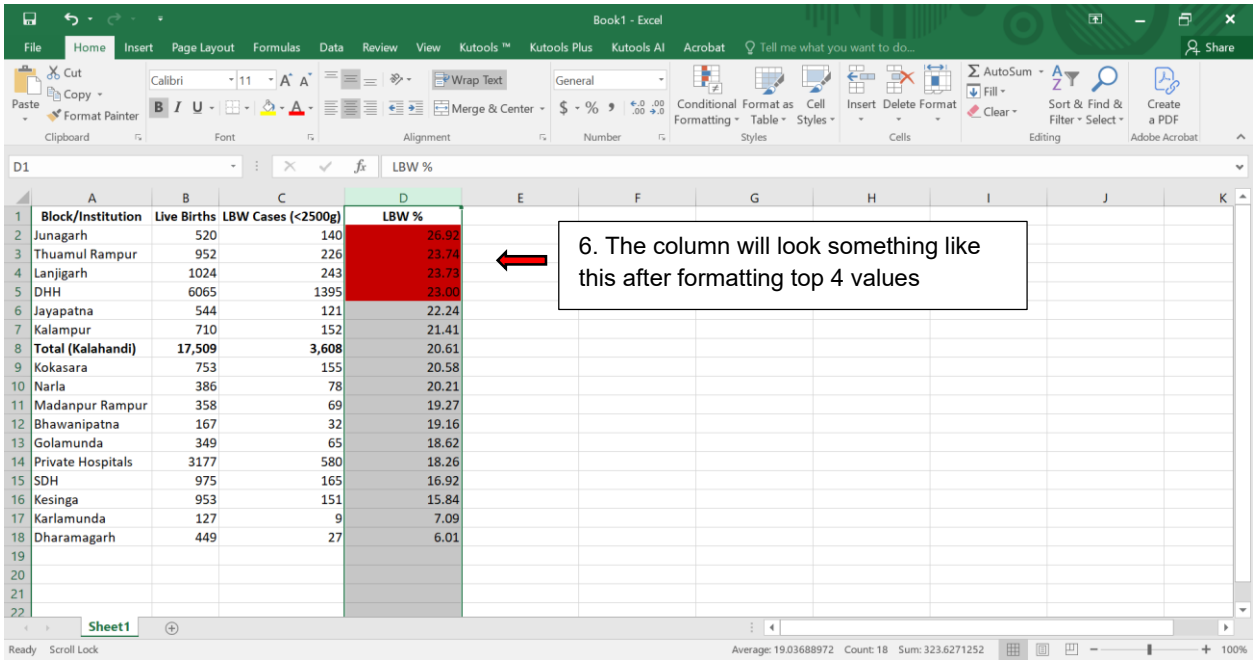

New Formatting Rule
Select a Rule Type:
Format all cells based on their values
Format only cells that contain
Format only top or bottom ranked values
Format only values that are above or below average
Format only unique or duplicate values
Use a formula to determine which cells to format
Edit the Rule Description:
Format all cells based on their values:
Format Style: 2-Color Scale
Minimum
Maximum
Type: Lowest Value
Highest Value
Value: (Lowest value)
(Highest value)
Color:
Preview:
OK
Cancel
3. Choose Format only top or bottom ranked


New Formatting Rule
Select a Rule Type:
Format all cells based on their values
Format only cells that contain
Format only top or bottom ranked values
Format only values that are above or below average
Format only unique or duplicate values
Use a formula to determine which cells to format
Edit the Rule Description:
Format values that rank in the:
Top
4
% of the selected range
Preview:
No Format Set
Format...
OK
Cancel
4. Select "Top", type "4", choose a red fill.

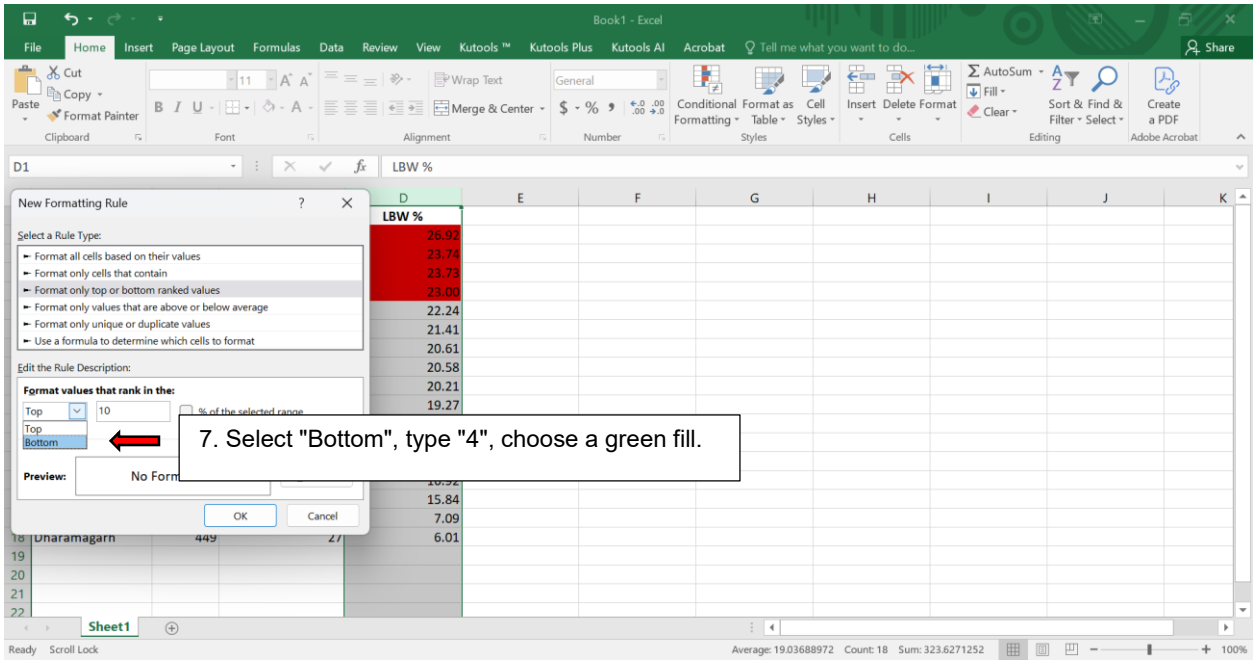


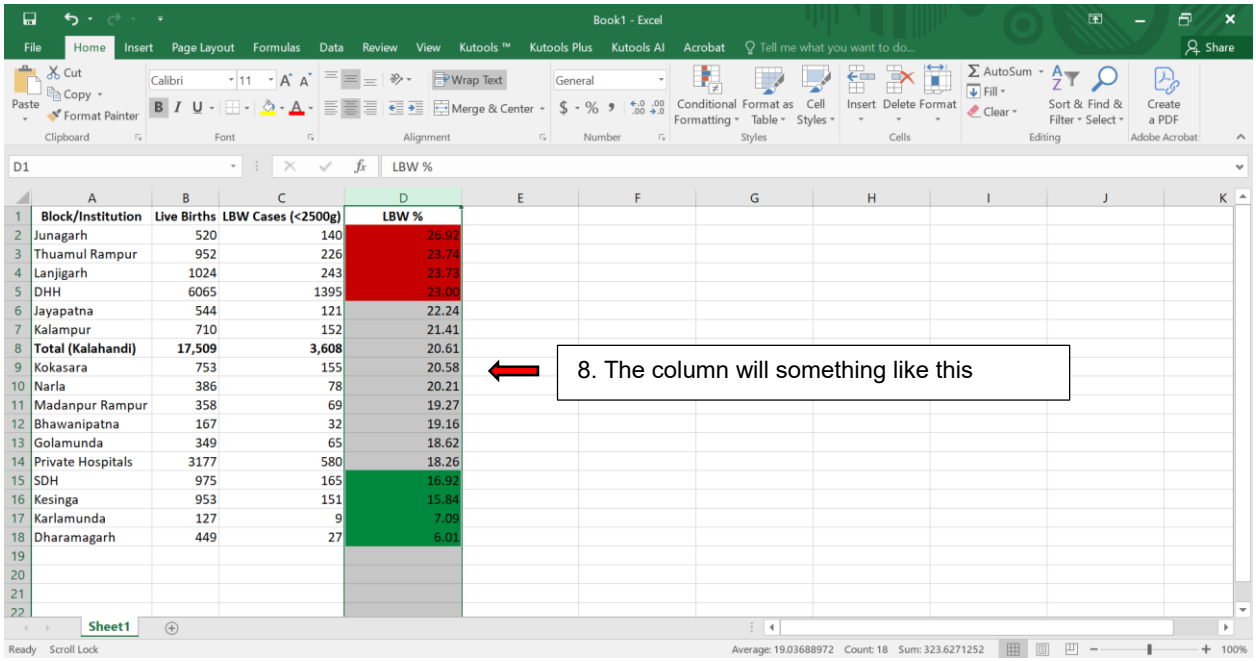
5. Select red and click





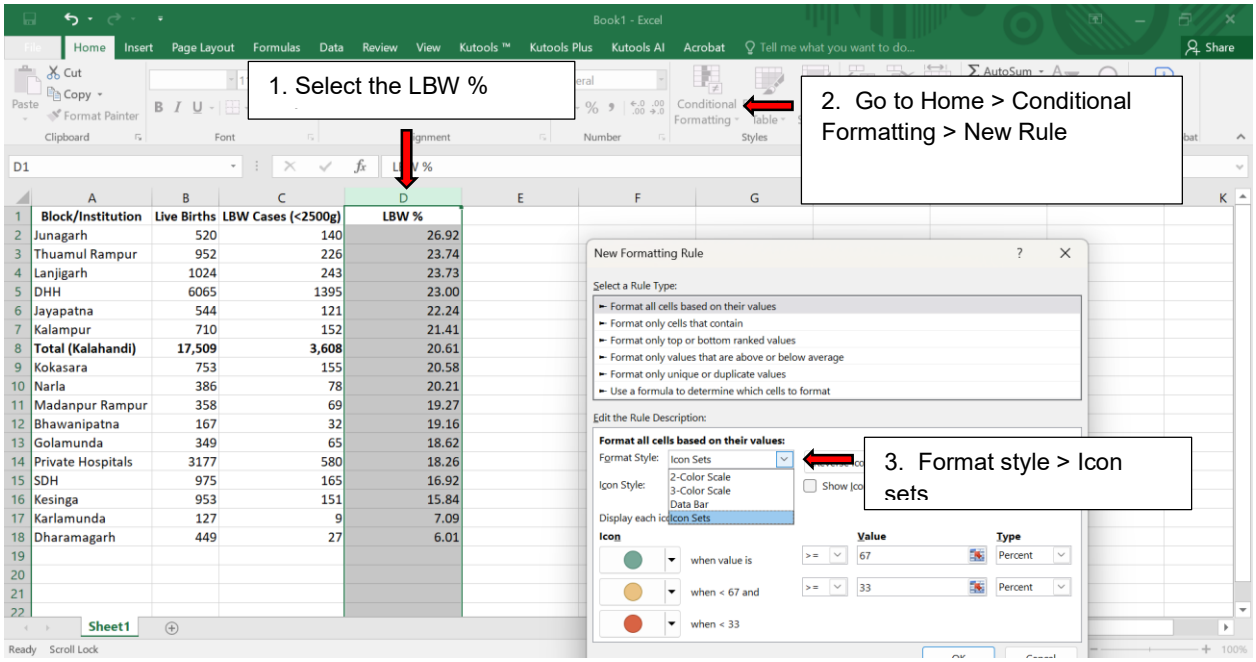
	A	B	C	D
1	Block/Institution	Live Births	LBW Cases (<2500g)	LBW %
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3	Thuamul Rampur	952	226	23.74
4	Lanjigarh	1024	243	23.73
5	DHH	6065	1395	23.00
6	Jayapatna	544	121	22.24
7	Kalampur	710	152	21.41
8	**Total (Kalahandi)**	**17,509**	**3,608**	20.61
9	Kokasara	753	155	20.58
10	Narla	386	78	20.21
11	Madanpur Rampur	358	69	19.27
12	Bhawanipatna	167	32	19.16
13	Golamunda	349	65	18.62
14	Private Hospitals	3177	580	18.26
15	SDH	975	165	16.92
16	Kesinga	953	151	15.84
17	Karlamunda	127	9	7.09
18	Dharamagarh	449	27	6.01

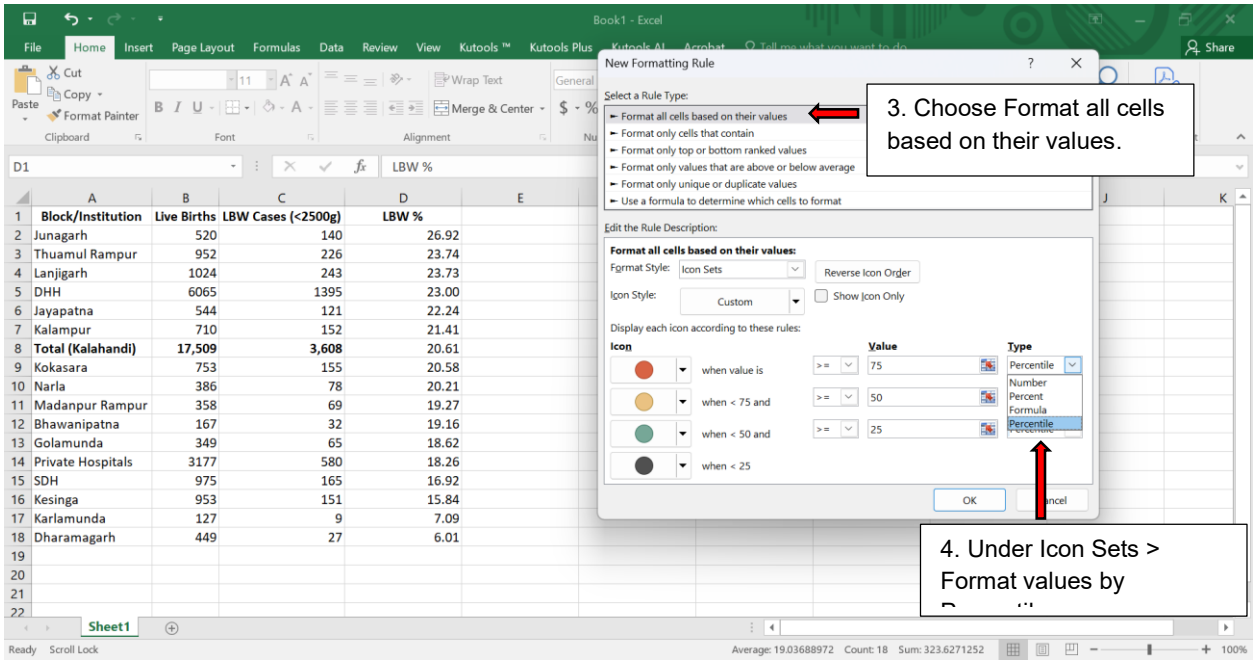


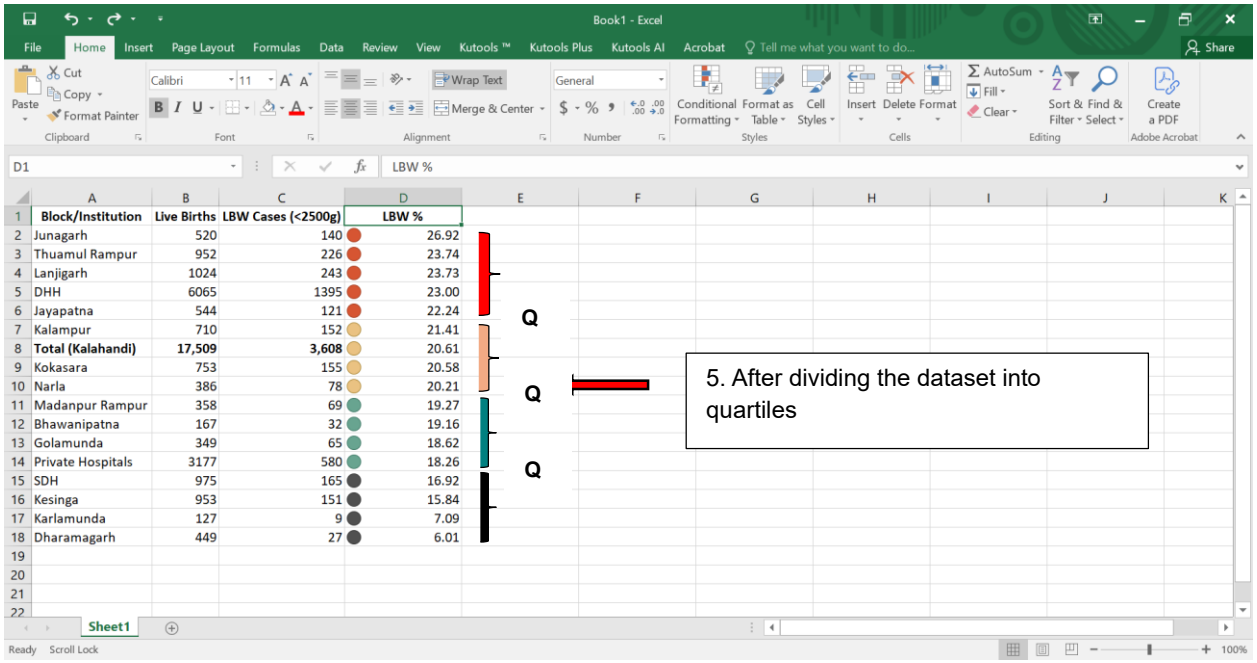


Block/Institution	Live Births	LBW Cases (<2500g)	LBW %
Junagarh	520	140	26.92
Thuamul Rampur	952	226	23.74
Lanjigarh	1024	243	23.73
DHH	6065	1395	23.00
Jayapatna	544	121	22.24
Kalampur	710	152	21.41
Total (Kalahandi)	**17,509**	**3,608**	20.61
Kokasara	753	155	20.58
Narla	386	78	20.21
Madanpur Rampur	358	69	19.27
Bhawanipatna	167	32	19.16
Golamunda	349	65	18.62
Private Hospitals	3177	580	18.26
SDH	975	165	16.92
Kesinga	953	151	15.84
Karlamunda	127	9	7.09
Dharamagarh	449	27	6.01

Task 4: Divide into Quartiles and Color Code





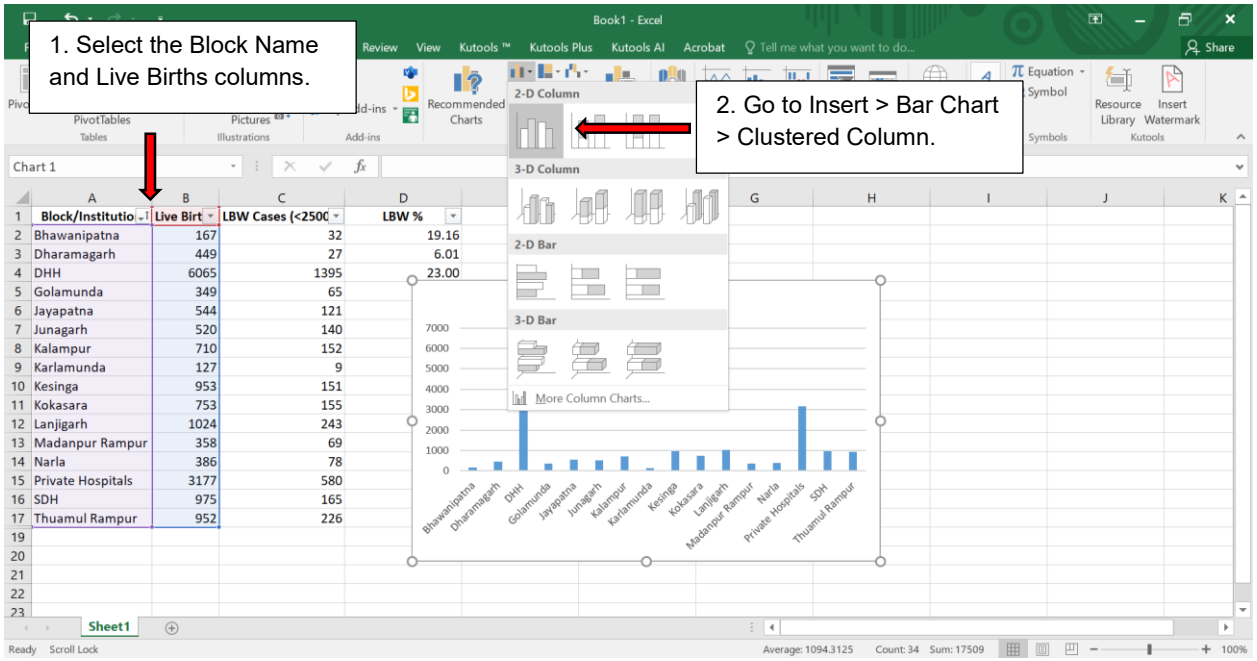


Outcome:

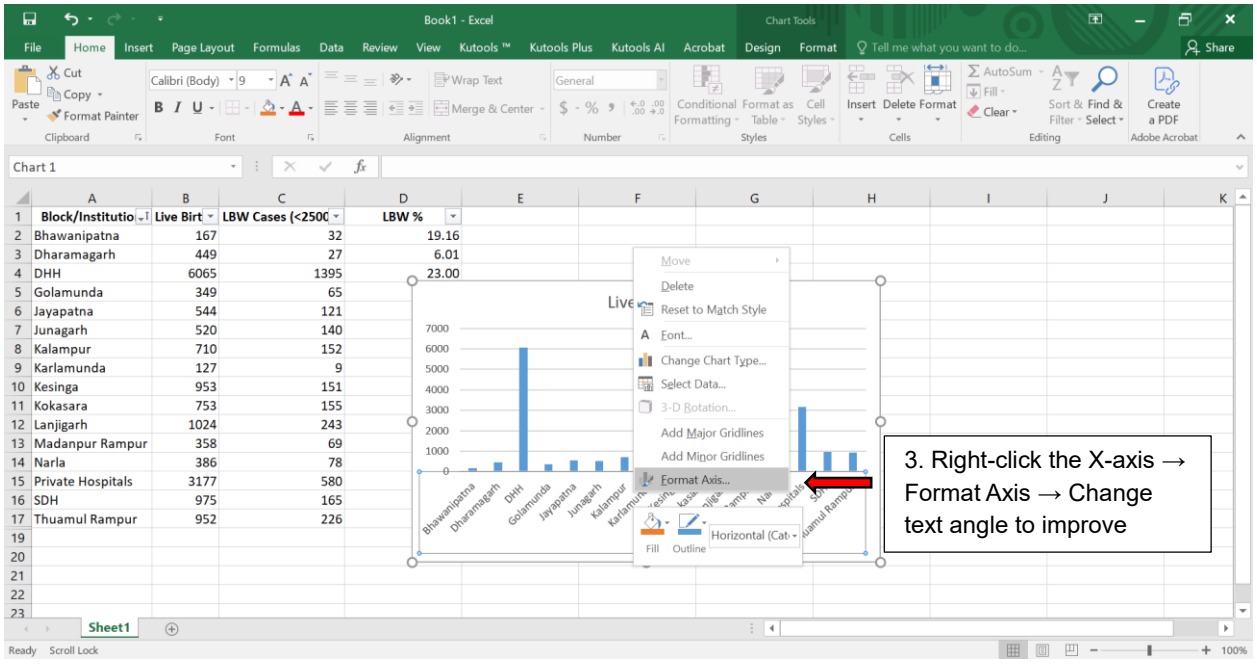
- Detect missing or extreme values
- Rank and compare health block performance
- Visually identify areas needing attention
- Gain confidence using Excel's data visualization features

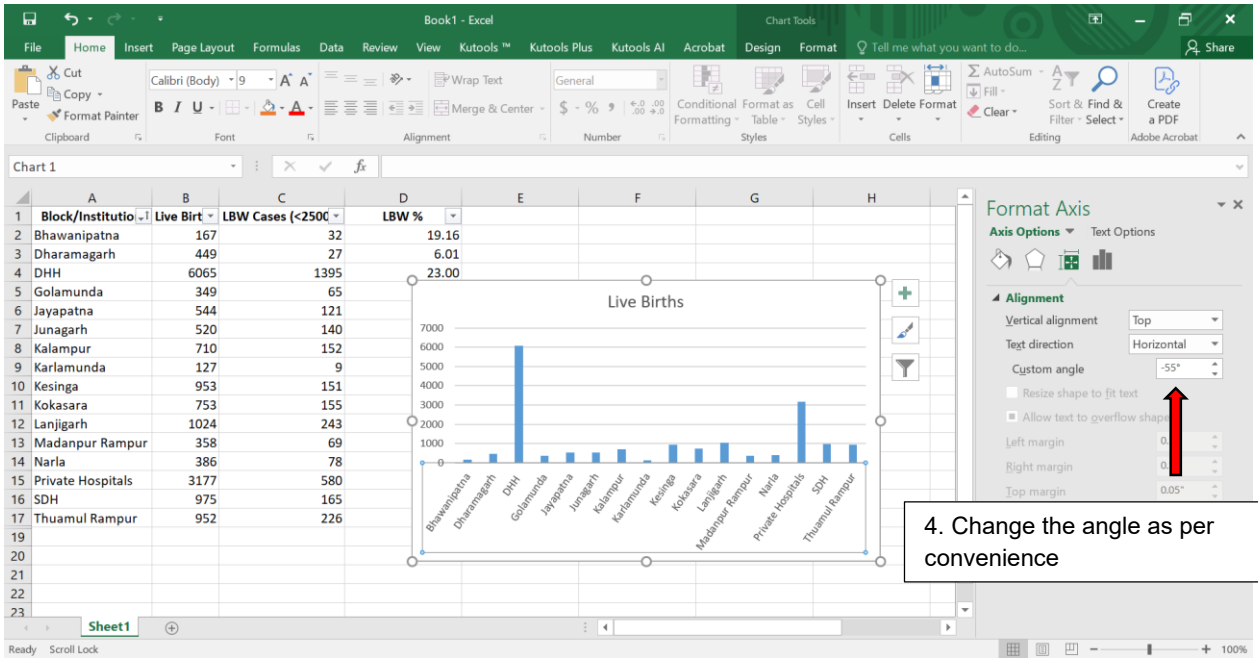
Exercise 2: Categorical data

Task 1: Bar Graph of Total Live Births by Block

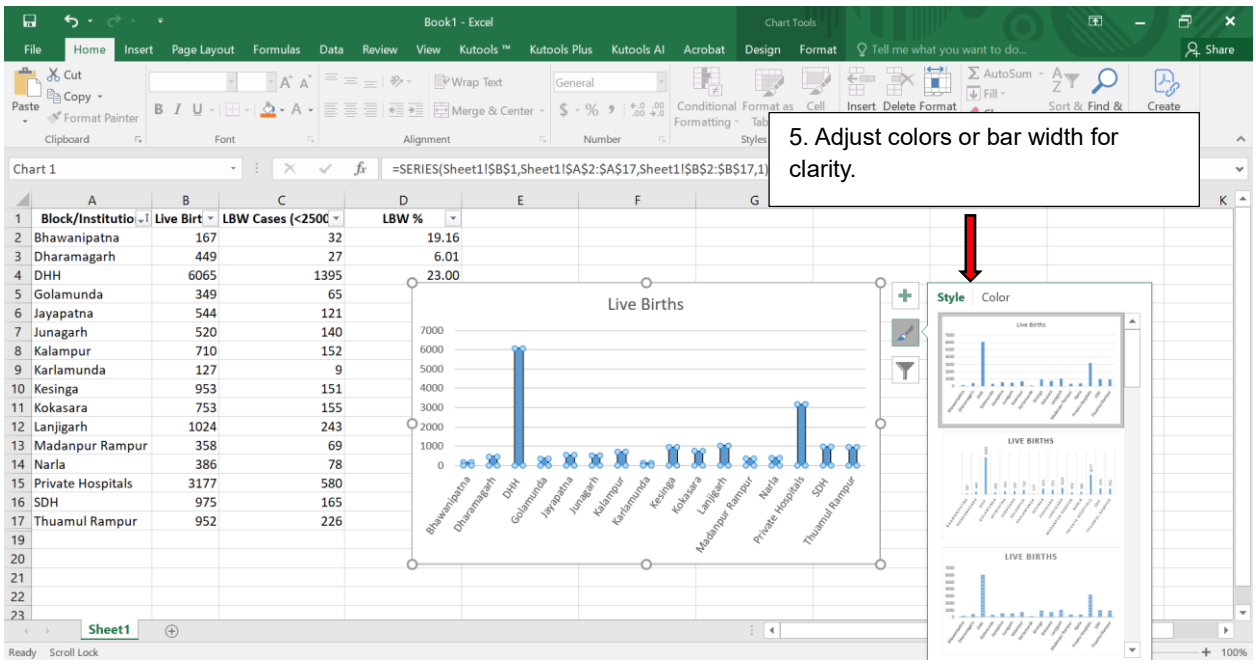


Block/Institutio	Live Birt	LBW Cases (<2500	LBW %
Bhawanipatna	167	32	19.16
Dharamagarh	449	27	6.01
DHH	6065	1395	23.00
Golamunda	349	65	
Jayapatna	544	121	
Junagarh	520	140	
Kalampur	710	152	
Karlamunda	127	9	
Kesinga	953	151	
Kokasara	753	155	
Lanjigarh	1024	243	
Madanpur Rampur	358	69	
Narla	386	78	
Private Hospitals	3177	580	
SDH	975	165	
Thuamul Rampur	952	226	



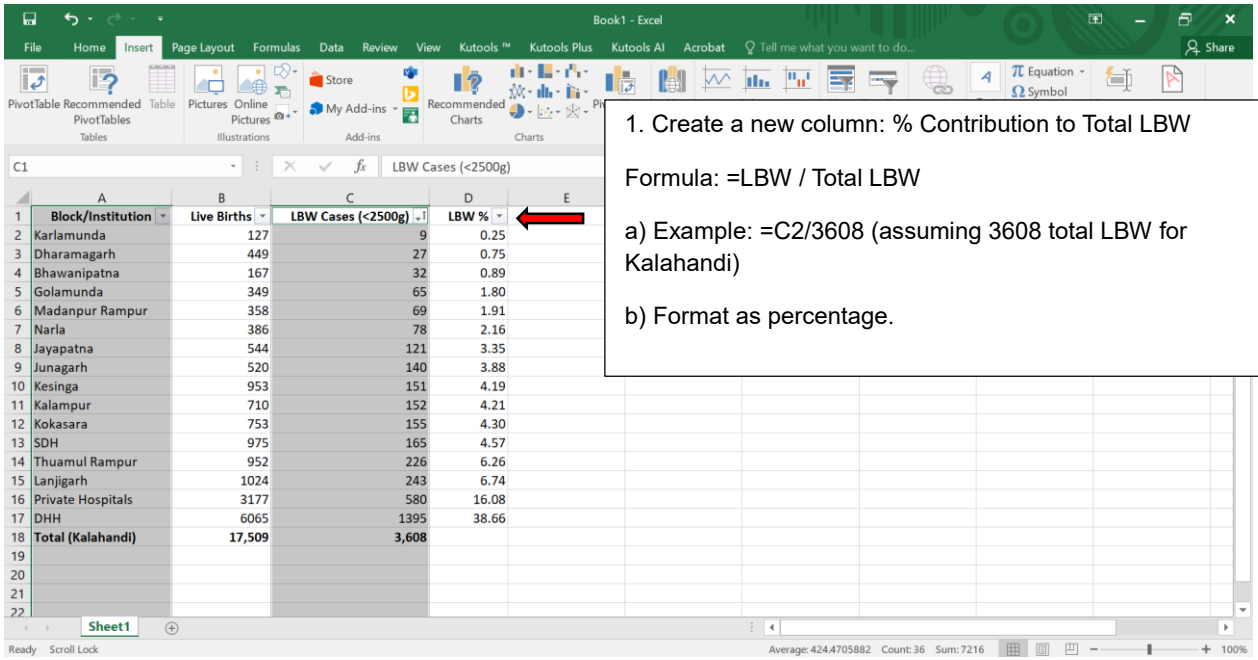


4. Change the angle as per convenience

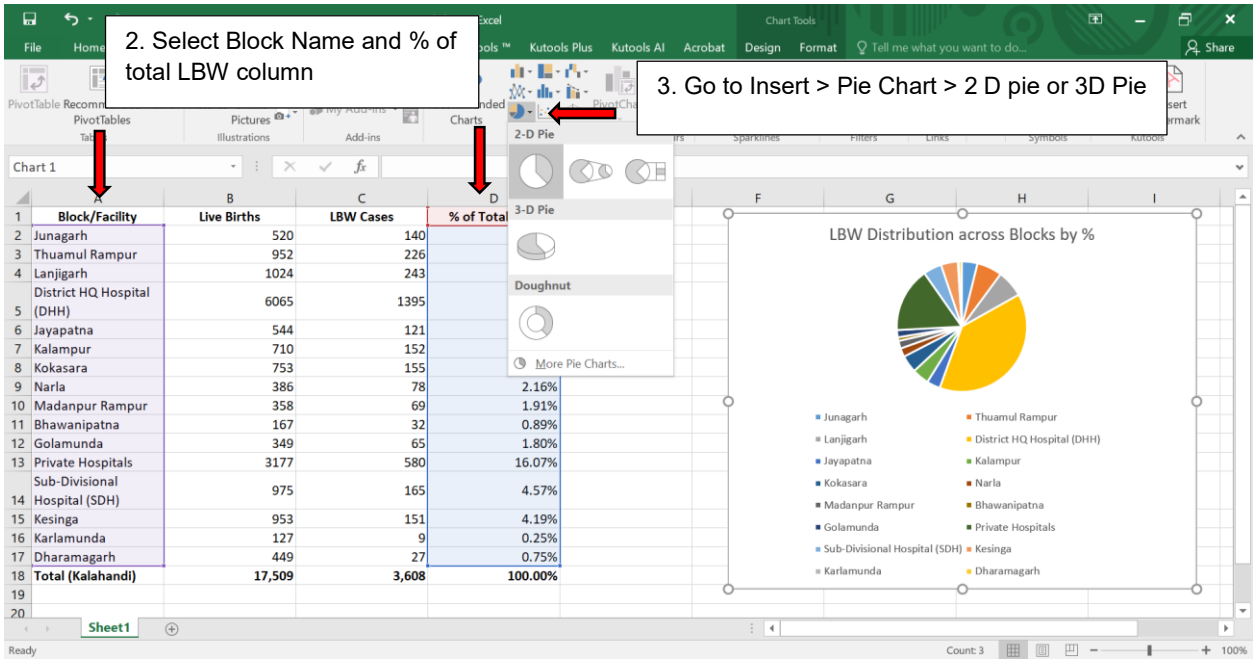


5. Adjust colors or bar width for clarity.

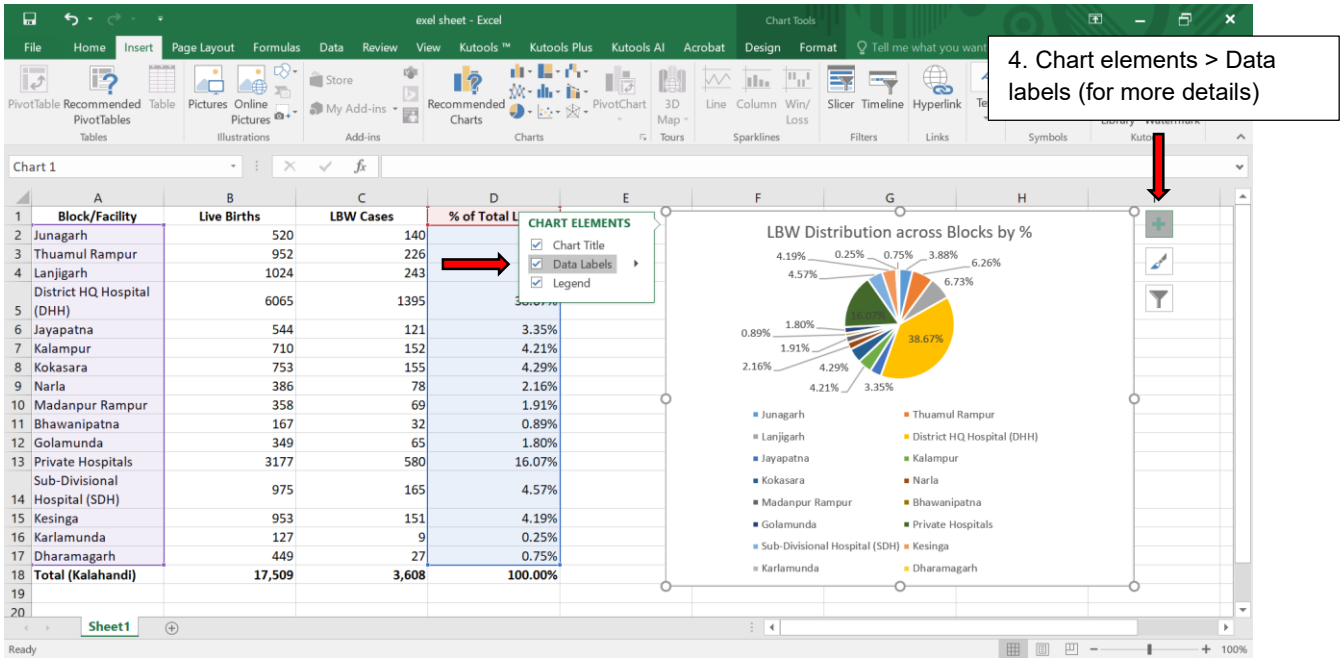
Task 2: Pie chart of LBW Burden by Block



Block/Institution	Live Births	LBW Cases (<2500g)	LBW %
Karlamunda	127	9	0.25
Dharamagarh	449	27	0.75
Bhawanipatna	167	32	0.89
Golamunda	349	65	1.80
Madanpur Rampur	358	69	1.91
Narla	386	78	2.16
Jayapatna	544	121	3.35
Junagarh	520	140	3.88
Kesinga	953	151	4.19
Kalampur	710	152	4.21
Kokasara	753	155	4.30
SDH	975	165	4.57
Thuamul Rampur	952	226	6.26
Lanjigarh	1024	243	6.74
Private Hospitals	3177	580	16.08
DHH	6065	1395	38.66
Total (Kalahandi)	**17,509**	**3,608**	

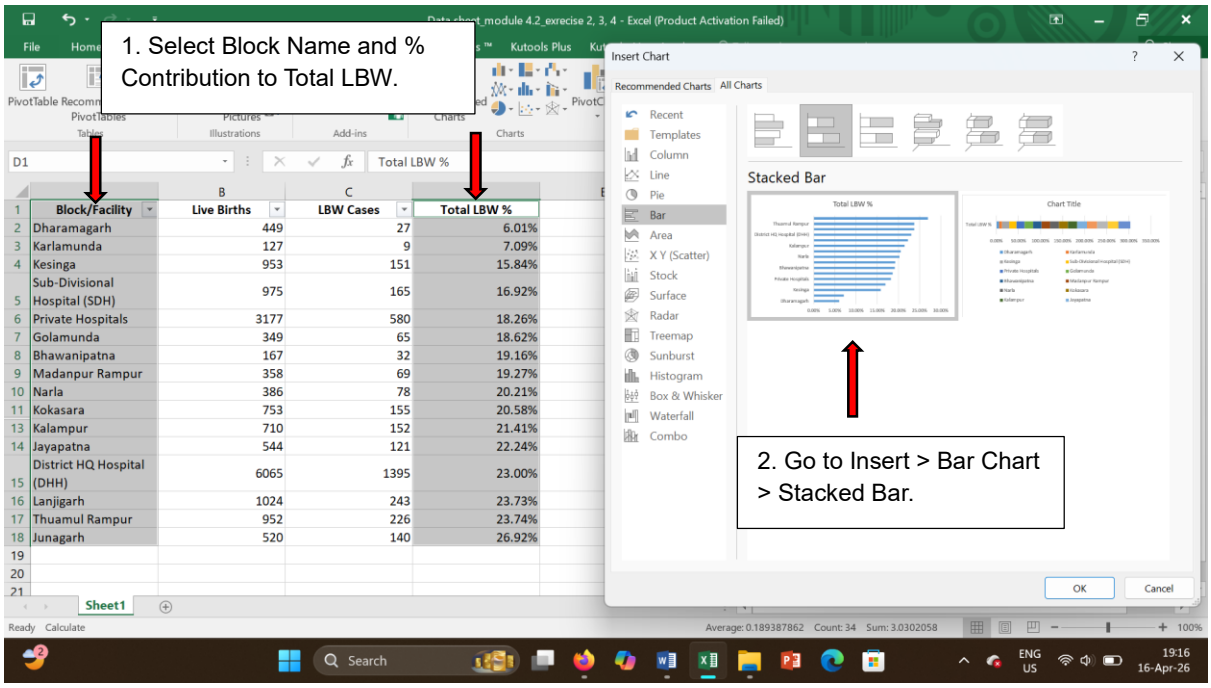


Block/Facility	Live Births	LBW Cases	% of Total
Junagarh	520	140	
Thuamul Rampur	952	226	
Lanjigarh	1024	243	
District HQ Hospital (DHH)	6065	1395	
Jayapatna	544	121	
Kalampur	710	152	
Kokasara	753	155	
Narla	386	78	2.16%
Madanpur Rampur	358	69	1.91%
Bhawanipatna	167	32	0.89%
Golamunda	349	65	1.80%
Private Hospitals	3177	580	16.07%
Sub-Divisional Hospital (SDH)	975	165	4.57%
Kesinga	953	151	4.19%
Karlamunda	127	9	0.25%
Dharamagarh	449	27	0.75%
Total (Kalahandi)	**17,509**	**3,608**	**100.00%**



Block/Facility	Live Births	LBW Cases	% of Total L
Junagarh	520	140	
Thuamul Rampur	952	226	
Lanjigarh	1024	243	
District HQ Hospital (DHH)	6065	1395	
Jayapatna	544	121	3.35%
Kalampur	710	152	4.21%
Kokasara	753	155	4.29%
Narla	386	78	2.16%
Madanpur Rampur	358	69	1.91%
Bhawanipatna	167	32	0.89%
Golamunda	349	65	1.80%
Private Hospitals	3177	580	16.07%
Sub-Divisional Hospital (SDH)	975	165	4.57%
Kesinga	953	151	4.19%
Karlamunda	127	9	0.25%
Dharamagarh	449	27	0.75%
Total (Kalahandi)	17,509	3,608	100.00%

Task 3: Stacked Bar Chart – Block-wise Contribution to LBW Burden



Block/Facility	Live Births	LBW Cases	Total LBW %
Dharamagarh	449	27	6.01%
Karlamunda	127	9	7.09%
Kesinga	953	151	15.84%
Sub-Divisional Hospital (SDH)	975	165	16.92%
Private Hospitals	3177	580	18.26%
Golamunda	349	65	18.62%
Bhawanipatna	167	32	19.16%
Madanpur Rampur	358	69	19.27%
Narla	386	78	20.21%
Kokasara	753	155	20.58%
Kalampur	710	152	21.41%
Jayapatna	544	121	22.24%
District HQ Hospital (DHH)	6065	1395	23.00%
Lanjigarh	1024	243	23.73%
Thuamul Rampur	952	226	23.74%
Junagarh	520	140	26.92%

Learning Outcome:

- Visualize health indicators across blocks effectively
- Interpret which blocks contribute most to LBW burden
- Use **basic and advanced bar chart types** in Excel
- Apply formatting to enhance readability and insight

Module 3.1

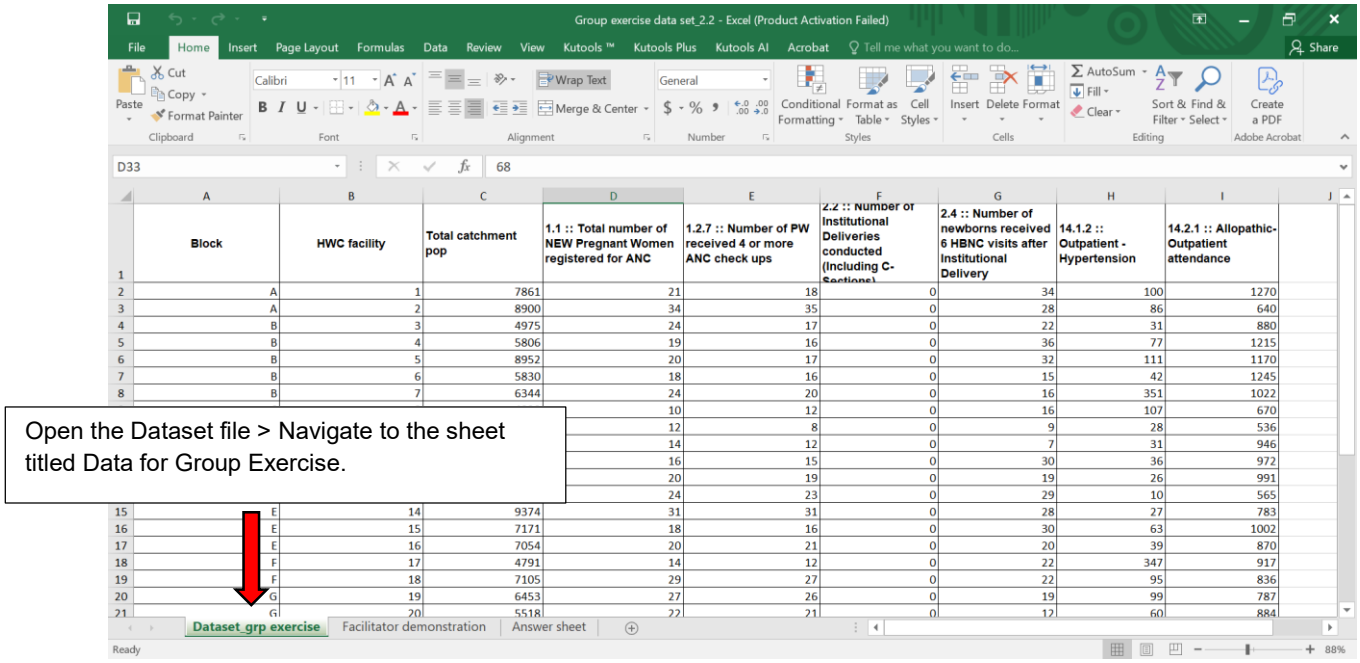
Exercise 1: Estimating facility level service coverage indicators using HMIS data

Objective: To estimate and interpret facility level service coverage indicators using HMIS data

Instructions:

- Divide yourselves into groups of 4.
- Read through the instructions and guide for the group exercise.
- Open the data set titled “Datasheet_module3.1”. The data set has information on a list of 37 facilities (1 through 37) across 12 blocks (A through L).
- Follow along the step wise instructions in the guide.
- Discuss the answers to the questions at the end of the guide.

Step 1: Open the Dataset



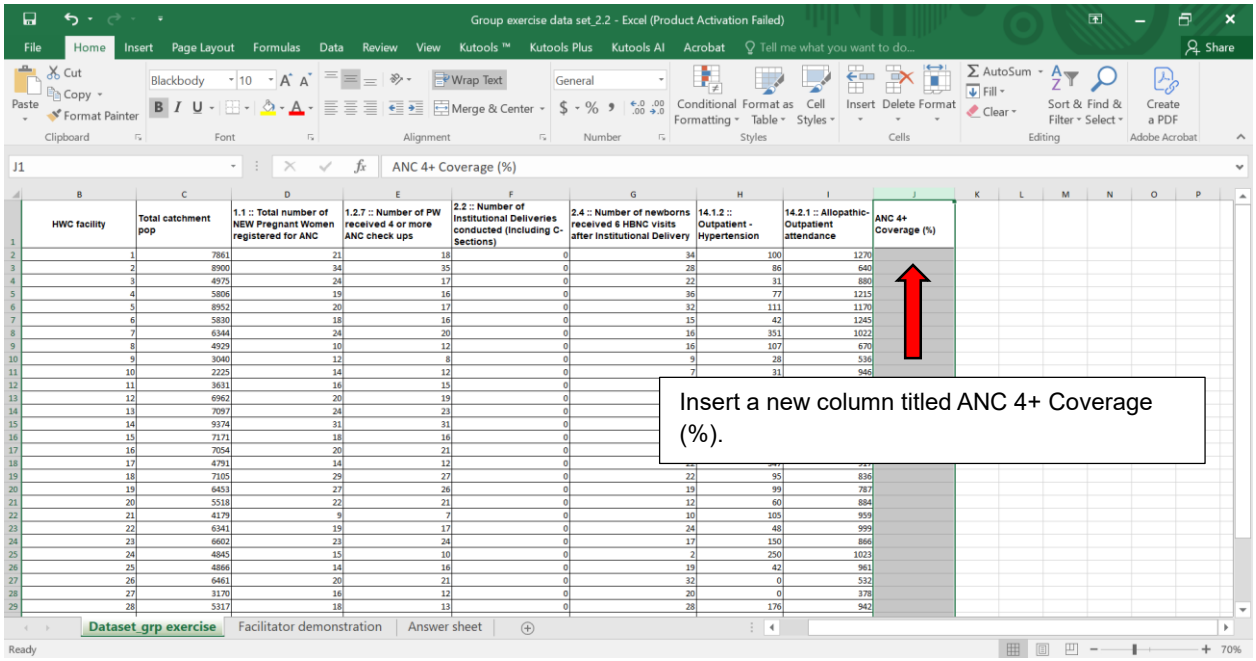
	Block	HWC facility	Total catchment pop	1.1 :: Total number of NEW Pregnant Women registered for ANC	1.2.7 :: Number of PW received 4 or more ANC check ups	2.2 :: Number of Institutional Deliveries conducted (Including C-Sections)	2.4 :: Number of newborns received 6 HBNC visits after Institutional Delivery	14.1.2 :: Outpatient - Hypertension	14.2.1 :: Allopathic-Outpatient attendance
2	A	1	7861	21	18	0	34	100	1270
3	A	2	8900	34	35	0	28	86	640
4	B	3	4975	24	17	0	22	31	880
5	B	4	5806	19	16	0	36	77	1215
6	B	5	8952	20	17	0	32	111	1170
7	B	6	5830	18	16	0	15	42	1245
8	B	7	6344	24	20	0	16	351	1022
				10	12	0	16	107	670
				12	8	0	9	28	536
				14	12	0	7	31	946
				16	15	0	30	36	972
				20	19	0	19	26	991
				24	23	0	29	10	565
15	E	14	9374	31	31	0	28	27	783
16	E	15	7171	18	16	0	30	63	1002
17	E	16	7054	20	21	0	20	39	870
18	F	17	4791	14	12	0	22	347	917
19	F	18	7105	29	27	0	22	95	836
20	G	19	6453	27	26	0	19	99	787
21	G	20	5518	22	21	0	12	60	884

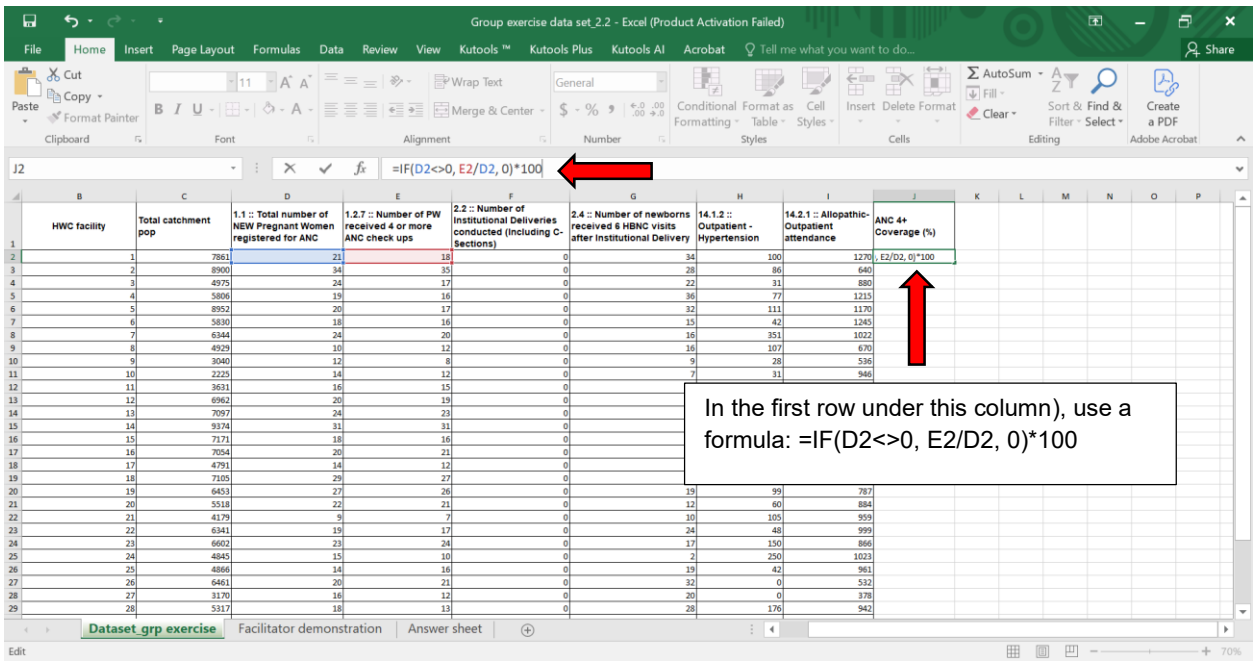
Step 2: Calculate ANC 4+ Coverage for each facility

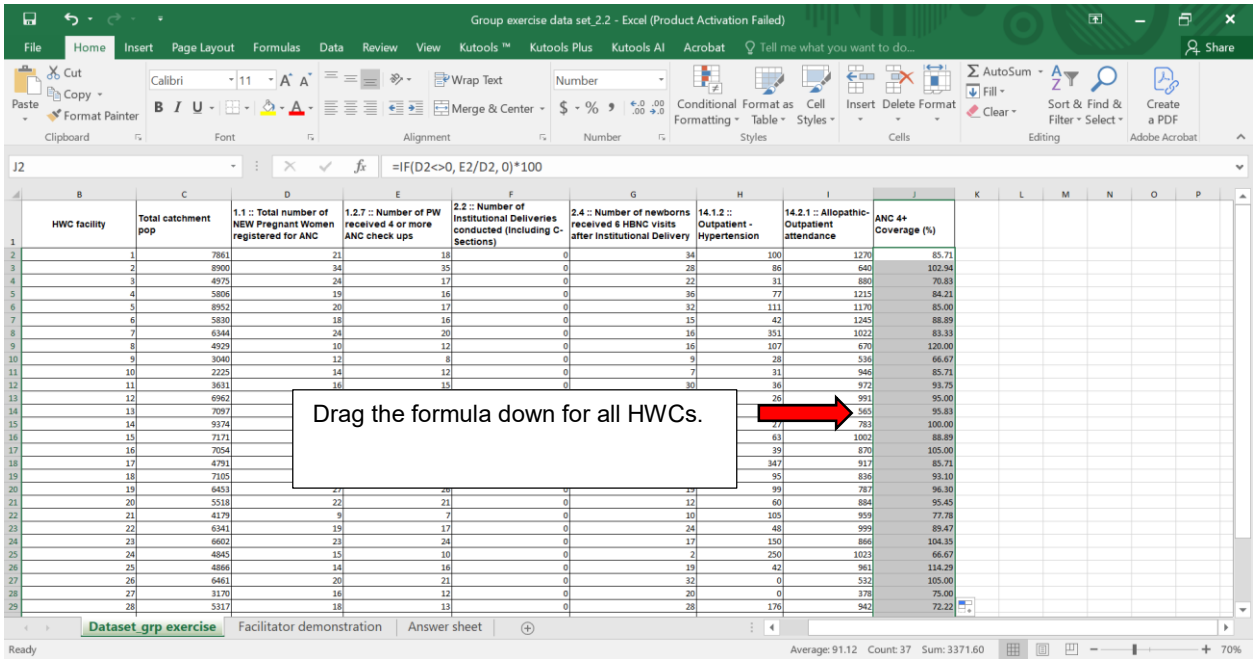
Indicator:
Proportion of registered pregnant women who have received at least 4 ANC visits

Formula:

```
ANC 4+ coverage (%) = (No. of women with 4 ANC visits / Total registered pregnant women) * 100
```


Group exercise data set_2.2 - Excel (Product Activation Failed)
J1
ANC 4+ Coverage (%)
Insert a new column titled ANC 4+ Coverage (%).
Dataset_grp exercise
Facilitator demonstration
Answer sheet
Ready


Group exercise data set_2.2 - Excel (Product Activation Failed)
J2
=IF(D2<>0, E2/D2, 0)*100
In the first row under this column), use a formula: =IF(D2<>0, E2/D2, 0)*100
Dataset_grp exercise
Facilitator demonstration
Answer sheet
Edit

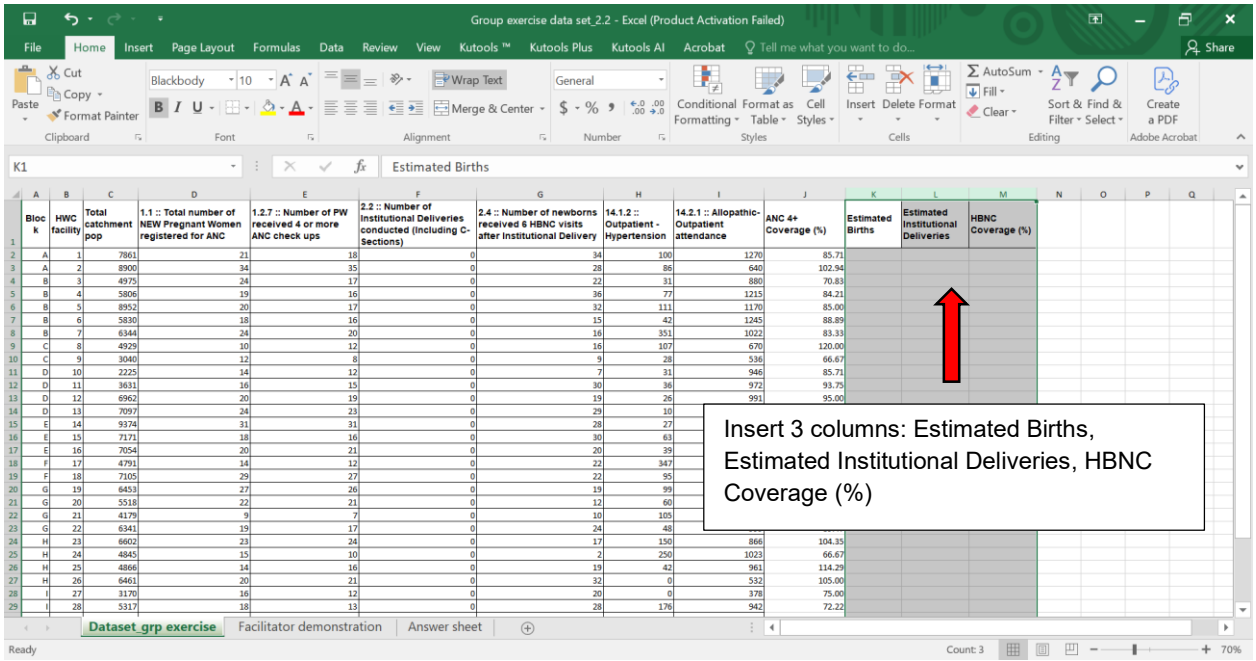


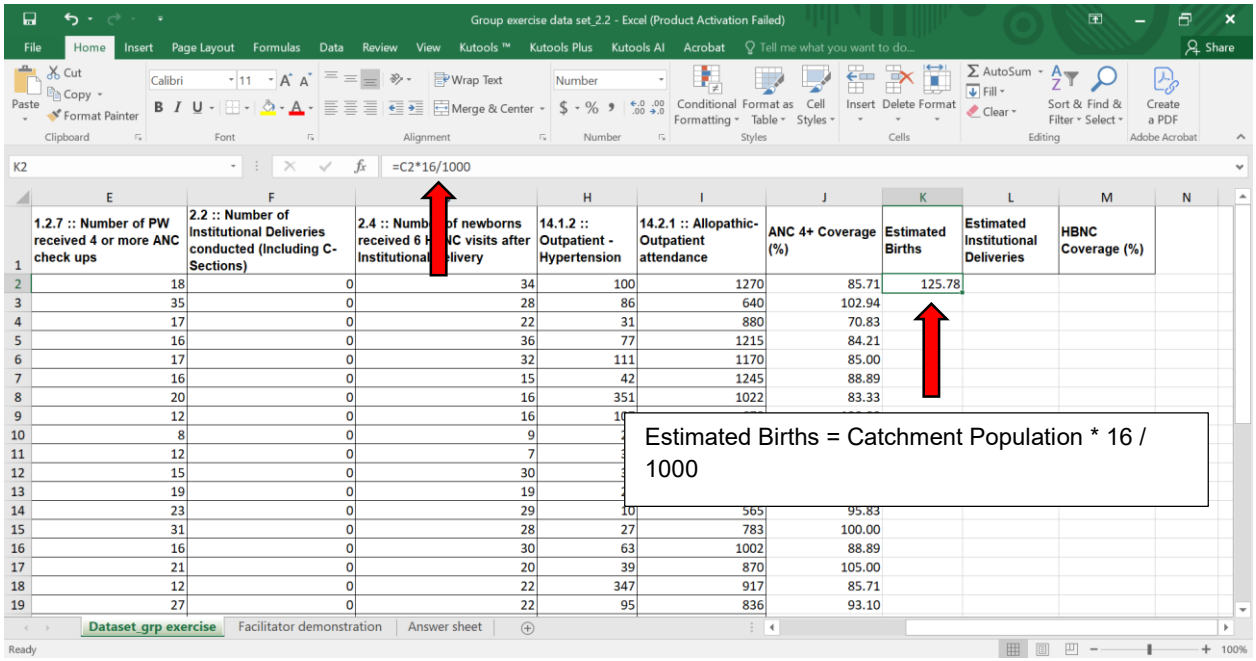
Step 3: Calculate HBNC coverage for each facility

Indicator:
HBNC coverage as a proportion of institutional deliveries

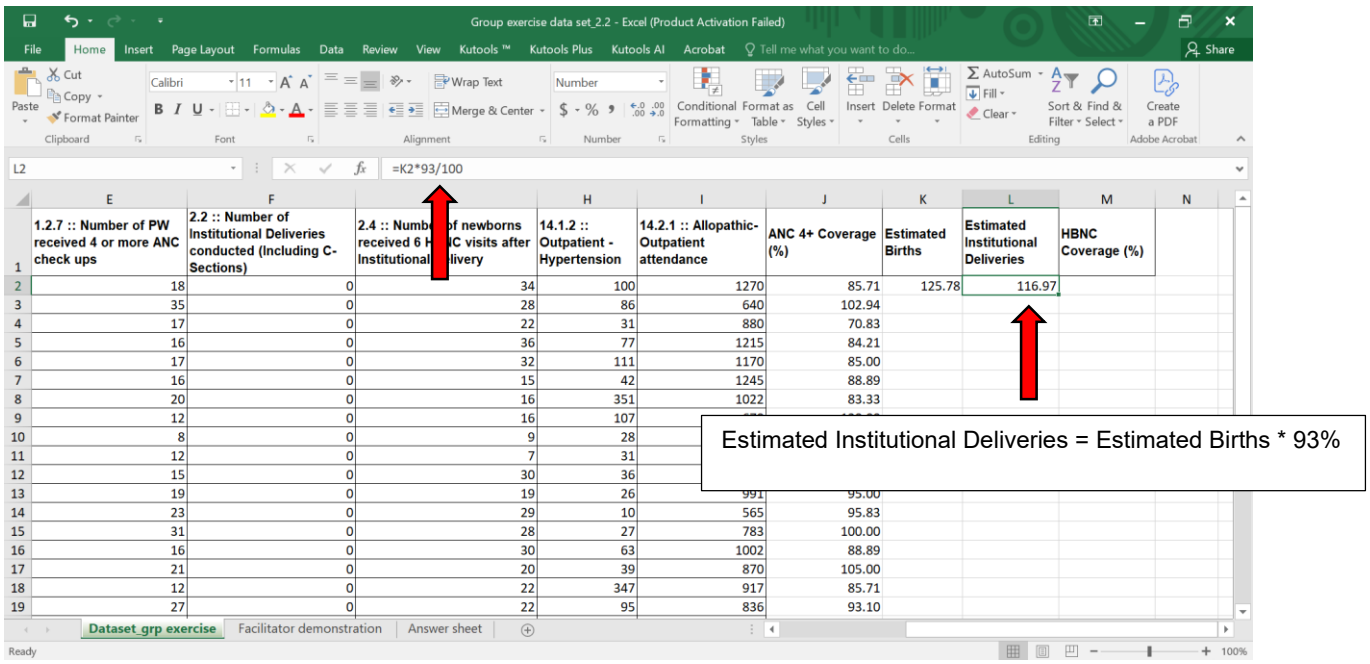
- **Crude Birth Rate (in Odisha, as per NFHS-5)** = 16 per 1,000 population
- **Institutional Delivery Rate (in Kalahandi, as per NFHS-5)** = 93%

Estimated Births = Facility catchment population × CBR / 1000
Estimated Institutional Deliveries = Estimated Births × 93%
HBNC Coverage (%) = (No. of HBNC visits / Estimated Institutional Deliveries) * 100

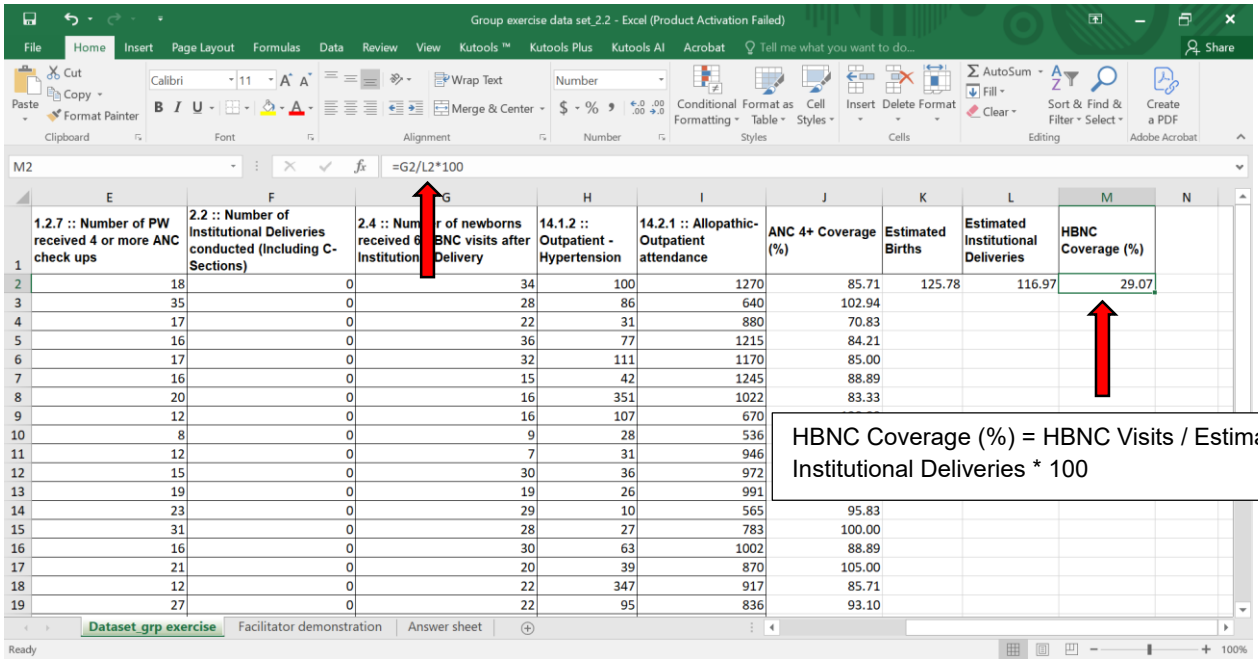


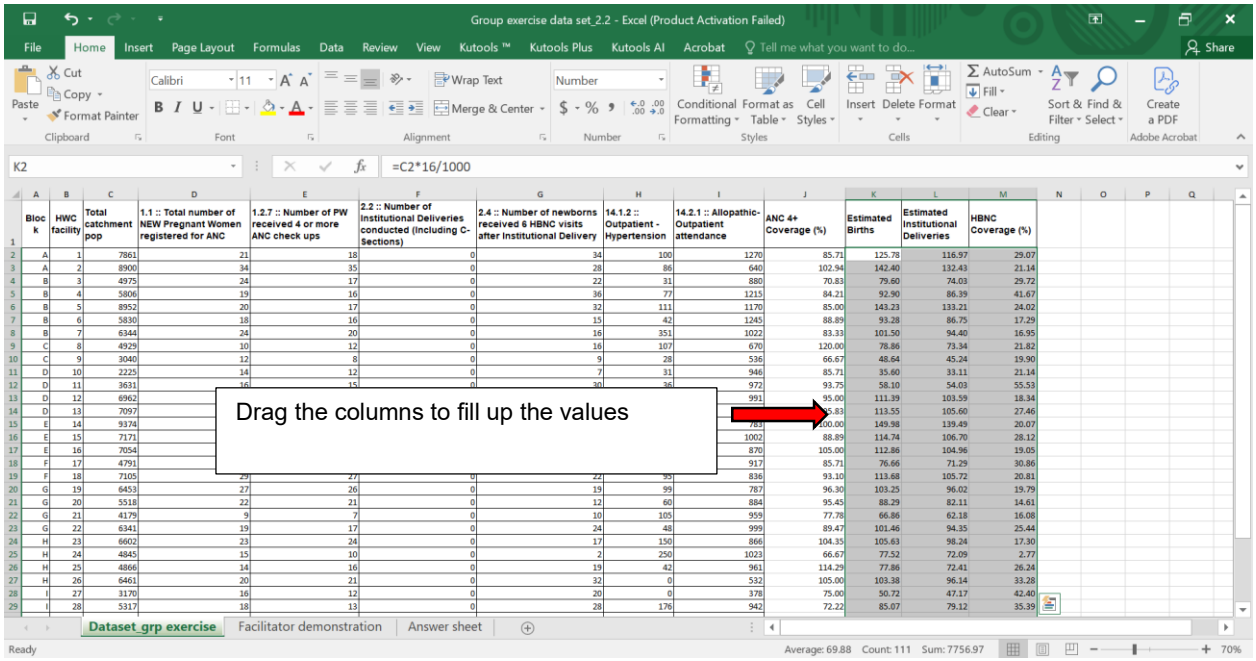


	E	F	G	H	I	J	K	L	M	N
1	1.2.7 :: Number of PW received 4 or more ANC check ups	2.2 :: Number of Institutional Deliveries conducted (Including C-Sections)	2.4 :: Number of newborns received 6 HBNC visits after Institutional Delivery	14.1.2 :: Outpatient - Hypertension	14.2.1 :: Allopathic-Outpatient attendance	ANC 4+ Coverage (%)	Estimated Births	Estimated Institutional Deliveries	HBNC Coverage (%)	
2	18	0	34	100	1270	85.71	125.78			
3	35	0	28	86	640	102.94				
4	17	0	22	31	880	70.83				
5	16	0	36	77	1215	84.21				
6	17	0	32	111	1170	85.00				
7	16	0	15	42	1245	88.89				
8	20	0	16	351	1022	83.33				
9	12	0	16	10						
10	8	0	9							
11	12	0	7							
12	15	0	30							
13	19	0	19							
14	23	0	29	10	565	95.83				
15	31	0	28	27	783	100.00				
16	16	0	30	63	1002	88.89				
17	21	0	20	39	870	105.00				
18	12	0	22	347	917	85.71				
19	27	0	22	95	836	93.10				



	E	F	G	H	I	J	K	L	M	N
1	1.2.7 :: Number of PW received 4 or more ANC check ups	2.2 :: Number of Institutional Deliveries conducted (Including C-Sections)	2.4 :: Number of newborns received 6 HBNC visits after Institutional Delivery	14.1.2 :: Outpatient - Hypertension	14.2.1 :: Allopathic-Outpatient attendance	ANC 4+ Coverage (%)	Estimated Births	Estimated Institutional Deliveries	HBNC Coverage (%)	
2	18	0	34	100	1270	85.71	125.78	116.97		
3	35	0	28	86	640	102.94				
4	17	0	22	31	880	70.83				
5	16	0	36	77	1215	84.21				
6	17	0	32	111	1170	85.00				
7	16	0	15	42	1245	88.89				
8	20	0	16	351	1022	83.33				
9	12	0	16	107						
10	8	0	9	28						
11	12	0	7	31						
12	15	0	30	36						
13	19	0	19	26	991	95.00				
14	23	0	29	10	565	95.83				
15	31	0	28	27	783	100.00				
16	16	0	30	63	1002	88.89				
17	21	0	20	39	870	105.00				
18	12	0	22	347	917	85.71				
19	27	0	22	95	836	93.10				

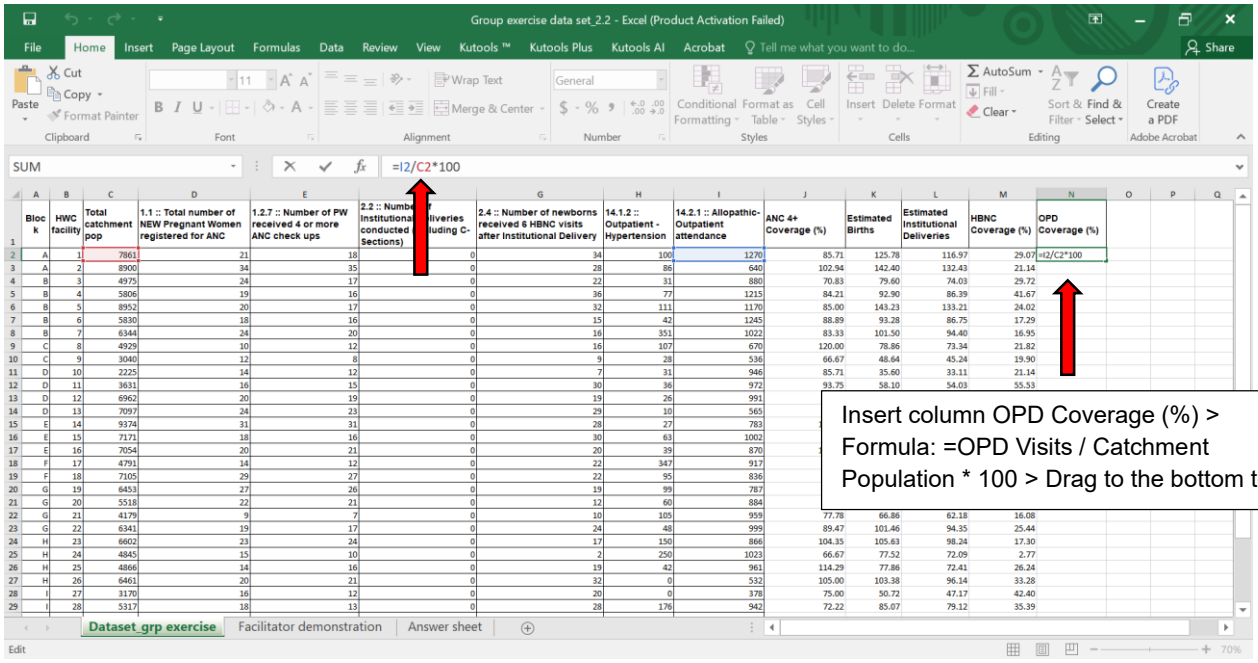




Step 4: Calculate OPD coverage for each facility

Indicator:
OPD service coverage as a proportion of the total population

Formula:
`OPD Coverage (%) = (Total OPD visits / Catchment Population) * 100`



Step 5: Calculate hypertension OPD coverage for each facility

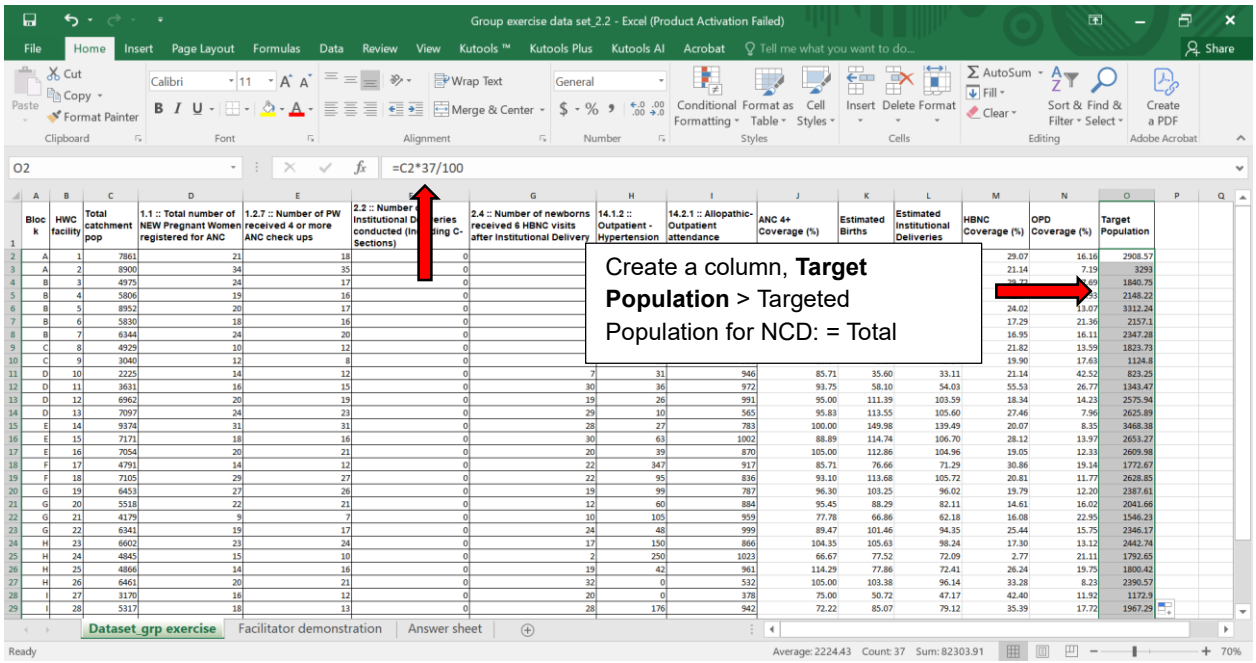
Indicator:
HTN OPD coverage as a proportion of total hypertensives aged 30+

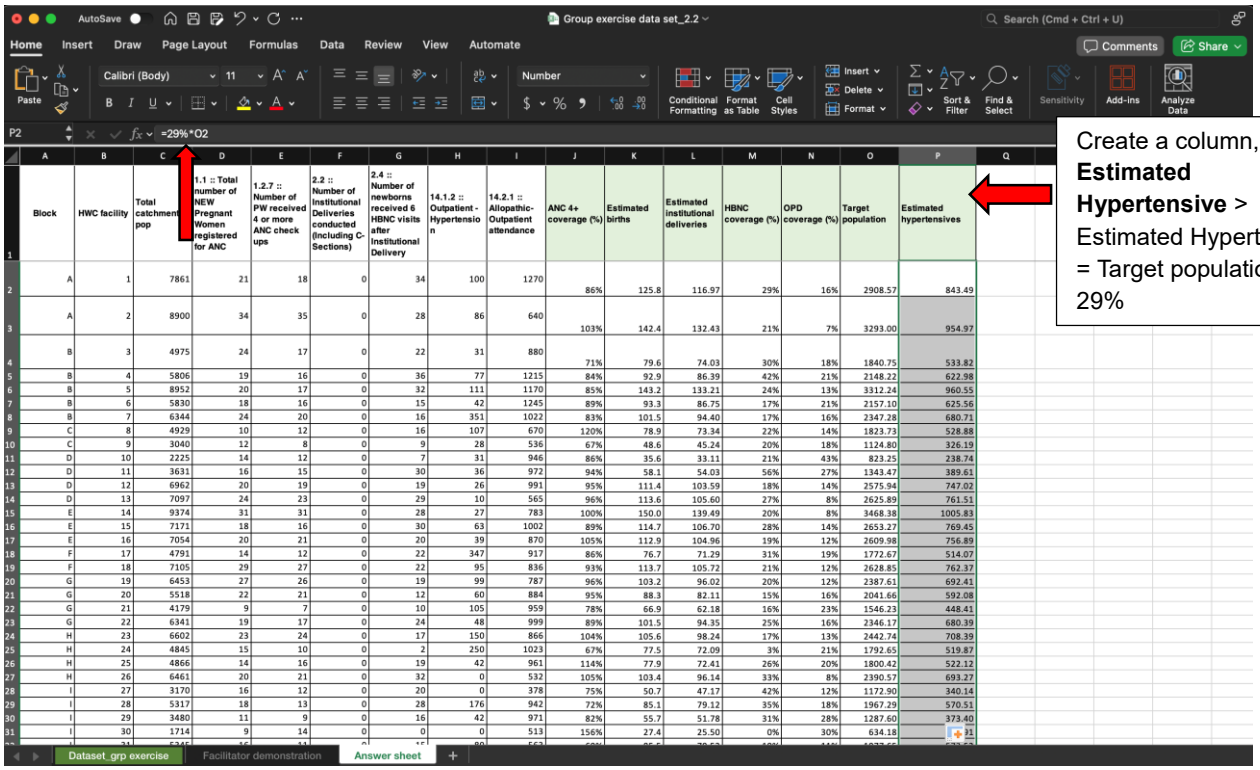
Prevalence of hypertension, i.e., raised blood pressure (among 18-69year as per NNMS, 2017-18) = 29%

Target population for NCD services= 37% * Total catchment population

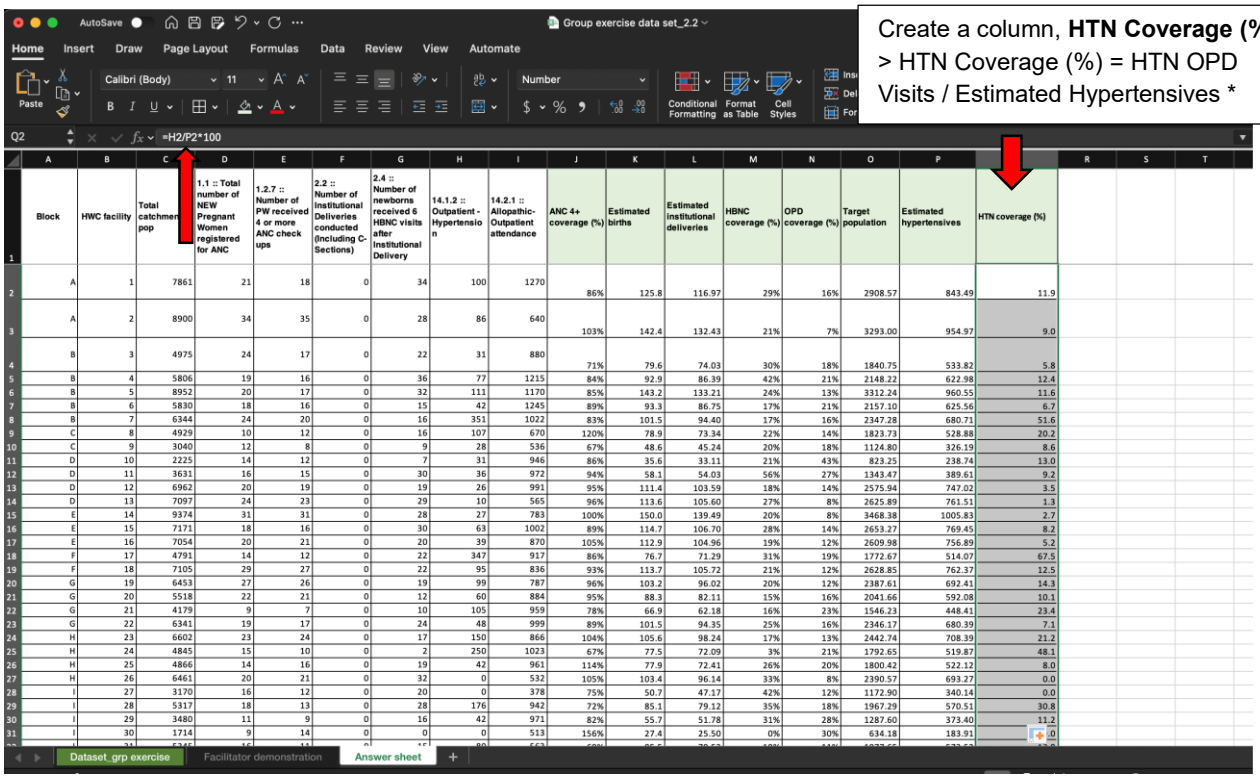
Estimated hypertensives among target population = 29% * Target population

`HTN Coverage (%)` = `HTN OPD Visits / Estimated Hypertensives * 100`





Create a column, **Estimated Hypertensive** > Estimated Hypertensive: = Target population * 29%



Create a column, **HTN Coverage (%)** > HTN Coverage (%) = HTN OPD Visits / Estimated Hypertensives *

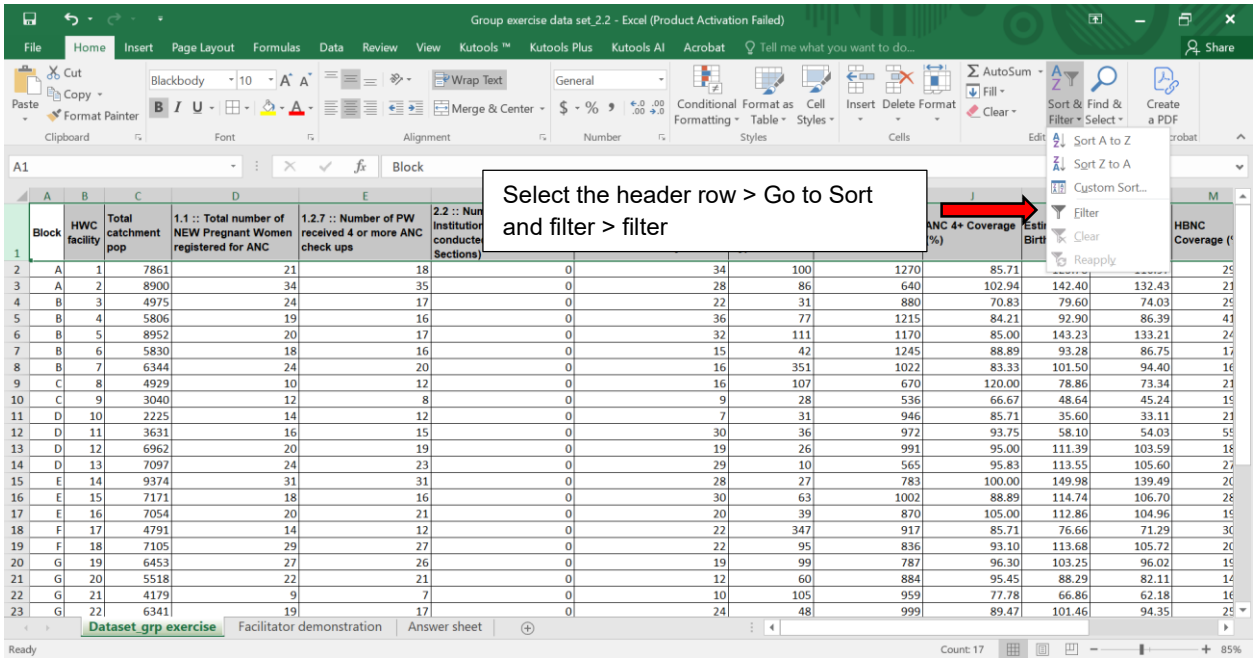
Step 6: Discuss the following questions

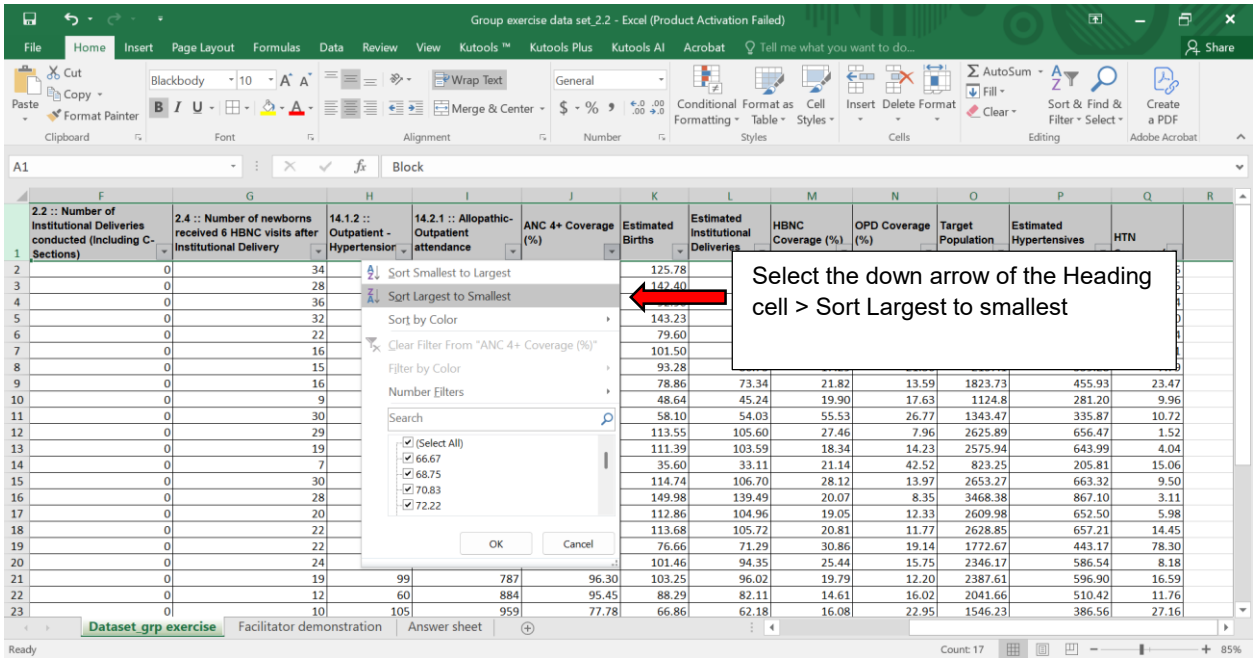
1. Which facilities are performing well in maternal and child health services? Which facilities are not performing well on the same?
2. Which facilities are performing well in OPD services? Which facilities are not performing well on the same?
3. Which facilities are performing well in hypertension services? Which facilities are not performing well on the same?
4. On what services is the district performing well? On what services is the district not performing well?

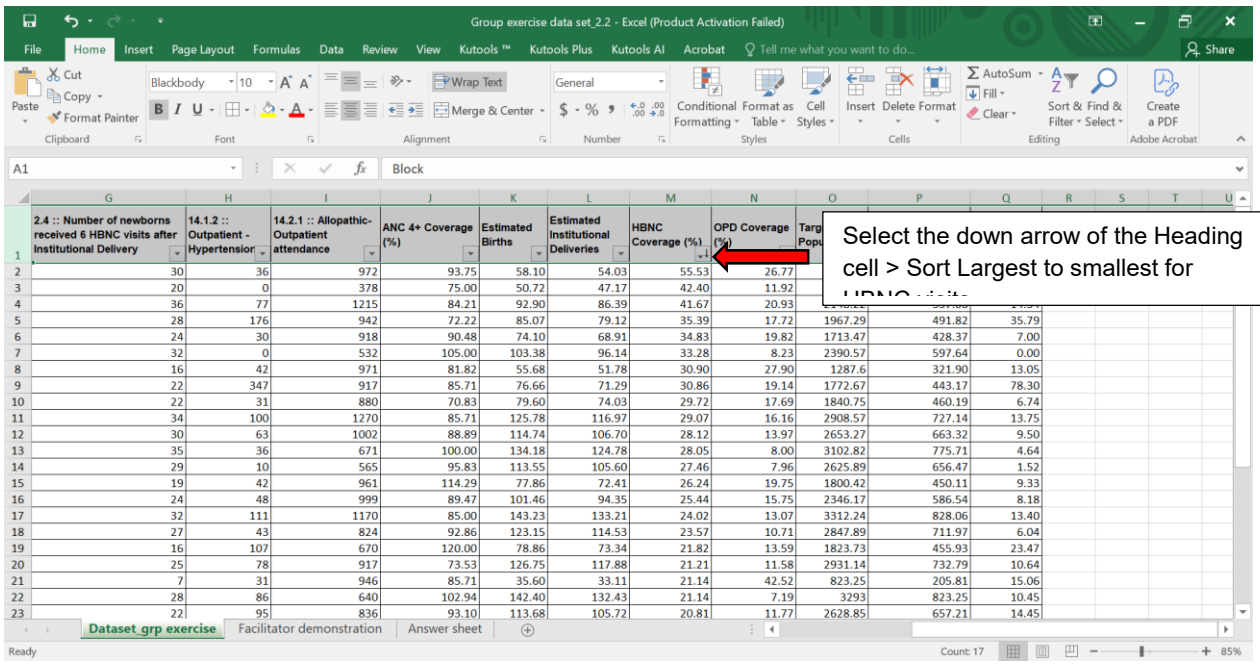
To answer the above questions, follow the steps below:

Sort the coverage columns in descending order.

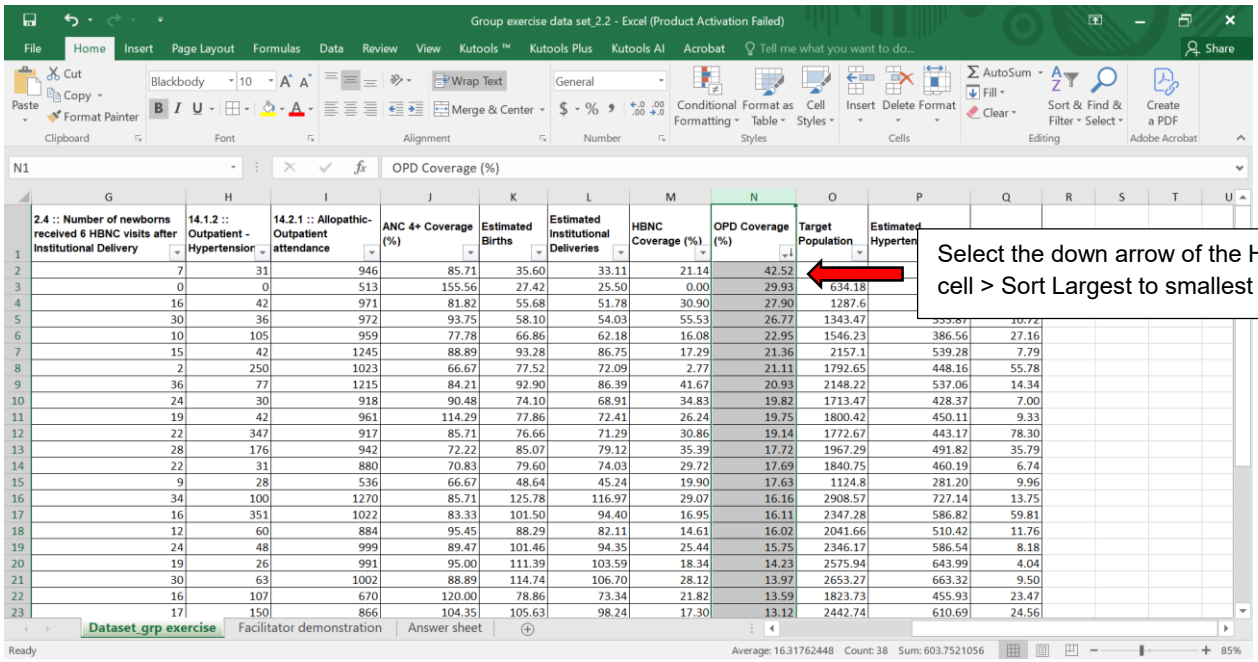
Top performers in Maternal and child health: sort by ANC 4+ and HBNC coverage




Group exercise data set_2.2 - Excel (Product Activation Failed)
Sort Smallest to Largest
Sort Largest to Smallest
Sort by Color
Clear Filter From "ANC 4+ Coverage (%)"
Filter by Color
Number Filters
Search
(Select All)
66.67
68.75
70.83
72.22
OK
Cancel
Select the down arrow of the Heading cell > Sort Largest to smallest
Dataset_grp exercise
Facilitator demonstration
Answer sheet

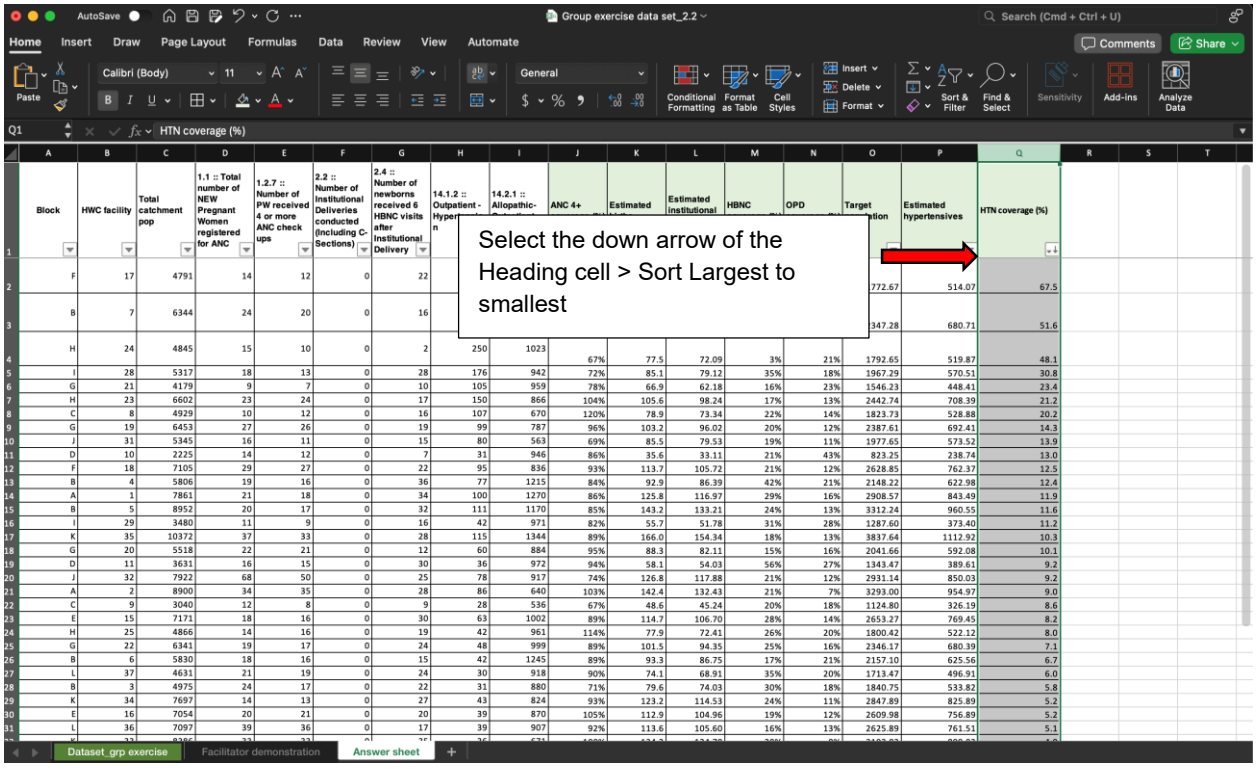

Group exercise data set_2.2 - Excel (Product Activation Failed)
Select the down arrow of the Heading cell > Sort Largest to smallest for
Dataset_grp exercise
Facilitator demonstration
Answer sheet

Top performers in OPD services: sort by OPD coverage



2.4 :: Number of newborns received 6 HBNC visits after Institutional Delivery	14.1.2 :: Outpatient - Hypertension	14.2.1 :: Allopathic-Outpatient attendance	ANC 4+ Coverage (%)	Estimated Births	Estimated Institutional Deliveries	HBNC Coverage (%)	OPD Coverage (%)	Target Population	Estimated Hyperten
7	31	946	85.71	35.60	33.11	21.14	42.52		
0	0	513	155.56	27.42	25.50	0.00	29.93	634.18	
16	42	971	81.82	55.68	51.78	30.90	27.90	1287.6	
30	36	972	93.75	58.10	54.03	55.53	26.77	1343.47	
10	105	959	77.78	66.86	62.18	16.08	22.95	1546.23	386.56
15	42	1245	88.89	93.28	86.75	17.29	21.36	2157.1	539.28
2	250	1023	66.67	77.52	72.09	2.77	21.11	1792.65	448.16
36	77	1215	84.21	92.90	86.39	41.67	20.93	2148.22	537.06
24	30	918	90.48	74.10	68.91	34.83	19.82	1713.47	428.37
19	42	961	114.29	77.86	72.41	26.24	19.75	1800.42	450.11
22	347	917	85.71	76.66	71.29	30.86	19.14	1772.67	443.17
28	176	942	72.22	85.07	79.12	35.39	17.72	1967.29	491.82
22	31	880	70.83	79.60	74.03	29.72	17.69	1840.75	460.19
9	28	536	66.67	48.64	45.24	19.90	17.63	1124.8	281.20
34	100	1270	85.71	125.78	116.97	29.07	16.16	2908.57	727.14
16	351	1022	83.33	101.50	94.40	16.95	16.11	2347.28	586.82
12	60	884	95.45	88.29	82.11	14.61	16.02	2041.66	510.42
24	48	999	89.47	101.46	94.35	25.44	15.75	2346.17	586.54
19	26	991	95.00	111.39	103.59	18.34	14.23	2575.94	643.99
30	63	1002	88.89	114.74	106.70	28.12	13.97	2653.27	663.32
16	107	670	120.00	78.86	73.34	21.82	13.59	1823.73	455.93
17	150	866	104.35	105.63	98.24	17.30	13.12	2442.74	610.69

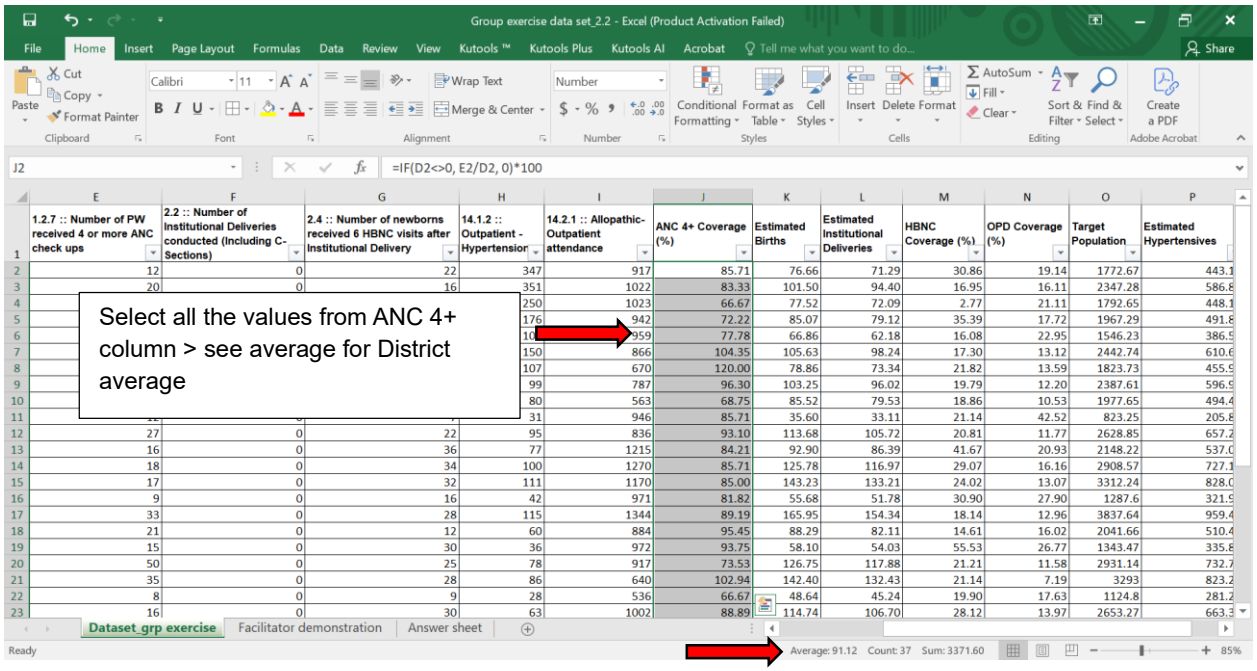
Top performers in hypertension services: sort by HTN coverage



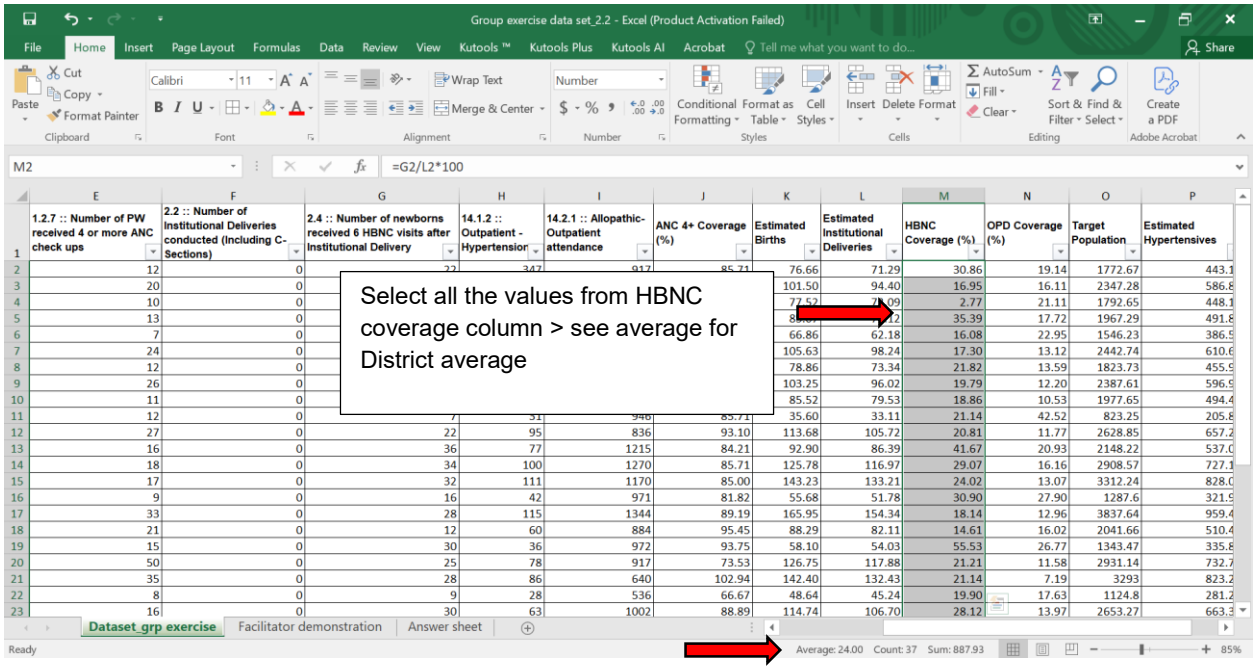
Block	HWC facility	Total catchment pop	1.1 :: Total number of NEW Pregnant Women registered for ANC	1.2.7 :: Number of PW received 4 or more ANC check ups	2.2 :: Number of Institutional Deliveries conducted (including C-Sections)	2.4 :: Number of newborns received 6 HBNC visits after Institutional Delivery	14.1.2 :: Outpatient - Hyper n	14.2.1 :: Allopathic-	ANC 4+	Estimated	Estimated institutional	HBNC	OPD	Target ation	Estimated hypertensives	HTN coverage (%)
F	17	4791	14	12	0	22								772.67	514.07	67.5
B	7	6344	24	20	0	16								347.28	680.71	51.6
H	24	4845	15	10	0	2	250	1023	67%	77.5	72.09	3%	21%	1792.65	519.87	48.1
I	28	5317	18	13	0	28	176	942	72%	85.1	79.12	35%	18%	1967.29	570.51	30.8
G	21	4179	9	7	0	10	105	959	78%	66.9	62.18	16%	23%	1546.23	448.41	23.4
H	23	6602	23	24	0	17	150	866	104%	105.6	98.24	17%	13%	2442.74	708.39	21.2
C	8	4929	10	12	0	16	107	670	120%	78.9	73.34	22%	14%	1823.73	528.88	20.2
G	19	6453	27	26	0	19	99	787	96%	103.2	96.02	20%	12%	2387.61	692.41	14.3
J	31	5345	16	11	0	15	80	563	69%	85.5	79.53	19%	11%	1977.65	573.52	13.9
D	10	2225	14	12	0	7	31	946	86%	35.6	33.11	21%	43%	823.25	238.74	13.0
F	18	7105	29	27	0	22	95	836	93%	113.7	105.72	21%	12%	2628.85	762.37	12.5
B	4	5806	19	16	0	36	77	1215	84%	92.9	86.39	42%	21%	2148.22	622.98	12.4
A	1	7861	21	18	0	34	100	1270	86%	125.8	116.97	29%	16%	2908.57	843.49	11.9
B	5	8952	20	17	0	32	111	1170	85%	143.2	133.21	24%	13%	3312.24	960.55	11.6
I	29	3480	11	9	0	16	42	971	82%	55.7	51.78	31%	28%	1287.60	373.40	11.2
K	35	10372	37	33	0	28	115	1344	89%	166.0	154.34	18%	13%	3837.64	1112.92	10.3
G	20	5518	22	21	0	12	60	884	95%	88.3	82.11	15%	16%	2041.66	592.08	10.1
D	11	3631	16	15	0	30	36	972	94%	58.1	54.03	56%	27%	1343.47	389.61	9.2
J	32	7922	68	50	0	25	78	917	74%	126.8	117.88	21%	12%	2931.14	850.03	9.2
A	2	8900	34	35	0	28	86	640	103%	142.4	132.43	21%	7%	3293.00	954.97	9.0
C	9	3040	12	8	0	9	28	536	67%	48.6	45.24	20%	18%	1124.80	326.19	8.6
E	15	7171	18	16	0	30	63	1002	89%	114.7	106.70	28%	14%	2653.27	769.45	8.2
H	25	4866	14	16	0	19	42	961	114%	77.9	72.41	26%	20%	1800.42	522.12	8.0
G	22	6341	19	17	0	24	48	999	89%	101.5	94.35	25%	16%	2346.17	680.39	7.1
B	6	5830	18	16	0	15	42	1245	89%	93.3	86.75	17%	21%	2157.10	625.56	6.7
L	37	4631	21	19	0	24	30	918	90%	74.1	68.91	35%	20%	1713.47	496.91	6.0
B	3	4975	24	17	0	22	31	880	71%	79.6	74.03	30%	18%	1840.75	533.82	5.8
K	34	7697	14	13	0	27	43	824	93%	123.2	114.53	24%	11%	2847.89	825.89	5.2
E	16	7054	20	21	0	20	39	870	105%	112.9	104.96	19%	12%	2609.98	756.89	5.2
L	36	7097	39	36	0	17	39	907	92%	113.6	105.60	16%	13%	2625.89	761.51	5.1

To estimate average district-level coverage, follow the below steps.

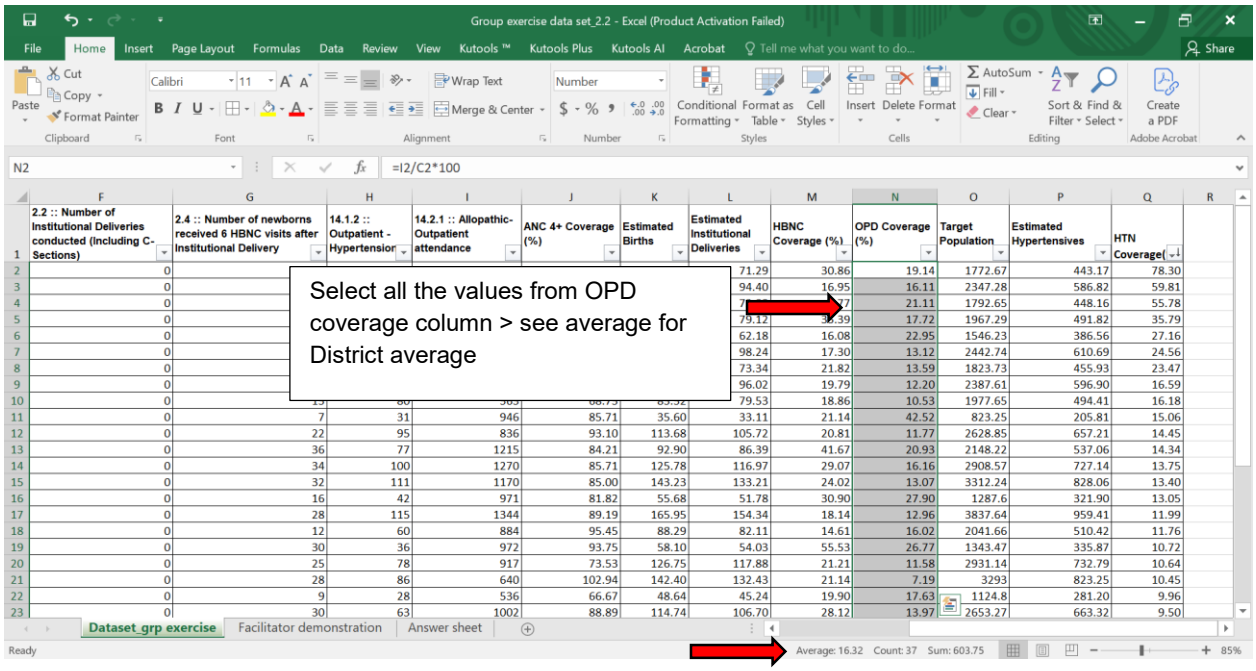
Average ANC 4+ coverage in the district.



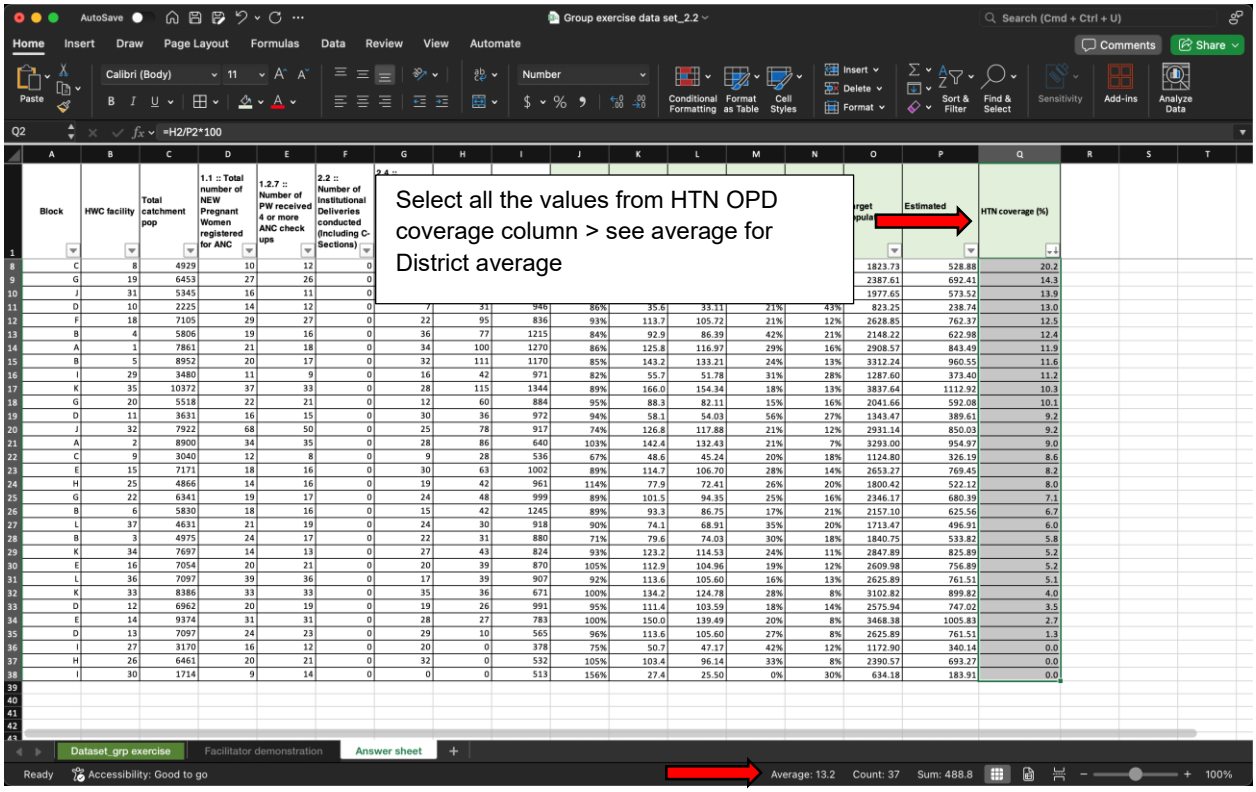
Average HBNC coverage in the district.



Average OPD coverage in the district.



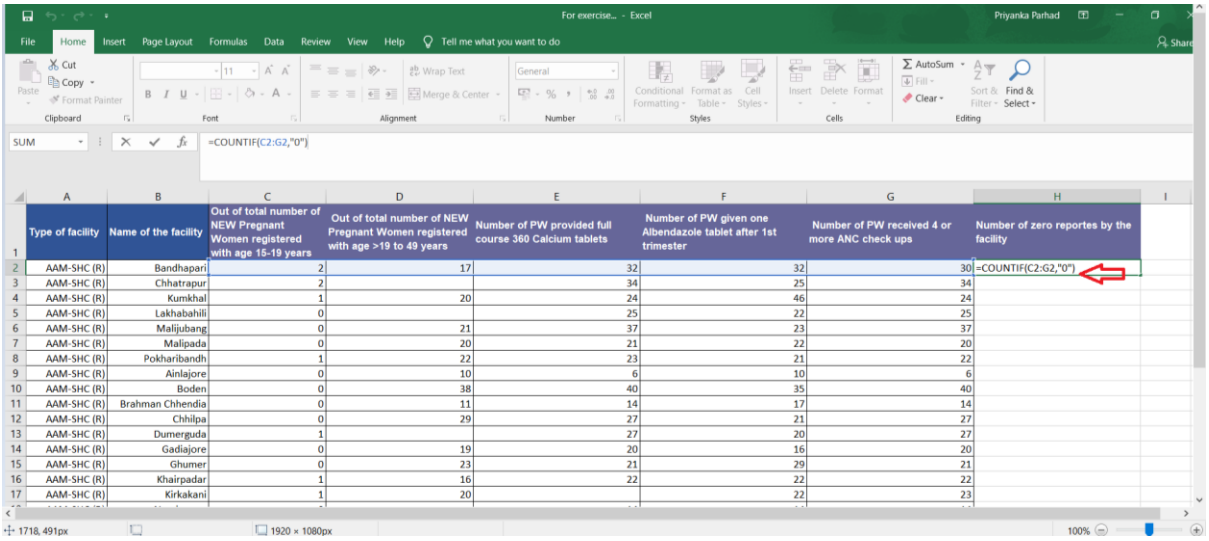
Average HTN OPD coverage in the district



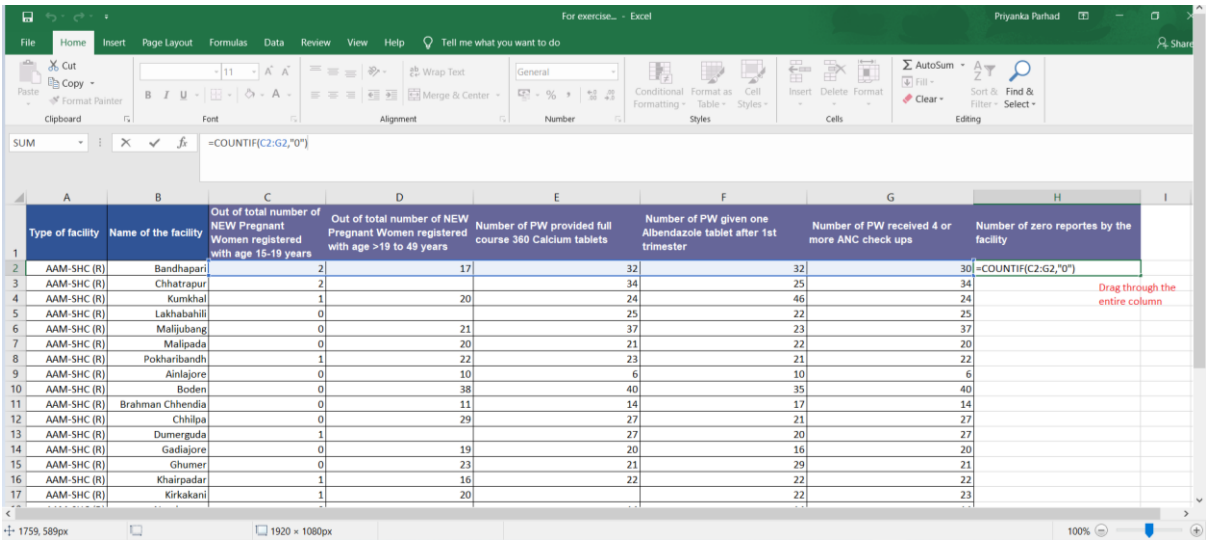
Module 4.1

Exercise 1: Data quality issue- Incompleteness (missing data)

To find the facilities which reported Zero-

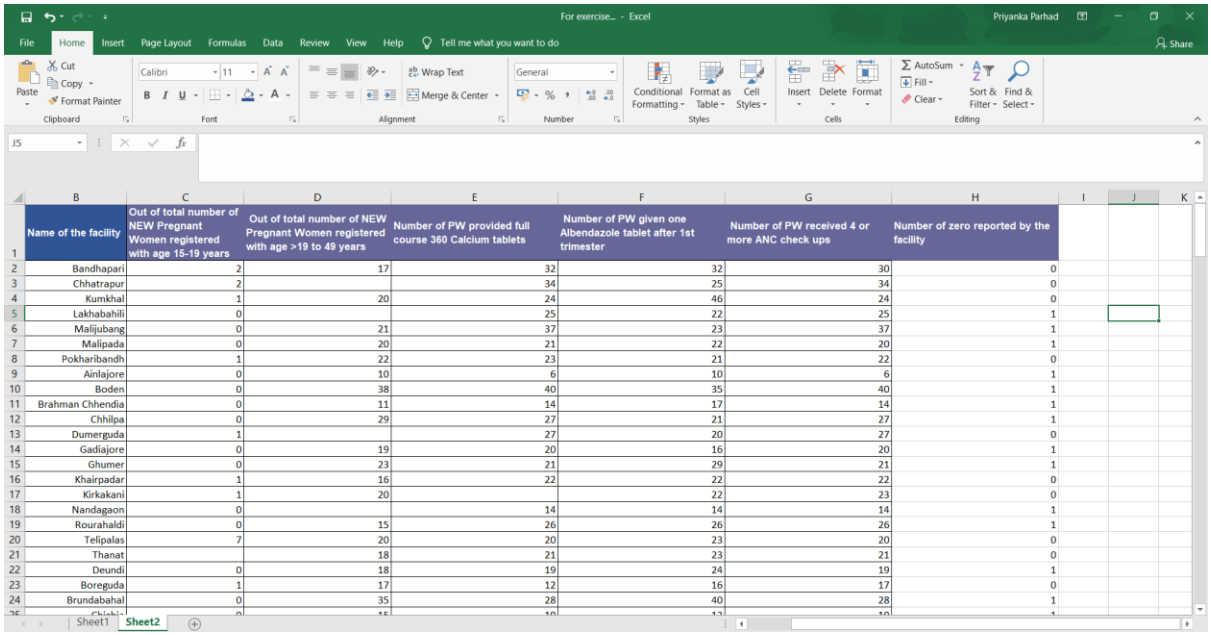


Type of facility	Name of the facility	Out of total number of NEW Pregnant Women registered with age 15-19 years	Out of total number of NEW Pregnant Women registered with age >19 to 49 years	Number of PW provided full course 360 Calcium tablets	Number of PW given one Albendazole tablet after 1st trimester	Number of PW received 4 or more ANC check ups	Number of zero reportes by the facility
AAM-SHC (R)	Bandhapari	2	17	32	32	30	=COUNTIF(C2:G2,"0")
AAM-SHC (R)	Chhatrapur	2		34	25	34	
AAM-SHC (R)	Kumkhal	1	20	24	46	24	
AAM-SHC (R)	Lakhabahili	0		25	22	25	
AAM-SHC (R)	Malijubang	0	21	37	23	37	
AAM-SHC (R)	Malipada	0	20	21	22	20	
AAM-SHC (R)	Pokharibandh	1	22	23	21	22	
AAM-SHC (R)	Ainlajore	0	10	6	10	6	
AAM-SHC (R)	Boden	0	38	40	35	40	
AAM-SHC (R)	Brahman Chhendia	0	11	14	17	14	
AAM-SHC (R)	Chhilpa	0	29	27	21	27	
AAM-SHC (R)	Dumerguda	1		27	20	27	
AAM-SHC (R)	Gadiajore	0	19	20	16	20	
AAM-SHC (R)	Ghumer	0	23	21	29	21	
AAM-SHC (R)	Khairpadar	1	16	22	22	22	
AAM-SHC (R)	Kirkakani	1	20		22	23	



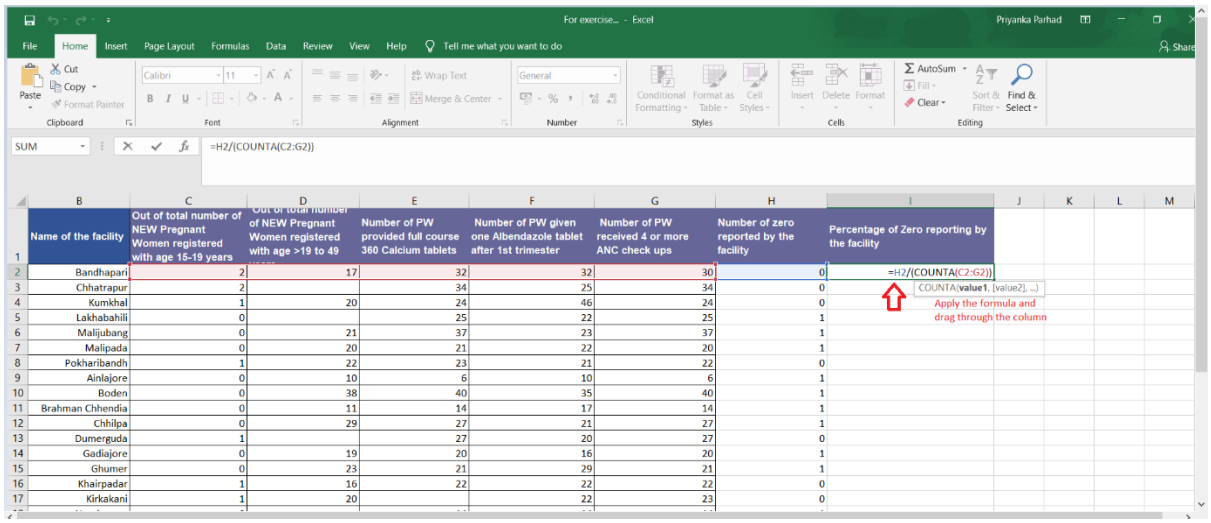
Type of facility	Name of the facility	Out of total number of NEW Pregnant Women registered with age 15-19 years	Out of total number of NEW Pregnant Women registered with age >19 to 49 years	Number of PW provided full course 360 Calcium tablets	Number of PW given one Albendazole tablet after 1st trimester	Number of PW received 4 or more ANC check ups	Number of zero reportes by the facility
AAM-SHC (R)	Bandhapari	2	17	32	32	30	=COUNTIF(C2:G2,"0")
AAM-SHC (R)	Chhatrapur	2		34	25	34	
AAM-SHC (R)	Kumkhal	1	20	24	46	24	
AAM-SHC (R)	Lakhabahili	0		25	22	25	
AAM-SHC (R)	Malijubang	0	21	37	23	37	
AAM-SHC (R)	Malipada	0	20	21	22	20	
AAM-SHC (R)	Pokharibandh	1	22	23	21	22	
AAM-SHC (R)	Ainlajore	0	10	6	10	6	
AAM-SHC (R)	Boden	0	38	40	35	40	
AAM-SHC (R)	Brahman Chhendia	0	11	14	17	14	
AAM-SHC (R)	Chhilpa	0	29	27	21	27	
AAM-SHC (R)	Dumerguda	1		27	20	27	
AAM-SHC (R)	Gadiajore	0	19	20	16	20	
AAM-SHC (R)	Ghumer	0	23	21	29	21	
AAM-SHC (R)	Khairpadar	1	16	22	22	22	
AAM-SHC (R)	Kirkakani	1	20		22	23	

We will get total number of zeros reported by the facility across all the indicators

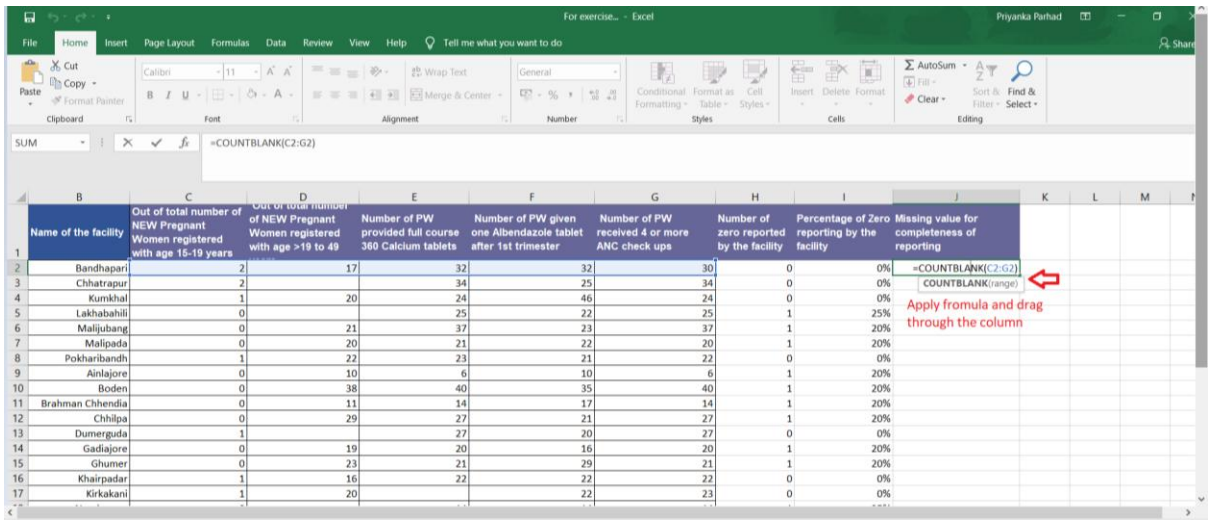


	Name of the facility	Out of total number of NEW Pregnant Women registered with age 15-19 years	Out of total number of NEW Pregnant Women registered with age >19 to 49 years	Number of PW provided full course 360 Calcium tablets	Number of PW given one Albendazole tablet after 1st trimester	Number of PW received 4 or more ANC check ups	Number of zero reported by the facility
2	Bandhapari	2	17	32	32	30	0
3	Chhatrapur	2		34	25	34	0
4	Kumkhal	1	20	24	46	24	0
5	Lakhabahili	0		25	22	25	1
6	Malijubang	0	21	37	23	37	1
7	Malipada	0	20	21	22	20	1
8	Pokharibandh	1	22	23	21	22	0
9	Ainlajore	0	10	6	10	6	1
10	Boden	0	38	40	35	40	1
11	Brahman Chhendia	0	11	14	17	14	1
12	Chhilpa	0	29	27	21	27	1
13	Dumerguda	1		27	20	27	0
14	Gadiajore	0	19	20	16	20	1
15	Ghumer	0	23	21	29	21	1
16	Khairpadar	1	16	22	22	22	0
17	Kirkakani	1	20		22	23	0
18	Nandagaon	0		14	14	14	1
19	Rourahaldi	0	15	26	26	26	1
20	Telipalas	7	20	20	23	20	0
21	Thanat		18	21	23	21	0
22	Deundi	0	18	19	24	19	1
23	Boreguda	1	17	12	16	17	0
24	Brundabahal	0	35	28	40	28	1

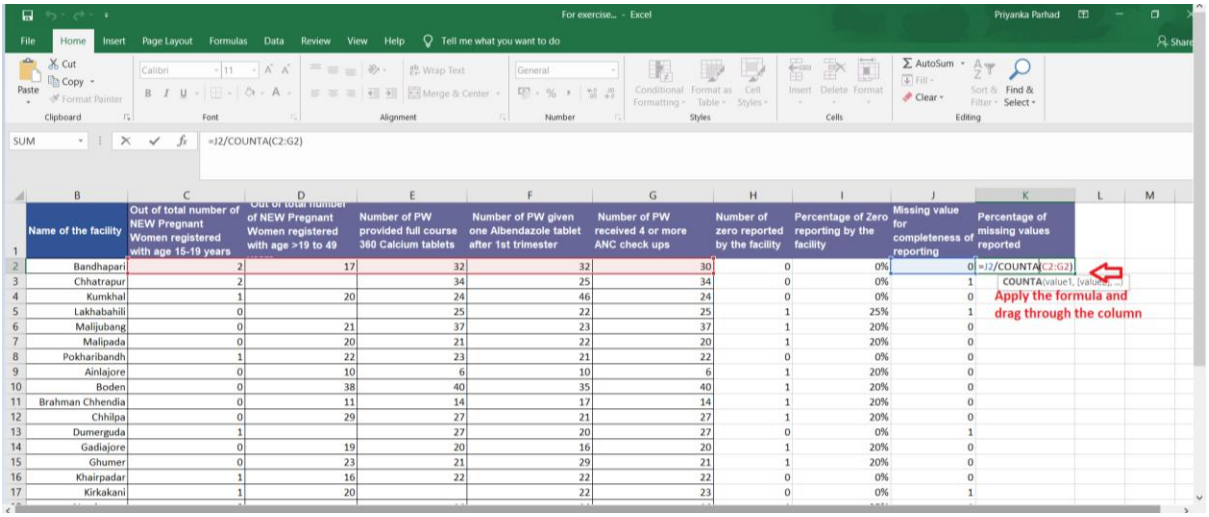
Then we find the percentage of “zero” reported by the facility



	Name of the facility	Out of total number of NEW Pregnant Women registered with age 15-19 years	Out of total number of NEW Pregnant Women registered with age >19 to 49	Number of PW provided full course 360 Calcium tablets	Number of PW given one Albendazole tablet after 1st trimester	Number of PW received 4 or more ANC check ups	Number of zero reported by the facility	Percentage of Zero reporting by the facility
2	Bandhapari	2	17	32	32	30	0	=H2/(COUNTA(C2:G2))
3	Chhatrapur	2		34	25	34	0	
4	Kumkhal	1	20	24	46	24	0	
5	Lakhabahili	0		25	22	25	1	
6	Malijubang	0	21	37	23	37	1	
7	Malipada	0	20	21	22	20	1	
8	Pokharibandh	1	22	23	21	22	0	
9	Ainlajore	0	10	6	10	6	1	
10	Boden	0	38	40	35	40	1	
11	Brahman Chhendia	0	11	14	17	14	1	
12	Chhilpa	0	29	27	21	27	1	
13	Dumerguda	1		27	20	27	0	
14	Gadiajore	0	19	20	16	20	1	
15	Ghumer	0	23	21	29	21	1	
16	Khairpadar	1	16	22	22	22	0	
17	Kirkakani	1	20		22	23	0	



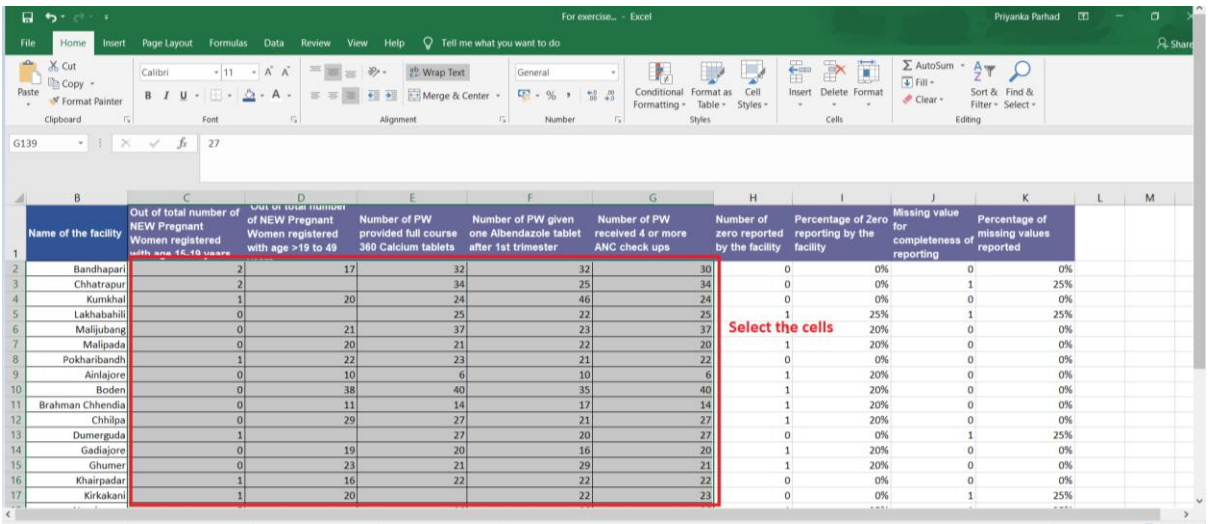
	Name of the facility	Out of total number of NEW Pregnant Women registered with age 15-19 years	Out of total number of NEW Pregnant Women registered with age >19 to 49	Number of PW provided full course 360 Calcium tablets	Number of PW given one Albendazole tablet after 1st trimester	Number of PW received 4 or more ANC check ups	Number of zero reported by the facility	Percentage of Zero reporting by the facility	Missing value for completeness of reporting
2	Bandhapari	2	17	32	32	30	0	0%	=COUNTBLANK(C2:G2)
3	Chhatrapur	2		34	25	34	0	0%	
4	Kumkhal	1	20	24	46	24	0	0%	
5	Lakhabahili	0		25	22	25	1	25%	
6	Malijubang	0	21	37	23	37	1	20%	
7	Malipada	0	20	21	22	20	1	20%	
8	Pokharibandh	1	22	23	21	22	0	0%	
9	Ainlajore	0	10	6	10	6	1	20%	
10	Boden	0	38	40	35	40	1	20%	
11	Brahman Chhendia	0	11	14	17	14	1	20%	
12	Chhilpa	0	29	27	21	27	1	20%	
13	Dumerguda	1		27	20	27	0	0%	
14	Gadiajore	0	19	20	16	20	1	20%	
15	Ghumer	0	23	21	29	21	1	20%	
16	Khairpadar	1	16	22	22	22	0	0%	
17	Kirkakani	1	20		22	23	0	0%	

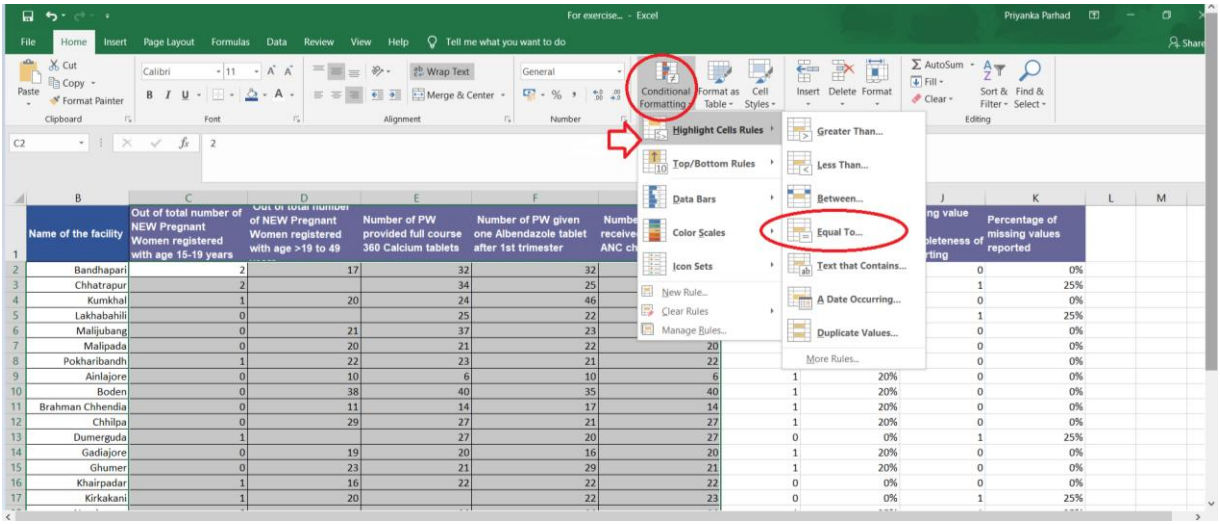


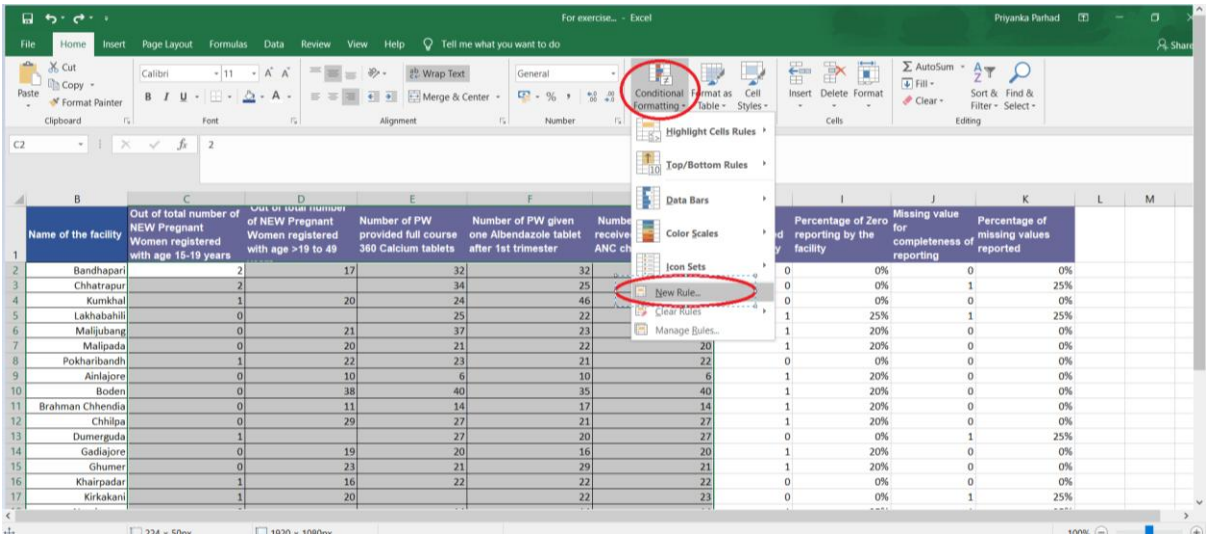
Now we get the number and percentage of zero and missing values reported by the facilities.

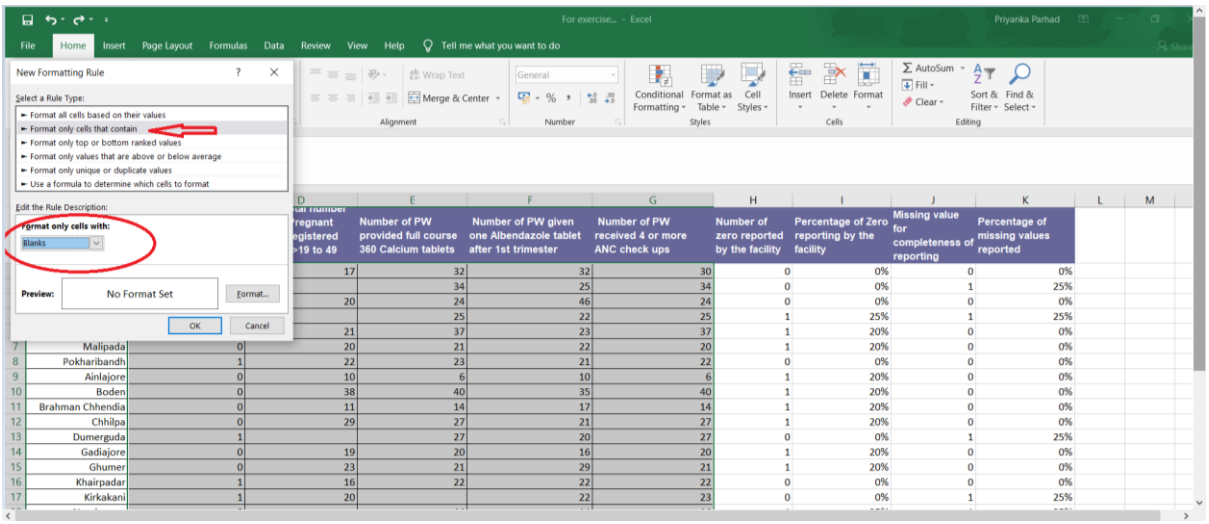
Since missing values can result in inaccurate reporting calculations, they should first be identified and then cross-verified with the respective facility. Based on this verification, the missing entries should be appropriately filled in with either the correct number or zero.

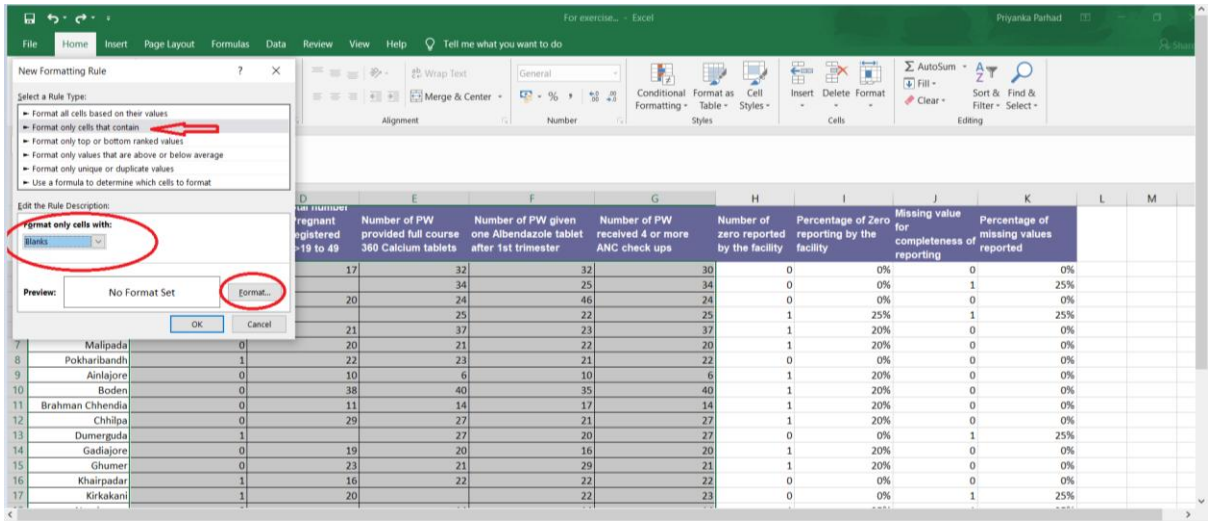
So now we need to colour code the missing value cells

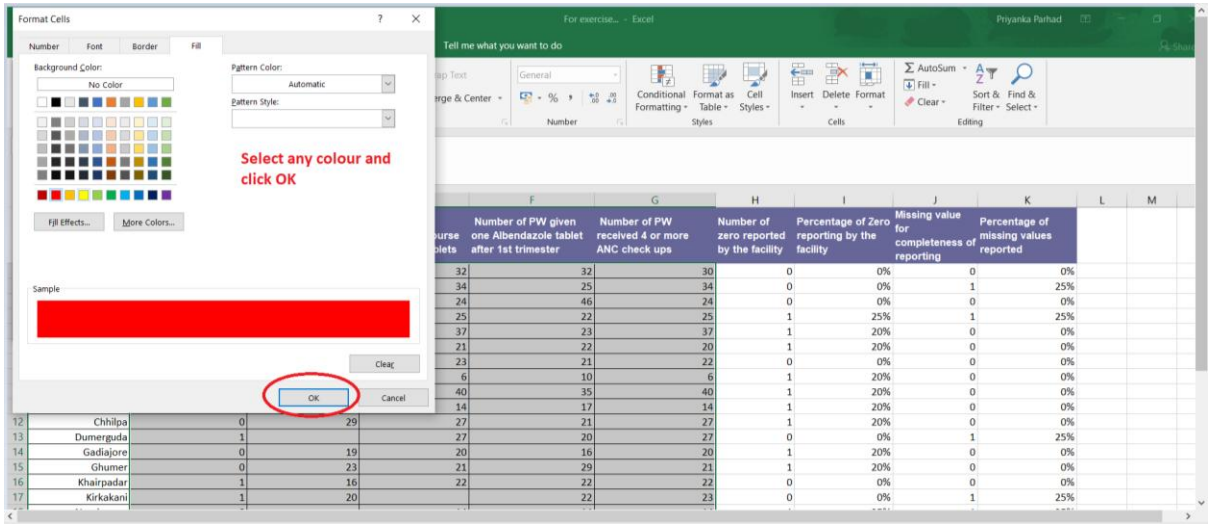


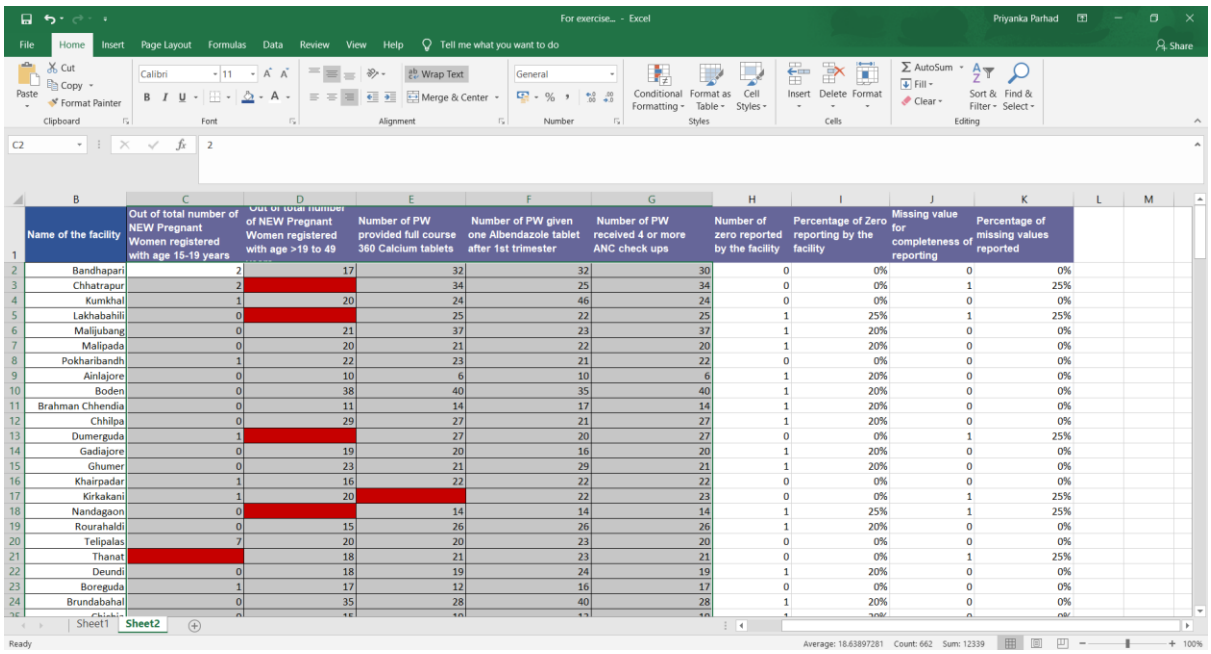

Conditional Formatting
Highlight Cells Rules
Top/Bottom Rules
Data Bars
Color Scales
Icon Sets
New Rule...
Clear Rules
Manage Rules...
Greater Than...
Less Than...
Between...
Equal To...
Text that Contains...
A Date Occurring...
Duplicate Values...
More Rules...


Conditional Formatting
Highlight Cells Rules
Top/Bottom Rules
Data Bars
Color Scales
Icon Sets
New Rule...
Clear Rules
Manage Rules...


New Formatting Rule
Select a Rule Type:
Format all cells based on their values
Format only cells that contain
Format only top or bottom ranked values
Format only values that are above or below average
Format only unique or duplicate values
Use a formula to determine which cells to format
Edit the Rule Description:
Format only cells with:
Blanks
Preview:
No Format Set
Format...
OK
Cancel







	Name of the facility	Out of total number of NEW Pregnant Women registered with age 15-19 years	Out of total number of NEW Pregnant Women registered with age >19 to 49	Number of PW provided full course 360 Calcium tablets	Number of PW given one Albendazole tablet after 1st trimester	Number of PW received 4 or more ANC check ups	Number of zero reported by the facility	Percentage of Zero reporting by the facility	Missing value for completeness of reporting	Percentage of missing values reported
2	Bandhapari	2	17	32	32	30	0	0%	0	0%
3	Chhatrapur	2		34	25	34	0	0%	1	25%
4	Kumkhal	1	20	24	46	24	0	0%	0	0%
5	Lakhabahili	0		25	22	25	1	25%	1	25%
6	Malijubang	0	21	37	23	37	1	20%	0	0%
7	Malipada	0	20	21	22	20	1	20%	0	0%
8	Pokharibandh	1	22	23	21	22	0	0%	0	0%
9	Ainlajore	0	10	6	10	6	1	20%	0	0%
10	Boden	0	38	40	35	40	1	20%	0	0%
11	Brahman Chhendia	0	11	14	17	14	1	20%	0	0%
12	Chhilpa	0	29	27	21	27	1	20%	0	0%
13	Dumerguda	1		27	20	27	0	0%	1	25%
14	Gadiajore	0	19	20	16	20	1	20%	0	0%
15	Ghumer	0	23	21	29	21	1	20%	0	0%
16	Khairpadar	1	16	22	22	22	0	0%	0	0%
17	Kirkakani	1	20		22	23	0	0%	1	25%
18	Nandagaon	0		14	14	14	1	25%	1	25%
19	Rourahaldi	0	15	26	26	26	1	20%	0	0%
20	Telipalas	7	20	20	23	20	0	0%	0	0%
21	Thanat		18	21	23	21	0	0%	1	25%
22	Deundi	0	18	19	24	19	1	20%	0	0%
23	Boreguda	1	17	12	16	17	0	0%	0	0%
24	Brundabahal	0	35	28	40	28	1	20%	0	0%

Exercise 2: Data quality issue- Inconsistency (Outliers)

IDENTIFICATION OF STATISTICAL OUTLIERS

- Statistical outliers are numbers that do not conform to the trend or are unexpected values.
- In statistical terms,
  - ✓if the value lies 1.5 Standard Deviations away from the range
- In formula terms:
  - ✓Upper limit = Mean + 1.5 × SD
  - ✓Lower limit = Mean – 1.5 × SD
- Can also be viewed on scatter plot it is identified as an outlier.
- This often helps to identify data entry errors or large deviations in computation.

Example of calculation

Note: Please refer to step 1 (calculation of mean/ average), step 2 (calculation of standard deviation) in exercise 1 under Module 2.1

	A	B	C
1	Facility	ANC Registrations	Outlier
2	A	85	
3	B	78	
4	C	82	
5	D	88	
6	E	76	
7	F	95	
8	G	91	
9	H	89	
10	I	77	
11	J	120	Outlier
12	K	83	
13	L	86	
14	Mean	87.5	
15	SD	11.8	
16	Upper limit (UL)	105.1	
17	Lower limit (LL)	69.9	
18	Below LL	0	
19	Above UL	1	

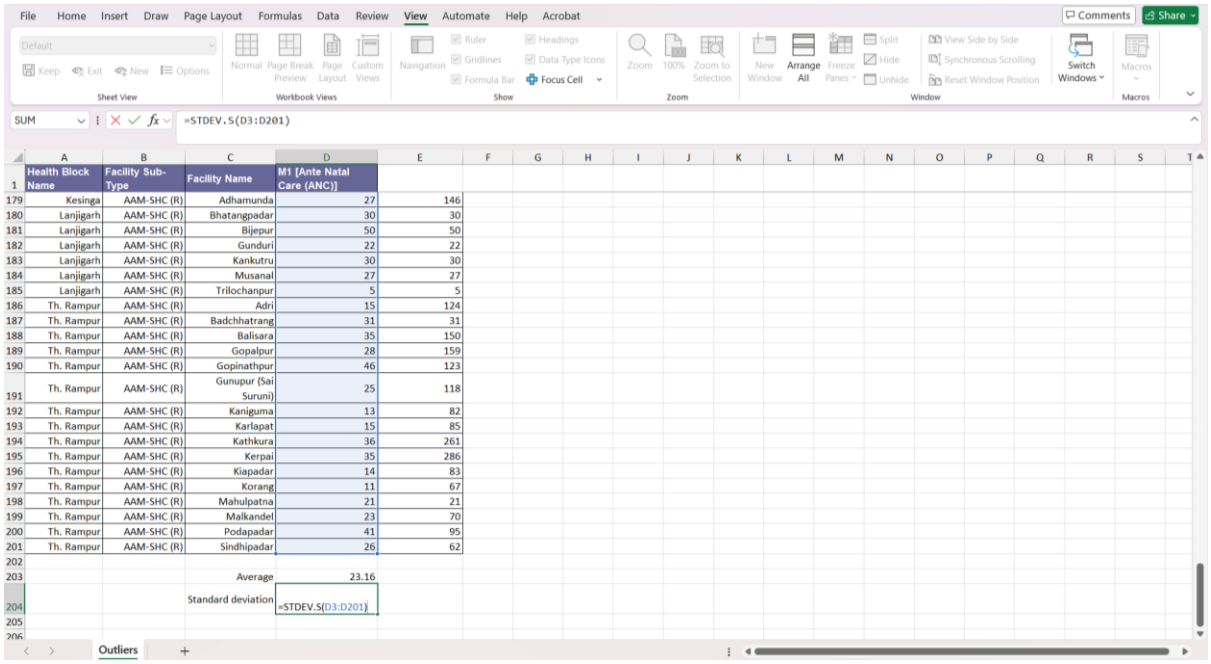
Steps Steps to Identify Outliers
(Example from ANC Registrations)

Calculate Mean
=AVERAGE(B2:B13) → Mean = 87.5
Calculate Standard Deviation (SD)
=STDEV.S(B2:B13) → SD = 11.8
Determine Thresholds for Outliers
Upper Limit (UL) = Mean + 1.5 × SD
= B14+(1.5*B15) → UL = 105.1
Lower Limit (LL) = Mean - 1.5 × SD
= B14-(1.5*B15) → LL = 69.9
Identify Outliers
Flag values < LL or > UL
Example: 120 (Facility J) is an outlier.
Use COUNTIF to Summarize
Values below LL: =COUNTIF(B2:B13,"<"&B17) → 0
Values above UL: =COUNTIF(B2:B13,">"&B16) → 1

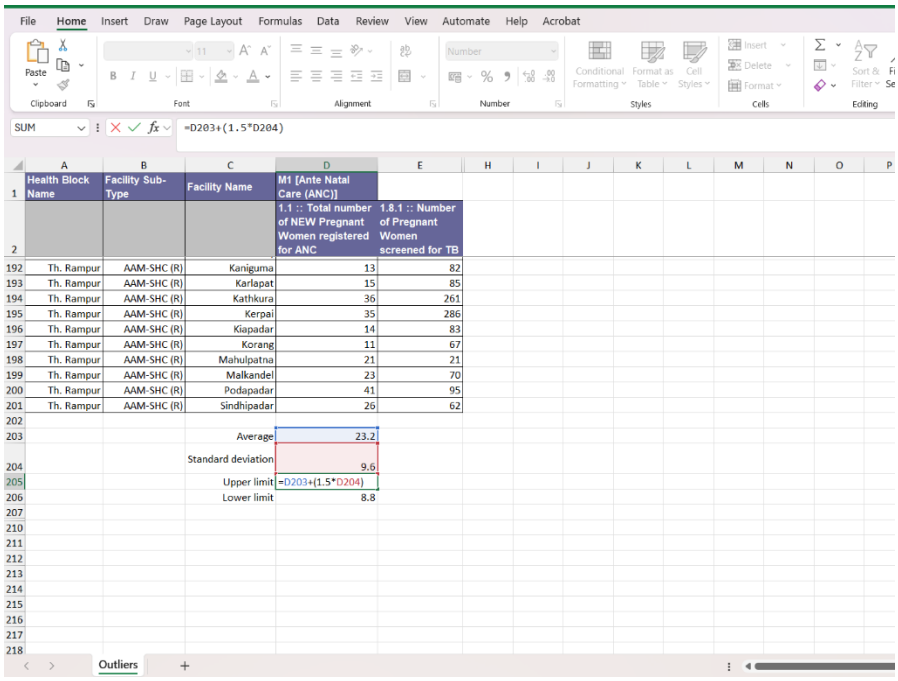
(1) To find the facilities with outliers using SD method-

Data element: Total number of NEW Pregnant Women registered for ANC

Step 1: Calculate the average and standard deviation

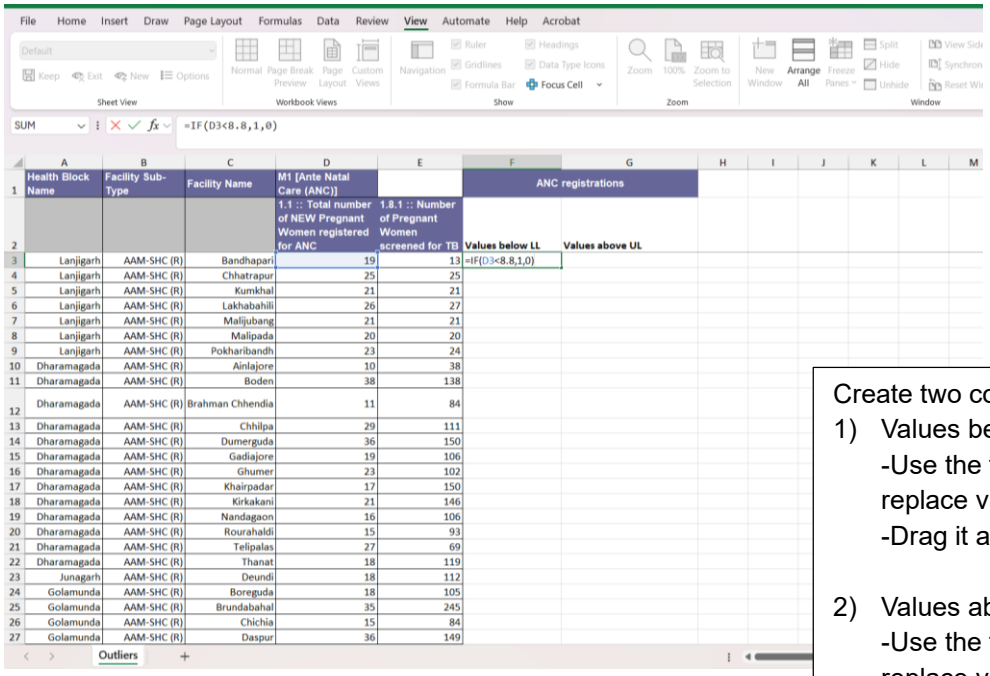


Step 2: Calculate the upper and lower limit



Upper limit (UL)= mean + (1.5*SD)

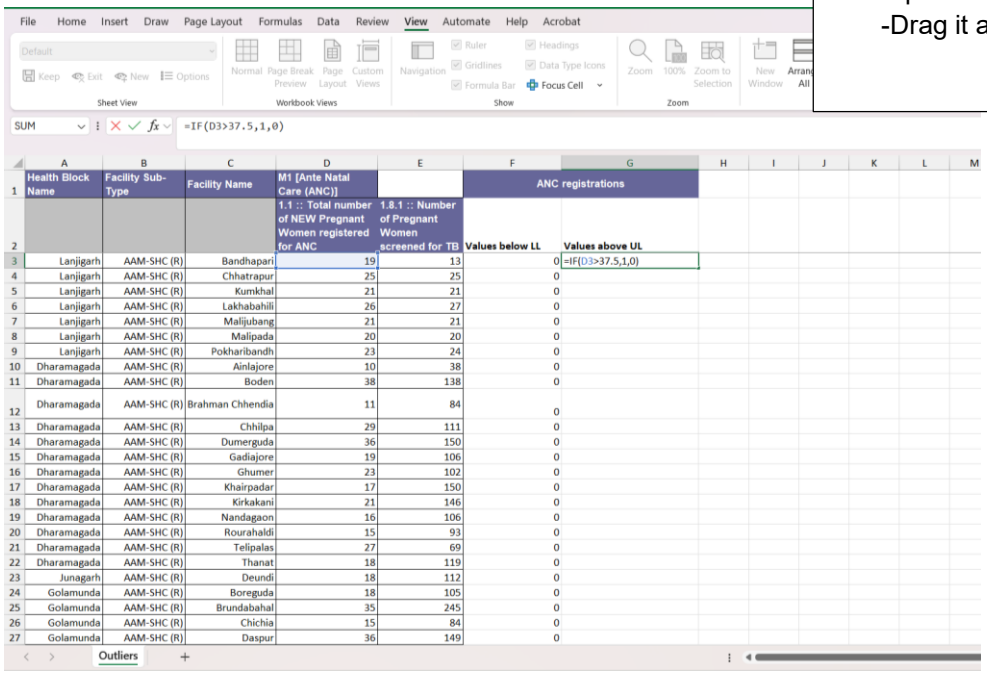
Step 3: Determine which facilities have values above UL or below LL



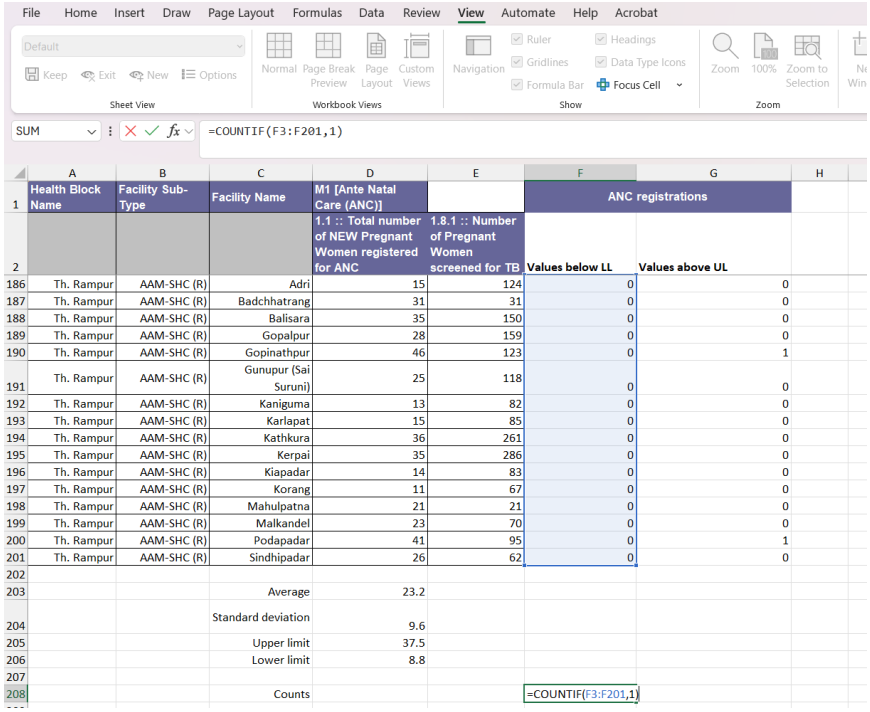
Create two columns:

1) Values below LL
   -Use the function: =IF(Cell<8.8,1,0) to replace values below LL with 1
   -Drag it across the column

2) Values above UL
   -Use the function: =IF(Cell>37.5,1,0) to replace values above UL with 1
   -Drag it across the column



Step 4: Calculate the total number of SHCs in the district with outlier values



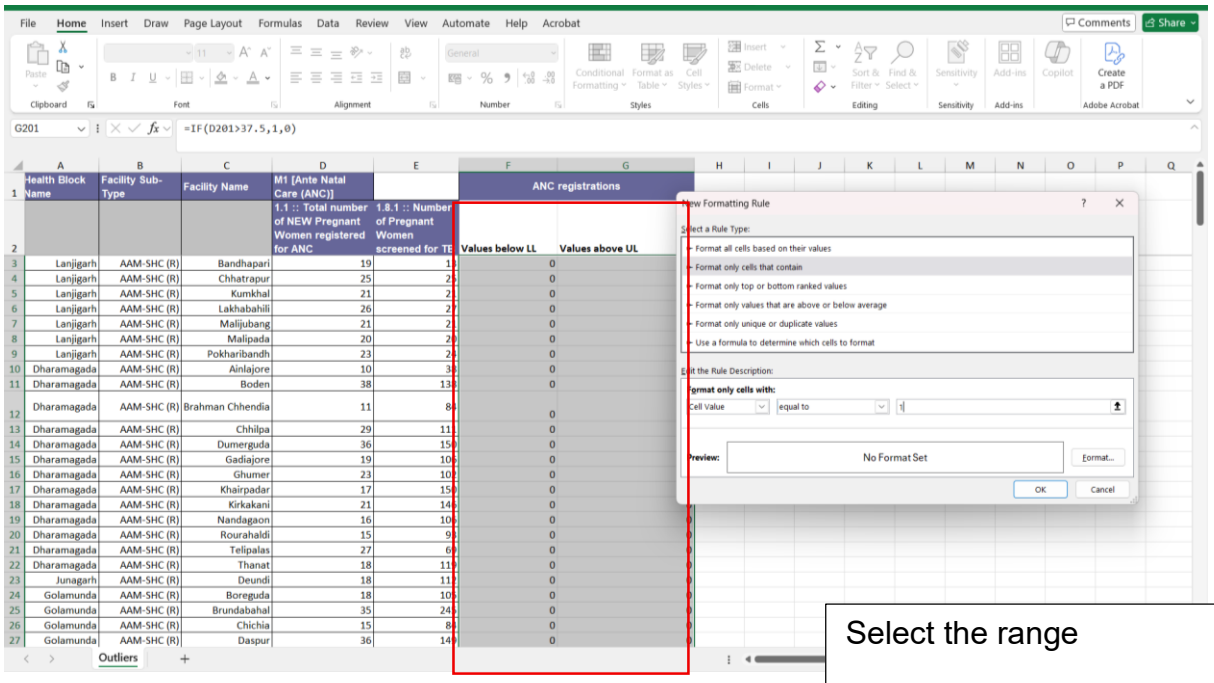
=COUNTIF(F3:F201,1)

	A	B	C	D	E	F	G	H
1	Health Block Name	Facility Sub-Type	Facility Name	M1 [Ante Natal Care (ANC)]		ANC registrations		
2				1.1 :: Total number of NEW Pregnant Women registered for ANC	1.8.1 :: Number of Pregnant Women screened for TB	Values below LL	Values above UL	
186	Th. Rampur	AAM-SHC (R)	Adri	15	124	0	0	
187	Th. Rampur	AAM-SHC (R)	Badchhatrang	31	31	0	0	
188	Th. Rampur	AAM-SHC (R)	Balisara	35	150	0	0	
189	Th. Rampur	AAM-SHC (R)	Gopalpur	28	159	0	0	
190	Th. Rampur	AAM-SHC (R)	Gopinathpur	46	123	0	1	
191	Th. Rampur	AAM-SHC (R)	Gunupur (Sai Suruni)	25	118	0	0	
192	Th. Rampur	AAM-SHC (R)	Kaniguma	13	82	0	0	
193	Th. Rampur	AAM-SHC (R)	Karlapat	15	85	0	0	
194	Th. Rampur	AAM-SHC (R)	Kathkura	36	261	0	0	
195	Th. Rampur	AAM-SHC (R)	Kerpai	35	286	0	0	
196	Th. Rampur	AAM-SHC (R)	Kiapadar	14	83	0	0	
197	Th. Rampur	AAM-SHC (R)	Korang	11	67	0	0	
198	Th. Rampur	AAM-SHC (R)	Mahulpatna	21	21	0	0	
199	Th. Rampur	AAM-SHC (R)	Malkandel	23	70	0	0	
200	Th. Rampur	AAM-SHC (R)	Podapadar	41	95	0	1	
201	Th. Rampur	AAM-SHC (R)	Sindhipadar	26	62	0	0	
202								
203			Average	23.2				
204			Standard deviation	9.6				
205			Upper limit	37.5				
206			Lower limit	8.8				
207								
208			Counts			=COUNTIF(F3:F201,1)		

Use countif function

Number of outlier facilities= COUNTIF(range,1)

Step 5: Highlight facilities with outlier values



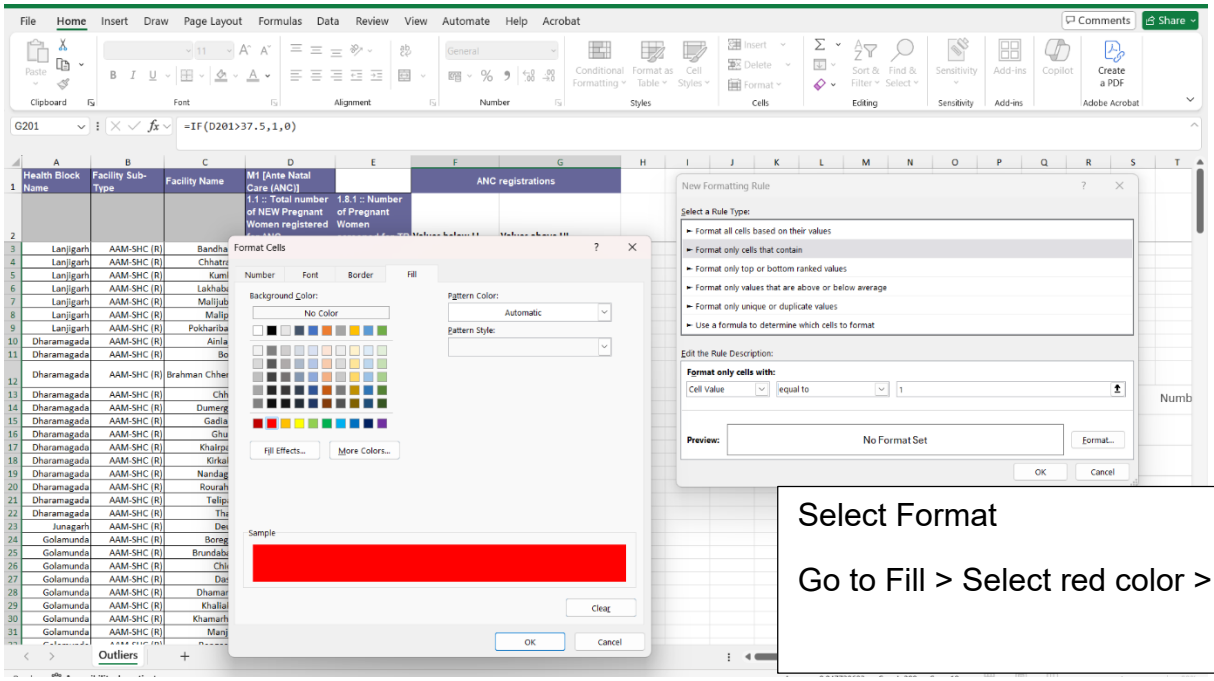
=IF(D201>37.5,1,0)

	A	B	C	D	E	F	G	H
1	Health Block Name	Facility Sub-Type	Facility Name	M1 [Ante Natal Care (ANC)]		ANC registrations		
2				1.1 :: Total number of NEW Pregnant Women registered for ANC	1.8.1 :: Number of Pregnant Women screened for TB	Values below LL	Values above UL	
3	Lanjigarh	AAM-SHC (R)	Bandhapari	19	1	0		
4	Lanjigarh	AAM-SHC (R)	Chhatrapur	25	2	0		
5	Lanjigarh	AAM-SHC (R)	Kumkhal	21	2	0		
6	Lanjigarh	AAM-SHC (R)	Lakhabahili	26	2	0		
7	Lanjigarh	AAM-SHC (R)	Malijubang	21	2	0		
8	Lanjigarh	AAM-SHC (R)	Malipada	20	2	0		
9	Lanjigarh	AAM-SHC (R)	Pokharibandh	23	2	0		
10	Dharamagada	AAM-SHC (R)	Ainlajore	10	3	0		
11	Dharamagada	AAM-SHC (R)	Boden	38	13	0		
12	Dharamagada	AAM-SHC (R)	Brahman Chhendia	11	8	0		
13	Dharamagada	AAM-SHC (R)	Chhilpa	29	11	0		
14	Dharamagada	AAM-SHC (R)	Dumerguda	36	15	0		
15	Dharamagada	AAM-SHC (R)	Gadiajore	19	10	0		
16	Dharamagada	AAM-SHC (R)	Ghumer	23	10	0		
17	Dharamagada	AAM-SHC (R)	Khairpadar	17	15	0		
18	Dharamagada	AAM-SHC (R)	Kirkakani	21	14	0		
19	Dharamagada	AAM-SHC (R)	Nandagaon	16	10	0		
20	Dharamagada	AAM-SHC (R)	Rourahaldi	15	9	0		
21	Dharamagada	AAM-SHC (R)	Telipalas	27	6	0		
22	Dharamagada	AAM-SHC (R)	Thanat	18	11	0		
23	Junagarh	AAM-SHC (R)	Deundi	18	11	0		
24	Golamunda	AAM-SHC (R)	Boreguda	18	10	0		
25	Golamunda	AAM-SHC (R)	Brundabahal	35	24	0		
26	Golamunda	AAM-SHC (R)	Chichia	15	8	0		
27	Golamunda	AAM-SHC (R)	Daspur	36	14	0		

Select the range

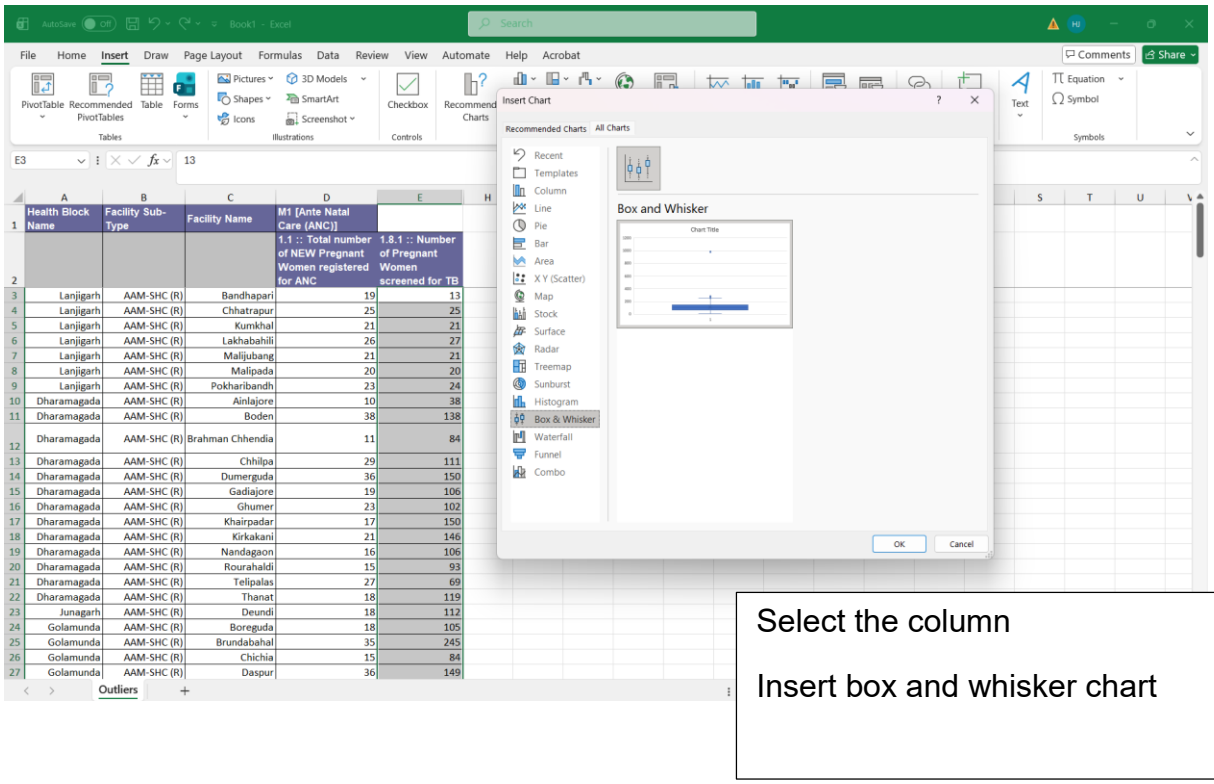
Go to Conditional formatting > New Rules > Format only cells that contain

Cell value > equal to > 1

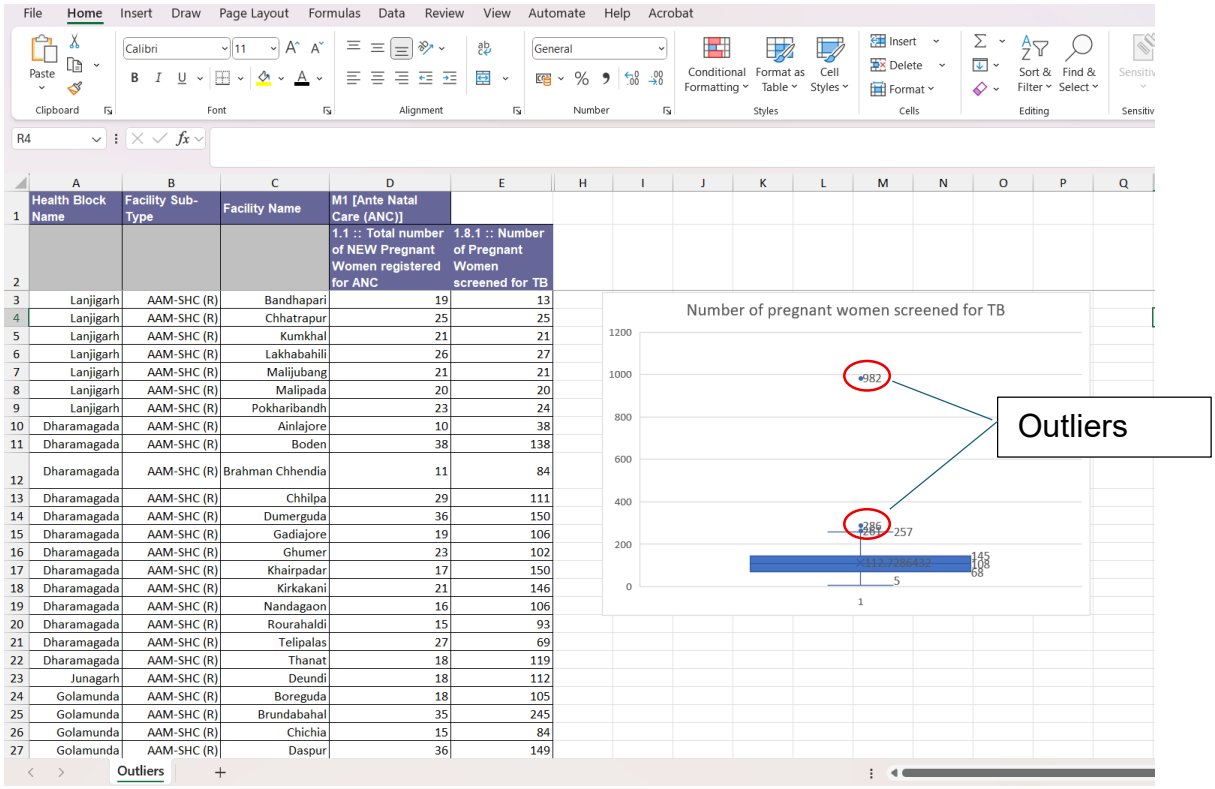


(2) To find the facilities with outliers using box plot method-

Data element: Number of pregnant women screened for TB



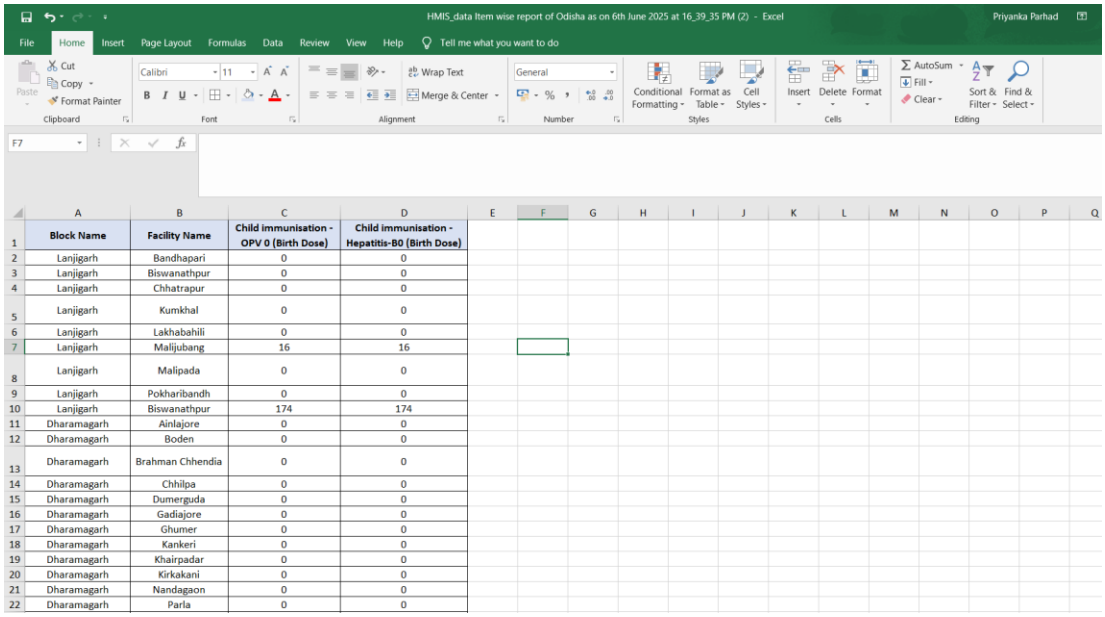
Health Block Name	Facility Sub-Type	Facility Name	M1 [Ante Natal Care (ANC)] 1.1 :: Total number of NEW Pregnant Women registered for ANC	1.8.1 :: Number of Pregnant Women screened for TB
Lanjigarh	AAM-SHC (R)	Bandhapari	19	13
Lanjigarh	AAM-SHC (R)	Chhatrapur	25	25
Lanjigarh	AAM-SHC (R)	Kumkhal	21	21
Lanjigarh	AAM-SHC (R)	Lakhabahili	26	27
Lanjigarh	AAM-SHC (R)	Malijubang	21	21
Lanjigarh	AAM-SHC (R)	Malipada	20	20
Lanjigarh	AAM-SHC (R)	Pokharibandh	23	24
Dharamagada	AAM-SHC (R)	Ainlajore	10	38
Dharamagada	AAM-SHC (R)	Boden	38	138
Dharamagada	AAM-SHC (R)	Brahman Chhendia	11	84
Dharamagada	AAM-SHC (R)	Chhilpa	29	111
Dharamagada	AAM-SHC (R)	Dumerguda	36	150
Dharamagada	AAM-SHC (R)	Gadiajore	19	106
Dharamagada	AAM-SHC (R)	Ghumer	23	102
Dharamagada	AAM-SHC (R)	Khairpadar	17	150
Dharamagada	AAM-SHC (R)	Kirkakani	21	146
Dharamagada	AAM-SHC (R)	Nandagaon	16	106
Dharamagada	AAM-SHC (R)	Rourahaldi	15	93
Dharamagada	AAM-SHC (R)	Telipalas	27	69
Dharamagada	AAM-SHC (R)	Thanat	18	119
Junagarh	AAM-SHC (R)	Deundi	18	112
Golamunda	AAM-SHC (R)	Boreguda	18	105
Golamunda	AAM-SHC (R)	Brundabahal	35	245
Golamunda	AAM-SHC (R)	Chichia	15	84
Golamunda	AAM-SHC (R)	Daspur	36	149



Health Block Name	Facility Sub-Type	Facility Name	M1 [Ante Natal Care (ANC)]	
			1.1 :: Total number of NEW Pregnant Women registered for ANC	1.8.1 :: Number of Pregnant Women screened for TB
Lanjigarh	AAM-SHC (R)	Bandhapari	19	13
Lanjigarh	AAM-SHC (R)	Chhatrapur	25	25
Lanjigarh	AAM-SHC (R)	Kumkhal	21	21
Lanjigarh	AAM-SHC (R)	Lakhabahili	26	27
Lanjigarh	AAM-SHC (R)	Malijubang	21	21
Lanjigarh	AAM-SHC (R)	Malipada	20	20
Lanjigarh	AAM-SHC (R)	Pokharibandh	23	24
Dharamagada	AAM-SHC (R)	Ainlajore	10	38
Dharamagada	AAM-SHC (R)	Boden	38	138
Dharamagada	AAM-SHC (R)	Brahman Chhendia	11	84
Dharamagada	AAM-SHC (R)	Chhilpa	29	111
Dharamagada	AAM-SHC (R)	Dumerguda	36	150
Dharamagada	AAM-SHC (R)	Gadiajore	19	106
Dharamagada	AAM-SHC (R)	Ghumer	23	102
Dharamagada	AAM-SHC (R)	Khairpadar	17	150
Dharamagada	AAM-SHC (R)	Kirkakani	21	146
Dharamagada	AAM-SHC (R)	Nandagaon	16	106
Dharamagada	AAM-SHC (R)	Rourahaldi	15	93
Dharamagada	AAM-SHC (R)	Telipalas	27	69
Dharamagada	AAM-SHC (R)	Thanat	18	119
Junagarh	AAM-SHC (R)	Deundi	18	112
Golamunda	AAM-SHC (R)	Boreguda	18	105
Golamunda	AAM-SHC (R)	Brundabahal	35	245
Golamunda	AAM-SHC (R)	Chichia	15	84
Golamunda	AAM-SHC (R)	Daspur	36	149

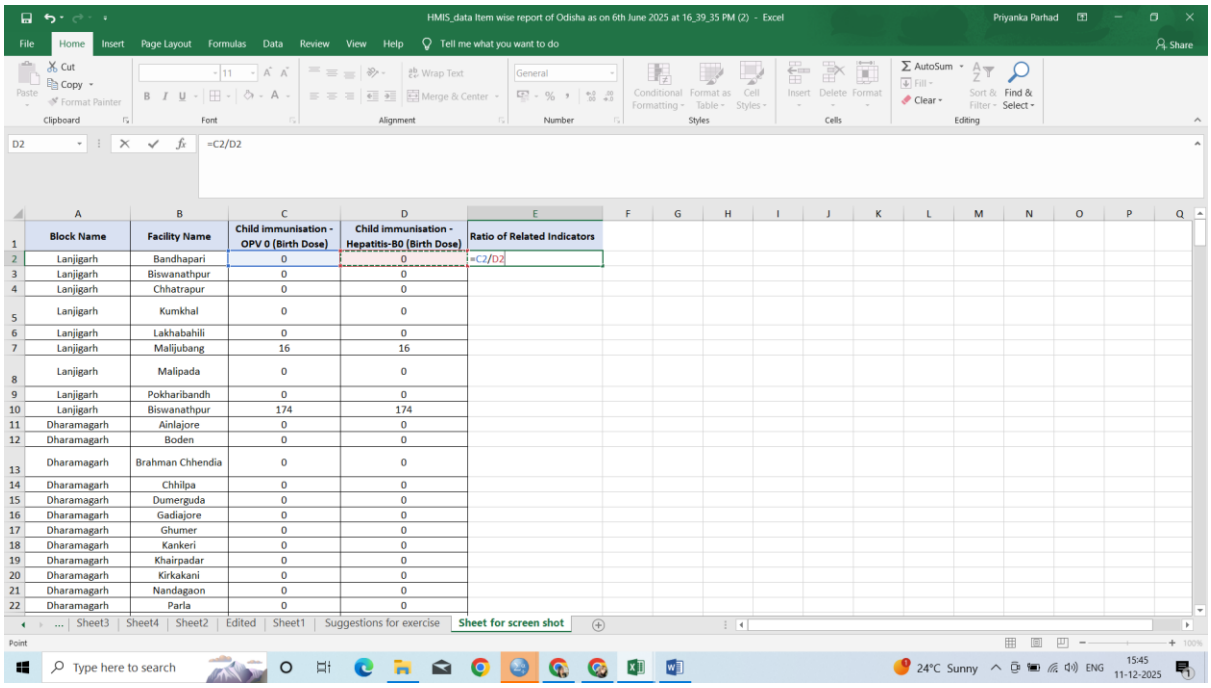
Exercise 3: Data quality issue- Inconsistency between related indicators

HMIS Data: We have selected two related indicators for analysis: OPV-0 (birth dose) and Hepatitis-B0 (birth dose).



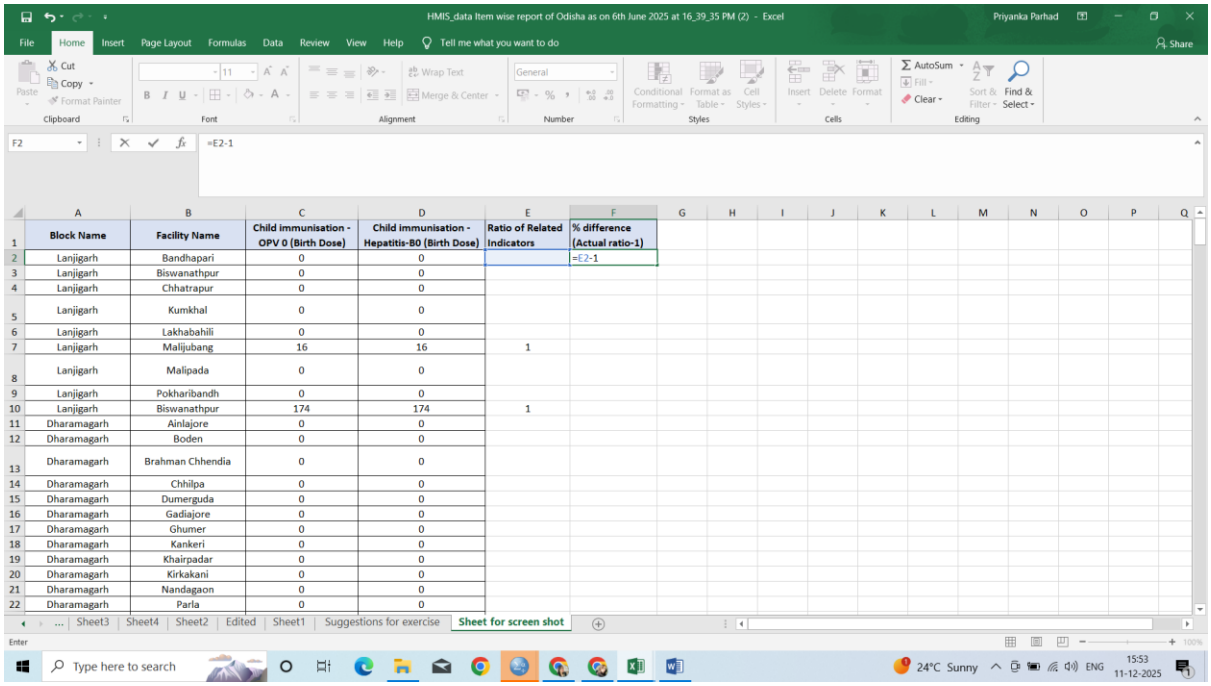
Block Name	Facility Name	Child immunisation - OPV 0 (Birth Dose)	Child immunisation - Hepatitis-B0 (Birth Dose)
Lanjigarh	Bandhapari	0	0
Lanjigarh	Biswanathpur	0	0
Lanjigarh	Chhatrapur	0	0
Lanjigarh	Kumkhal	0	0
Lanjigarh	Lakhabahili	0	0
Lanjigarh	Malijubang	16	16
Lanjigarh	Malipada	0	0
Lanjigarh	Pokharibandh	0	0
Lanjigarh	Biswanathpur	174	174
Dharamagarh	Ainlajore	0	0
Dharamagarh	Boden	0	0
Dharamagarh	Brahman Chhendia	0	0
Dharamagarh	Chhilpa	0	0
Dharamagarh	Dumerguda	0	0
Dharamagarh	Gadiajore	0	0
Dharamagarh	Ghumer	0	0
Dharamagarh	Kankeri	0	0
Dharamagarh	Khairpadar	0	0
Dharamagarh	Kirkakani	0	0
Dharamagarh	Nandagaon	0	0
Dharamagarh	Parla	0	0

Step 1: We will calculate the ratio of these related indicators.



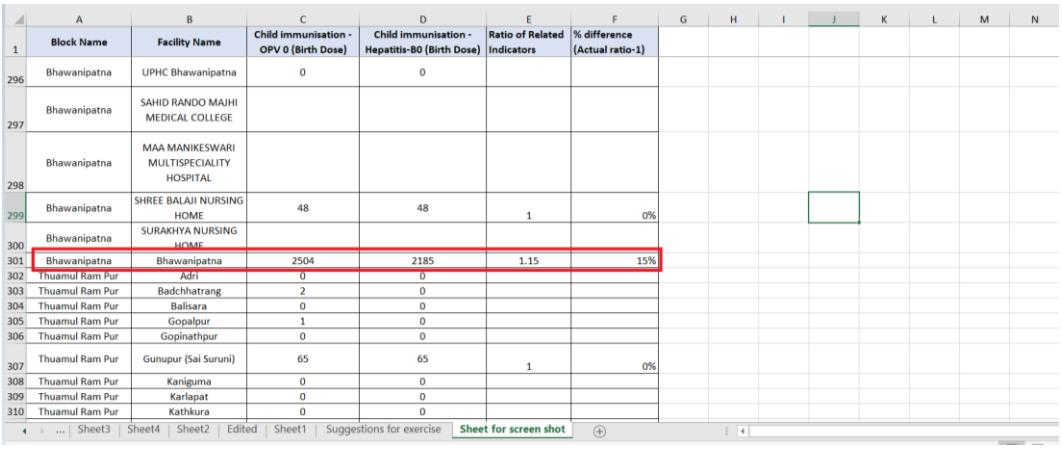
Block Name	Facility Name	Child immunisation - OPV 0 (Birth Dose)	Child immunisation - Hepatitis-B0 (Birth Dose)	Ratio of Related Indicators
Lanjigarh	Bandhapari	0	0	=C2/D2
Lanjigarh	Biswanathpur	0	0	
Lanjigarh	Chhatrapur	0	0	
Lanjigarh	Kumkhal	0	0	
Lanjigarh	Lakhabahili	0	0	
Lanjigarh	Malijubang	16	16	
Lanjigarh	Malipada	0	0	
Lanjigarh	Pokharibandh	0	0	
Lanjigarh	Biswanathpur	174	174	
Dharamagarh	Ainlajore	0	0	
Dharamagarh	Boden	0	0	
Dharamagarh	Brahman Chhendia	0	0	
Dharamagarh	Chhilpa	0	0	
Dharamagarh	Dumerguda	0	0	
Dharamagarh	Gadiajore	0	0	
Dharamagarh	Ghumer	0	0	
Dharamagarh	Kankeri	0	0	
Dharamagarh	Khairpadar	0	0	
Dharamagarh	Kirkakani	0	0	
Dharamagarh	Nandagaon	0	0	
Dharamagarh	Parla	0	0	

Step 2: We will calculate the percentage difference between the actual ratio and 1 (the ideal ratio), as the two related indicators should ideally be equal.



Block Name	Facility Name	Child immunisation - OPV 0 (Birth Dose)	Child immunisation - Hepatitis-B0 (Birth Dose)	Ratio of Related Indicators	% difference (Actual ratio-1)
Lanjigarh	Bandhapari	0	0		=E2-1
Lanjigarh	Biswanathpur	0	0		
Lanjigarh	Chhatrapur	0	0		
Lanjigarh	Kumkhal	0	0		
Lanjigarh	Lakhabahili	0	0		
Lanjigarh	Malijubang	16	16	1	
Lanjigarh	Malipada	0	0		
Lanjigarh	Pokharibandh	0	0		
Lanjigarh	Biswanathpur	174	174	1	
Dharamagarh	Ainlajore	0	0		
Dharamagarh	Boden	0	0		
Dharamagarh	Brahman Chhendia	0	0		
Dharamagarh	Chhilpa	0	0		
Dharamagarh	Dumerguda	0	0		
Dharamagarh	Gadiajore	0	0		
Dharamagarh	Ghumer	0	0		
Dharamagarh	Kankeri	0	0		
Dharamagarh	Khairpadar	0	0		
Dharamagarh	Kirkakani	0	0		
Dharamagarh	Nandagaon	0	0		
Dharamagarh	Parla	0	0		

Step 3: We can identify and highlight the facilities that show a percentage difference of more than 10%.

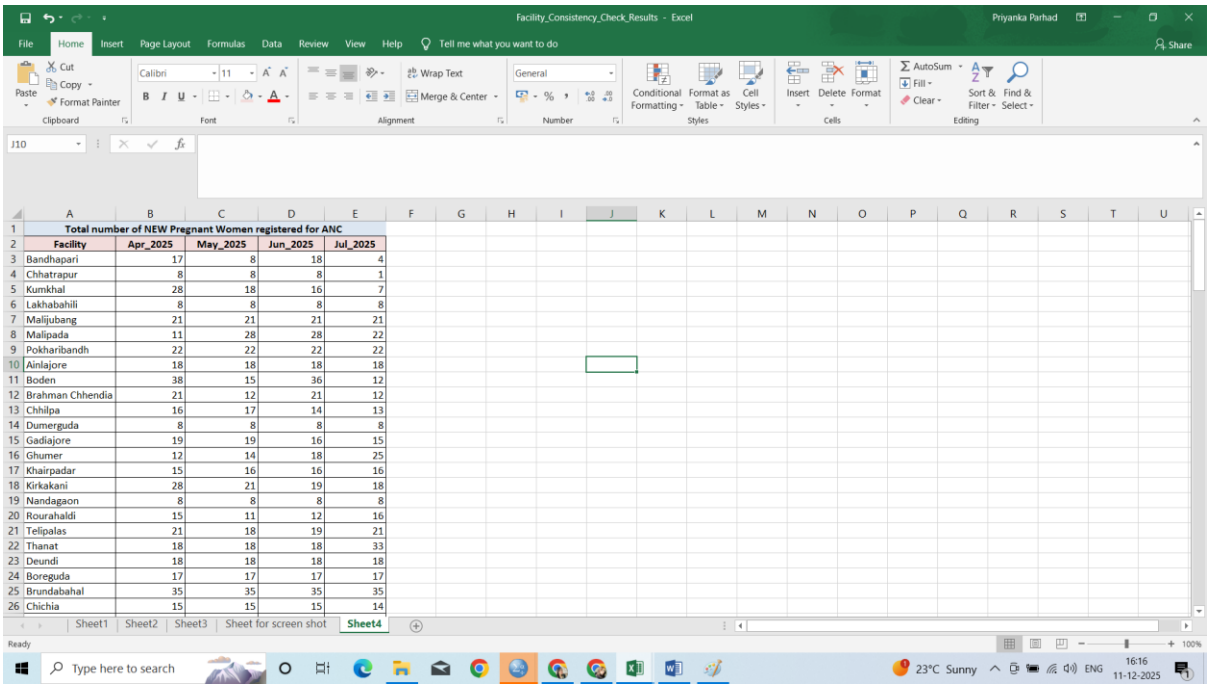


	Block Name	Facility Name	Child immunisation - OPV 0 (Birth Dose)	Child immunisation - Hepatitis-B0 (Birth Dose)	Ratio of Related Indicators	% difference (Actual ratio-1)
296	Bhawanipatna	UPHC Bhawanipatna	0	0		
297	Bhawanipatna	SAHID RANDO MAJHI MEDICAL COLLEGE				
298	Bhawanipatna	MAA MANIKESWARI MULTISPECIALITY HOSPITAL				
299	Bhawanipatna	SHREE BALAJI NURSING HOME	48	48	1	0%
300	Bhawanipatna	SURAKHYA NURSING HOME				
301	Bhawanipatna	Bhawanipatna	2504	2185	1.15	15%
302	Thuamul Ram Pur	Adri	0	0		
303	Thuamul Ram Pur	Badchhatrang	2	0		
304	Thuamul Ram Pur	Balisara	0	0		
305	Thuamul Ram Pur	Gopalpur	1	0		
306	Thuamul Ram Pur	Gopinathpur	0	0		
307	Thuamul Ram Pur	Gunupur (Sai Suruni)	65	65	1	0%
308	Thuamul Ram Pur	Kaniguma	0	0		
309	Thuamul Ram Pur	Karlapat	0	0		
310	Thuamul Ram Pur	Kathkura	0	0		

Exercise 4: Data quality issue- Inconsistency over time

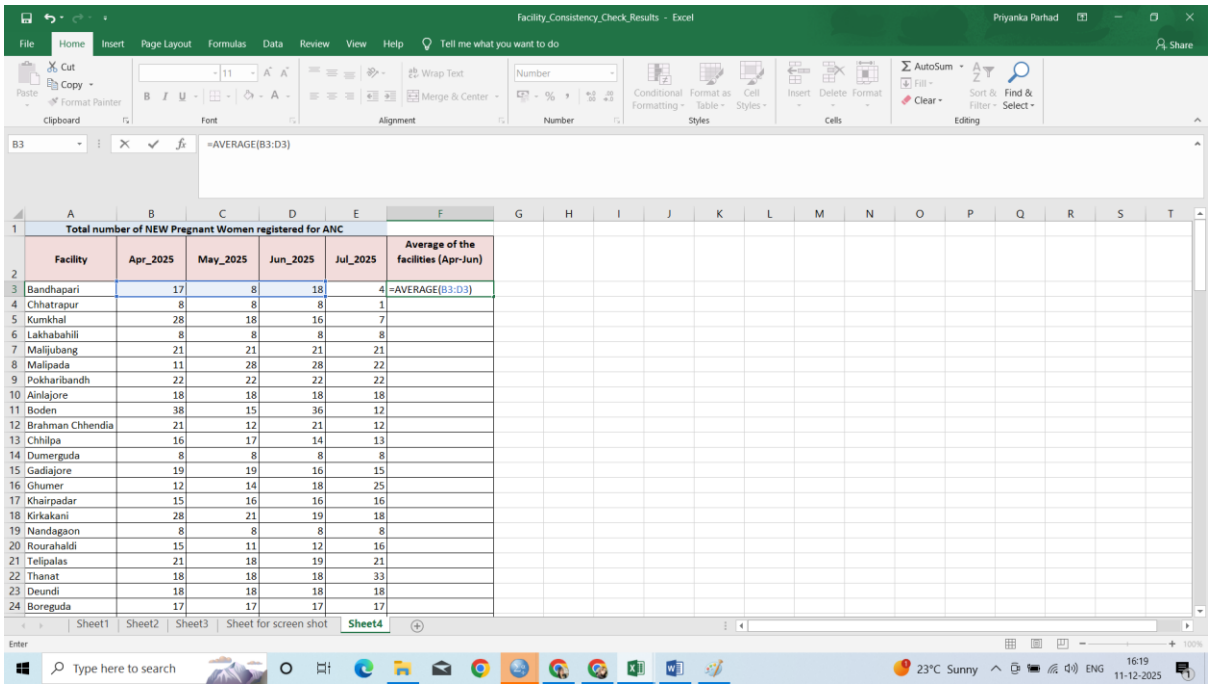
HMIS data: Facility-wise monthly data for approximately four months on new ANC registrations.

We want to see if July data is consistent with the previous quarter (Apr-Jun)



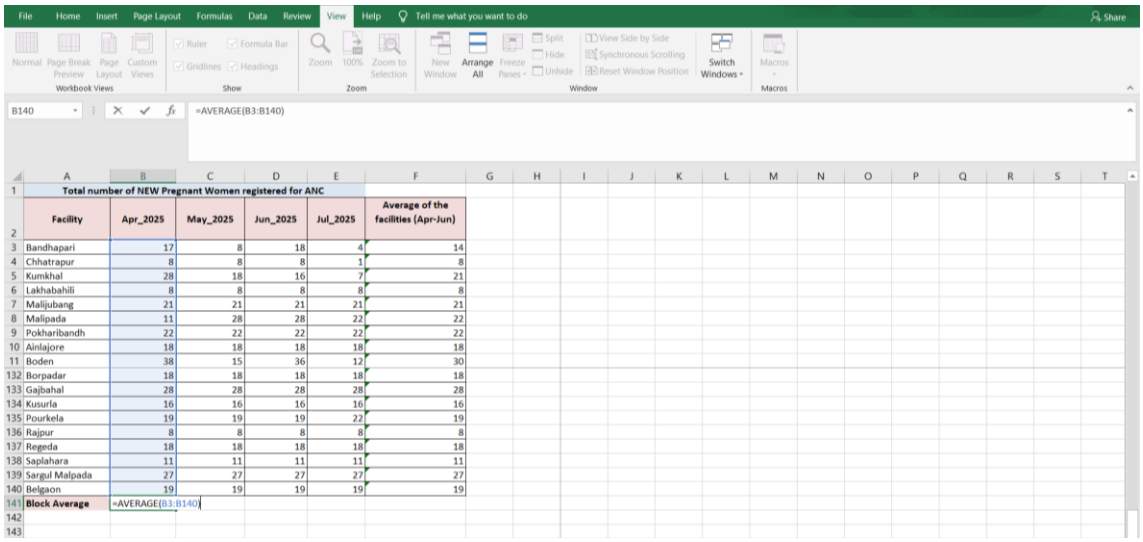
	Total number of NEW Pregnant Women registered for ANC				
	Facility	Apr_2025	May_2025	Jun_2025	Jul_2025
3	Bandhapari	17	8	18	4
4	Chhatrapur	8	8	8	1
5	Kumkhal	28	18	16	7
6	Lakhabahili	8	8	8	8
7	Malijubang	21	21	21	21
8	Malipada	11	28	28	22
9	Pokharibandh	22	22	22	22
10	Ainlajore	18	18	18	18
11	Boden	38	15	36	12
12	Brahman Chhendia	21	12	21	12
13	Chhilpa	16	17	14	13
14	Dumerguda	8	8	8	8
15	Gadiajore	19	19	16	15
16	Ghumer	12	14	18	25
17	Khairpadar	15	16	16	16
18	Kirkakani	28	21	19	18
19	Nandagaon	8	8	8	8
20	Rourahaldi	15	11	12	16
21	Telipalas	21	18	19	21
22	Thanat	18	18	18	33
23	Deundi	18	18	18	18
24	Boreguda	17	17	17	17
25	Brundabahal	35	35	35	35
26	Chichia	15	15	15	14

Step 1: Calculate the three-month facility-wise average.

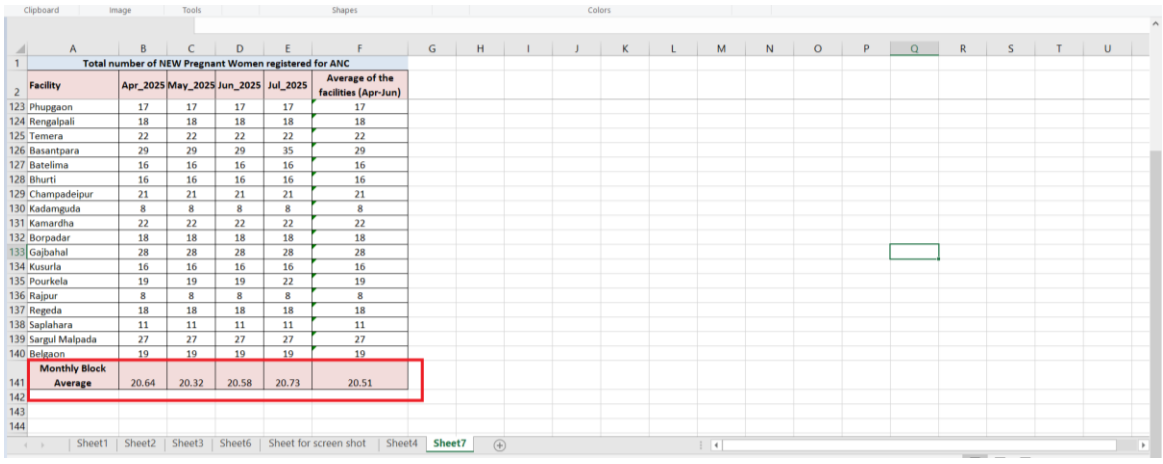


Total number of NEW Pregnant Women registered for ANC					
Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)
Bandhapari	17	8	18	4	=AVERAGE(B3:D3)
Chhatrapur	8	8	8	1	
Kumkhal	28	18	16	7	
Lakhabahili	8	8	8	8	
Malijubang	21	21	21	21	
Malipada	11	28	28	22	
Pokharibandh	22	22	22	22	
Ainlajore	18	18	18	18	
Boden	38	15	36	12	
Brahman Chhendia	21	12	21	12	
Chhilpa	16	17	14	13	
Dumerguda	8	8	8	8	
Gadiajore	19	19	16	15	
Ghumer	12	14	18	25	
Khairpadar	15	16	16	16	
Kirkakani	28	21	19	18	
Nandagaon	8	8	8	8	
Rourahaldi	15	11	12	16	
Telipalas	21	18	19	21	
Thanat	18	18	18	33	
Deundi	18	18	18	18	
Boreguda	17	17	17	17	

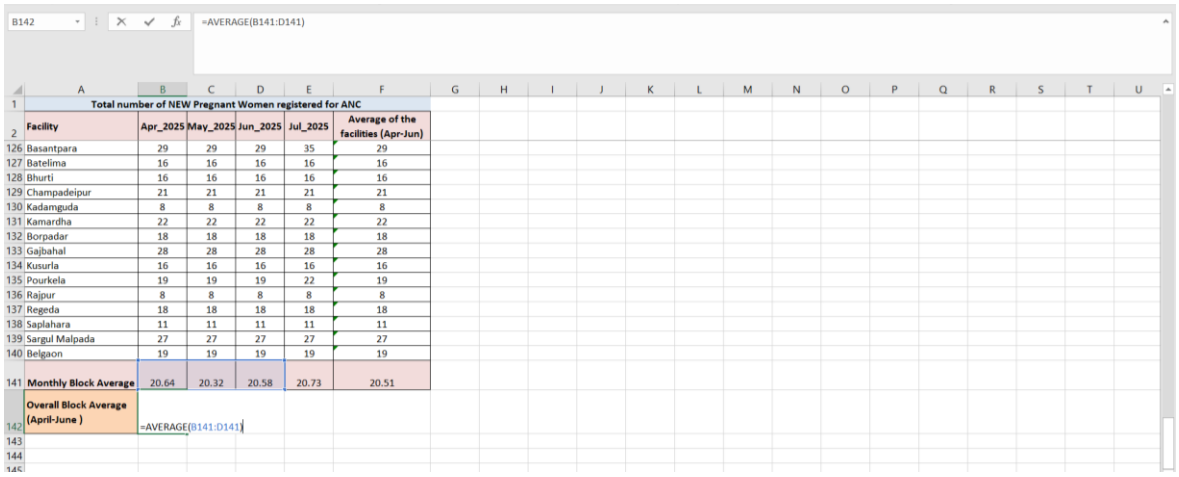
Step 2: Calculate the block averages for each month from April to July, along with the overall three-month block average for April–June.

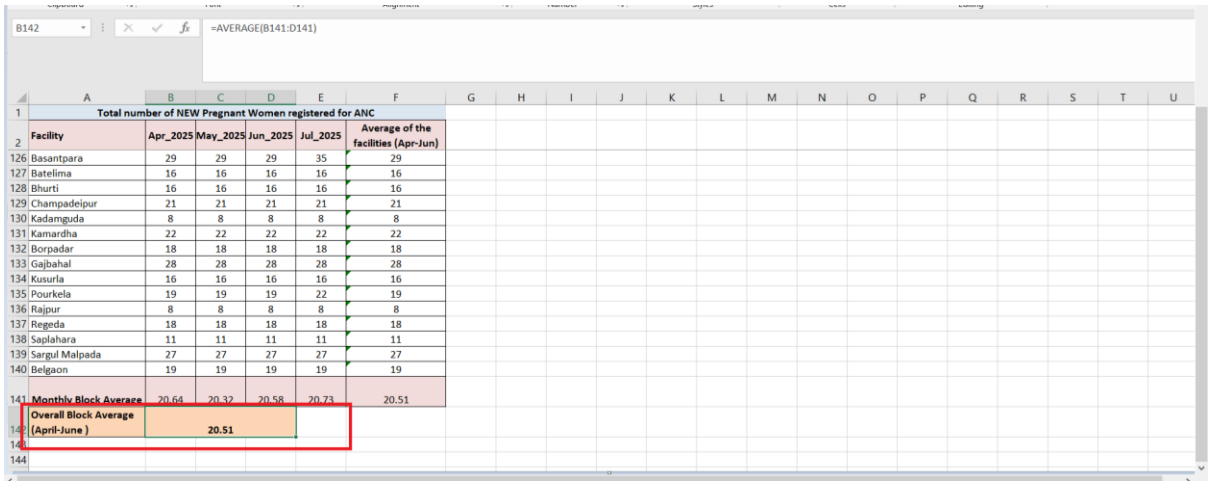


Total number of NEW Pregnant Women registered for ANC					
Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)
Bandhapari	17	8	18	4	14
Chhatrapur	8	8	8	1	8
Kumkhal	28	18	16	7	21
Lakhabahili	8	8	8	8	8
Malijubang	21	21	21	21	21
Malipada	11	28	28	22	22
Pokharibandh	22	22	22	22	22
Ainlajore	18	18	18	18	18
Boden	38	15	36	12	30
Borpadar	18	18	18	18	18
Gajbahal	28	28	28	28	28
Kusurla	16	16	16	16	16
Pourkela	19	19	19	22	19
Rajpur	8	8	8	8	8
Regeda	18	18	18	18	18
Saplahara	11	11	11	11	11
Sargul Malpada	27	27	27	27	27
Belgaon	19	19	19	19	19
Block Average	=AVERAGE(B3:B140)				

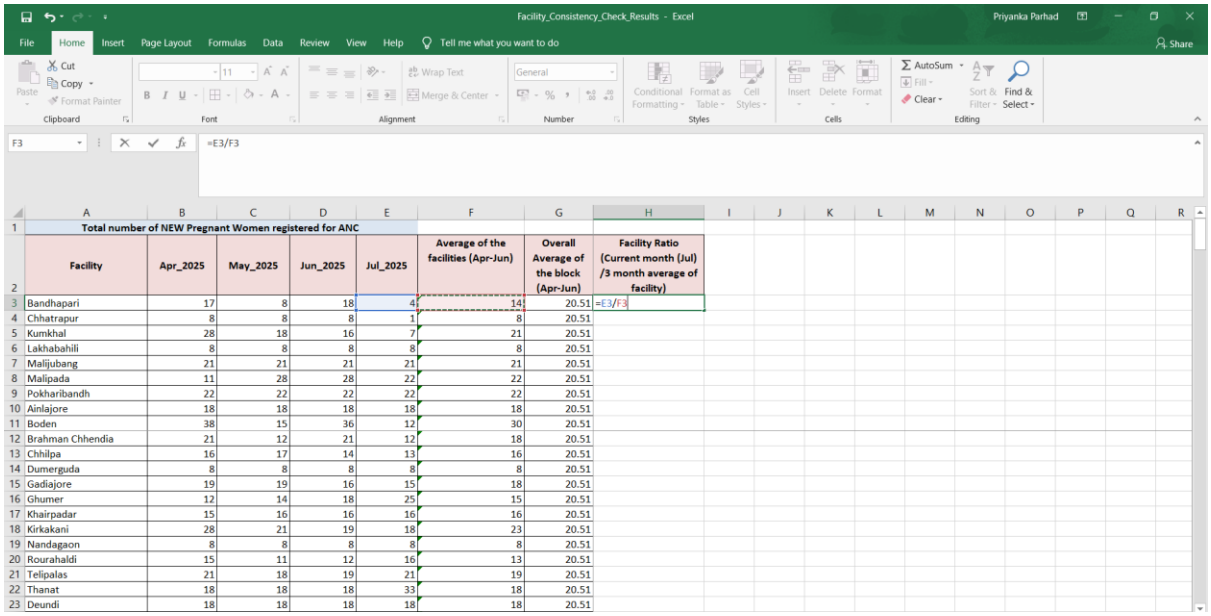


Total number of NEW Pregnant Women registered for ANC					
Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)
Phupgaon	17	17	17	17	17
Rengalpali	18	18	18	18	18
Temera	22	22	22	22	22
Basantpara	29	29	29	35	29
Batelima	16	16	16	16	16
Bhurti	16	16	16	16	16
Champadeipur	21	21	21	21	21
Kadamguda	8	8	8	8	8
Kamardha	22	22	22	22	22
Borpadar	18	18	18	18	18
Gajbahal	28	28	28	28	28
Kusurla	16	16	16	16	16
Pourkela	19	19	19	22	19
Rajpur	8	8	8	8	8
Regeda	18	18	18	18	18
Saplahara	11	11	11	11	11
Sargul Malpada	27	27	27	27	27
Belgaon	19	19	19	19	19
Monthly Block Average	20.64	20.32	20.58	20.73	20.51

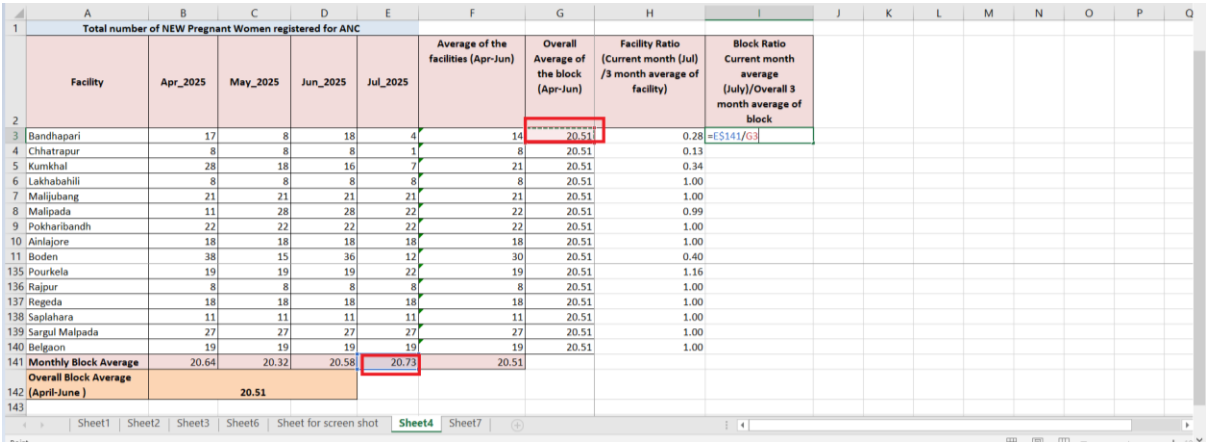




Step 3:Then, we calculate the facility ratio, defined as the ratio of the facility's current month's value to the facility's three-month average.- Use the division formula and drag across the column.



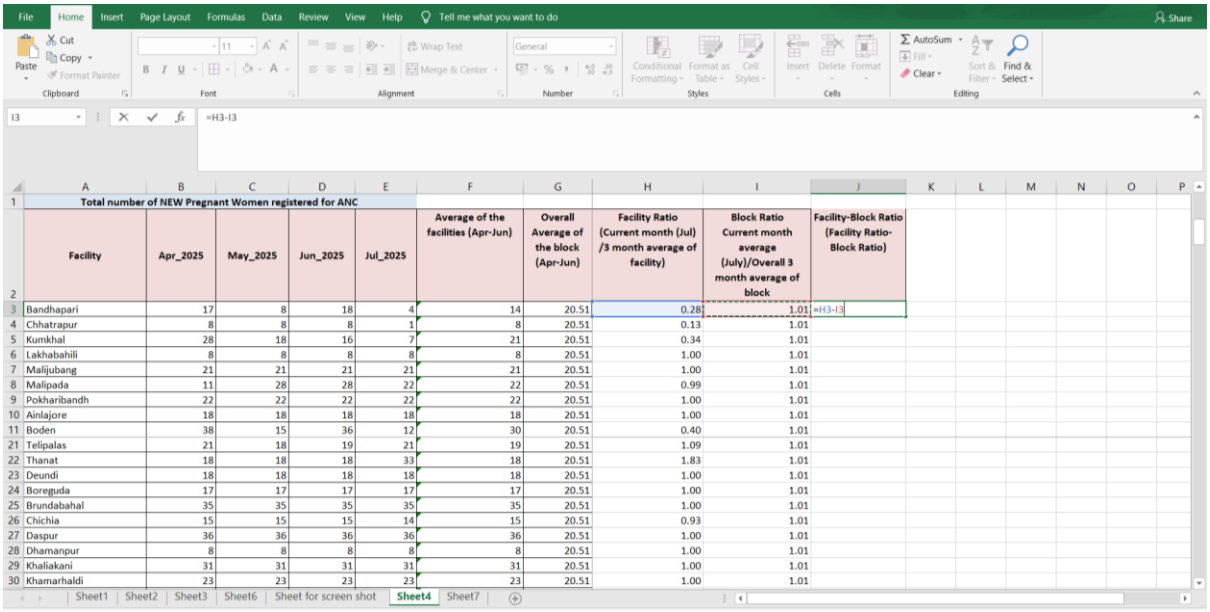
Step 4: The next step is to calculate the block ratio by comparing the current month's average (July) with the overall three-month block average for April, May, and June.



Total number of NEW Pregnant Women registered for ANC								
Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)	Overall Average of the block (Apr-Jun)	Facility Ratio (Current month (Jul) /3 month average of facility)	Block Ratio Current month average (July)/Overall 3 month average of block
Bandhapari	17	8	18	4	14	20.51	0.28	=E5141/G3
Chhatrapur	8	8	8	1	8	20.51	0.13	
Kumkhal	28	18	16	7	21	20.51	0.34	
Lakhabahili	8	8	8	8	8	20.51	1.00	
Malijubang	21	21	21	21	21	20.51	1.00	
Malipada	11	28	28	22	22	20.51	0.99	
Pokharibandh	22	22	22	22	22	20.51	1.00	
Ainlajore	18	18	18	18	18	20.51	1.00	
Boden	38	15	36	12	30	20.51	0.40	
Pourkela	19	19	19	22	19	20.51	1.16	
Rajpur	8	8	8	8	8	20.51	1.00	
Regeda	18	18	18	18	18	20.51	1.00	
Saplahara	11	11	11	11	11	20.51	1.00	
Sargul Malpada	27	27	27	27	27	20.51	1.00	
Belgaon	19	19	19	19	19	20.51	1.00	
Monthly Block Average	20.64	20.32	20.58	20.73	20.51			
Overall Block Average (April-June)	20.51							

Sheet1 | Sheet2 | Sheet3 | Sheet6 | Sheet for screen shot | Sheet4 | Sheet7

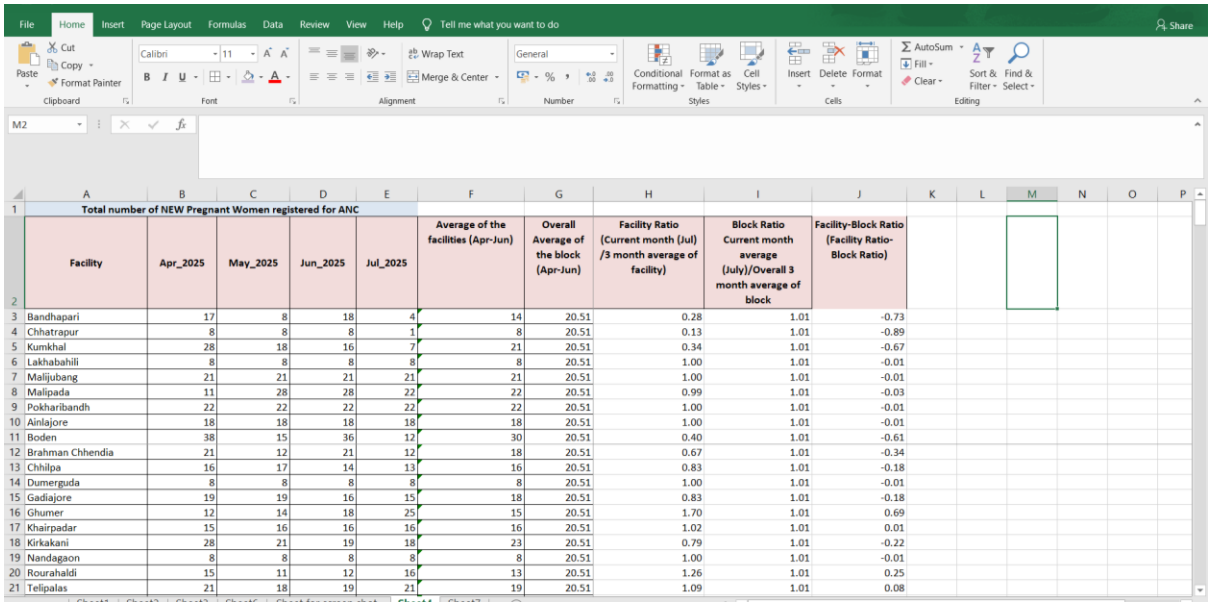
Step 5: Calculate the difference between the facility ratio and the block ratio by subtracting the block ratio from the facility ratio.



=H3-I3

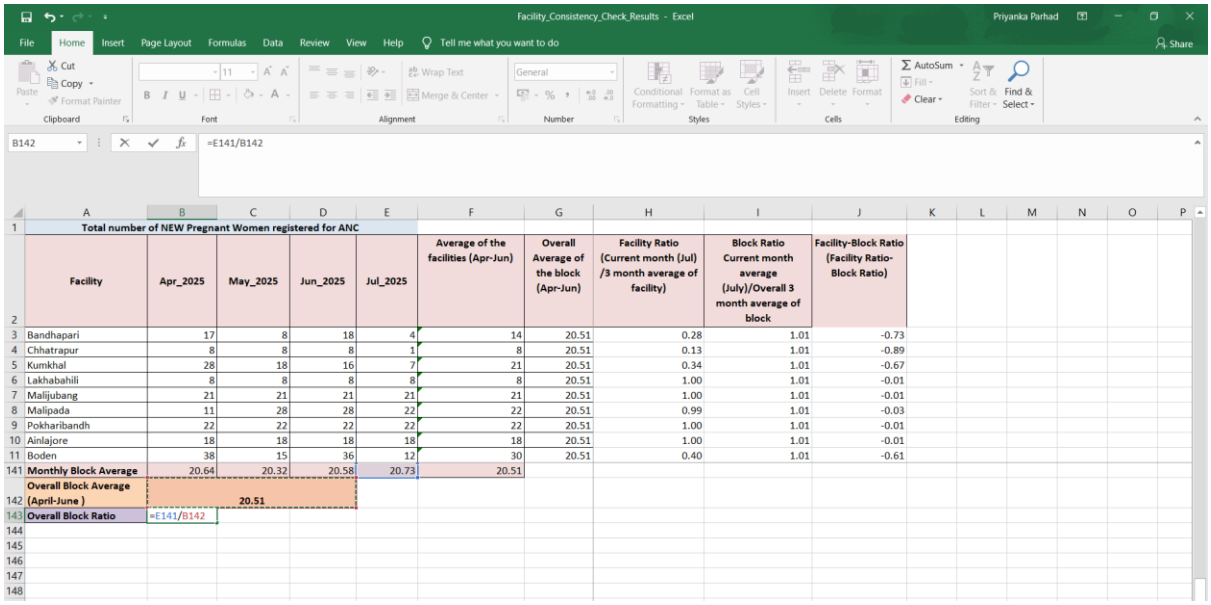
Total number of NEW Pregnant Women registered for ANC									
Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)	Overall Average of the block (Apr-Jun)	Facility Ratio (Current month (Jul) /3 month average of facility)	Block Ratio Current month average (July)/Overall 3 month average of block	Facility-Block Ratio (Facility Ratio-Block Ratio)
Bandhapari	17	8	18	4	14	20.51	0.28	1.01	=H3-I3
Chhatrapur	8	8	8	1	8	20.51	0.13	1.01	
Kumkhal	28	18	16	7	21	20.51	0.34	1.01	
Lakhabahili	8	8	8	8	8	20.51	1.00	1.01	
Malijubang	21	21	21	21	21	20.51	1.00	1.01	
Malipada	11	28	28	22	22	20.51	0.99	1.01	
Pokharibandh	22	22	22	22	22	20.51	1.00	1.01	
Ainlajore	18	18	18	18	18	20.51	1.00	1.01	
Boden	38	15	36	12	30	20.51	0.40	1.01	
Telipalas	21	18	19	21	19	20.51	1.09	1.01	
Thanat	18	18	18	33	18	20.51	1.83	1.01	
Deundi	18	18	18	18	18	20.51	1.00	1.01	
Boreguda	17	17	17	17	17	20.51	1.00	1.01	
Brundabahal	35	35	35	35	35	20.51	1.00	1.01	
Chichia	15	15	15	14	15	20.51	0.93	1.01	
Daspur	36	36	36	36	36	20.51	1.00	1.01	
Dhamanpur	8	8	8	8	8	20.51	1.00	1.01	
Khaliakani	31	31	31	31	31	20.51	1.00	1.01	
Khamarhaldi	23	23	23	23	23	20.51	1.00	1.01	

Sheet1 | Sheet2 | Sheet3 | Sheet6 | Sheet for screen shot | Sheet4 | Sheet7

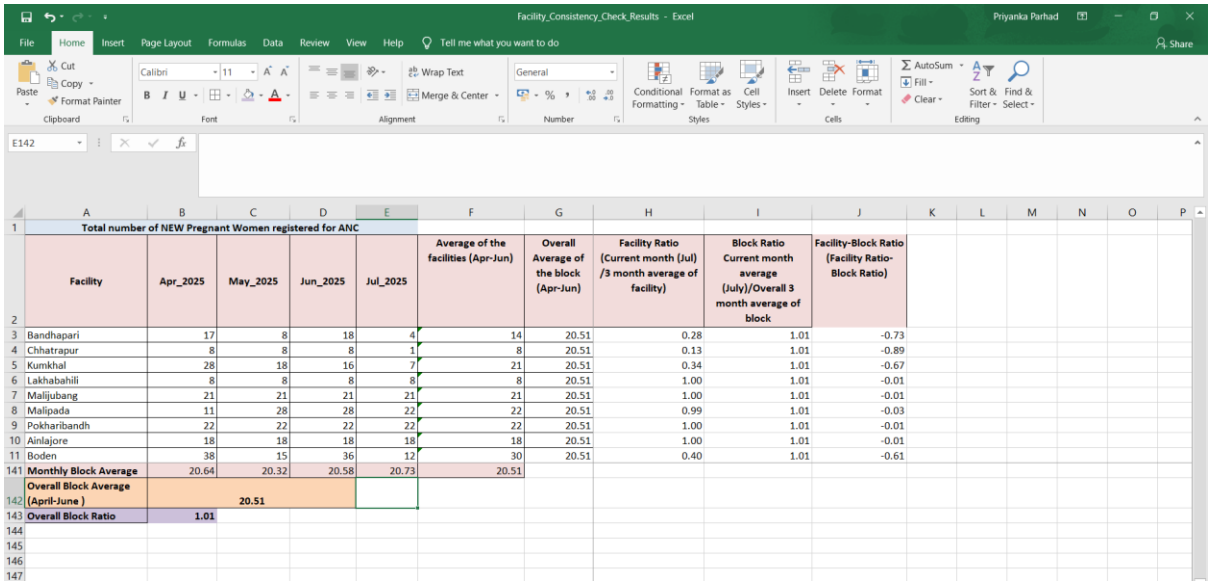


Total number of NEW Pregnant Women registered for ANC									
Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)	Overall Average of the block (Apr-Jun)	Facility Ratio (Current month (Jul) /3 month average of facility)	Block Ratio Current month average (July)/Overall 3 month average of block	Facility-Block Ratio (Facility Ratio-Block Ratio)
Bandhapari	17	8	18	4	14	20.51	0.28	1.01	-0.73
Chhatrapur	8	8	8	1	8	20.51	0.13	1.01	-0.89
Kumkhal	28	18	16	7	21	20.51	0.34	1.01	-0.67
Lakhabahili	8	8	8	8	8	20.51	1.00	1.01	-0.01
Malijubang	21	21	21	21	21	20.51	1.00	1.01	-0.01
Malipada	11	28	28	22	22	20.51	0.99	1.01	-0.03
Pokharibandh	22	22	22	22	22	20.51	1.00	1.01	-0.01
Ainlajore	18	18	18	18	18	20.51	1.00	1.01	-0.01
Boden	38	15	36	12	30	20.51	0.40	1.01	-0.61
Brahman Chhendia	21	12	21	12	18	20.51	0.67	1.01	-0.34
Chhilpa	16	17	14	13	16	20.51	0.83	1.01	-0.18
Dumerguda	8	8	8	8	8	20.51	1.00	1.01	-0.01
Gadiajore	19	19	16	15	18	20.51	0.83	1.01	-0.18
Ghumer	12	14	18	25	15	20.51	1.70	1.01	0.69
Khairpadar	15	16	16	16	16	20.51	1.02	1.01	0.01
Kirkakani	28	21	19	18	23	20.51	0.79	1.01	-0.22
Nandagaon	8	8	8	8	8	20.51	1.00	1.01	-0.01
Rourahaldi	15	11	12	16	13	20.51	1.26	1.01	0.25
Telipalas	21	18	19	21	19	20.51	1.09	1.01	0.08

Step 6:To estimate the deviation, we must also calculate the **overall block ratio** (current month average ÷ three-month average).



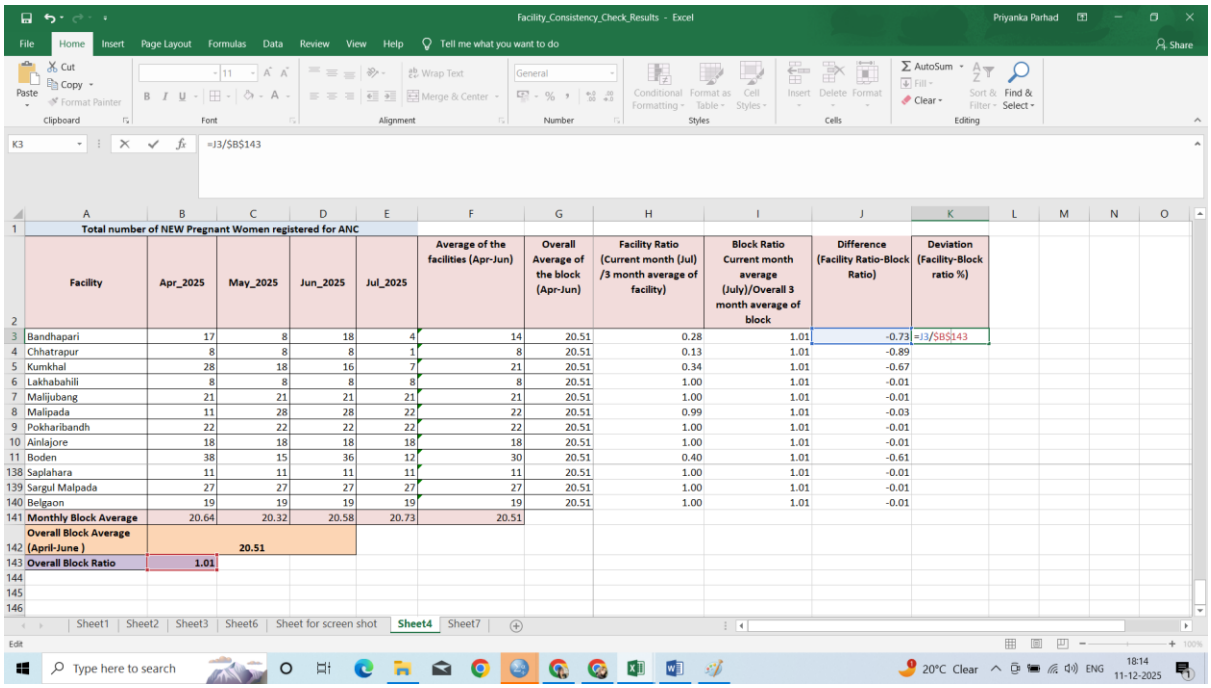
Total number of NEW Pregnant Women registered for ANC									
Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)	Overall Average of the block (Apr-Jun)	Facility Ratio (Current month (Jul) /3 month average of facility)	Block Ratio Current month average (July)/Overall 3 month average of block	Facility-Block Ratio (Facility Ratio-Block Ratio)
Bandhapari	17	8	18	4	14	20.51	0.28	1.01	-0.73
Chhatrapur	8	8	8	1	8	20.51	0.13	1.01	-0.89
Kumkhal	28	18	16	7	21	20.51	0.34	1.01	-0.67
Lakhabahili	8	8	8	8	8	20.51	1.00	1.01	-0.01
Malijubang	21	21	21	21	21	20.51	1.00	1.01	-0.01
Malipada	11	28	28	22	22	20.51	0.99	1.01	-0.03
Pokharibandh	22	22	22	22	22	20.51	1.00	1.01	-0.01
Ainlajore	18	18	18	18	18	20.51	1.00	1.01	-0.01
Boden	38	15	36	12	30	20.51	0.40	1.01	-0.61
Monthly Block Average	20.64	20.32	20.58	20.73	20.51				
Overall Block Average (April-June)	20.51								
Overall Block Ratio	=E141/B142								



Total number of NEW Pregnant Women registered for ANC

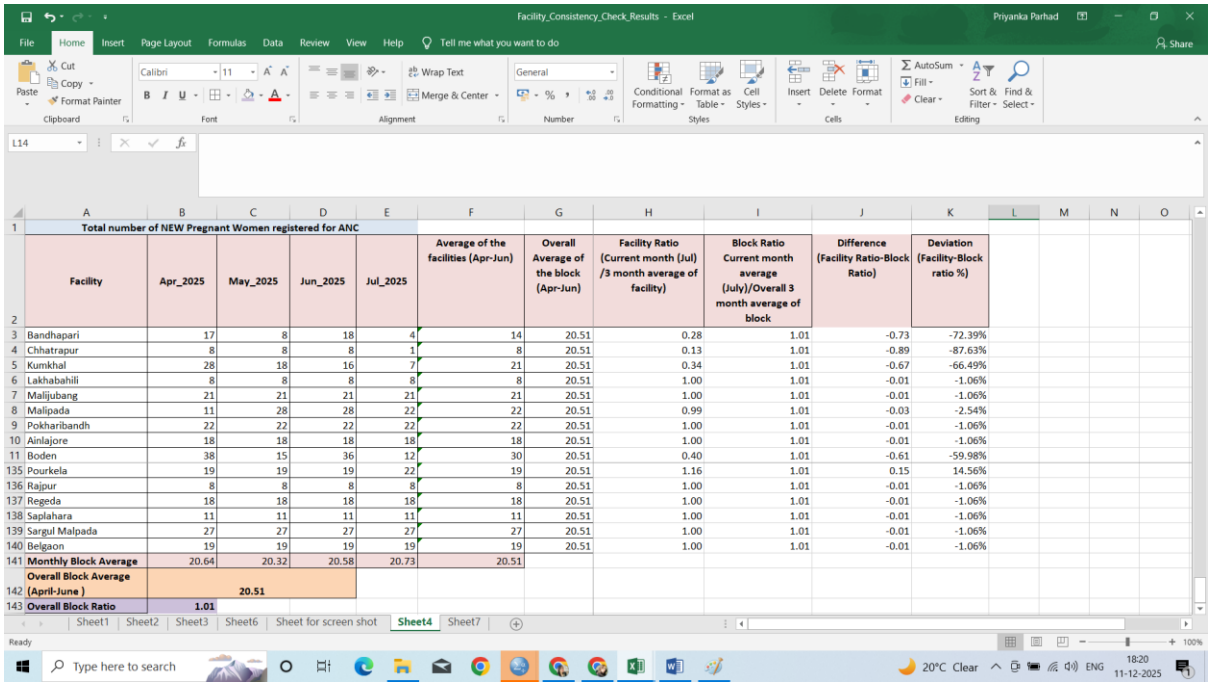
Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)	Overall Average of the block (Apr-Jun)	Facility Ratio (Current month (Jul) /3 month average of facility)	Block Ratio Current month average (July)/Overall 3 month average of block	Facility-Block Ratio (Facility Ratio-Block Ratio)
Bandhapari	17	8	18	4	14	20.51	0.28	1.01	-0.73
Chhatrapur	8	8	8	1	8	20.51	0.13	1.01	-0.89
Kumkhal	28	18	16	7	21	20.51	0.34	1.01	-0.67
Lakhabahili	8	8	8	8	8	20.51	1.00	1.01	-0.01
Malijubang	21	21	21	21	21	20.51	1.00	1.01	-0.01
Malipada	11	28	28	22	22	20.51	0.99	1.01	-0.03
Pokharibandh	22	22	22	22	22	20.51	1.00	1.01	-0.01
Ainlajore	18	18	18	18	18	20.51	1.00	1.01	-0.01
Boden	38	15	36	12	30	20.51	0.40	1.01	-0.61
Monthly Block Average	20.64	20.32	20.58	20.73	20.51				
Overall Block Average (April-June)		20.51							
Overall Block Ratio	1.01								

Step 7: To calculate the percentage deviation, divide the difference between the facility ratio and the block ratio by the overall block ratio.



Total number of NEW Pregnant Women registered for ANC

Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)	Overall Average of the block (Apr-Jun)	Facility Ratio (Current month (Jul) /3 month average of facility)	Block Ratio Current month average (July)/Overall 3 month average of block	Difference (Facility Ratio-Block Ratio)	Deviation (Facility-Block ratio %)
Bandhapari	17	8	18	4	14	20.51	0.28	1.01	-0.73	=J3/B143
Chhatrapur	8	8	8	1	8	20.51	0.13	1.01	-0.89	
Kumkhal	28	18	16	7	21	20.51	0.34	1.01	-0.67	
Lakhabahili	8	8	8	8	8	20.51	1.00	1.01	-0.01	
Malijubang	21	21	21	21	21	20.51	1.00	1.01	-0.01	
Malipada	11	28	28	22	22	20.51	0.99	1.01	-0.03	
Pokharibandh	22	22	22	22	22	20.51	1.00	1.01	-0.01	
Ainlajore	18	18	18	18	18	20.51	1.00	1.01	-0.01	
Boden	38	15	36	12	30	20.51	0.40	1.01	-0.61	
Saplahara	11	11	11	11	11	20.51	1.00	1.01	-0.01	
Sargul Malpada	27	27	27	27	27	20.51	1.00	1.01	-0.01	
Belgaon	19	19	19	19	19	20.51	1.00	1.01	-0.01	
Monthly Block Average	20.64	20.32	20.58	20.73	20.51					
Overall Block Average (April-June)		20.51								
Overall Block Ratio	1.01									



Total number of NEW Pregnant Women registered for ANC

Facility	Apr_2025	May_2025	Jun_2025	Jul_2025	Average of the facilities (Apr-Jun)	Overall Average of the block (Apr-Jun)	Facility Ratio (Current month (Jul) /3 month average of facility)	Block Ratio Current month average (July)/Overall 3 month average of block	Difference (Facility Ratio-Block Ratio)	Deviation (Facility-Block ratio %)
Bandhapari	17	8	18	4	14	20.51	0.28	1.01	-0.73	-72.39%
Chhatrapur	8	8	8	1	8	20.51	0.13	1.01	-0.89	-87.63%
Kumkhal	28	18	16	7	21	20.51	0.34	1.01	-0.67	-66.49%
Lakhabahili	8	8	8	8	8	20.51	1.00	1.01	-0.01	-1.06%
Malijubang	21	21	21	21	21	20.51	1.00	1.01	-0.01	-1.06%
Malipada	11	28	28	22	22	20.51	0.99	1.01	-0.03	-2.54%
Pokharibandh	22	22	22	22	22	20.51	1.00	1.01	-0.01	-1.06%
Ainlajore	18	18	18	18	18	20.51	1.00	1.01	-0.01	-1.06%
Boden	38	15	36	12	30	20.51	0.40	1.01	-0.61	-59.98%
Pourkela	19	19	19	22	19	20.51	1.16	1.01	0.15	14.56%
Rajpur	8	8	8	8	8	20.51	1.00	1.01	-0.01	-1.06%
Regeda	18	18	18	18	18	20.51	1.00	1.01	-0.01	-1.06%
Saplahara	11	11	11	11	11	20.51	1.00	1.01	-0.01	-1.06%
Sargul Malpada	27	27	27	27	27	20.51	1.00	1.01	-0.01	-1.06%
Belgaon	19	19	19	19	19	20.51	1.00	1.01	-0.01	-1.06%
Monthly Block Average	20.64	20.32	20.58	20.73	20.51					
Overall Block Average (April-June)			20.51							
Overall Block Ratio	1.01									

As the deviation between individual facilities and the overall block should ideally remain within 33%, we can flag facilities where the variation exceeds this threshold.

NOTES

NOTES



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