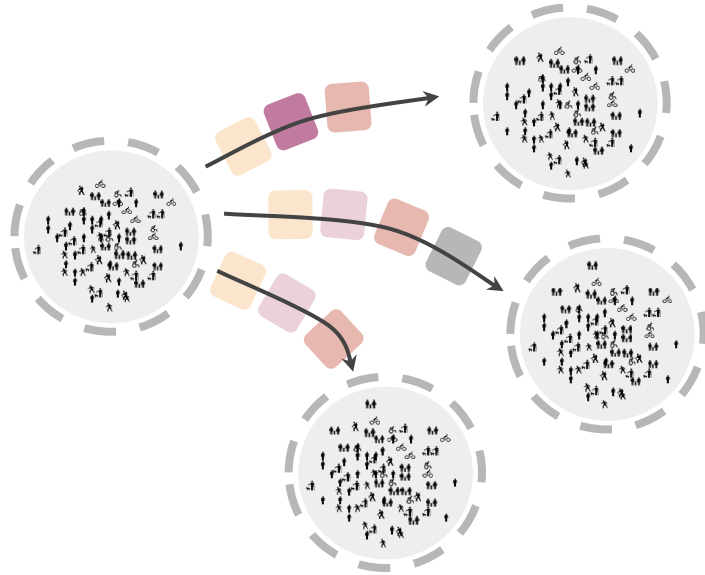
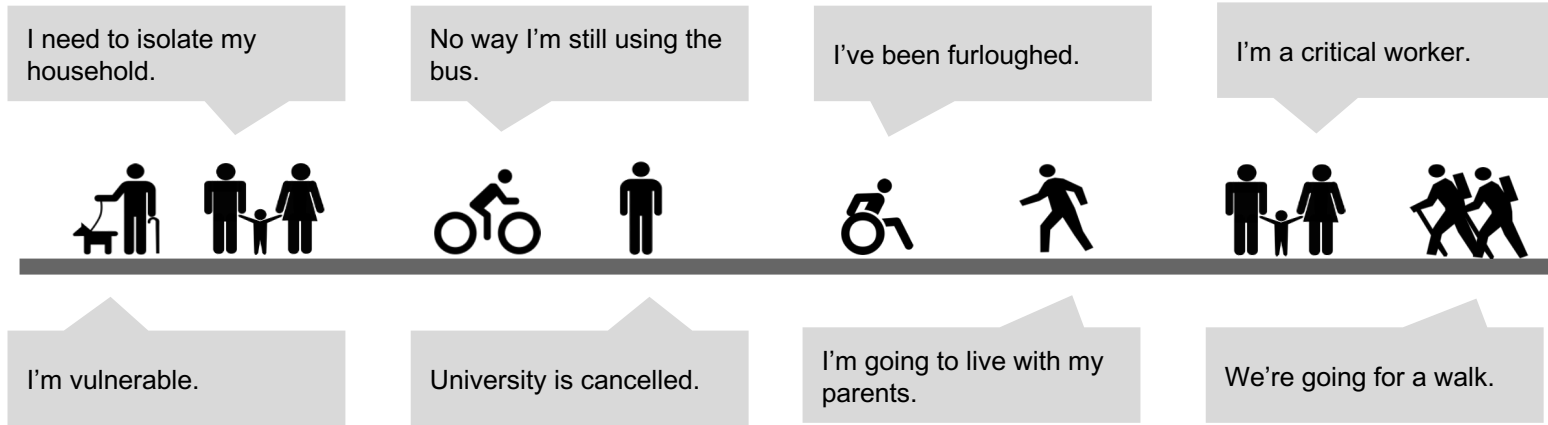


Pandemic Activity Modeller/Modifier (PAM)

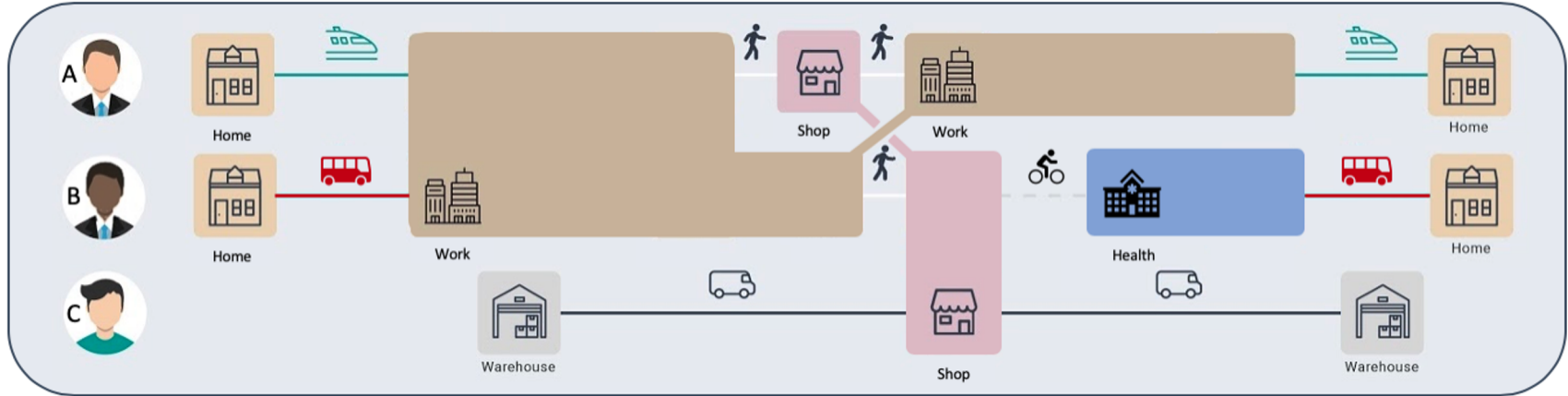


MOTIVATION: People are behaving differently, (i) new rules, (ii) new decision making and (iii) changes to employment:



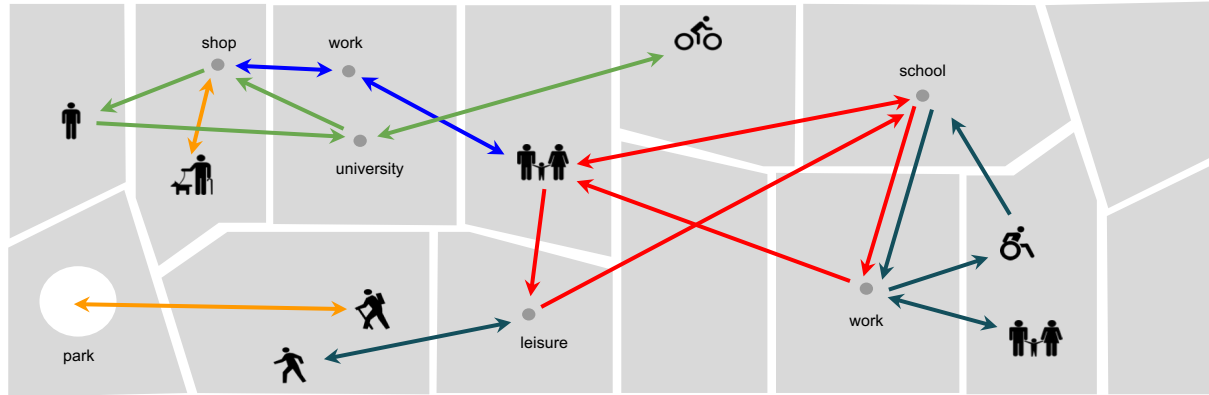
Existing models are out of date and the rules/scenarios are changing rapidly.

We work with **ACTIVITY PLANS:**



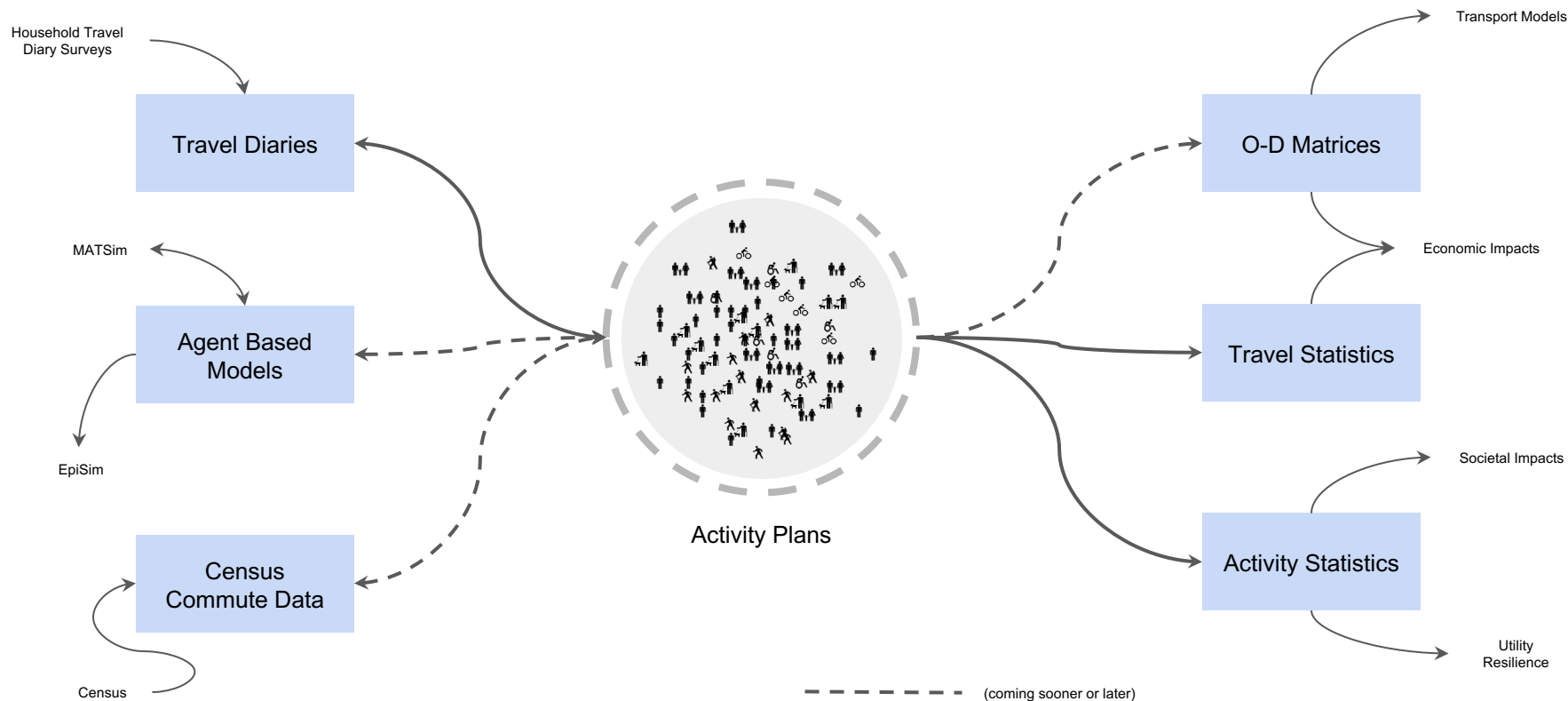
Activity Plans include detailed disaggregate info about a population and its activities

ACTIVITY PLANS are useful for modelling transport demand:

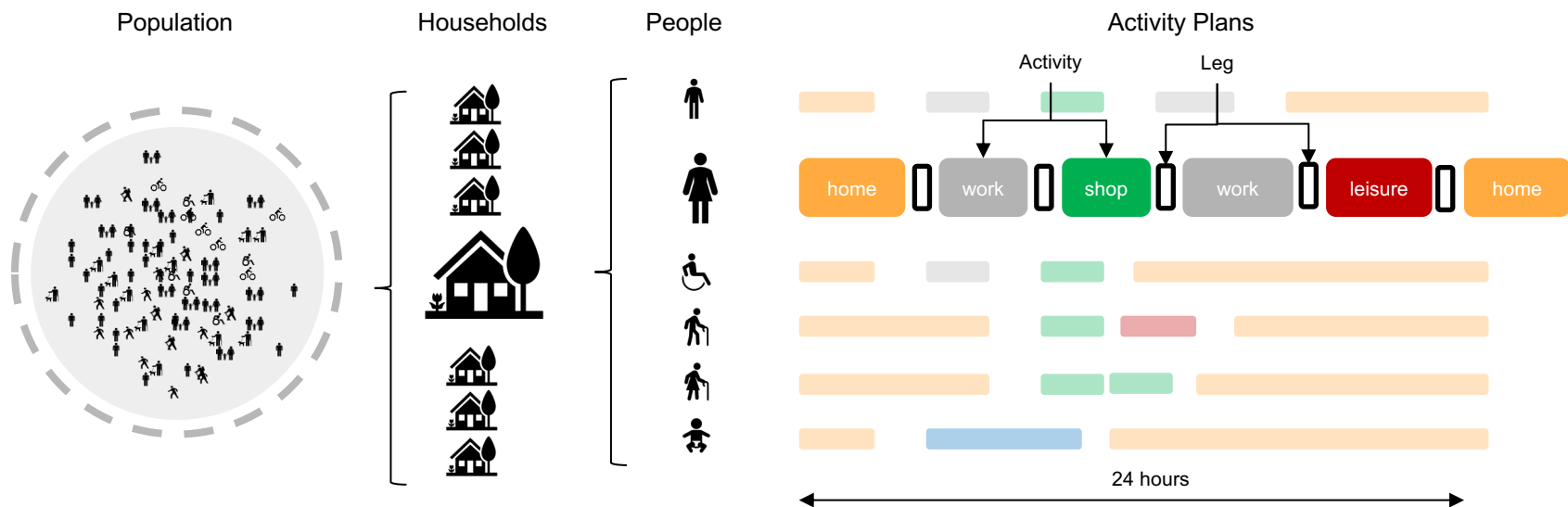


... but also: any model or analysis that cares about where and when people are travelling or doing things, can make use of Activity Plans

PAM FEATURE (1/2) - reading and writing to and from Activity Plans and other formats/outputs:



PAM CORE (1/2) –Data Structure:



PAM FEATURE (2) - modifying activity plans using policies, for example:



*if **critical worker**;
isolate household
with $p = 0.1$, else; p
 $= 0.05$*



*if not **critical
household**; then
remove all education
activities*



*if **person age** > 50 ;
then isolate with $p =$
 0.2*

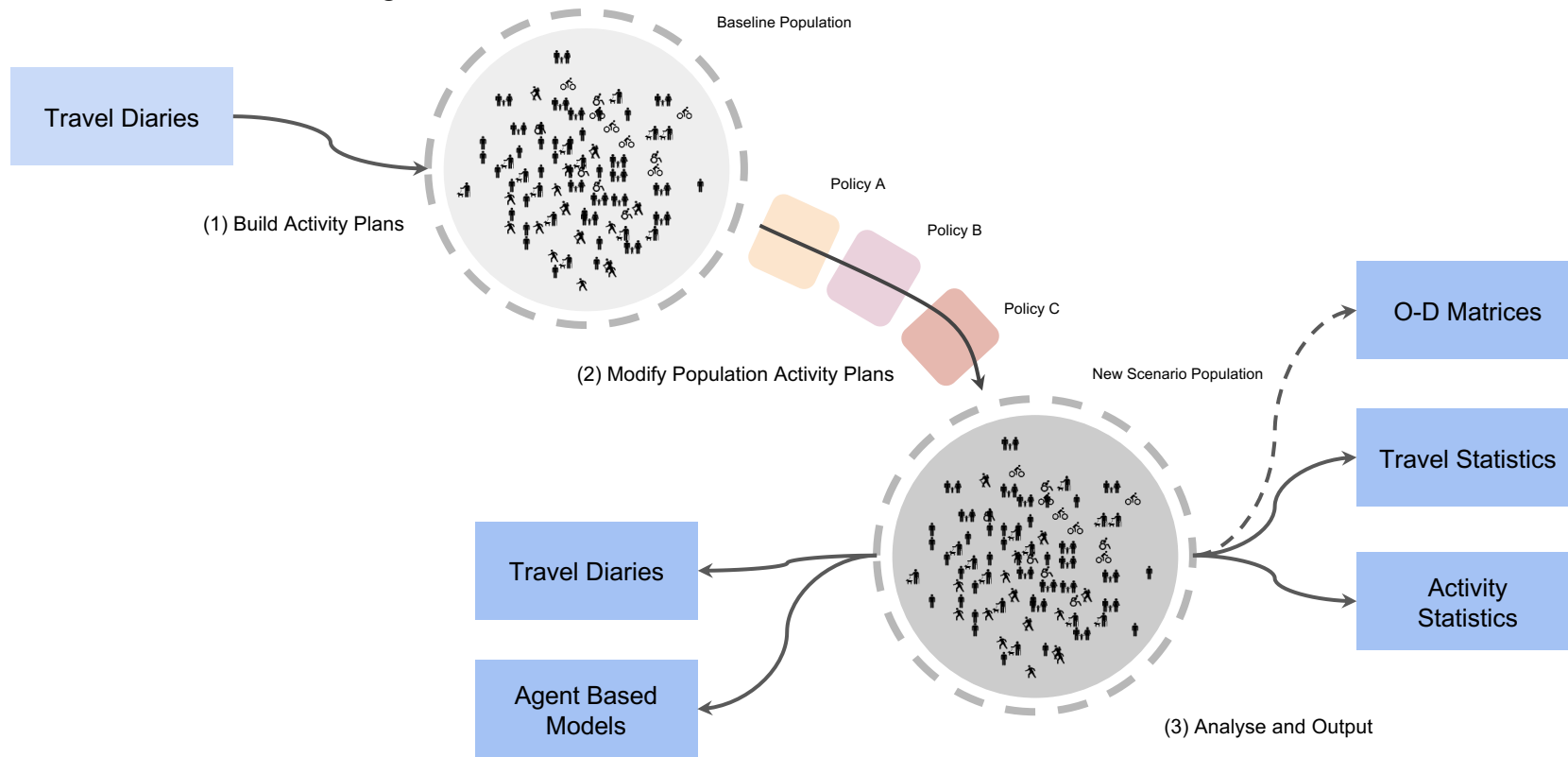


*if **income** $> 50k$;
remove work
activity $p = 0.9$*

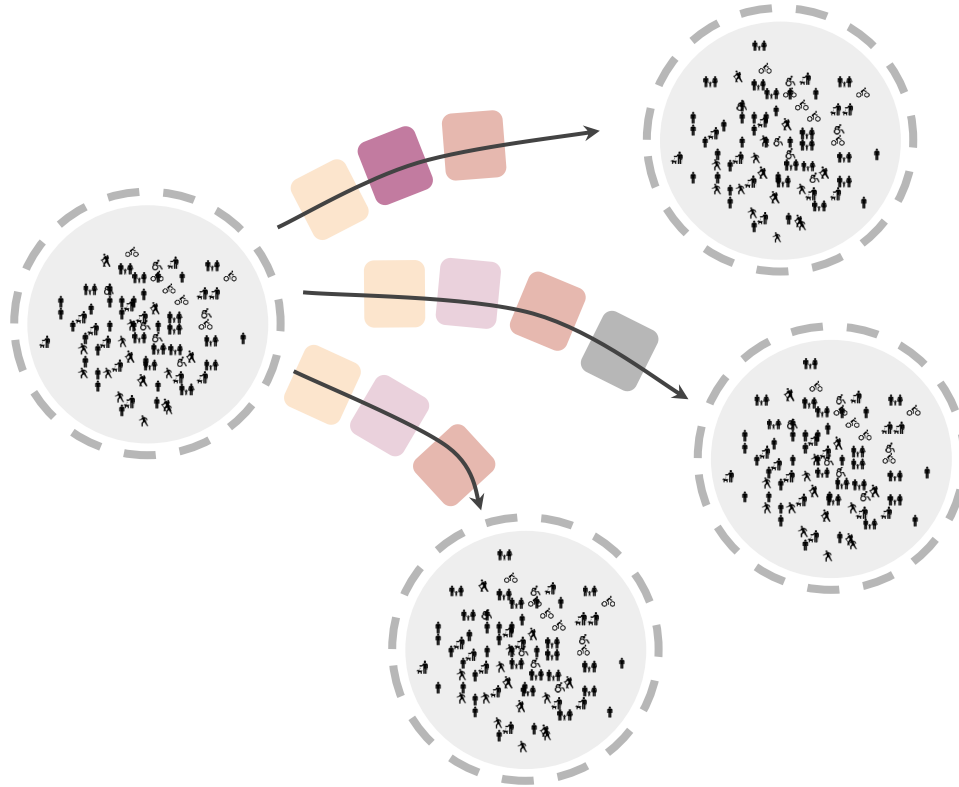
PAM CORE (2/2) – Modification Logic:

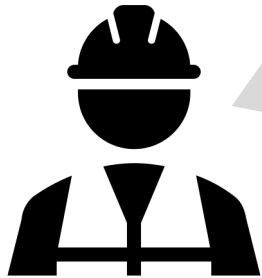


PAM APPLIED - eg:



BUT - PAM is a Tool - it doesn't know what's correct, or what the most likely scenarios are:





Example User Story:

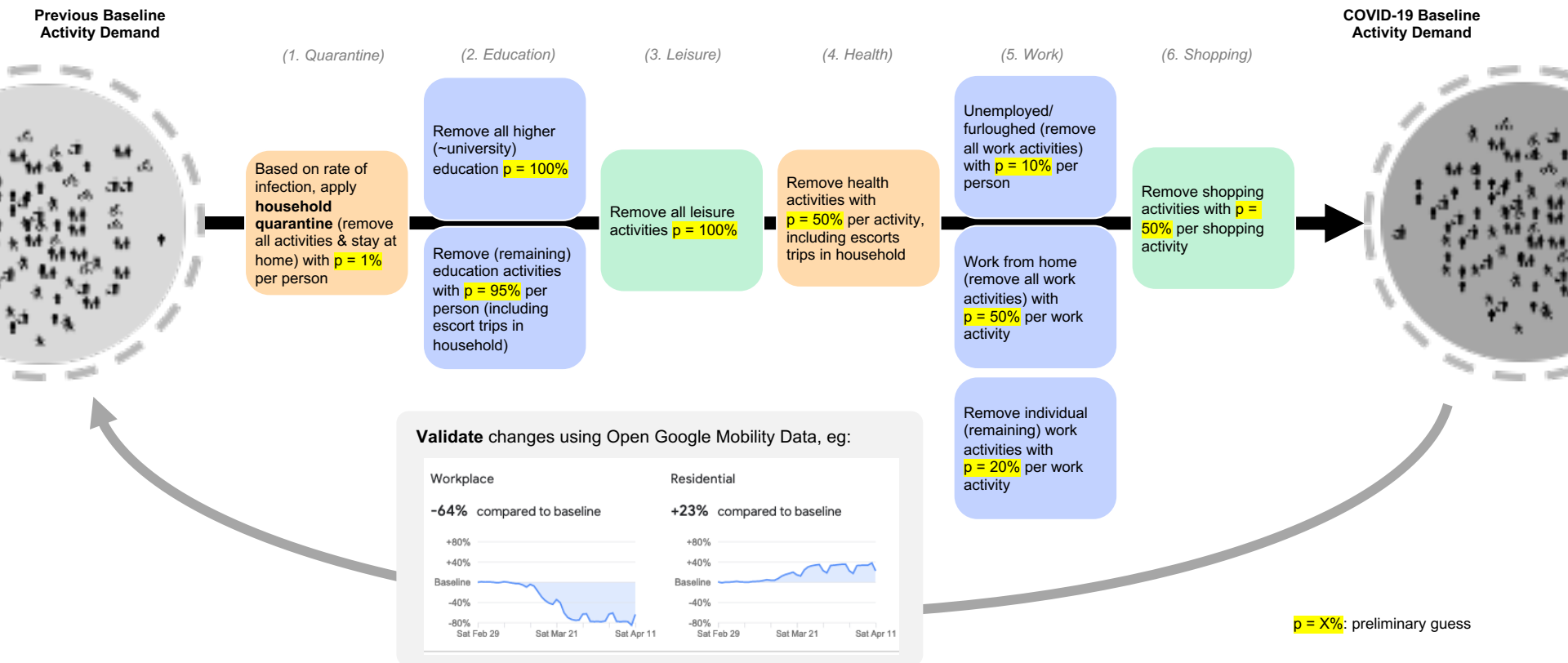
"We've reduced transit services as best we can for our drivers and public safety. But we're unsure what impact this has had on people's travel behaviour."

"I want to consider closing/opening some stations to better serve the existing demand, but my existing demand model is out of date..."

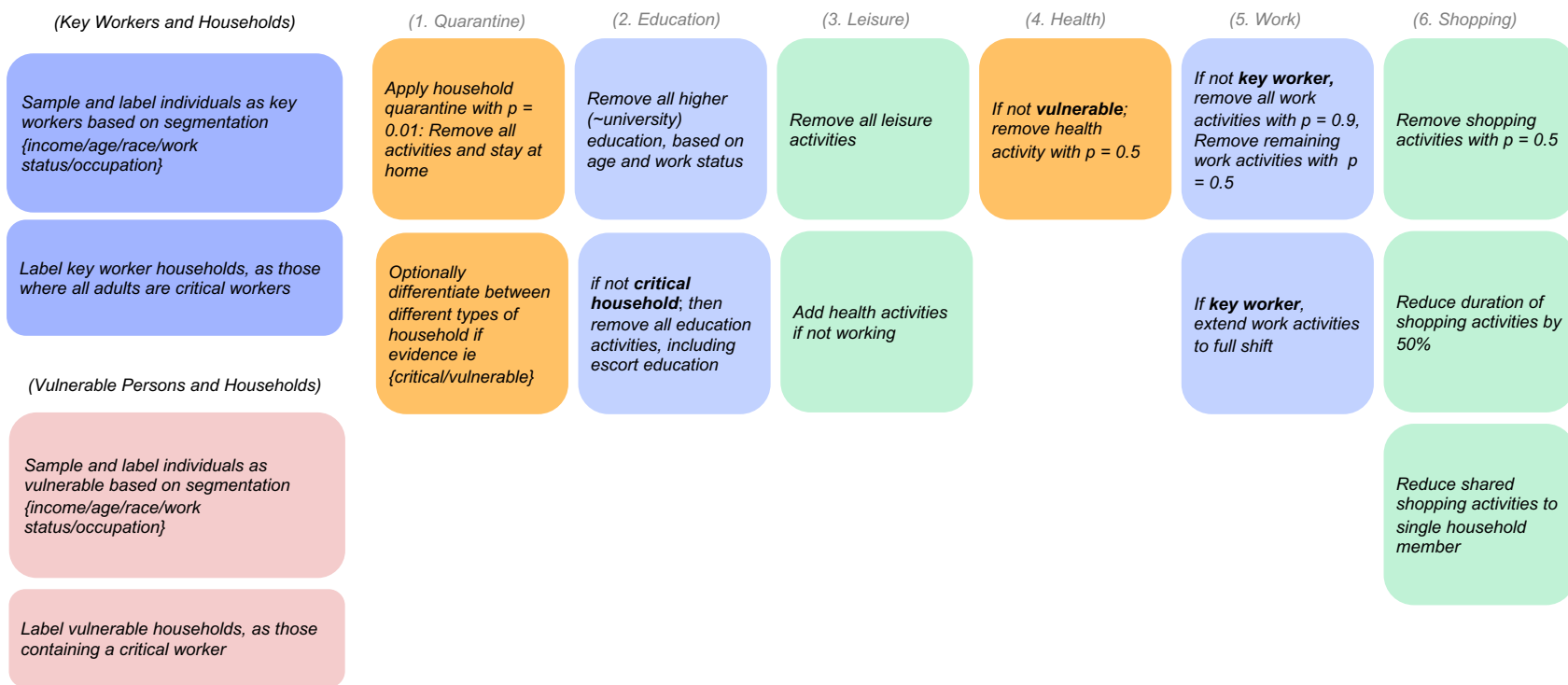
"If I can get my demand model adjusted for this new baseline then I can start to make more careful decisions – I am sure there are going to be some trade-offs between costs, risks and economic benefits."

- Local Authority Transport Planner

Baseline 19 – preliminary policy proposals for building a new demand baseline:



Baseline 19 – more **advanced** policy proposals (2/2):



PAM is Open Source and needs help, we are looking for people to help with:

Literature Review/theoretical vetting by transport modellers/planners

- ie. is the approach useful?
- ie. does the approach sound theoretically ok? - is there any existing lit?

Research - what new policies do we need - mode shift?/add daily exercise?/activities closer to home? etc

Data - we need to try out policies and validate them with data

- eg can we recreate Google mobility data for different cities with different rules?

Python dev of any level - get in touch please

Got a use case? or new output requirement? - let us know - we will add it to the project

We have more details about the project and how to get involved here:

<https://github.com/arup-group/pam>

Including an example notebook here:

<https://github.com/arup-group/pam/blob/master/notebooks/pam-getting-started.ipynb>

Feedback:

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