As a team of researchers, GCU is committed to developing clinical practice while working in partnership with patients, clinical staff, health service management, pharma and healthcare companies to guard against HAI and to enhance the quality of patient care.

Healthcare Associated Infection (HAI) research team is led by Professor Jacqui Reilly, who has established a strong relationship between HAI laboratory-based research and its application to HAI prevention in the NHS. The team also includes GCU’s Dr Sue Lang, Dr Kay Currie, Dr Christina Knussen, and Dr Lesley Price.

The HAI research has been undertaken at GCU for 17 years with outputs of more than 100 peer reviewed publications over this period. Early research indicated that 10% of hospital patients acquired an infection. Professor Reilly led investigations into HAI surveillance, identifying the risk factors for surgical site infection, and evaluated a change in practice designed to decrease the incidence of these infections. Subsequent prevalence surveys of HAI were conducted, establishing the cost of HAI to the NHS in Scotland as £183m a year and that S. aureus was the organism most commonly causing HAI.

Important changes have been made to national and international approaches to meticillin-resistant Staphylococcus aureus (MRSA) screening with cost savings of £7.5 million to the NHS. At least 28 European countries now use the HAI point prevalence survey validation method determined by the research.

A strategic partnership with NHS Health Protection Scotland (HPS) has enabled this research to have an impact on national policy in Scotland and in Europe.

The research determined HAI priorities and was a key driver in the decision to invest funds in NHS Scotland to prevent and control infection. Funding of £56m was invested in a number of areas in order to reduce HAI from 2008-11; with £7m of this focused on MRSA, in recognition of Healthcare Associated Infections (HAI) can be an unintended consequence of healthcare delivery. They are caused by a range of organisms, which are frequently resistant to antibiotics, but are often preventable. Glasgow Caledonian University (GCU)-led research has reduced avoidable infections in healthcare in the UK and Europe by stimulating policy debate and investment in new healthcare practice and influencing policy decisions, evidence guidelines, and educational practices.
the public health importance of the organism identified in the research.

The work has also stimulated debate on the national policy for screening, which resulted in the introduction of a national strategy for MRSA screening in NHS Scotland.

There is evidence from national statistics that the research and subsequent change in policy is now having an impact on patient outcomes with reduced infections rates. Health Protection Scotland noted in the 2012 national statistics for Scotland that ‘the proportion of S. aureus bloodstream infections, which were MRSA, had significantly reduced in the last year from 19% to 14%.

Subsequent work evaluating the antimicrobial treatment of S. aureus infections has provided insight into how the organisms evade their action, why treatments fail and ultimately how resistance develops leading to antibiotic resistant pathogens. With this understanding we are better placed to develop new or alternative therapies for these difficult to treat infections.

In parallel, our work on antibiotic stewardship aims to advise on the improved clinical usage of these invaluable agents as a means not only improving patient care, but preserving the long-term use of these agents and reducing the rate of development of antibiotic resistance. HAI group research was also at the centre of a recent community engagement initiative which united a large number of organisations under the Glasgow City of Science banner to promote hand-hygiene, the best intervention to avoid colds, flu and other viruses, and the first line of defence against the spread of many infections in healthcare settings. GCU student nurses, Health Protection Scotland, the NHS and around 5,400 pupils from 62 schools across Glasgow as part of an attempt to set the world record for the biggest hand-hygiene class ever held.

At Glasgow Caledonian University, we work with industry and public sector partners to ensure our expertise responds to the need for real world innovation. GCU’s strategic business development and knowledge transfer teams work with academic experts in our Schools and Research Institutes to support businesses with a problem-solving approach.

Contact us to find out more about building a brighter future with GCU at www.gcu.ac.uk/business.