

# Who Should Participate in First-In-Human Pig Xenotransplant Clinical Trials?



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## INTRODUCTION

- First-in-human pig xenotransplant (XTx) clinical trials may soon be launched, which raises ethical concerns about participant eligibility.<sup>1, 2</sup>
- Should XTx clinical trials be limited to those for whom allotransplantation is unlikely?
- We assessed expert views about suitable candidates for kidney XTx clinical trials.

## METHODS

**Design:** Cross-sectional, mixed-methods study

**Setting:**

- The Hastings Center, Garrison, NY
- Lehigh University, Bethlehem, PA
- Northwestern University, Chicago, IL

**Participants:** 28 clinical, translational, and regulatory experts

**Data Collection:** In-depth, semi-structured telephone interviews (Jul 2022 - Feb 2023)

- Open-ended questions about perceptions of trial eligibility
- Assessed whether respondents would offer trial participation in 2 different patient scenarios:
  - Scenario 1:** “A 40-year-old patient on the waiting list who has been waiting for 10 years, not because of geography but because the patient is highly sensitized.”
  - Scenario 2:** “A 65-year-old patient who just started dialysis, so the patient has no waiting time accrued.”

**Data Analysis:** Thematic analysis (K > 0.80)

## RESULTS

**Support for the two scenarios:**

- Most respondents (68%, n=19/28) supported offering trial participation to patients in both scenarios.
- One-third of respondents (32%, n=9/28) opposed offering trial participation to either group.

**Table 1. Reasons to Support and Oppose Trial Participation of Patients in Two Scenarios**

Scenario 1: Reasons to <u>support</u> trial participation	
Unlikely to receive a human kidney	“Yes...there’s very low access to a transplant within their current lifetime, and so this may be a better alternative.”
Allographic sensitization may not be relevant	“I am not convinced that high allographic sensitization will translate into sensitization against the pig kidney. And I would not actually aggressively immuno-suppress that patient the way you would if getting human organ.”
Scenario 1: Reasons to <u>oppose</u> trial participation	
Concerns about risk of sensitization	“I don’t know whether an appropriately treated pig organ would actually have a lower risk of generating that kind of a rejection phenomenon.”
Concerns about complexity	“These are complicated patients, like more complicated than the traditional dialysis patient that are already kind of complicated.”
Scenario 2: Reasons to <u>support</u> trial participation	
Unlikely to receive a human kidney	“I think a lot of the patients we are likely to enroll will be 60-65 on the waiting list, but with little chance of receiving a human organ quickly.”
Scenario 2: Reasons to <u>oppose</u> trial participation	
The current allocation system is unfair	“...the current priority setting on the kidney waitlist may be screwed up, [so] I’d be uncomfortable [with this scenario].”
There are alternatives	“Off the bat, no. Because I think I could get him out five years on dialysis.”  “I think that actually that patient perhaps has alternative.”

## CONCLUSIONS

- Experts agreed that XTx clinical trials should recruit patients for whom other treatment options are unavailable or unlikely.
- Most support offering participation to both patient groups described in our scenarios
- One-third opposed offering trial participation to either group.
- Those opposed to scenario 1 focused on appropriateness of including highly sensitized patients in XTx trials.
- Those opposed to scenario 2 raised concerns about the existing organ allocation system.
- Future research should assess actual clinical design decisions about patient recruitment.
- Limitations: Perceptions reported reflect expert’s consideration of hypothetical XTx trial participation rather than an actual trial.

## REFERENCES

- Pierson III RN. Progress toward pig-to-human xenotransplantation. *New Engl J Med* 2022;386(20):1871.
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