

between clinical research and communities impacted by the opioid crisis.

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### **“I liked having my voice heard:” Co-designing an adolescent-centered contraceptive counseling training program for primary care clinicians with teen, caregiver, and clinician advisory boards<sup>†</sup>**

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**OBJECTIVES/GOALS:** Our research goal is to translate medical guidelines for adolescent-centered contraceptive counseling into improved clinical practice. Here, we describe the process of co-designing a training program for adolescent-serving primary care clinicians with teen, caregiver, and clinician advisory boards. **METHODS/STUDY POPULATION:** We recruited teens, caregivers, and clinicians residing in North Carolina to participate in three virtual advisory boards separated by role. Eligible teen advisors were assigned female at birth and 15–19 years old; eligible clinicians provided care for teen patients; and all groups were purposively sampled to reflect diverse identities and experiences. At each advisor meeting, we used human-centered design techniques to elicit participant priorities, generate training content and engagement strategies, and obtain feedback on the final training program. We conducted a focus group at our final meetings and used rapid qualitative analysis to understand our advisors’ experiences participating in program co-development. **RESULTS/ANTICIPATED RESULTS:** We partnered with 20 advisors with diverse identities across geographic location, race and ethnicity, sexuality, and experiences with disability. During 15 meetings from January to May 2024 (five with each advisor group), we developed a 3-hour virtual, synchronous training for adolescent-serving primary care providers to improve their contraceptive counseling skills. The curriculum includes five interactive modules and a resource toolkit. Advisors described motivations to participate (e.g., chance to share their perspective, desire to make change), positive experiences with the advisory boards (e.g., opportunities to learn, to connect with others), and opportunities for improvement (e.g., better technology orientation). **DISCUSSION/SIGNIFICANCE OF IMPACT:** We describe developing a successful longitudinal partnership with three community advisory boards and co-creating a training program that incorporates community-led priorities and perspectives, including youth. This approach can be adapted for other clinician training programs seeking to center community voices.

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### **Using human-centered design to improve cervical cancer screening for people experiencing homelessness**

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**OBJECTIVES/GOALS:** People experiencing homelessness (PEH) face excess cervical cancer burden and unique barriers to screening.

As part of a broader study addressing cervical cancer disparities in homeless populations in Indiana, our goal was to engage unhoused women in a human-centered design process to inform a homeless shelter-based self-sampling intervention. **METHODS/STUDY POPULATION:** An established community-academic partnership enabled meaningful engagement of homeless communities in Indiana and informed the need to understand and address cervical cancer disparities in this population. Rapid assessment surveys (n = 202) and in-depth interviews (n = 30) were conducted with PEH at two major shelters in Indianapolis and Lafayette to understand cervical cancer screening coverage, knowledge, attitudes, and practices; barriers and facilitators; and acceptability of human papillomavirus (HPV) self-sampling for onsite shelter-based screening. A human-centered design session with (n = 12) unhoused women further explored motivators and concerns regarding self-sampling and informed key messages and informational materials to encourage uptake of screening. **RESULTS/ANTICIPATED RESULTS:** At least 37% were overdue for screening (last screened >5 years ago; 50% were last screened >3 years ago), far greater than national (22%) or state (24%) averages. Despite common misconceptions regarding indifference toward preventive healthcare among homeless populations, most (87%) wanted to be screened and believed it is important for their health. Competing priorities for daily survival, transportation, cost, provider mistrust, stigma, and related trauma were common barriers to screening. Enthusiasm for HPV self-sampling centered on convenience, privacy, and comfort in taking one’s own sample at the shelter. Notable concerns included lack of confidence regarding ability to self-sample correctly, unhygienic conditions in shelter restrooms, preference to be seen by a doctor, and the need for education. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The unique challenges of PEH require human-centered strategies to improve cervical cancer screening access. Willingness to be screened and acceptability of HPV self-sampling is high. Identified concerns and preferences will guide implementation of HPV self-sampling delivered by trusted community health workers in homeless shelters in Indiana.

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### **Reimagining postpartum care to advance health equity – A qualitative study with Black birthing people and health workers<sup>†</sup>**

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**OBJECTIVES/GOALS:** 1. Examine structural, interpersonal, and health system factors that impact postpartum well-being for people who are racialized Black. 2. Differentiate components of postpartum well-being. 3. Design a model of postpartum care that addresses comprehensive well-being. **METHODS/STUDY POPULATION:** We conducted eight focus groups with participants in the Washington, D.C. area including four with Black birthing people who had given birth in the past two years (n = 23), and four with staff and providers from Community of Hope, a federally qualified health center, who provide care to birthing people (n = 19). We used an action-oriented qualitative approach informed by Black feminist theory. Our analysis was grounded in the 5D Cycle for Health Equity (reDefine, Discover, Dream, Design, and Deliver) and appreciative inquiry, which guide researchers to focus on strengths, be open to

possibility, and engage radical imagination. RESULTS/ANTICIPATED RESULTS: Participants reDefined postpartum health and wellness as physical, mental and social well-being, and material stability. Participants discovered that Black birthing people felt deeply unsupported navigating postpartum including difficulties with feeding, sleep, and mood and strongly believed that “postpartum” is at least a year, with different needs at different phases. Participants dreamed that postpartum care could be more accessible and trustworthy, have opportunities for social connection and creating a village, and have their basic needs (food, housing, clothing, and rest) met. DISCUSSION/SIGNIFICANCE OF IMPACT: The participants conveyed that postpartum care must be designed and delivered to ensure that it is accessible, creates opportunities for connection, and promotes health, well-being, and joy. Postpartum care that can generate trust and engagement with healthcare, reduce morbidity and mortality, and increase thriving.

### **Piloting a novel community-engaged bloodborne infection and drug supply surveillance system to improve harm reduction services for people who inject drugs in Kentucky**

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OBJECTIVES/GOALS: Kentucky (KY) is a high priority ending the HIV epidemic state, with high rates of new HIV diagnoses tied to injection drug use. The overall goal of this pilot is to launch sentinel surveillance of bloodborne infections and drug compounds among people who inject drugs (PWID) to monitor trends in near-real time and inform rapid community response. METHODS/STUDY POPULATION: In collaboration with the Clark County, KY, syringe service program (SSP), the pilot study involves two 1-month waves of data collection: enrolling eligible SSP participants and conducting anonymous behavioral surveys, collection of participants' syringes, laboratory testing of syringes to detect HIV and hepatitis C (HCV), drug residue testing through National Institute of Standards and Technology, and statistical modeling approaches to produce outputs of bloodborne infection and drug detection. Syringes are tested from each enrolled individual for: 1) HIV antibody; 2) HCV antibody; 3) HIV and HCV PCR; 4) HIV antigen; and 5) drug residue. Collaboration with community and PWID stakeholders will identify optimal messaging for reporting results. RESULTS/ANTICIPATED RESULTS: The first wave community-facing pilot was conducted in September–October 2024. 29 survey responses were obtained; median age of the sample is 42 years, 55.2% are gender female; 37.9% reported unstable housing in the past week. Primary drugs of injection reported via survey in the prior month were methamphetamine (62.1%), heroin (13.8%), fentanyl (13.8%), buprenorphine (10.3%), meth and fentanyl in combination (3.4%). PWID reported returning 900 used syringes and a median of

15 per participant visit. At most recent testing, 69.0% reported a positive HCV test; 0% reported a positive HIV test. Some level of drug checking with fentanyl test strips in past month was reported by 51.7%. Initially, 20 syringes were tested for drug compounds; results are pending. HIV and HCV detection testing will be completed by early 2025. DISCUSSION/SIGNIFICANCE OF IMPACT: Early results document proof of concept for our sentinel surveillance study; all individuals screened were willing to participate in surveys and syringe collection. New methods to identify risk for disease outbreaks and emerging drugs can inform rapid allocation of prevention resources at a community level, especially where testing is infrequent.

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### **Staying connected: Community engagement for enhanced HIV care outcomes**

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OBJECTIVES/GOALS: Retention in care is vital for people living with HIV. We used human-centered design (HCD) to engage a community-based research panel over a 5-year period, allowing us to incorporate their insights on research guidance and interpretation of findings to investigate correlates of HIV care outcomes. METHODS/STUDY POPULATION: We recruited a diverse panel of individuals who were living with HIV, HIV clinicians, and/or providing non-clinical HIV services in Marion County, Indiana. We conducted biannual sessions using a variety of HCD tools and activities to engage participants. Each session took about three hours, and panelists were compensated for their participation. Due to the COVID-19 pandemic, sessions were initially held virtually. Sessions were designed for project discussion and to facilitate exploration of concerns and challenges facing receipt of HIV services. Our HCD approach put participants in the center of discussion and empowered them to externalize ideas and collaborate meaningfully with our team. RESULTS/ANTICIPATED RESULTS: Since project inception, 48 individuals have joined the panel. Thirty-five are actively engaged, participating in one or more of six sessions conducted to date. We have learned much from the panel. One example is that a residential move might be a risk or protective factor for retention in care and the amount of time one had lived with HIV is a crucial factor. Panel insights have helped guide and prioritize analyses, aided in identification of data missing from our ecosystem, helped interpret results, provided feedback on future interventions, led to a quality improvement project with the local health department, and led to a presentation at a local health equity conference. DISCUSSION/SIGNIFICANCE OF IMPACT: Community engagement is essential to impactful and sustainable research. HCD was a successful approach to engage our panel to inform interventions more relevant to the community. We anticipate these methods will be important for others conducting community-engaged research.