PROBABILISTIC RATIONING WITH CATEGORIZED PRIORITIES: PROCESSING RESERVES FAIRLY AND EFFICIENTLY

HARIS AZIZ

UNSW SYDNEY

	MRE	**RE**	Simultaneous Reserves (Delacrétaz, 2021)	REV (Aziz & Brandl, 2021)	Smart Reserves (Pathak et al., 2020)	DA / Sequential Categories
compliance with eligibility requirements	✓	✓	✓	✓	✓	✓
respect of priorities	✓	✓	✓	✓	✓	✓
maximum size	✓	–	–	✓	✓	–
anonymity	✓	✓	✓	–	–	✓
neutrality	✓	✓	✓	✓	✓	–
category sd-envy-freeness	–	✓	–	–	–	–
category sd-efficiency	✓	✓	?	–	–	✓
category uniformity	–	–	✓	–	–	–
handles heterogeneous priorities	✓	✓	✓	✓	–	✓

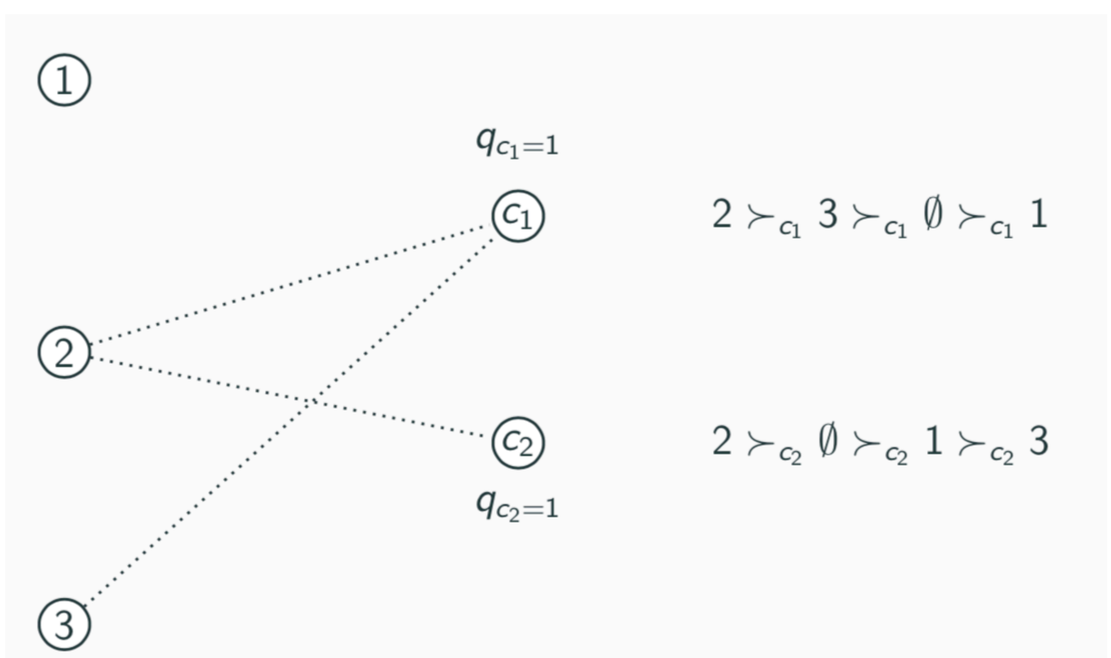
Table 1: Properties satisfied by prioritized rationing algorithms.

Research Question

For the general healthcare rationing problem with heterogeneous priorities, how do we allocate resources in a fair, economically efficient, strategyproof, and computationally tractable way?

Model

- Set of agents
- Set of categories
- Each category has a certain number of healthcare units
- Each category has a priority list over the agents



Results

- We present two new algorithms **MRE** and **RE** for the problem

References

- H. Aziz and F. Brandl. Efficient, Fair, and Incentive-Compatible Healthcare Rationing, 2021 Working Paper.
- P. A. Pathak, T. Sönmez, M. U. Ünver, and M. B. Yenmez. Fair Allocation of Vaccines, Ventilators and Antiviral Treatments: Leaving No Ethical Value Behind in Health Care Rationing. Boston College Working Papers in Economics 1015, Boston College Department of Economics, July 2020. URL https://ideas.repec.org/p/boc/bocoec/1015.html.