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Siloed to Solutions: Creating a Culture of Collaboration

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Scientific and societal challenges are becoming more complicated, and efforts to address them require research collaboration across disciplinary, organizational, and cultural boundaries to solve the challenges facing society today. The fast-moving opioid and heroin epidemic is one of those complex problems. Much like a natural or an environmental disaster, it endangers not just one population, but an entire social ecosystem, a community of interconnected individuals and interests. Addressing this complex problem requires coordinated teams of professionals trained in different fields with diverse skills and knowledge.

This issue of *Marshall Journal of Medicine* showcases some efforts directed towards the opioid epidemic and its tragic effect, neonatal abstinence syndrome (NAS), in West Virginia – guest commentary on NAS by Dr. Sean Loudin, champion for West Virginia Perinatal Partnership project and pilot study by Dr. White et al exploring pain management in expecting mothers who struggle with addiction. Although disciplinary research efforts are essential, addressing this complex problem requires coordinated teams of professionals trained in different fields with diverse

skills and knowledge.

Many entities must come together to prevent opioid overdoses and deaths—first responders, health care providers, health departments, law enforcement, community-based organizations, pain specialists, addiction specialists, researchers and educators. Major funders, including the National Science Foundation (NSF) and the National Institutes of Health (NIH), are pushing scientific collaboration among those professionally trained in different disciplines under the banner of “Team Science.”^{1,2} This helps by melding disciplinary silos, allowing stakeholders to cross disciplinary boundaries (interdisciplinary) to define the problem and find an effective solution (transdisciplinary). However, building “Team Science” can prove challenging due to the diversity in the training of professionals, attitudes of the professionals toward other disciplines, differences in evaluating measures and research data quality.

Successful research collaboration is built around human elements and requires cooperative spirit embodied in each team member.^{3,4,5,6} Practicing the

following human elements can help build a culture of collaboration.

TRUST & MUTUAL RESPECT

Two of the most significant barriers to scientific collaboration is the ignorance of others' expertise and mistrust in their abilities to meet the team's expectations. Trust is at the core of successful collaboration and can be achieved through honest conversations, positive team dynamics, and psychological safety so that each team member is comfortable sharing credit for good ideas.

SHARED VISION

A shared vision provides a compelling overarching goal for the collaboration and a sense of purpose; it attaches people to the team and keeps them together.

BUILDING RELATIONSHIPS

Vision alone is not enough to sustain the team collaboration. Vision must be accompanied by the ability to build and nurture strong relationships through self-awareness and emotional intelligence. The better someone gets to know and understand themselves (personal strength and weakness), the better they will appreciate those who surround them.

CONFLICT

Conflict is good for scientific collaboration – it can expand thinking, add new knowledge to a complex scientific problem, and stimulate new directions for research. Although, if not handled skillfully, it can impede effective team functioning and stifle scientific advancement.

COMMUNICATION

Strong scientific and interpersonal communication skills within research teams are vital components of effective team collaboration. Communication must be clear and understandable without disciplinary jargon. Shared language empowers researchers

across all sciences and engages them effectively regardless of their disciplinary silos.

LEADERSHIP

Strong collaborative leadership elicits and capitalizes on the team members' strengths and is a critical component of team success. It is a "connector" that can link people, ideas, and resources from across boundaries to help establish robust systems of researchers who together can accomplish more than they could as individuals. Every team member, not just the formal leader, can demonstrate leadership and shared goals must be placed above personal satisfaction and recognition.

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