culture. A 2D/3D infection culture system for IEC-6 and HT-29 cells was infected for 4 hr and imaged and then DNA damage examined by comet assay, cell cycle andÍ³H2AX accumulation. Germ-free (GF) Il10-/- (colitis) mice were orally gavaged with 108 cfu WT orï „fimH E. coli NC101 for 16 weeks. E. coli colonization were quantified by plate culture and qPCR. Lipocalin2 was quantified by ELISA. PCNA and β-catenin were evaluated by immunohistochemistry (IHC). RESULTS/ANTICIPATED RESULTS: Biofilm formation was reduced by more than 40% ($p<0.05$) in E. coli NC101ï „fimH compared to WT strain. Zebrafish larvae showed a 41% decrease in intestinal colonization ofï „fimH compared to WT ($p<0.05$). E. coli NC101-induced DNA damage was reduced by 67% ($p<0.0001$) in HT-29 cells infected withï „fimH compared to WT strain. Using the 3D infection system, a 46% decrease in yH2AX ($p<0.05$) and 42% decrease in G2 cell cycle arrest ($p<0.05$) was observed inï „fimH infected IEC-6 cells compared to WT strain. Furthermore, ï „fimH infected Il10-/- mice showed decreased colonization ($p<0.01$), decreased intestinal inflammation ($p<0.05$), decreased stool lipocalin2 level ($p<0.01$), and reduction of PCNA positive cells in the intestine ($p<0.05$) compared to mice infected with WT strain. DISCUSSION/SIGNIFICANCE OF FINDINGS: Adhesin protein FimH is required by E. coli NC101 to colonize and promote colitis and carcinogenesis both in a 3D perfusion culture and in mice and may serve as potential therapeutic target.

Clinical Trial

10040

Proactive and responsive COVID-19 multidisciplinary research support through the University of Minnesota's Clinical Research Support Center

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ABSTRACT IMPACT: In a global pandemic where data development and dissemination are integral to combating the disease, the Clinical Research Support Center at the University of Minnesota provides a model of comprehensive virtual support, helping to attain and disseminate novel research on COVID-19, its individual and community impact, and treatment initiatives/outcomes. OBJECTIVES/GOALS: The pandemic created massive disruption to the conduct of clinical research with an unprecedented reorientation towards COVID-19. In this fast-paced environment, the Clinical Research Support Center (CRSC) rapidly developed innovative means of supporting diverse research initiatives. METHODS/STUDY POPULATION: The CRSC rapidly transitioned into a virtual environment and developed tools for the clinical research community to enhance remote clinical trial start up. This includes supporting remote consent, eBinders, COVID-19 research training for clinical staff, and easier identification of potential participants for COVID-19 studies; all through virtual support. Support provided research teams guidance on study protocols, regulatory requirements, informatics, biostatistics, financial management, recruitment strategies to support critical, urgent COVID-19 research. We outline proactive examples of how the CRSC now provides support to research teams through the pandemic. RESULTS/ANTICIPATED RESULTS: From March-November 2020, 116 COVID-19 projects received virtual support from the CRSC for COVID-19 research: disease understanding (n=27), treatment (n=23), pandemic impact (n=20), clinical care innovation (n=18), disease control and surveillance (n=10), prevention (n=9), detection (n=5), and impact on minorities (n=4). The diversity of these studies demonstrates the demand for and benefit from multidisciplinary expertise supporting study design and implementation. Through successful articulation and acceleration of research activities, the CRSC met the need for speed and rapidly adapted to new challenges created by the pandemic. DISCUSSION/SIGNIFICANCE OF FINDINGS: In a global pandemic where rapidly changing barriers to research is ongoing, through multidisciplinary efforts, the CRSC continues to provide comprehensive, virtual support to attain and disseminate novel research on COVID-19, its individual and community impact, and treatment initiatives/outcomes.

39901

Breaking down silos to synergize clinical trial development and initiation: The Clinical Research Support Center, University of Minnesota

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ABSTRACT IMPACT: The model of the Clinical Research Support Center at the University of Minnesota of streamlining clinical trial infrastructure can be leveraged by the larger clinical trial community to create valuable efficiencies and facilitate faster initiation of research activities by supporting researchers from concept to dissemination. OBJECTIVES/GOALS: Substantial time, energy, and money are spent bridging disparate resources in research. We describe how the University of Minnesota's (UMN) Clinical Research Support Center (CRSC) streamlines trial infrastructure, creating valuable efficiencies to support researchers from concept to dissemination. METHODS/STUDY POPULATION: The CRSC, established in 2018 through the Clinical and Translational Science Award (CTSA) program, brings resources together in a single, centralized, and convenient location to help researchers navigate the UMN clinical research startup process and specifically to assist with the development and initiation of a research study from feasibility assessment to project opening. Diverse expertise in components of human subject research is available to support the broad scope of projects at a large institution like the UMN. We present how CRSC services, when coordinated by Clinical Research Specialists, have

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