The Current State of US Pediatric Vascular Access Care Delivery from the Perspective of Key Stakeholders – A Qualitative Study

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BACKGROUND

- About 70% of hospitalized children require a least one IV catheter
- Vascular access care delivery is often suboptimal → patient discomfort, complications, added staff time, increased healthcare costs
- Aim: To understand stakeholders' needs, experiences and attitudes regarding vascular access care delivery

METHODS

- Semi-structured interviews with 3 stakeholder groups:
  - Hospitalized pediatric patients/guardians at 1 hospital
  - Clinicians and institutional leaders from 3 hospitals
- Purposive sampling to ensure diversity
- Coding frame based on two frameworks: System Engineering Initiative for Patient Safety and Picker Patient Experience
- Data analysis: Qualitative content analysis using MAXQDA qualitative software

RESULTS

- Patient/guardian group (N=8): ages 6 days to 14 yrs
  - DIVA history: N=2
  - Complex chronic condition (CCC): N=1
  - Central venous catheters: N=1
  - Peripheral IV catheters: N=7
- Clinician group (N=7): vascular access specialists (N=3), APPs/physicians (N=4) from emergency medicine, complex care, and hospital medicine
- Leader group (N=5): intervention radiology, nursing leadership, quality and safety leaders, and a chief medical officer

RESULTS

Patient and Guardian Interviews (n=8)

Interviews Indicating Positive or Negative Experiences with Care

Categories and subcategories	+	-
Care and attention		
Access to services, technology, devices	6	3
Timeliness and efficiency	3	3
Continuity of care	0	0
Confidence in quality of care	7	1
Coordinated care	0	1
Clear communication and information	8	1
Patient/family involvement in decision making & care	3	1
Emotional aspect of care	4	5
Physical needs and comfort	6	3

Clear communication and information (+)
"I remember they were referring to the needle as a straw. 'Your body's so thirsty that we need to put a straw in so you can drink a special water' I think it just piqued her interest and calming down. She kept looking at them, wanting to know more." (Parent of 4-yr-old child)

Confidence in quality of care (+)
"We love the CAT [central access team] … They treat him like their child. They're just very personal, they love him, and they just joke around. He just loves being around them."(Parent of 10-yr-old child with CCC)

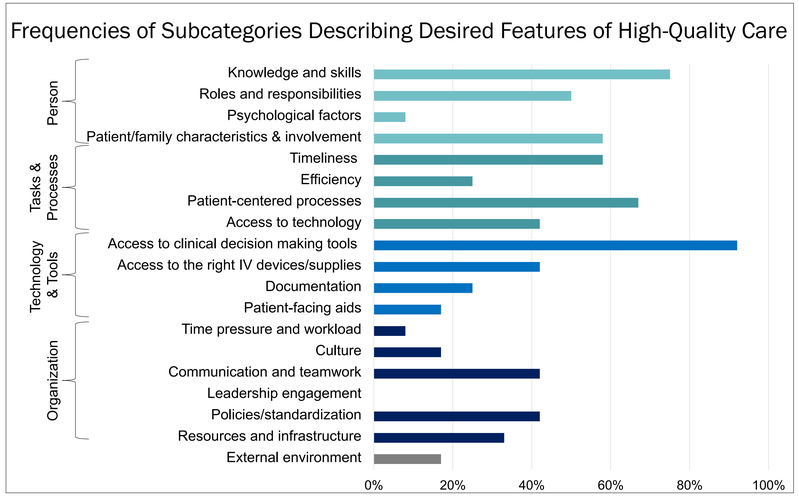
Access to services, technology, and devices (+)
"[The vascular access specialist] had an ultrasound. She could see when the needle got to the vein and stuff. It just popped in!" (14-yr-old adolescent)

Emotional aspect (-)
"[Patient] was terrified. Crying, and on top of being in pain too, just terrified… She's like, 'I don't want to do needles.'" (Parent of 4-yr-old child)

Physical need and comfort (-)
"They didn't actually get it on the first try and just kept on trying to dig to find it…[it] hurt ." (14-yr-old adolescent)

Clinician and Leader Interviews (n=12)

Frequencies of Subcategories Describing Desired Features of High-Quality Care



Examples of Early Themes About High-Quality Vascular Access Care

Barriers
- Financial investment and budget
- Nursing skill and competency
- Physician/APP knowledge
- Local culture

Facilitators
- Access to experts (e.g., vascular access team)
- Access to child life specialist
- Monitoring outcomes

Desired features
- One attempt, one catheter
- Patient needs matched with resources/expertise
- Vascular access team as a centralized coordinating entity
- Clinician support with decision-making tools/algorithms

CLINICAL IMPLICATIONS

- Patient-centered vascular access care delivery may be achieved through:
  - Enhanced information delivery (e.g., multimedia communication)
  - Emotional support (e.g., child life specialist, age-appropriate distractions)
  - Minimizing attempts through access to services (e.g., vascular access specialist) and technology (e.g., ultrasound)
- Elements of high-quality care to be incorporated into a care pathway may include:
  - Pre-placement assessment tool to determine patient needs so it can be match to the right resources/expertise
  - Decision-making algorithms (e.g., algorithm for selecting the most appropriate type of catheter)

NEXT STEPS

- Continue interviews and analysis until thematic saturation is reached
- Compile elements of high-quality care to be incorporated into a vascular access care pathway
- Prioritize elements of care via national survey
- Design comprehensive vascular access care pathway
- Test the feasibility and effectiveness in an adaptive pragmatic clinical trial
- If successful, plan for large scale implementation

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