



# INFECTION CONTROL

Mapping of actors in the field Infection control in West Sweden

April 2021, Gothenburg



# About this report

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## The importance of Infection control

The spread of healthcare-associated infections constitutes a major global health issue for patient safety. A health issue that becomes more prominent with increased antimicrobial resistance. Hospital acquired infections are however preventable with the right measures. It is essential for a sustainable healthcare that all patients can get safe treatment with good hygiene standards. With the rising concerns surrounding healthcare-associated infections, infection prevention and control has become an increasingly more important, and regulated, top priority. A priority that has become even more accentuated during the ongoing coronavirus outbreak.

In this report, infection control is defined relatively broad including approaches and solutions that contributes to prevent, diagnose and treat infections, primarily in healthcare settings. Effective infection control calls for joint efforts and cross-sector collaboration. Awareness about actors, initiatives, infrastructure etc. with relevance for the area is therefore of high importance to facilitate collaborative efforts, development and implementation of new smart approaches and solutions to address this global health issue.

## Report scope

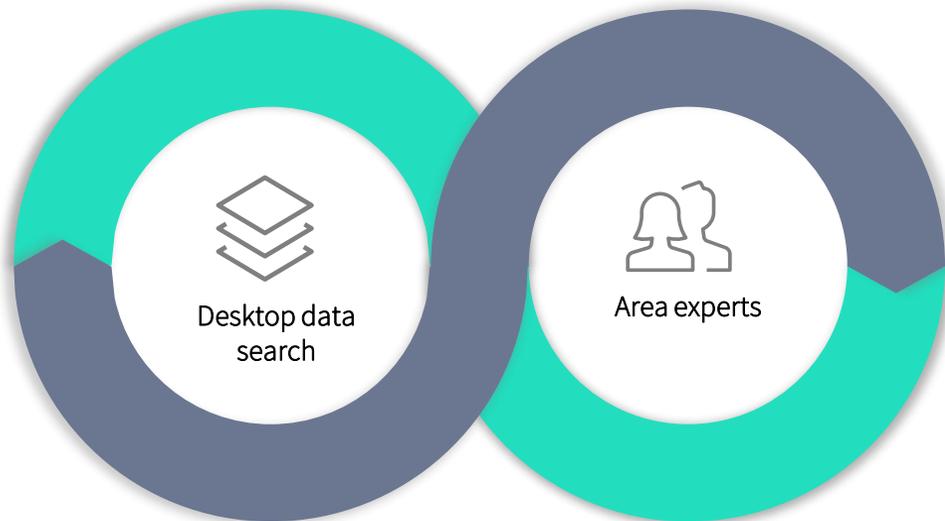
The main purpose of this report is to provide an overview of the industrial actors in West Sweden with presence in the area infection control. In addition, the report provides a brief overview of relevant research, initiatives and infrastructure that have particular value for infection control. This is done with the ambition to increase awareness and knowledge about actors and activity within the domain.

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# Methodology

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The data presented in this report has predominantly been gathered via desktop search of externally available data complemented by interactions with selected experts. The report *'Health Innovation West: Market analysis of cluster strongholds and opportunities'* issued in 2020, has been used as a starting point for the data collection.

A primary focus for this report has been to map companies active within infection control with presence in West Sweden. The inclusion criteria for the industry mapping have been relatively broad and inclusive to showcase the wide spectrum of companies active in the area. This means that companies have been included even if only parts of their business is related to infection control. Identified companies have been categorized based on what type of products and solutions they offer or are developing. The list of companies as well as the categorization has been iteratively reviewed with selected experts in the field.

The report also provides an overview of relevant research, initiatives and research infrastructure. However, the reader should note that the information presented in the report is not indented nor claimed to be a fully comprehensive mapping. Instead, this should be seen as an attempt to highlight prominent examples in the region based upon externally available data and information elicited from experts.

*For a more detailed description of the methodology applied for this report including definitions of company categories, please refer to appendix*

# Executive summary

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## Industrial stronghold with 60+ companies

- 60+ companies covering the full range of infection control
- Presence of major global companies related to infection control represents a unique regional strength
- Renowned tech/ICT cluster providing novel opportunities for innovation



## Prominent science

- Prominent innovative research by academia and industry in key areas
- University of Gothenburg selected for Nordic infection control Master's degree education
- Public/private collaboration reflected in numerous projects within infection control



## Strong supportive ecosystem

- 450+ life science companies and renowned ICT cluster
- Access to test beds, research infrastructure and healthcare including university hospital
- Strong setup of incubators and science parks to support start-ups



## Quick adaptation during COVID-19 crisis

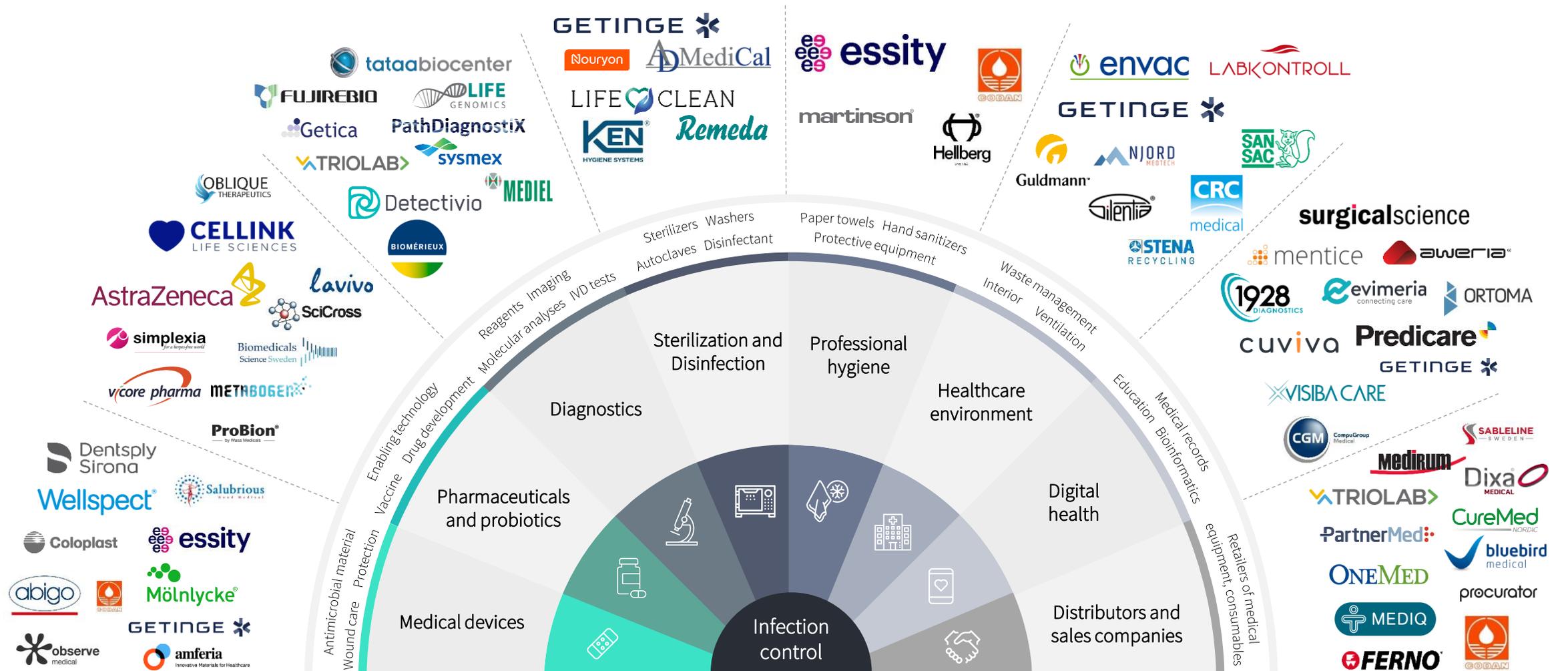
- Companies and researchers have rapidly adapted to combat COVID-19 pandemic
- 50+ clinical research projects related to COVID-19 approved at hospitals in the region

# Industry

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# An industrial stronghold within infection control

60+ companies present in West Sweden



# Infection control industry map

A mapping of the 66 identified companies in West Sweden active within infection control has been conducted

A total of 66 companies listed

Examples of products relevant for infection control

## Infection control industry map 1(3)

Company	On market	Product examples	Medical devices	Pharmaceuticals and probiotics	Diagnostics	Sterilization and disinfection	Professional hygiene	Healthcare environment	Digital health	Distributors and sales companies
1928Diagnostics	•	Cloud-based service analyzing resistance markers in bacteria			•				•	
Biomérieux*	•	IVD tests, diagnostic instruments, reagents, software			•					
Abigo Medical	•	Advanced wound care and medical devices with antimicrobial effects	•							
AD MediCal	•	Autoclaves, dishwasher disinfectants				•				
Amferia	•	Anti-infective medical devices within wound care	•							
AstraZeneca	•	Pharmaceuticals, vaccines		•						
Aweria	•	IT platform for the emergency care chain							•	
Biomedicals science Sweden	•	Orally distributed product for urinary tract infection								
Bluebird Medical	•	Equipment and consumables, e.g. hygiene, surgery, sterilization								•
CELLINK	•	Bioprinters, bioink, liquid handlers, sanitizing solutions		•						
CODAN Triplus*	•	Consumables, e.g. single-use instruments, surgery drapes, face masks	•				•			•
Coloplast*	•	Catheters, ostomy products, wound care products	•							
CompuGroup Medical Sweden	•	Web-based platform for information sharing in healthcare							•	
CRC MEDICAL	•	Tailored ventilation solutions						•		
CureMed	•	Protective visor, dishwasher disinfectants, autoclaves								•
Cuvida	•	Connected healthcare platform for healthcare at home							•	
Dentsply Sirona	•	Dental implants, surgical instruments, bone graft materials, membranes	•							
Detectivio	•	Contact-free measurement of vital signs			•					
Dixa Medical	•	Protective equipment						•		•
ENVAC Scandinavia	•	Waste collection system								
Essity	•	Paper hand towels, incontinence products, wound care, hand sanitizers	•							
Evimeria EMR	•	Web-based platform for information sharing in healthcare							•	

Indicated whether the companies have products on the market or if they are in development phase

Mapping of applicable product categories per company. Note that companies can be active in more than one category

See appendix for full industry mapping

# The home of world leading companies active in infection control



- Employees worldwide: 10 000
- Countries: 38
- Annual revenue: 29 800 MSEK

Develops and provides hospitals with products and solutions for intensive care, cardiovascular procedures, operating rooms, sterile reprocessing, life science research and laboratories



- Employees worldwide: 7 800
- Countries: 100
- Annual revenue: 16 700 MSEK

Develops and sells products and solutions within surgery and wound care to enhance performance in healthcare



- Employees worldwide: 46 000
- Countries: 150
- Annual revenue: 121 800 MSEK

Global hygiene and health company developing and selling products and solutions within Personal Care, Consumer Tissue and Professional Hygiene



- Employees worldwide: 76 000
- Countries: 100
- Annual revenue: 240 000 MSEK

Global, science-led biopharmaceutical business developing and selling innovative medicines used by millions of patients worldwide



Combined employees worldwide

140 000



Combined country presence

150+



Combined annual revenue

400 000 MSEK

# At the forefront in key infection control areas

Industry stronghold examples in West Sweden

## Safe hospital environment

Leading companies within sterilization and healthcare environment, providing complete sterilization solutions, ultraclean ventilation, easy-clean interior and safe waste management systems



## Protection & antimicrobial materials

Strong setup of companies within the surgical and wound care segment with particular focus on infection control



## Saving the power of antibiotics

A bioinformatic cloud-based service analyzing resistance markers in bacteria and providing strong infection control

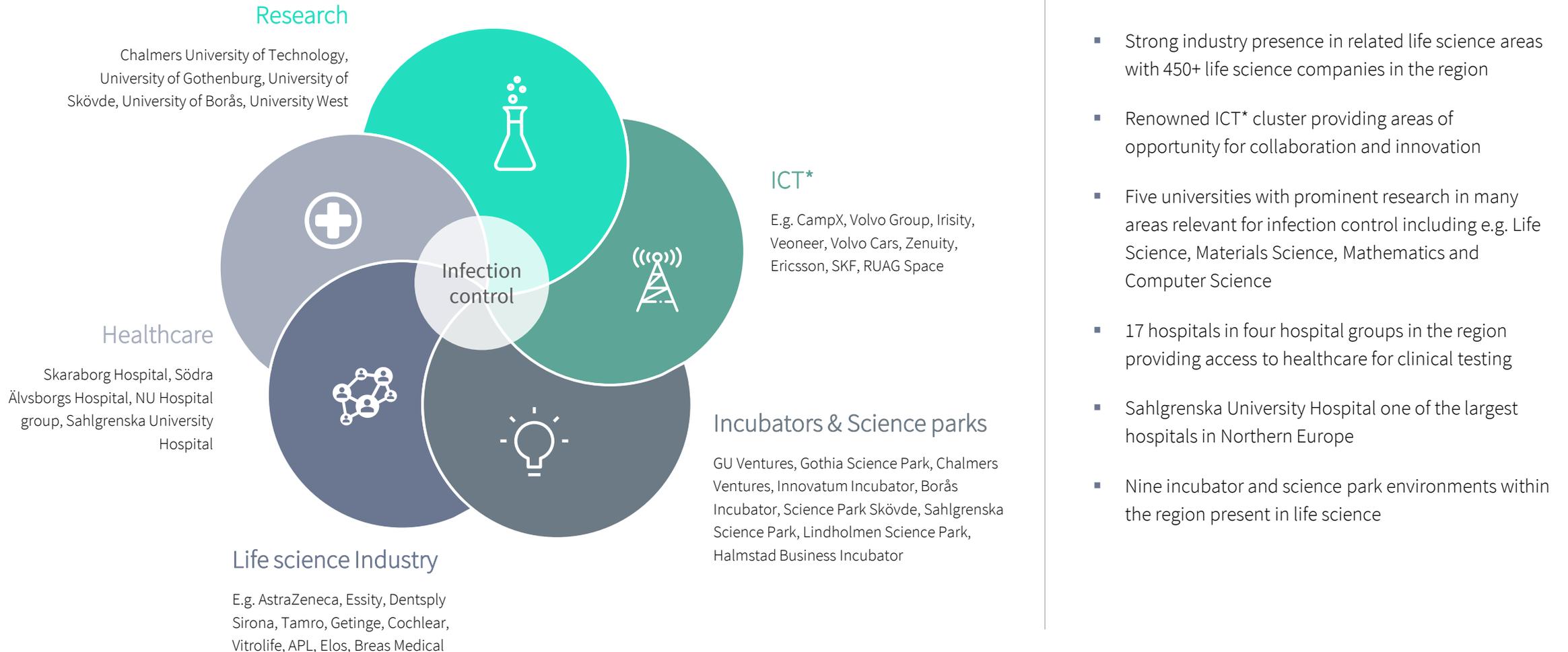


## Leveraging digital innovation

Simulation solutions for surgery training, enabling procedural training without putting patients at risk, reducing medical errors and thereby reducing risk for surgical site infections



# Part of a strong cluster for innovation in West Sweden



\*Information and communication technology. Note: Company names represent examples of actors in West Sweden.  
Source: Health Innovation West: Market analysis of cluster strongholds and opportunities (Triathlon, 2020)

# Research & Infrastructure

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# Prominent academic research in key areas



**Department of Microbiology and Immunology**

Specialized and focused research on infection and immunity at mucosal surfaces.



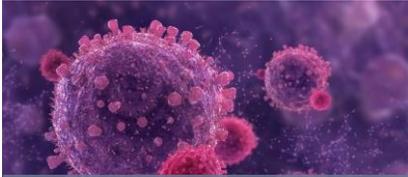
**Department of Infectious diseases**

Research is conducted in both basic and clinical microbiology, including everything from viruses and bacteria to immunology.



**Institute of Odontology**

Top ranked in the world by QS World University Rankings. 'Oral microbiology and immunology' area of focus by dedicated research group



**Infection Biology**

Focuses on the development and use of mathematical and statistical models to understand complex systems in infection biology.



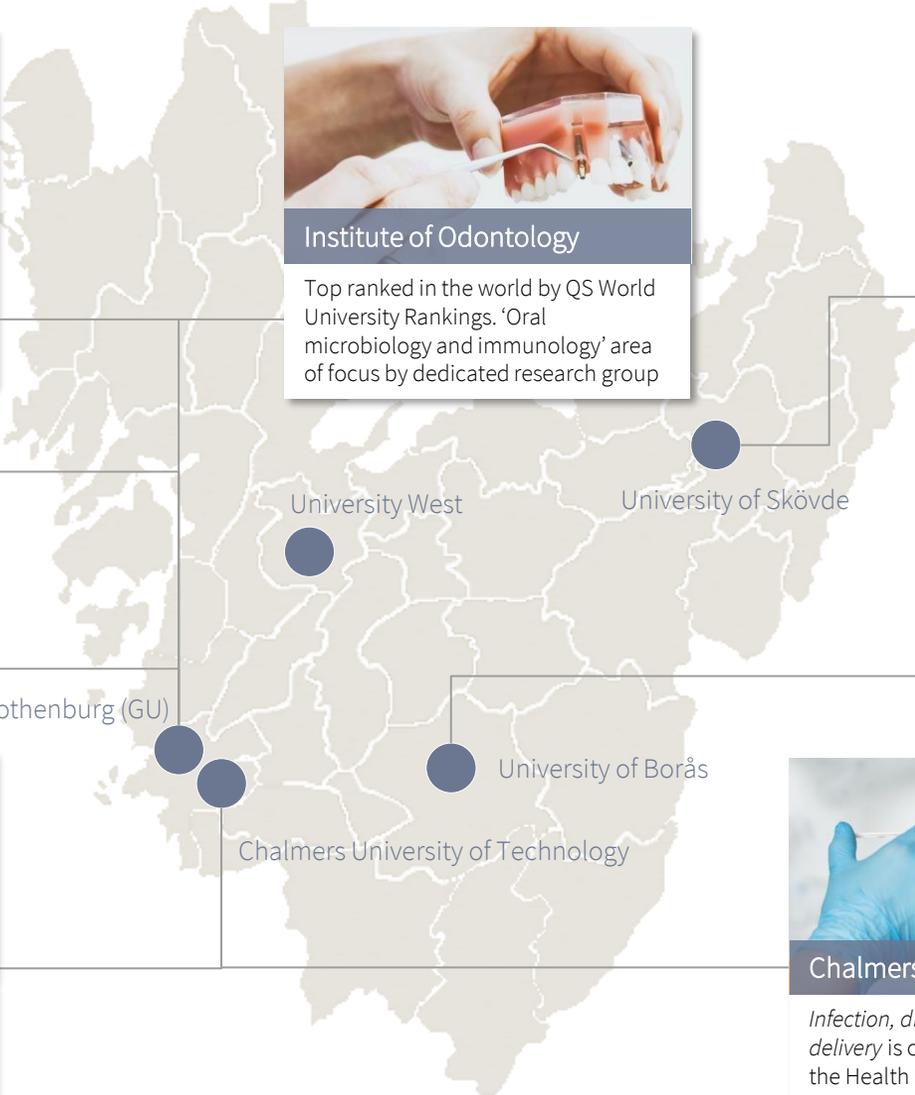
**CARe - Centre for Antibiotic Resistance Research**

Vision to limit mortality, morbidity and socioeconomic costs related to antibiotic resistance on a global scale through research.



**Biology and biological engineering**

World-leading research in biotechnology, e.g. in *Systems and Synthetic Biology* especially relevant for infection control.




**Textiles research**

University of Borås researches innovative wearable sensing for biomedical applications.



**Chalmers Health Engineering**

*Infection, diagnostics and drug delivery* is one of the focus areas in the Health Engineering Area of Advance at Chalmers.

Note: Highlighted cases represents examples of academic departments, research centers or focus areas in West Sweden with research related to infection control

# Examples of researchers within infection control



**Magnus Gisslén**

Professor / Chief Physician,  
Department of infectious  
diseases, Sahlgrenska  
Academy, University of  
Gothenburg

Research focus on the effects of HIV and the virus on the central nervous system and the brain as a virus reservoir. Responsible for the HIV unit at Sahlgrenska University Hospital, and now also for COVID-19

**Achievements** (examples)

- Ranked #8 in Sweden within infection, and #2 within HIV, on Monoclonal top medical expert rank



**Joakim Larsson**

Professor at Department  
of Infectious Diseases,  
Sahlgrenska Academy,  
University of Gothenburg

Leads a group engaged in research on several aspects of antibiotic resistance, with a particular expertise in the environmental dimensions, spawning from a long-standing interest in pharmaceuticals in the environment. Director of CARE.

**Achievements** (examples)

- Top cited researcher
- Over 50 million SEK from Swedish Research Council the last 10 years
- Ranked #3 in Sweden within Microbial Drug Resistance on Monoclonal top medical expert rank



**Magnus Lindh**

Professor/ Chief Physician,  
Department of infectious  
diseases, Sahlgrenska  
Academy, University of  
Gothenburg

Professor of Clinical Virology frequently appearing as expert in media related to the COVID-19 pandemic.

**Achievements** (examples)

- Ranked #10 in Sweden within infection on Monoclonal top medical expert rank
- Member of the Swedish Public Health Agency's advisory reference group for the COVID-19 pandemic



**Ivan Mijakovic**

Professor, Bacterial Systems  
Biology; Division of Systems  
and Synthetic Biology,  
Biology and Biological  
Engineering, Chalmers  
University of Technology

Leading team with about 25 researchers focusing on nanotechnology to detect as well as to kill infectious bacteria. Developing advanced graphene-based antibacterial coatings in collaboration with Chalmers Graphene Centre, and graphene-based sensors for infections in collaboration with Sahlgrenska.

**Achievements** (examples)

- Coordinator of EU ITN consortium “PEST-BIN” – working on new methods to fight bacterial infections
- Leading new Nord Forsk consortium: Graphene-based drug delivery systems for treating MRSA infections (GraMI)



**Agnes Wold**

Professor / Chief Physician  
Department of infectious  
diseases, Sahlgrenska  
Academy, University of  
Gothenburg

Professor of clinical bacteriology and leading a research group consisting of 15 people focusing on studies of the normal intestinal microflora, particularly in relation to development of allergy and inflammatory bowel disease in childhood.

**Achievements** (examples)

- Recognized and frequently consulted expert communicating to the public, especially in COVID-19 pandemic
- Received grants for corona research 2020
- Named “Women of the year” in a media survey 2021



**Christina Åhrén**

Associate professor /  
Physician, Department of  
infectious diseases,  
Sahlgrenska Academy,  
University of Gothenburg

Physician and scientist with deep knowledge of the health care sector in Sweden and how to reduce occurrence of antibiotic resistance and prevent transmission of antibiotic resistant bacteria. President of the Swedish strategic programme against antibiotic resistance, Strama, in West Sweden.

**Achievements** (examples)

- President of Strama in West Sweden

# Selected for Nordic infection control education

- Nordic Master's degree education in microbiology, infection control and hospital hygiene, comprising of courses in:
  - Contagion and antibiotic resistance
  - Infection epidemiology and vaccinology
  - Infection control and hospital hygiene
- Nordic Council of Ministers 2017 selected University of Gothenburg to host the education based on its close contact to the hospital and the teachers' high competency

## Highly topical training in infection control and hospital hygiene

Published 12 March 2021 at [Sahlgrenska Academy](#) →

**Infection control and hospital hygiene are key concepts in health care — especially now, during the ongoing coronavirus outbreak. They are also the subjects of a study program at the University of Gothenburg, designed for health professionals in the Nordic region. The application period for the fall semester is now underway.**

### SA startar nya kurser för nya vårdbehov

**Ekonomi** • Snart startar två nya påbyggnadsutbildningar vid Sahlgrenska Akademin i Göteborg. Det handlar om utbildningar i hjärtsjukvård och smittskydd – kompetenser som det finns en stor efterfrågan av inom sjukvården.

Maria Rand

© 09:00 - 9 apr, 2018

Utbildningen i hjärtsjukvård riktar sig enbart till sjuksköterskor medan utbildningen inom smittskydd även kommer att vara öppen för dem som uppfyller behörighetskraven men inte nödvändigtvis lobbyar inom hälso-

Fakta: Kurser för framtidens vård

Utbildningen i smittskydd kan läsas både på kandidatnivå och magisternivå, medan specialistsjuksköterskeutbildningen erbjuds på magisternivå.

### Ny utbildning i smittskydd till Göteborg

Av: Aftonbladet

PUBLISERAD: ON 4 07 FEB 2018



# Wide range of infrastructure for research and testing

**BioSafe**

Test bed at RISE offering biological analyses related to human health, including infection control studies

**Biobank Väst**

Offers services and guidance in biobanking to health care, academia and business. VGR and University of Gothenburg collaboration

**Wallenberg Centre for Molecular and Translational Medicine**

Recently awarded extension grant for recruitment within epidemiology and infection biology

**Computational Systems Biology Infrastructure**

Research infrastructure at Chalmers providing computational framework for genome-scale metabolic models and expert support in computational biology and bioinformatics

**Cleaning innovation**

Test bed at RISE for the development of cleaning and disinfection. Analysis equipment for characterization of microorganisms and biofilm

**Culture Collection University of Gothenburg**

Northern Europe's largest stem collection for bacteria and fungi

**Clinical Genomics**

University of Gothenburg core facility providing sequencing and bioinformatics support for clinical research and implementation projects

**The Clinical Microbiological Laboratory**

Accredited laboratory researching, teaching and educating in virology and bacteriology at Sahlgrenska University Hospital

● Test bed ● Research and laboratory infrastructure ● Biobank, microbial collection

# Collaborative initiatives

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# High research activity within infection control in West Sweden

**90+** research projects

received funding from Swedish Research Council, Horizon 2020, Vinnova and Formas since 2018

**300+** million SEK

received from Swedish Research Council, Horizon 2020, Vinnova and Formas since 2018

**60+** clinical trials

ongoing or recruiting

*Selected project examples:*



## Clean Care

- Project coordinated by RISE, centered at Sahlgrenska University Hospital aiming to prevent spread of infection and antibiotic resistant microbes in healthcare
- Cross-sector collaboration with 14 participants from academia, industry and healthcare with a total budget of 22,5 million SEK



## Using artificial intelligence to improve the diagnostics of antibiotic resistant bacteria

- Collaboration project between Chalmers, CARE, Sahlgrenska University Hospital and Fraunhofer-Chalmers Centre
- Coordinated by Erik Kristiansson at Chalmers



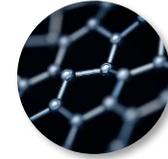
## Identification of bacterial infections and antibiotic resistance in low income countries by rapid optical DNA mapping

- Received 4,5 million SEK from Swedish Research Council to start the project 2020
- Lead by Fredrik Westerlund at Chalmers



## The Environment as a Driver of Antibiotic Resistance – EDAR

- Multidisciplinary research environment funded by the Swedish Research Council for the period 2019-2024 with 22,4 million SEK
- Led by Joakim Larsson in collaboration with other researchers at GU, Chalmers and other universities



## Graphene-based antibacterial surface

- Develops a surface with upright graphene flakes preventing bacterial colonization
- One of many infection control-related projects within the Graphene Flagship, coordinated by Chalmers with total budget of 1 billion SEK



## Future diagnostics of sepsis

- Research program at University of Skövde consisting of several projects
- Collaboration with different actors including TATAA Biocenter in West Sweden



## PEST-BIN - Pioneering Strategies Against Bacterial Infections

- EU funded project starting 2021 where both GU and Chalmers are participating
- The mission is to pioneer novel technologies to fight bacterial infections



## Novel adjuvant formulations for the next generation of broadly protective intranasal influenza vaccines

- Project to design and develop a broadly protective mucosal vaccine against pandemic influenza infections
- Led by Nils Lycke at Department of Microbiology and Immunology, GU

Note: Highlighted initiatives represent examples of recent and ongoing research initiatives. Search has been conducted in publicly available databases using keywords related to infection control. For more details regarding search criteria, please refer to appendix.

Source: European Commission, SweCRIS, Vinnova, Clinicaltrials.gov.

# Cross-sector collaborations against healthcare-associated infections

## Project examples

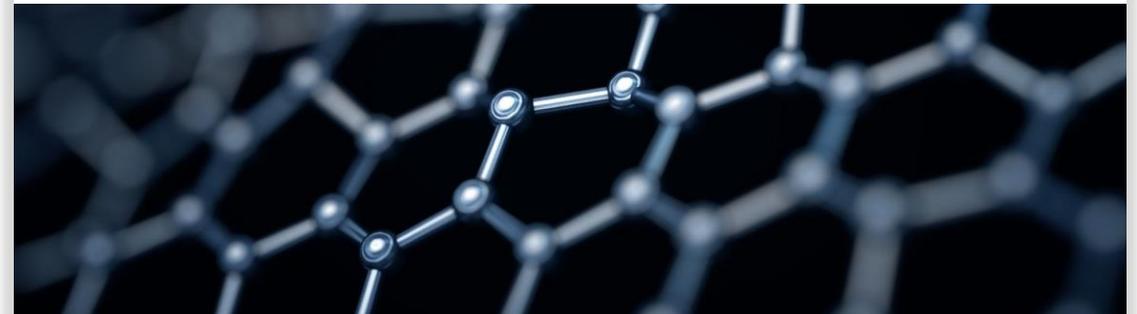
### Clean Care project

- Project addressing the urgent need to minimize healthcare-associated infection and spreading of antibiotic resistant microbes in healthcare settings
- Cross-sector collaboration with 14 participating organizations from industry, healthcare and academia. Coordinated by RISE and centered at Sahlgrenska University Hospital
- 22,5 million SEK total budget



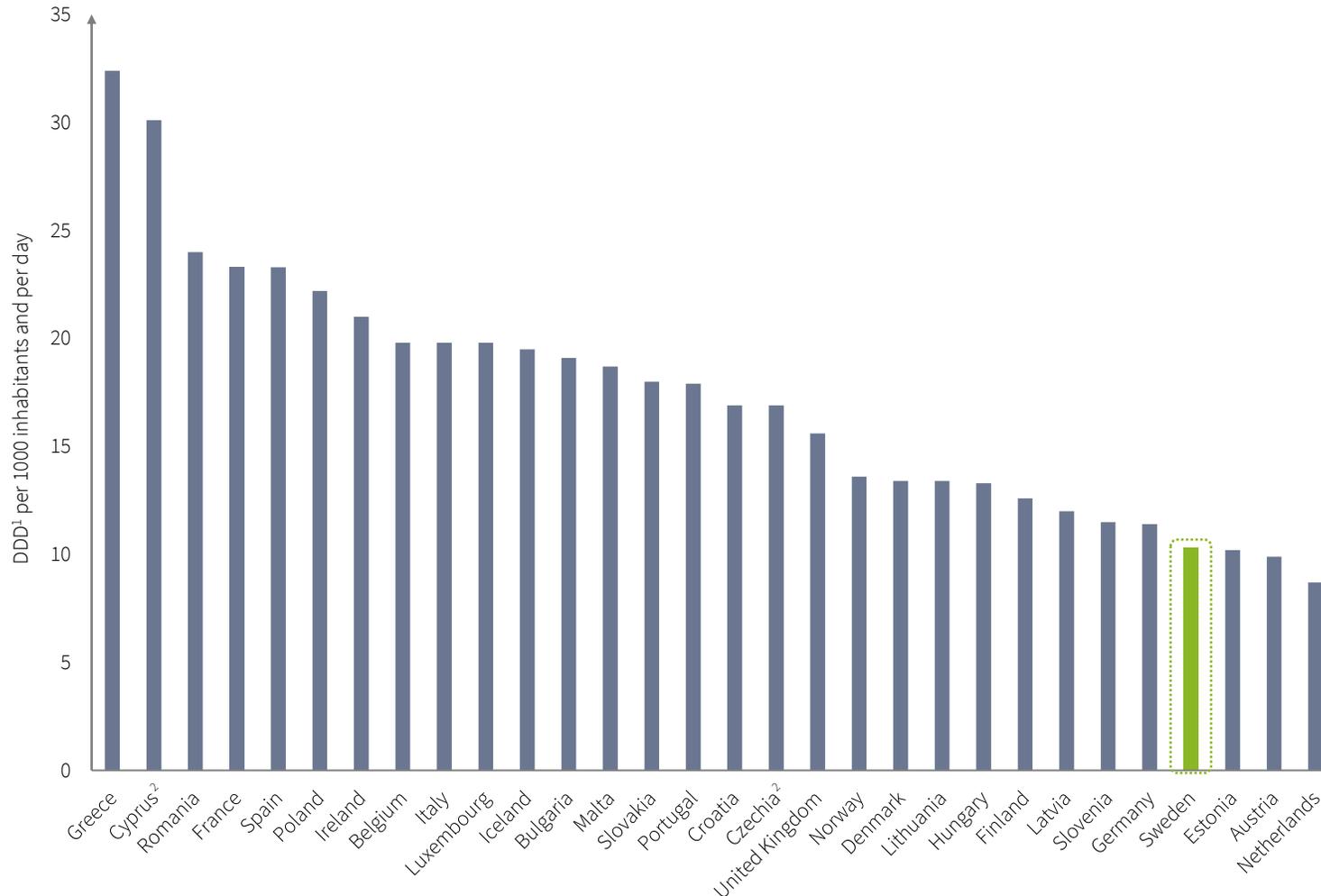
### Graphene-based antibacterial surface

- The project aims to develop a surface with upright graphene flakes preventing bacterial colonization, which can be used on medical devices to reduce the risk of infection
- Collaboration between Chalmers and industrial actors including Wellspect and Dentsply Sirona Implants from West Sweden
- One of several infection control-related projects within the Graphene Flagship, coordinated by Chalmers with total budget of 1 billion SEK



# Sweden taking the lead against antibiotic resistance

Antibacterial consumption for systemic use in primary care sector in Europe 2019



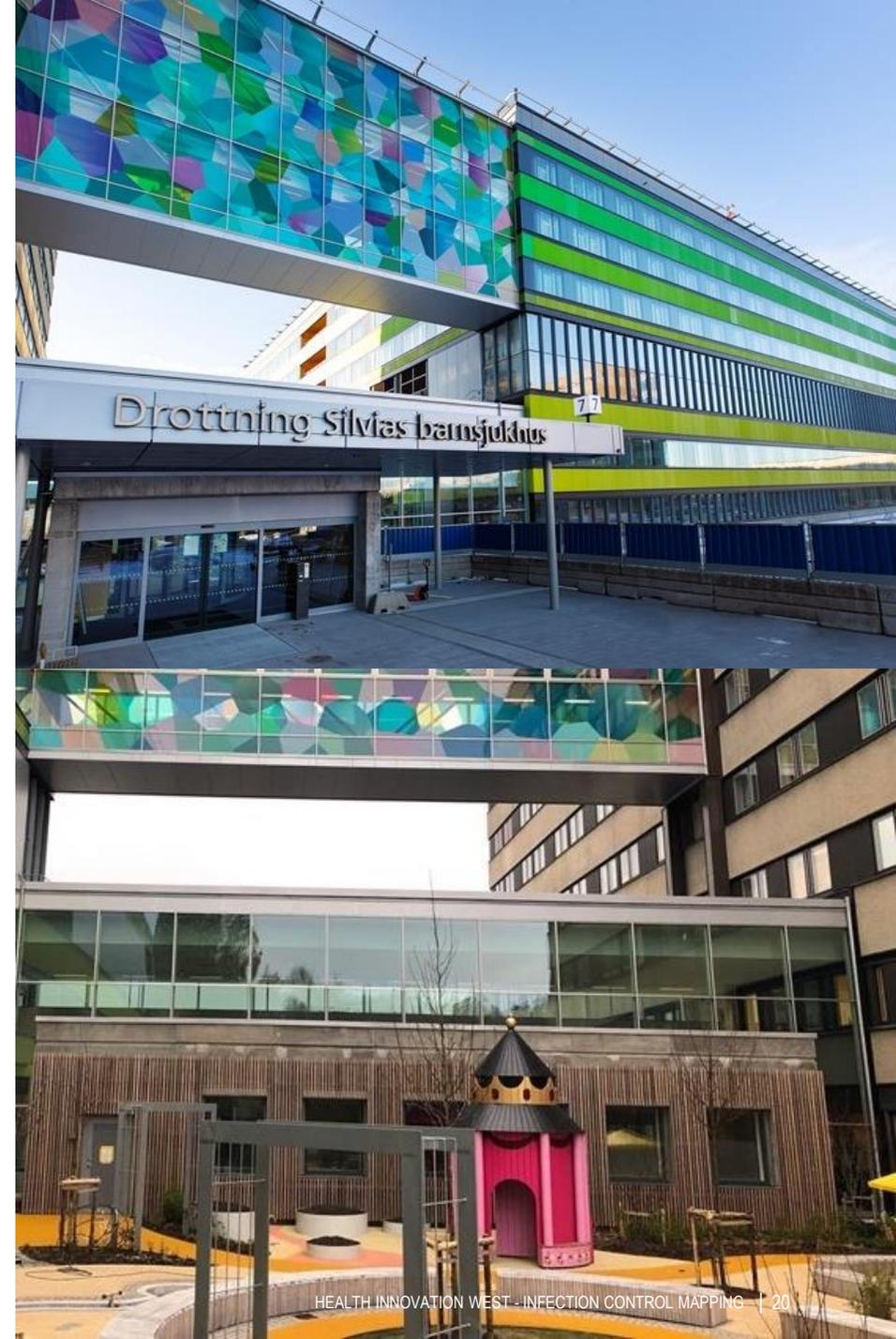
- Sweden has **successfully contained the use of antibiotics** and has today a low consumption compared to other EU countries, as well as a low level of antibiotic resistant bacteria<sup>3</sup>
- Sweden **first country in the world** to prohibit use of antibiotics to increase growth in animal feed in 1986
- National cooperation through the initiative Strama to **combat antibiotic resistant bacteria** by collecting data and sharing knowledge and experiences nationally

**Strama** Västra Götaland  
Samverkan mot antibiotikaresistens

<sup>1</sup>Defined Daily Dose. <sup>2</sup>Country provided only total care data. <sup>3</sup>Sweden has the fifth lowest resistance level of 30 countries reported in Europe for combined resistance in E. coli (third-generation cephalosporin, fluoroquinolones and aminoglycoside) (ECDC, 2019)  
Source: ECDC, National Veterinary Institute, Sveriges Riksdag

# New hospital in the forefront of infection control

- Queen Silvia Children's Hospital opened in spring 2021, a 2 billion SEK investment<sup>1</sup>
- Single-patient rooms to reduce the spread of infections and contribute to better hospital hygiene
- Improved workflows that respond to the collaborative needs of modern healthcare
- State of the art operating room ventilation system to deliver ultra-clean air to minimize risk of surgical site infections



<sup>1</sup>Source: Fastighetsnytt

# Rapid adaptation during the COVID-19 pandemic

## Examples of companies with COVID-19 initiatives



### Rapid vaccine development

Accelerated clinical development and rapidly mobilized to support supply of COVID-19 vaccine



### Testing kits and Coronapassport

Developed kits for rapid testing and new service to coordinate and verify test results for travelling (business transferred to Life Genomics in April 2021)



### Medicinal treatment of COVID-19

Awarded 18,5 million SEK for COVID-19 clinical study, enabling an accelerated development program for treatment of COVID-19 and other lung diseases

## Examples of research



### 50+ clinical trials

54 clinical trials approved<sup>1</sup> by Swedish Ethical Review Authority, of which 7 studies about heart-related conditions and 3 about coronavirus and pregnancy



### Research for COVID-19 treatment

Project in collaboration with Sahlgreńska University Hospital to identify unique antibody epitopes on SARS-CoV-2 and develop antibodies for treatment



UNIVERSITY OF GOTHENBURG

### COVID-19 Biobank

Building a biobank with samples of plasma and serum from patients with COVID-19 that can be used for research

<sup>1</sup>Source: Swedish Ethical Review Authority

Conclusion:

# West Sweden - A region with world class elements for infection control

- The home of world leading companies active in infection control, combined with innovative, fast growing companies originating from research in the region
- Excellent academic and clinical research in the field of infection control and related areas
- Part of cluster with strong life science as well as ICT industry, creating an ecosystem for innovation and business opportunities



# Appendix

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# Infection control industry map 1(3)

Company	On market	Product examples	Medical devices	Pharmaceuticals and probiotics	Diagnostics	Sterilization and disinfection	Professional hygiene	Healthcare environment	Digital health	Distributors and sales companies
 192Diagnostics	●	Cloud-based service analyzing resistance markers in bacteria							●	
 Biomérieux*	●	IVD tests, diagnostic instruments, reagents, software			●					
 Abigo Medical	●	Advanced wound care and medical devices with antimicrobial effects	●							
 AD MediCal	●	Autoclaves, dishwasher disinfectants				●				
 Amferia	●	Anti-infective medical devices within wound care	●							
 AstraZeneca	●	Pharmaceuticals, vaccines		●						
 Aweria	●	IT platform for the emergency care chain							●	
 Biomedicals science Sweden	●	Orally distributed product for urinary tract infection		●						
 Bluebird Medical	●	Equipment and consumables, e.g. hygiene, surgery, sterilization								●
 CELLINK	●	Bioprinters, bioink, liquid handlers, sanitizing solutions		●						
 CODAN Triplus*	●	Consumables, e.g. single-use instruments, surgery drapes, face masks	●				●			●
 Coloplast	●	Catheters, ostomy products, wound care products	●							
 CompuGroup Medical Sweden	●	Web-based platform for information sharing in healthcare							●	
 CRC MEDICAL	●	Tailored ventilation solutions						●		
 CureMed	●	Protective visor, dishwasher disinfectants, autoclaves								●
 Cuviva	●	Connected healthcare platform for healthcare at home							●	
 Dentsply Sirona	●	Dental implants, surgical instruments, bone graft materials, membranes	●							
 Detectivio	●	Contact-free measurement of vital signs			●					
 Dixa Medical	●	Protective equipment								●
 envac	●	Waste collection system						●		
 essity	●	Paper hand towels, incontinence products, wound care, hand sanitizers	●				●		●	
 evimeria	●	Web-based medical record system							●	

\*Company with sales office in West Sweden and development and manufacturing in other location

# Infection control industry map 2(3)

Company	On market	Product examples	Medical devices	Pharmaceuticals and probiotics	Diagnostics	Sterilization and disinfection	Professional hygiene	Healthcare environment	Digital health	Distributors and sales companies
 <b>FERNO</b>	Ferno Norden	•	Face masks, healthcare kits							•
 <b>FUJIREBIO</b>	Fujirebio Diagnostics	•	Test kits, infectious disease antigens		•					
 <b>Getica</b>	Getica	•	Antigens and antibodies, infection biomarkers		•					
 <b>GETINGE</b>	Getinge	•	Sterilizers, washers, isolators, closure processing, aseptic transfer systems			•		•	•	
 <b>Guldmann Sverige</b>	Guldmann Sverige	•	Patient handling equipment for Operating Room (OR) and intensive care					•		
 <b>Hellberg</b>	Hellberg Safety	•	Visors, protective equipment				•			
 <b>KEN</b>	KEN Hygiene Systems*	•	Washers and disinfectors			•				
 <b>LABKONTROLL</b>	Labkontroll	•	Protective ventilation and surveillance systems for the OR					•		
 <b>lavivo</b>	Lavivo	•	Probiotics and prebiotics	•						
 <b>LIFE GENOMICS</b>	Life Genomics	•	Genetic tests, COVID-19 tests, service for COVID-19 test and travel certificates		•					
 <b>LIFE CLEAN</b>	Lifeclean International	•	Disinfectant solution against spores, viruses, bacteria, fungi, parasite			•				
 <b>martinson</b>	Martinson	•	Surgical gowns				•			
 <b>MEDIEL</b>	Mediel	•	Equipment for diagnostic imagery		•					
 <b>MEDIQ</b>	Mediq	•	Wound care material, cleaning equipment, examining gloves							•
 <b>Medirum</b>	Medirum	•	Products and solutions for sterile centers, construction of modular OR							•
 <b>mentice</b>	Mentice	•	Medical simulators for procedural training						•	
 <b>METABOGEN</b>	Metabogen	•	Platform for metagenomic data analysis and strain analysis		•					
 <b>Mölnlycke</b>	Mölnlycke Health Care	•	Surgical products, protective equipment, wound care, professional hygiene			•				
 <b>NJORD</b>	Njord Medtech	•	Patient transfer device					•		
 <b>Nouryon</b>	Nouryon	•	Chemicals for water treatment and sterilization			•				
 <b>OBLIQUE</b>	Oblique Therapeutics	•	Antibody platform, developing new medicines for severe diseases		•					
 <b>observe</b>	Observe Medical	•	Digital urine meter							•

\*Company with sales office in West Sweden and development and manufacturing in other location

# Infection control industry map 3(3)

Company	On market	Product examples	Medical devices	Pharmaceuticals and probiotics	Diagnostics	Sterilization and disinfection	Professional hygiene	Healthcare environment	Digital health	Distributors and sales companies
 ONE MED	●	Hygiene and cleaning products								●
 ORTOMA		Server-based AI platform designed for orthopedic surgeries							●	
 PartnerMed	●	Wound care, disinfectant material, hygiene products								●
 PathDiagnostiX		Diagnostic tests based on peptide biomarkers			●					
 Predicare	●	Rapid emergency triage and treatment system							●	
 procurator	●	Protective equipment, hygiene products								●
 Remeda	●	Instrument tables, loading systems, cube-systems				●				
 SABLELINE SWEDEN	●	Protective clothing, face shields, face masks								●
 Salubrious	●	Anti-bacterial wound care	●							
 SAN SAC	●	Waste management systems for hospitals						●		
 SciCross	●	Biomarker discovery, vaccine design		●						
 Silentia	●	Screen systems to facilitate a clean and safe care environment						●		
 simplexia		Vaccine against herpes simplex virus type 2 infection		●						
 STENA RECYCLING	●	Solutions for sensitive waste management						●		
 surgicalscience	●	Surgical training, simulators, virtual trials							●	
 sysmex	●	Medical analytical solutions and IT solutions for labs			●					
 tataabiocenter	●	PCR and NGS products and research services, molecular biology reagents			●					
 TRIOLAB	●	Diagnostic tests and instruments			●					●
 vicore pharma		Pharmaceuticals for rare lung disorders		●						
 VISIBA CARE	●	Platform for consolidating healthcare providers digital services							●	
 ProBion	●	Lactic acid bacteria supplement		●						
 Wellspect	●	Catheters, surgical disposable products	●							

\*Company with sales office in West Sweden and development and manufacturing in other location

# Organizations in West Sweden for further information

	Organization	Description	Link for more information
	AZ BioVentureHub	AZ BioVentureHub is an innovative ecosystem integrated at AstraZeneca´s R&D center in Gothenburg. The hub provides emerging companies and academic groups a unique opportunity to co-locate and interact with AstraZeneca experts, and with each other	<a href="http://azbioventurehub.com">azbioventurehub.com</a>
	Business Region Göteborg (BRG)	Organization working to strengthen the collaborative business climate and achieve sustainable growth in the Gothenburg region's business life. Owned by the City of Gothenburg and representing 13 municipalities in the region	<a href="http://investingothenburg.com">investingothenburg.com</a>
	Gothia Forum	Unit within Västra Götalandsregionen assigned to strengthen the clinical research in Västra Götaland by supporting researchers and industry with the clinical trial process and connecting actors for collaboration	<a href="http://gothiaforum.com">gothiaforum.com</a>
	Industriell Dynamik/RISE	Offers help to small and medium-sized enterprises within technical development, technical problem solving, market and business development, internationalization and support in finding financing for development projects	<a href="http://ri.se">ri.se</a>
	Innovation Platform	Organization working as a bridge between healthcare, academia and industry offering services throughout the entire innovation process	<a href="http://vgregion.se">vgregion.se</a>
	Medtech West	MedTech West is a network and collaborative platform for research, education, development and evaluation of new biomedical concepts and technologies, and facilitates research collaboration between the health care sector, industry and academia	<a href="http://medtechwest.se">medtechwest.se</a>
	Sahlgrenska Science Park (SSP)	Sahlgrenska Science Park is working to strengthen the life science industry by offering expertise and experience on a commercial basis, together with a large network in the business community and other life science stakeholders	<a href="http://sahlgrenskasciencepark.com">sahlgrenskasciencepark.com</a>
	Västra Götalandsregionen (VGR)	VGR is the county council governing Västra Götaland, tasked to offer good healthcare and dental care and to provide the prerequisites for good public health, a rich cultural life, a good environment, jobs, research, education and good communications	<a href="http://vgregion.se">vgregion.se</a>
	West Sweden Chamber of Commerce	Works to create growth and develop the future of West Sweden by helping companies do more and better business and by influencing political decisions	<a href="http://vastsvenskahandelskammaren.se">vastsvenskahandelskammaren.se</a>

# Organizations in Sweden for further information

	Organization	Description	Link for more information
	Almi	Almi offers financing and business development to innovators, new companies and already established companies that want to develop.	<a href="http://almi.se">almi.se</a>
	Business Sweden	Business Sweden helps international companies gain access to the Swedish market and help domestic ones utilize it as a platform for expansion. They provide strategic advice and operational support to both small and large companies	<a href="http://business-sweden.com">business-sweden.com</a>
	Enterprise Europe Network (EEN)	The Networks main objective is to offer support to ambitions small and medium sized enterprises to internationalize by helping them find international business contacts and partners in new markets	<a href="http://enterpriseeurope.se">enterpriseeurope.se</a>
	European Centre for Disease Prevention and Control (ECDC)	ECDC is an EU agency aimed at strengthening Europe's defenses against infectious diseases, headquartered in Stockholm. ECDC works in partnership with national health protection bodies to strengthen and develop disease surveillance and warning systems.	<a href="http://ecdc.europa.eu">ecdc.europa.eu</a>
	Svensk Exportkredit (SEK)	SEK is a state-owned company that offers export credits, lending, structured financing, project financing, leasing, capital market products and financial advice	<a href="http://sek.se">sek.se</a>
	Swecare	Swecare is a unique platform where academia, public and private sector join forces toward enhanced export and internationalization of Swedish health care and life science	<a href="http://swecare.se">swecare.se</a>
	Swelife	Swelife supports collaboration within academia, industry and healthcare, with the goal to strengthen Life Science in Sweden and to improve public health	<a href="http://swelife.se">swelife.se</a>
	The Swedish Export Credit System (EKN)	The Swedish Export Credit Agency, is an authority with the task of promoting Swedish exports and work as a complement to the private export credit insurance market by insuring the risk of not being paid in export transactions	<a href="http://ekn.se">ekn.se</a>

# Methodology and definition of industry categories

## Industry selection and categorization

The company list from the report *'Health Innovation West: Market analysis of cluster strongholds and opportunities'* (Triathlon, 2020) has been used as a starting point for the company selection in this industry mapping. In addition, a dedicated desktop search has been conducted to identify additional companies including review of other externally available reports, company databases and materials on the topic of infection control. Input has also been received from interactions with selected experts and a list of suppliers for healthcare facilities in the region has been reviewed. The companies have been selected based on what type of products and solutions they offer or are developing. This has been defined by reviewing the companies' webpages, or when not available the company descriptions on e.g., Incubators' webpages, to identify products and keywords used to describe the companies' businesses. Companies that offer or develop solutions that contribute to prevent, diagnose, treat and control infections have been included, also when this only represents parts of their business and might not be the company's key focus. The companies selected have at least one workplace in Västra Götaland or Halland, but do not necessarily have their headquarters in the region. Start-up companies in development phase have also been included. It is indicated in the industry map whether the companies have products on the market or not.

## Company categorization

The companies have been categorized based on what type of products and solutions they offer or are developing, and the keywords used to describe the companies' businesses. The categories used in this report have been defined based on the

companies in West Sweden. There could be other categories relevant for infection control, but when no companies have been identified in West Sweden it has not been included in the categorization for this mapping. Some companies offering a wide range of products and solutions have been assigned to several categories. The list of companies and categorization has been iterated within the core team, experts in the Triathlon & ISEA organization, as well as other selected experts.

## Research and initiatives

Identification of prominent researchers, departments, infrastructure and initiatives has been based on externally available data complemented with input from selected experts. External sources are webpages of universities and research organizations in the region, initiative databases (SweCRIS, Vinnova, European Commission), compilations made by other organizations such as SweLife, specific sources for clinical trials (clinicaltrials.gov and Swedish Ethical Review Authority) and Monocl platform<sup>1</sup> for expert ranking. Keywords used in searches includes e.g.: Infectio\*, antimicrobial, antibiotic\*, hospital acquired infection, surgical site infection, covid, bacteri\*, virus. The report *'Health Innovation West: Market analysis of cluster strongholds and opportunities'* (Triathlon, 2020) has also in this case been used as a starting point for the data collection.

The research, initiatives and infrastructure highlighted is based on a subjective assessment and should not be seen as a comprehensive overview. Instead, the intention is to highlight prominent examples in the region based upon externally available data and information elicited from experts.

<sup>1</sup>Monocl is a cloud-based stakeholder platform with information about millions of stakeholders within the life science field. For more information, see [www.monocl.com](http://www.monocl.com)  
Note: The asterisk (\*) represents any group of characters, including no character, e.g. Infectio\* will result in search results including infection, infectious etc.

# Definition of industry categories

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## **Medical devices**

Companies developing, manufacturing and selling medical devices providing protection against infections or other devices with anti-infectious mechanisms, e.g. catheters or dressings with antimicrobial materials.

## **Pharmaceuticals and probiotics**

Companies developing, manufacturing and selling pharmaceuticals or probiotics relevant for infection treatment, as well as vaccines. This category also includes companies providing enabling tools and technology supporting pharmaceutical research and development within infection.

## **Diagnostics**

Companies developing, manufacturing and selling tools and techniques for diagnostics of infectious diseases. The products can be technical equipment for measuring or visualizing diagnostic results, or in vitro diagnostic tests.

## **Sterilization and disinfection**

Companies developing, manufacturing and selling equipment, materials, chemicals etc. used for sterilization or disinfection of healthcare instruments and environments, e.g. sterilizers, washers, autoclaves and disinfectants.

## **Professional hygiene**

Companies developing, manufacturing and selling products used for managing and improving hygiene in healthcare settings, e.g. paper towels, hand sanitizers and protective equipment.

## **Healthcare environment**

Companies developing, manufacturing and selling products and solutions related to interior and infrastructure in healthcare facilities contributing to improved infection control, e.g. waste management, ventilation solutions, and lift systems that reduce need of staff or human contact.

## **Digital health**

Companies providing digital solutions contributing to infection control, e.g. through improved workflows and safer care with lower risk of hospital acquired infections, reduced need for physical contact and potential contamination points, and bioinformatic solutions for improved diagnostics.

## **Distributors and sales companies**

This category includes companies that do not conduct research, product development, consulting or manufacturing on their own. These companies are typically distributors of other brands. The products can be of any type within infection control, e.g. diagnostic test, medical devices, single-us products etc.

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### **About Business Region Göteborg**

Business Region Göteborg is a non-profit company, owned by the City of Gothenburg, that works to strengthen and develop trade and industry in the Gothenburg region.

We provide confidential advisory services for you who plans to invest in or establish operations in the Gothenburg region. We can open the door to partnerships with other companies and organisations in the Gothenburg and international business community.

### **About Triathlon Group**

Triathlon Group is a growing professional service firm dedicated to performance improvement, with a prestigious track record. Our clients range from early phase startups, to large-scale multinationals and public institutions. Triathlon is partner owned, independent and hence a truly reliable partner in performance improvement.

By combining innovation and best practice, we develop substantial value to our clients through long-term relationship and genuine understanding of business needs in the industries we operate within. Together with ISEA, our affiliated expert organization represented by experienced experts with successful life science careers, we have long experience of helping life science companies and entrepreneurs. Triathlon's core business is our clients' 'out of the ordinary' operational management issues.



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