

Center for Healthcare Safety and Applied Research in Antimicrobial Resistance (CHARM)



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BACKGROUND

Healthcare-associated infections (HAIs), many caused by antimicrobial-resistant (AR) organisms, pose a major threat to patient safety. There are significant knowledge gaps regarding HAI prevention across the healthcare spectrum and regional HAI and AR patterns require localized study and response. Emerging AR pathogens threaten to put us back in the pre-antibiotic era, where we may have few, if any medical therapies to treat life threatening infections. Thus, research into the epidemiology of HAIs, improved understanding of AR, and the development of effective novel interventions are high priorities of funding agencies, healthcare facilities, and patients.

This problem requires *high-quality, high-impact, and multidisciplinary collaborative research*. Geographic variation in outbreaks highlights a need for regional collaborations to 1) respond directly to local public health needs and 2) effectively use resources across multiple lines of inquiry.

PURPOSE

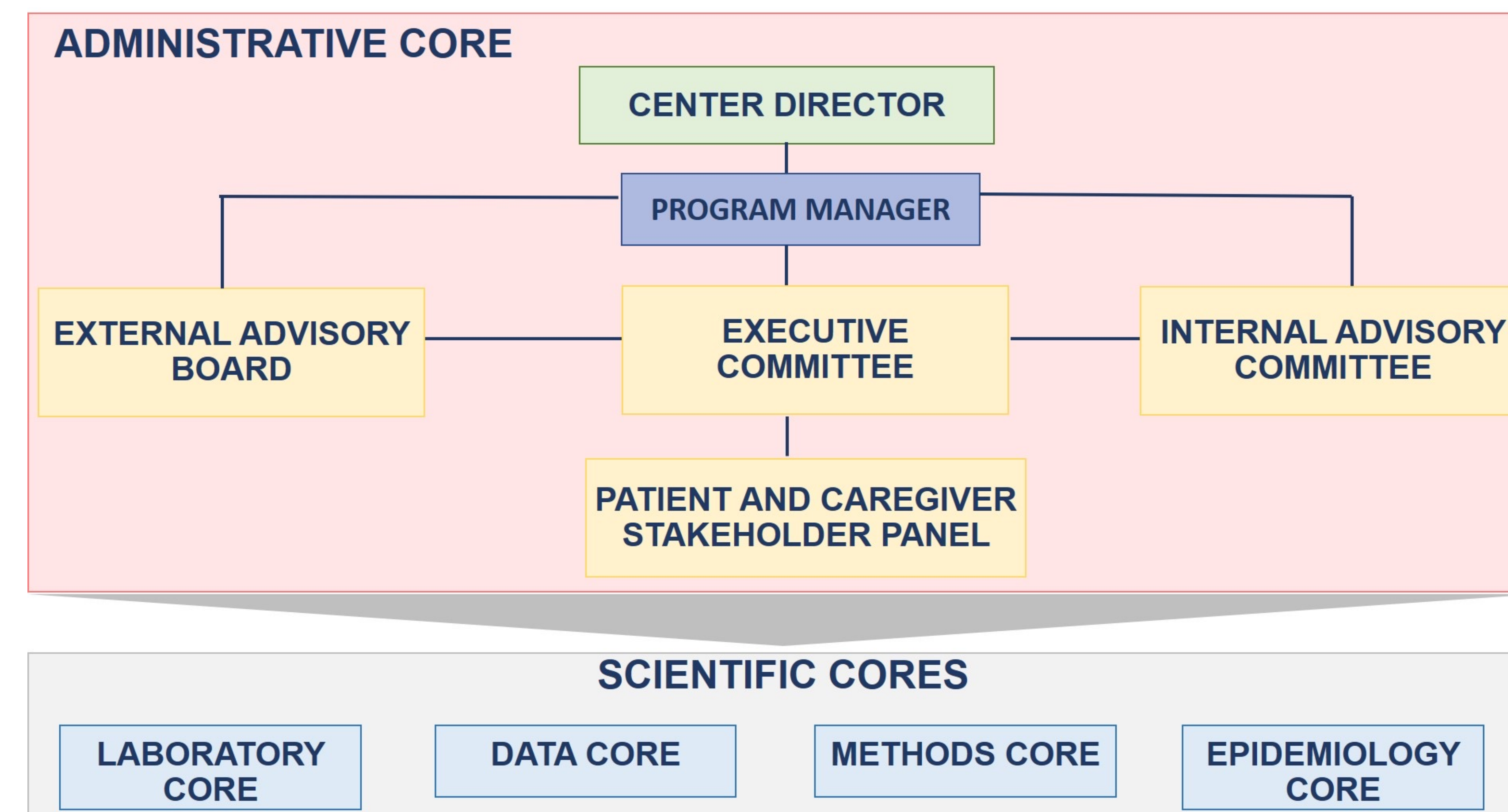
CHARM is a statewide coalition of academic institutions, public health agencies, and healthcare systems dedicated to preventing HAIs and AR through high-quality, high-impact research.

APPROACH

Goals:

- Lead collaborative, innovative, and high-impact research among multidisciplinary scientific leaders
- Connect and engage healthcare systems, researchers, and public health agencies on a local public health research agenda
- Mentor the next generation of HAI and AR clinicians and researchers
- Engage patients, caregivers, and other stakeholders to ensure relevance of center work to the public needs

Structure:



The Administrative Core will:

- 1) Lead Center activities (e.g., coordinate research efforts);
- 2) Provide regulatory support for research activities;
- 3) Solicit, review, and select projects to meet scientific goals;
- 4) Identify opportunities to train and mentor junior investigators; and
- 5) Adjust strategies alongside state public health authorities.

Collaborators:

- Department of Health Services
- Coalition of Community Hospitals
- Medical College of Wisconsin
- 6 Schools and Colleges in UW
- Patient Advisory Panel
- State Lab of Hygiene
- Department of Population Health
- UW Health system

OUTCOMES-initial projects

- Examine epidemiology and prevention interventions in post-acute care patients colonized with AR pathogens
- Determine diagnostic and antimicrobial stewardship challenges associated with *C. difficile* infection.
- Characterize post-acute healthcare networks to identify opportunities to interrupt inter-institutional spread of AR pathogens.
- Identify modifiable risk factors for healthcare-associated AR pathogens by leveraging statewide data linked to multiple healthcare systems.

DISCUSSION

CHARM joins investigators and clinicians across the spectrum of care in WI. Geographic patterns of HAI spread require regional collaboration of public health agencies and healthcare systems. Recent collaborations have shown the benefits of engaging multiple institutions given the complexity of HAI and AR research. Through CHARM collaborations and work, leaders can develop real-world, evidence-based strategies that will maximize patient safety.

CONCLUSION

With infrastructure/platform to support a broad translational research agenda, CHARM will directly address a critical issue of patient safety (HAIs and AR).