

Project Details	
Project Code	MRCPHS24Br Trickey
Title	Investigating cause-specific hospitalisations among people living with HIV on antiretroviral therapy
Research Theme	Population Health Sciences
Summary	This project aims to investigate rates of hospitalisations due to different causes among people with HIV on antiretroviral therapy, and how they differ by subgroups, for example, by gender or age. The student would have access to data from the largest collaboration of HIV cohorts across Europe and North America, with records for 200,000 people with HIV on antiretroviral therapy, including data on over 280,000 hospitalisations.
Description	<p>Prior to the introduction of combination antiretroviral therapy in 1996, people with HIV had very high rates of mortality, mostly due to AIDS. Since then, life expectancies have increased dramatically as people with HIV have been able to successfully suppress the virus due to antiretroviral therapy, reducing the risk of AIDS and death. Over the last decade, more effective antiretroviral therapy regimens with fewer side effects have continued to become available. Increasing life expectancies have meant that people with HIV are ageing with reduced morbidity due to AIDS and increased morbidity due to other causes that are common in the general population (e.g., cardiovascular disease and cancer). Additionally, substance use and comorbidities such as hepatitis C tend to be more common among people with HIV than in the general population. Therefore, the reduction in hospitalisations due to AIDS may not have translated into a net reduction in hospitalisations among people with HIV on antiretroviral therapy due to the emergence of other conditions associated with ageing. Also, trends in the causes of hospitalisations may vary across subgroups of people with HIV. This project aims to investigate rates of cause-specific hospitalisations among people with HIV on antiretroviral therapy. The student would have access to data from the Antiretroviral Therapy Cohort Collaboration (ART-CC), the largest collaboration of HIV cohorts across North America and Europe, which has been publishing world leading research for over 20 years. The 2018/19 ART-CC data update contains records for 200,000 people with HIV on antiretroviral therapy, including data on over 280,000 hospitalisations, with a 2022/23 update currently being received and cleaned. The ART-CC's cause-specific hospitalisations data have not previously been analysed. Access to other datasets from outside of North America and Europe is also possible. During the PhD, the student would start by reviewing the literature on the causes and rates of hospitalisations among people with HIV on antiretroviral therapy. The project would involve developing an algorithm to define causes for hospitalisations in the ART-CC dataset. The student would then investigate how rates of cause-specific hospitalisations differ by subgroups, for example those defined by age, gender, or health status. The student would be able to choose the subgroups of interest. Additionally, there is some evidence that people with HIV on specific antiretroviral regimens are more likely to experience particular side-effects, such as weight gain or metabolic syndromes. The student could investigate whether specific antiretroviral therapy regimens are associated with increased rates of cause-specific hospitalisations. Once</p>

	again, the student would have leeway to choose the scientific questions of interest. Over the course of the PhD, the student would learn about epidemiological survival analysis techniques such as Cox regression, as well as causal inference techniques where observational data are used to mimic randomised controlled trials. The student would also gain a background in literature searching and evidence synthesis and there would be the opportunity for travel to international conferences on HIV research.
<b>Supervisory Team</b>	
<b>Lead Supervisor</b>	
Name	Dr Adam Trickey
Affiliation	Bristol
College/Faculty	Population Health Sciences
Department/School	Bristol Medical School
Email Address	adam.trickey@bristol.ac.uk
<b>Co-Supervisor 1</b>	
Name	Dr David Gillespie
Affiliation	Cardiff
College/Faculty	Centre for Trials Research
Department/School	College of Biomedical & Life Sciences
<b>Co-Supervisor 2</b>	
Name	Professor Jonathan Sterne
Affiliation	Bristol
College/Faculty	Population Health Sciences
Department/School	Bristol Medical School
<b>Co-Supervisor 3</b>	
Name	
Affiliation	
College/Faculty	
Department/School	