When should homeless families get subsidized apartments?

CHPS Grand Rounds

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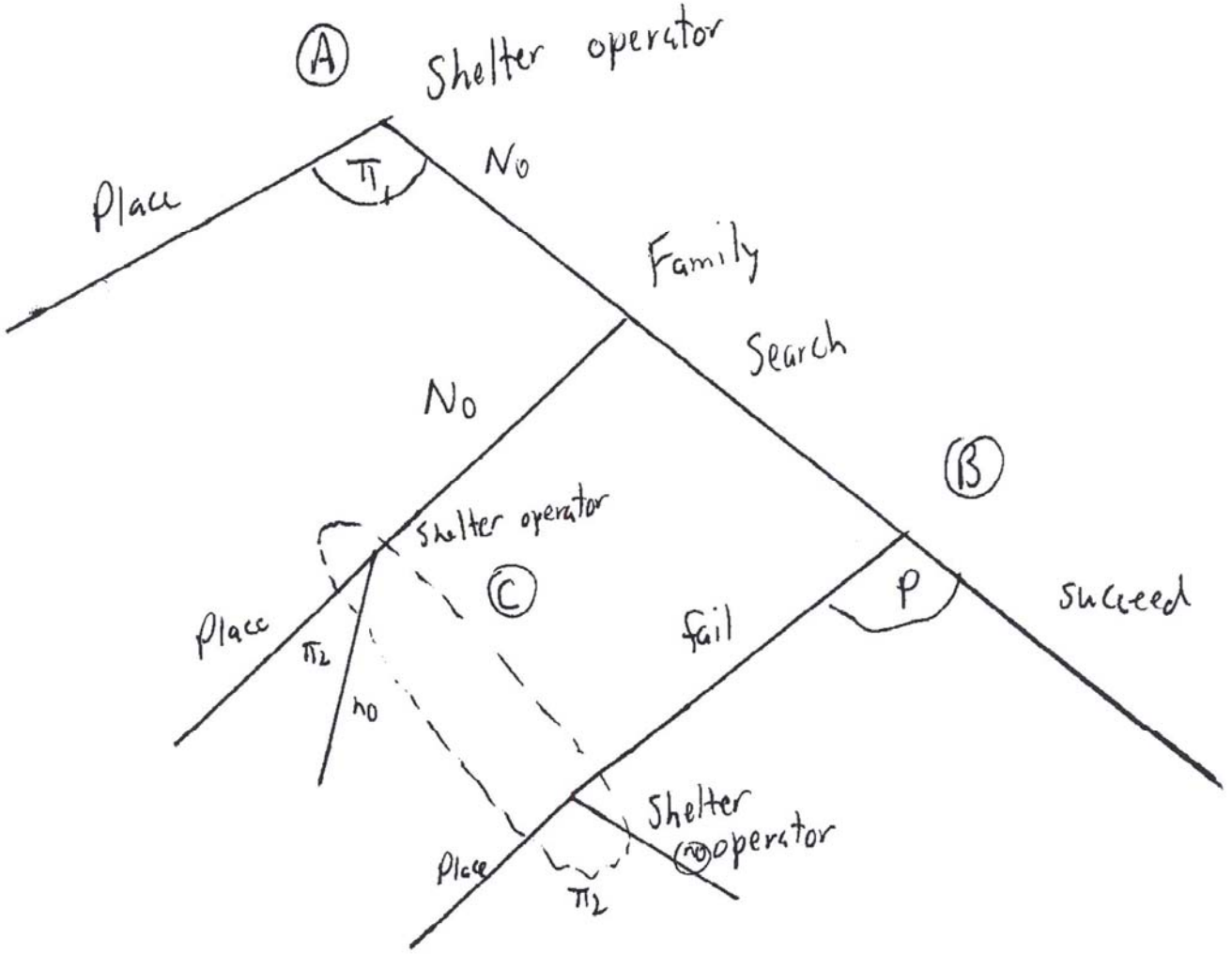
Vague Intuitions

- Why waste placements on people who are going to leave anyway?
- Why reward people for staying in shelters a long time?
- Won't immediate placement attract too many people into shelters?
- Moral hazard and adverse selection.
- World is very complicated.

It’s economic theory!

The Basic Story

- The game tree:



Assumptions

- At A & C, shelter operator can commit to any probability of placement. Pair of probabilities is called a “contract.”
- At B, there are many different types of families, but they all look the same to the shelter operator. Say two types.
- Shelter quality and cost fixed; placement quality and cost fixed

Keeping score

- Shelter operator minimizes expected cost, subject to a constraint on the well-being of families.
- Duality.
- Reservation utility same for all types of families.
- Ex ante
- In extensions, front door makes high utility costly.

Assumptions to make it simple and interesting

- Reservation utility is not so high that it's impossible
- But it's high enough that every feasible contract has some probability of placement sometime.
- Shelter is a bad deal: benefit-cost ratio is lower than ratio for subsidized apartment.
- Enough of each type that it doesn't pay to ignore either type.
- Every type searches if no chance for late placement.

Start with easy stuff

- Only one type, or shelter operator can verifiably distinguish among types.
- Then early placement is the optimal contract, and never late placement. Why spend money to make people unhappy?
- “Shavell-Weiss contract”: set Π1 to hit utility—easy to protect the front door too.
- Moral hazard but no adverse selection.

But it doesn’t work with two types

- The contract for the poor searcher has higher early placement probability
- So good searchers will pretend to be poor searchers
- Higher utility for them than required and more expensive.
- Maybe there’s a better way.
- Front door considerations make it an even bigger problem.

“Incentive compatibility”

- Each type must prefer the contract designed for them to the contract designed for the other type.
- SW contract for each is not incentive compatible
- Let’s think about how to make it cheaper and incentive compatible.

Squeezing and Revealing

- Start with the SW contract for the poor searcher. Want to make it less attractive to the good searcher (and cheaper), but can't make it less attractive to the poor searcher
- Increase the probability of late placement $\Pi 2$. This helps the poor searcher more than it helps the good searcher because the poor searcher is more likely to get there if probability of early placement is the not greater and good searcher is making at least as much search effort.

Continued

- As you increase late placement probability, decrease early placement probability in such a way as to keep the poor searcher's expected utility the same.
- Still makes this contract less attractive to the good searcher.
- Exactly how high to raise the late placement probability for the poor searcher depends on the parameters. If there are enough good searchers, it's so high that poor searchers never search on their own.
- Good searcher still has immediate placement only, but probability is lower because the poor-searcher contract is unattractive to the good searcher.
- This makes the good searcher contract unattractive to the poor searcher.

What's optimal?

- It's always optimal to have immediate placement for some group of families. It's rarely optimal to have immediate placement for all families—only when families are very homogeneous.

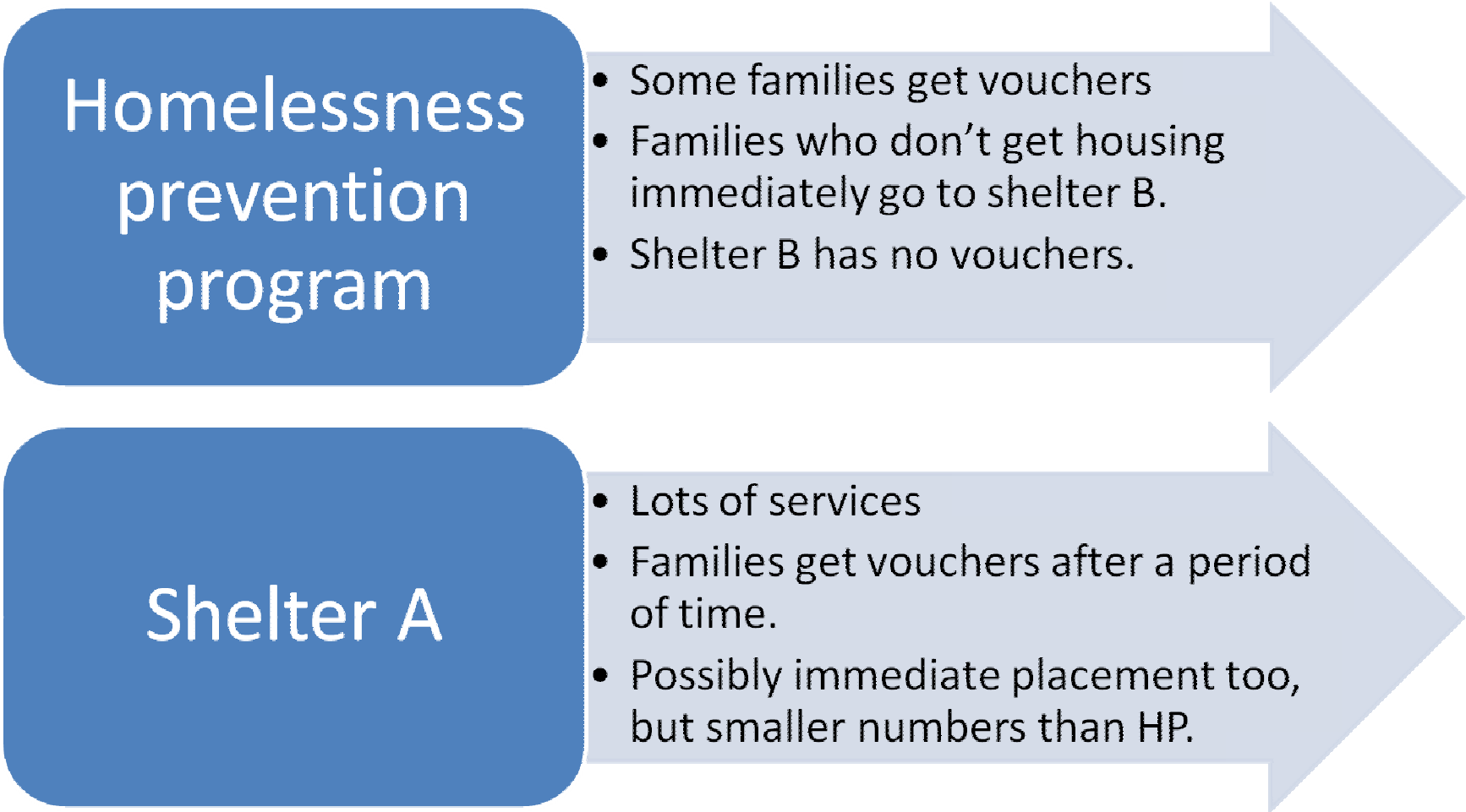
- It's often optimal to distort incentives for poor searchers to keep good searchers from pretending to be poor searchers, and so reduce cost of good searchers (and their incentives at the front door).

- Is this what services do?

Implementation: Strange Stuff

- Probabilistic placement. But it happens now. Just be conscious.
- Immediate placement. Homelessness prevention and rapid rehousing?
- Separate contracts and commitment not to place. Hard to do in a unified intake system. An argument against unified intake.

How to do it without unified intake



Problems

- What does DHS maximize?
- Different reservation utilities, continuous effort, infinite horizon
- Reset rules
- What do families know? What do intake workers know?
- Add front door. The less control on the front door, the more distorted the back door has to be.

Take-aways

- Economic theory is fun. 
- Look at the whole system. What looks crazy in isolation can have a purpose in the larger system.
- Commitments and information matter a lot.