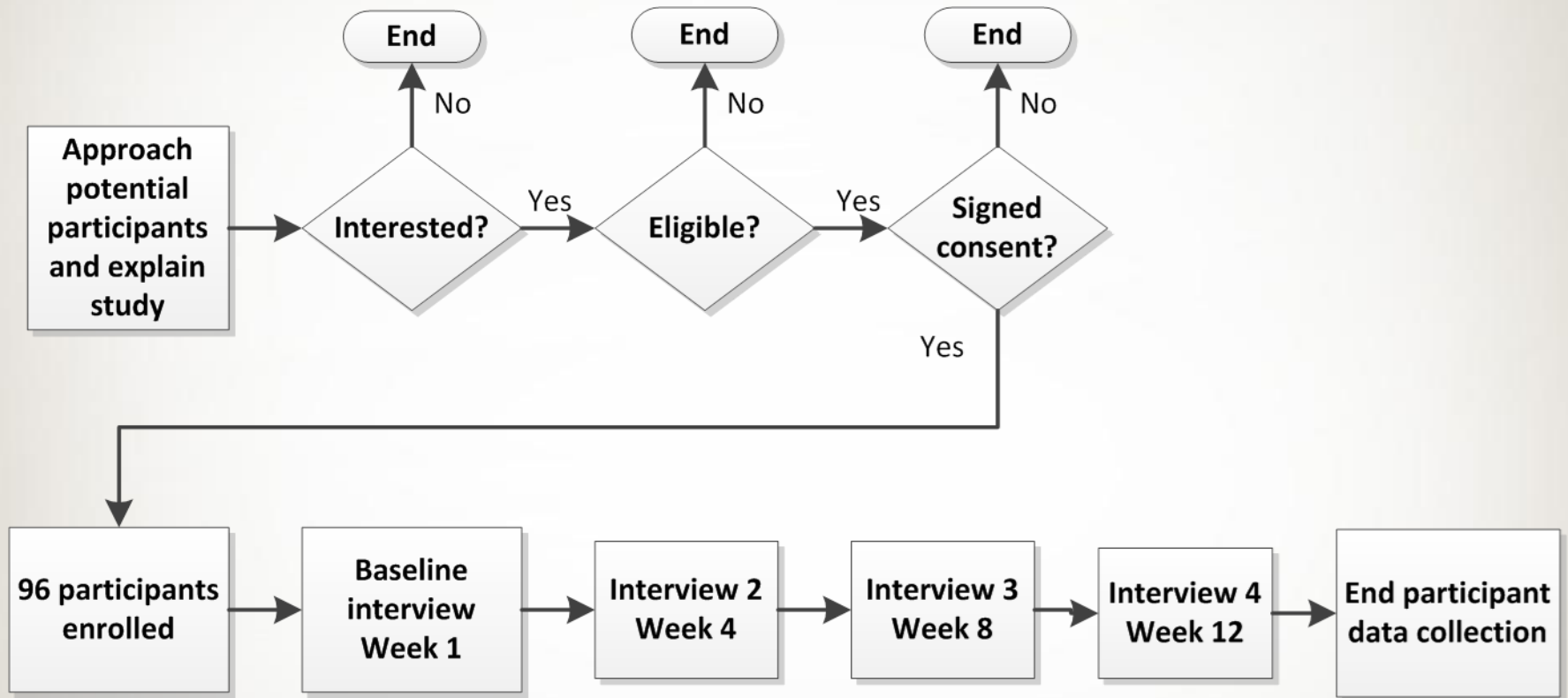


# Flow diagram for example of personnel planning (Study involving human subjects)



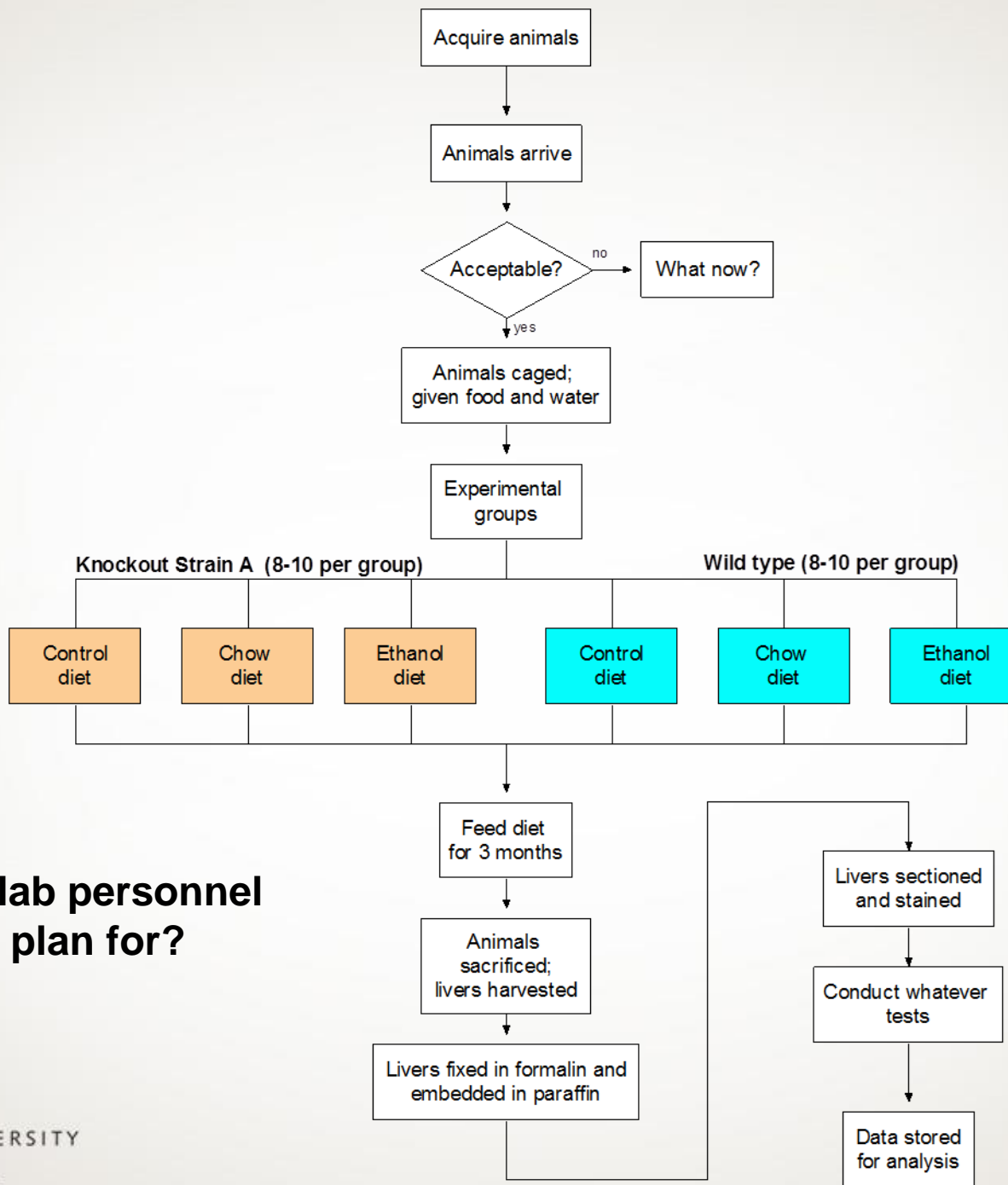
**How many interviewers will you need over what time period?**

# Assumptions for example

- Assume you can enroll between 12 to 16 women a week
- Total of 96 participants, each with 4 interviews
- Each interview takes 2.25 hours
- 864 hours total, but how do the interviews and associated times distribute?

# Example of personnel planning (Study involving human subjects)

Activity	Month 11				Month 12				Month 13				Month 14				Month 15				Month 16			
	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Study participants	12	16	12	16	12	16	12																	
Baseline	12	16	12	16	12	16	12																	
4 Weeks				12	16	12	16	12	16	12														
8 weeks								12	16	12	16	12	16	12										
12 weeks												12	16	12	16	12	16	12						
Total # interviews per week	12	16	12	28	28	28	28	24	32	24	16	24	32	24	16	12	16	12						
x 2.25 hours per interview	27	36	27	63	63	63	63	54	72	54	36	54	72	54	36	27	36	27						



**How many lab personnel should you plan for?**

# Personnel planning (Animal study)

## Assumptions

### Daily activities (7 days/week)

Feed, water, maintain takes 2 minutes per animal x 60 animals (in single cages) = 120 minutes/day or 2 hours/day, 7days/week = **14 hours/week**

Feed ethanol to 10 Knockout Strain takes 2 minutes per animal x 10 animals = 20 min/day x 7 days/week = 140 minutes/week or **2.3 hours/week**

Feed ethanol to 10 Wild type takes 2 minutes per animal x 10 animals = 20 min/day x 7 days/week = 140 minutes/week or **2.3 hours/week**

### Weekly activities

Collect blood and urine samples takes 20 minutes per animal x 30 Knockout Strain 1 = 600 minutes/week or **10 hours/week**

Collect blood and urine samples takes 20 minutes per animal x 30 Wild type = 600 minutes/week or **10 hours/week**

### One-time activity

Sacrifice and harvest takes 15 min/animal x 30 Knockout Strain 1 = 450 minutes or **7.5 hours total**

Sacrifice and harvest takes 15 min/animal x 30 Knockout Strain 1 = 450 minutes or **7.5 hours total**

# Personnel planning (Animal study)

	Month 1				Month 2				Month 3				Month 4				
	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8	Wk9	Wk10	Wk11	Wk12	Wk13	Wk14	Wk15	Wk16	Wk17
Feed and maintain 7 days/week	14	14	14	14	14	14	14	14	14	14	14	14	14				
Feed ethanol to 10 Knockout Strain 1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3				
Feed ethanol to 10 Wild type		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3			
30 Knockout Strain 1 blood and urine	10	10	10	10	10	10	10	10	10	10	10	10	10				
30 Wild type blood and urine		10	10	10	10	10	10	10	10	10	10	10	10	10			
Sacrifice and harvest														7.5	7.5		
Person hours/week	26.3	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	19.8	7.5		

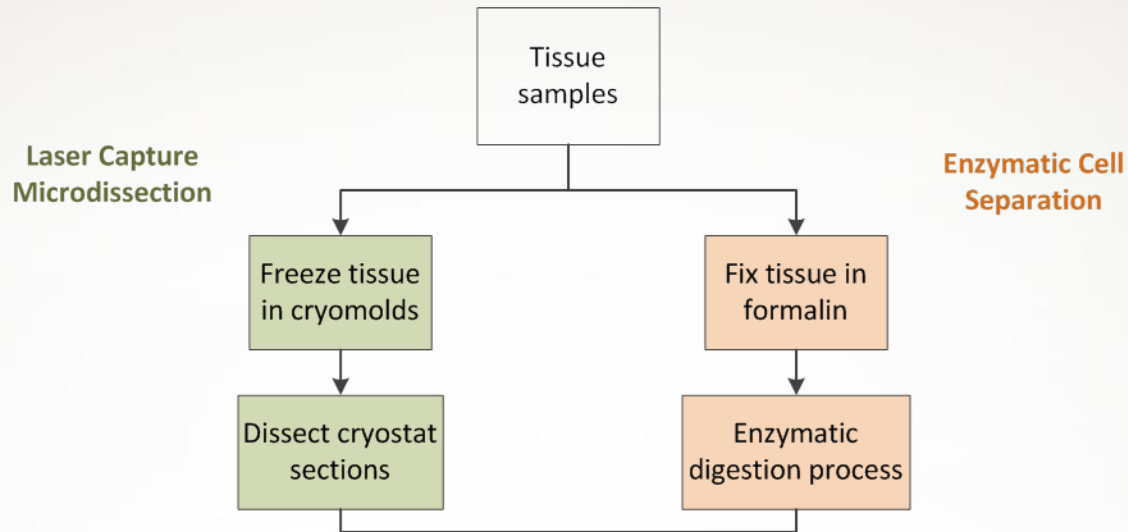
# Personnel Planning (Animal Study)

	Month 1				Month 2				Month 3				Month 4				
	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8	Wk9	Wk10	Wk11	Wk12	Wk13	Wk14	Wk15	Wk16	Wk17
Feed and maintain 7 days/week	14	14	14	14	14	14	14	14	14	14	14	14	14				
Feed ethanol to 10 Knockout Strain 1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3				
Feed ethanol to 10 Wild type		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3			
30 Knockout Strain 1 blood and urine	10	10	10	10	10	10	10	10	10	10	10	10	10				
30 Wild type blood and urine		10	10	10	10	10	10	10	10	10	10	10	10	10			
Sacrifice and harvest														7.5	7.5		
Person hours/week	26.3	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	19.8	7.5		

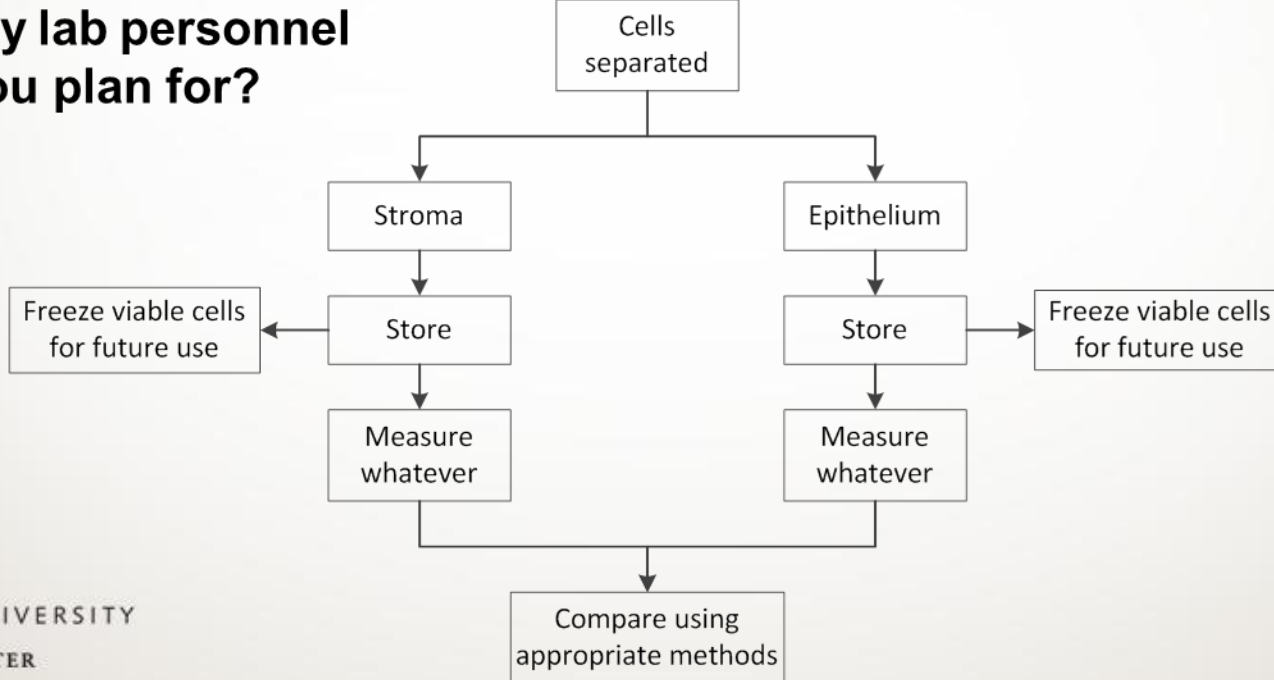
**Conduct experiments in series or in parallel?**

	Month 4				Month 5			
	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8
Feed and maintain 7 days/week	14	14	14	14	14	14	14	14
Feed ethanol to 10 Knockout <b>Strain 2</b>	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Feed ethanol to 10 Wild type		2.3	2.3	2.3	2.3	2.3	2.3	2.3
30 Knockout <b>Strain 2</b> blood and urine	10	10	10	10	10	10	10	10
30 Wild type blood and urine		10	10	10	10	10	10	10
Sacrifice and harvest								
Person hours/week	46.1	43.8	38.6	38.6	38.6	38.6	38.6	38.6

Validation of Enzymatic Cell Separation using Laser Capture Microdissection so that you can use resultant cells for later studies



**How many lab personnel should you plan for?**





# Personnel planning (Lab-based study)

## Assumptions

50 tissue samples for the Laser Capture Microdissection (LCM) technique

50 tissue samples for the Enzymatic Cell Separation (ES) technique

Freeze tissue and dissect cryostat sections (LCM) takes 30 minutes total time x 50 samples = 1500 minutes or **25 hours**

Fix tissue and conduct ES process takes 20 minutes x 50 samples = 1000 minutes or **~17 hours** (16.6)

Measure A takes 10 min/sample x 100 samples = 1000 minutes or **~17 hours**

Measure B takes 15 min/sample x 100 samples = 1500 minutes or **25 hours**

Measure C takes 5 min/sample x 100 samples = 500 minutes or **~8 hours** (8.3)

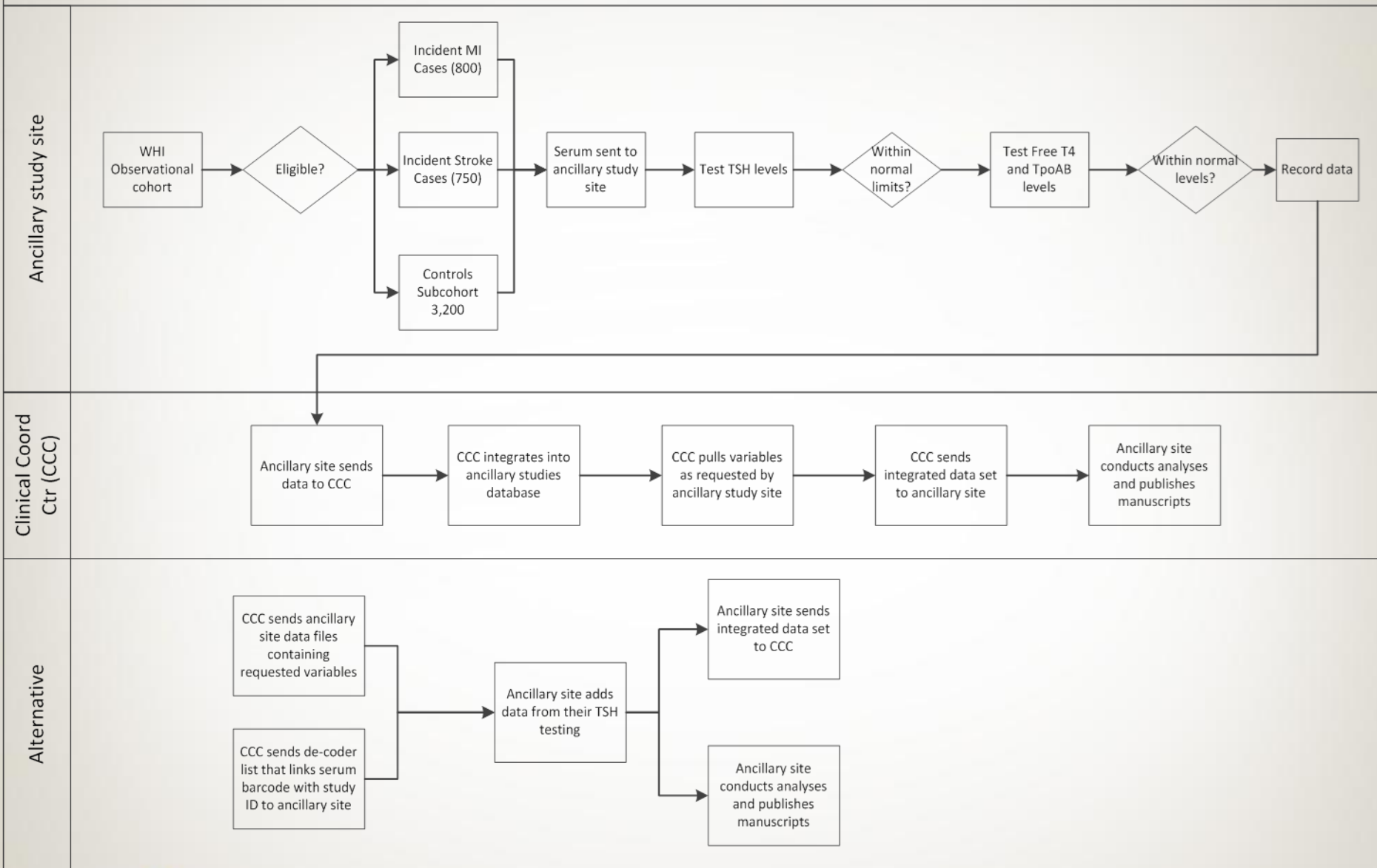
Separate viable cells from 100 samples and store takes 15 min/sample x 100 samples = 1500 minutes or **25 hours**

# Personnel planning (Lab-based study)

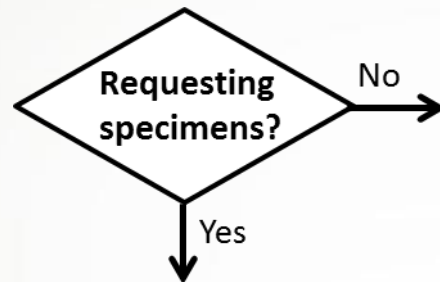
	Month 1			
	Wk1	Wk2	Wk3	Wk4
Freeze and dissect	25			
Fix and conduct ES	17			
Measure A (all 100 samples)		17		
Measure B (all 100 samples)		25		
Measure C (all 100 samples)			8	
Separate and store			25	
Analyze and compare				??
Person hours/week	42	42	33	??

	Month 1			
	Wk1	Wk2	Wk3	Wk4
Freeze and dissect	25			
Fix and conduct ES			17	
Measure A (50 samples)	8.5		8.5	
Measure B (50 samples)		12.5	12.5	
Measure C (50 samples)		4		4
Separate and store		12.5		12.5
Analyze and compare				??
	33.5	29	38	16.5

Subclinical Hypothyroidism and Risk for MI and Stroke (ancillary study to WHI observational study using stored specimens)



# Personnel Planning (Ancillary Study or Secondary Data Analysis)



Follow same approach as lab-based example

- Identify procedures
- Estimate number of minutes each procedure takes
- Multiply number of minutes by number of times that procedure will be done
- Divide by 60 to get hours
- Repeat for each different procedure
- Place in spreadsheet and calculate hours per week (or month)

- Learn the database
- Finalize/locate data you want
- Will you have to derive any variables?
- If so, how will you do this?
- Will you need to do any data cleaning?
- What and how?
- Extract the data
- Create Analysis data set
- Run analyses
- Interpret

## Personnel implications

Programmer—how much time and when?

Statistician—how much time and when?

Who extracts the data?

At what cost?

Who builds and maintains the data dictionary?