

Hôpitaux Universitaires de Genève

Point Prevalence Survey 2019 of healthcare-associated infections and antimicrobial use in Swiss acute care hospitals

Sommaire

Abbreviations.....	3
Executive Summary	4
Survey design and methodology.....	5
Implementation.....	6
Training courses	6
Table 1: Training-the trainer courses schedule.....	6
List of participating hospitals.....	6
Table 2: Participating hospitals by canton in alphabetic order	6
Swiss PPS website.....	7
Data management.....	7
Results.....	8
Table 3: Characteristics of hospitals and patients.....	8
Figure 1: HAI Prevalence in 2019 compared to previous years.....	9
Figure 2: HAI prevalence for hospitals participating in all surveys	10
Figure 3: HAIs by hospital-size, type and ownership	11
Figure 4: HAIs by patient gender, McCabe score and age (in years)	12
Figure 5: HAIs by hospital unit.....	13
Figure 6: HAI distribution by infection type.....	14
Figure 7: Antimicrobial use in 2019 PPS and in previous surveys.....	15
Figure 8: Antimicrobial use in hospitals participating in all surveys.....	16
Figure 9: AU by patient gender, McCabe score and age (in years)	17
Figure 10: Antimicrobials accounting for 75% of any antimicrobial use.....	18
Figure 11: Antimicrobials accounting for 75% of therapeutic use	19

Abbreviations

AU	Antimicrobial use
BSI	Bloodstream infection
CH	Switzerland
CH-PPS	Swiss Point Prevalence Survey
ECDC	European Centre for Disease Prevention and Control
FOPH	Federal Office of Public Health
HAI	Healthcare-associated infection
HUG	University Hospitals of Geneva (Hôpitaux Universitaires de Genève)
ICU	Intensive care
IPC	Infection Prevention and Control
LRTI	Lower respiratory tract infection
PPS	Point Prevalence Survey
PRIM	Primary care
PRIVFP	Private ownership, for-profit
PRIVNFP	Private ownership, not-for-profit
PUB	Public hospitals
SEC	Secondary care
SPEC	Specialised care
SSI	Surgical site infection
TERT	Tertiary care
UTI	Urinary tract infection

Executive Summary

The first point prevalence survey of healthcare-associated infections (HAIs) and antimicrobial use (AU) in Swiss acute care hospitals (CH-PPS) was conducted in 2017. Ninety-six Swiss hospitals agreed to participate in the survey, collecting data from approximately 13,000 patients. The identified prevalence of IAS was 5.9%, which placed Switzerland in the European average.

With the financial support of the Federal Office of Public Health, acute care hospitals interested in estimating their burden of HAI had the opportunity to use the CH-PPS platform free of charge in 2018 and 2019. These annual surveys allowed hospitals to monitor their own HAI prevalence and to compare the results with similar Swiss hospitals.

Between April and June 2019, 34 acute care hospitals accepted voluntary participation in the CH-PPS and provided data on 5'706 patients. Among these hospitals, 20 were small-size (<200 beds), 11 medium-size (200-650 beds) and 3 large-size (>650 beds). All large hospitals were university-affiliated.

The pooled HAI prevalence was 5.4%; among hospitals participating in all surveys, the HAI prevalence was at 5.4% compared to a prevalence of 5.8% in 2017 and 5.5% in 2018. Large and university-affiliated hospitals had a significantly higher prevalence (7.4% in both cases) compared to other hospital types. With 18.8%, the HAI prevalence was highest in intensive-care units (ICU). The two most common HAI-types were surgical site infections (SSI) and lower respiratory tract infections (LRTI), contributing for half all HAIs.

Approximately a third of the patients received one or more antimicrobials (31.43%) on the day of survey with a prevalence of AU remaining unchanged over the past years (33% in 2017 and 30.4% in 2018); cephalosporins, and penicillin combinations were the most frequently used antimicrobial groups.

The next national CH-PPS will be repeated in 2020.

Survey design and methodology

Invitation for voluntary participation was sent to all Swiss acute-care hospitals in October 2018. As in previous years, hospitals were asked to perform their PPS between April and June 2019 during a maximum of 14 days, and to include all acute-care patients (adults, children and neonates), except patients in the emergency department and in psychiatry.

The **Swiss protocol on point prevalence surveys of HAI and AU** issued in 2017, and repeated in 2018, was also applied in 2019 without modifications. In order to decrease the workload for hospital investigators and to encourage participation, reporting of hospital indicators remained optional.

Implementation

Training courses

The primary investigators of the Coordination Center of the prevalence survey in Geneva prepared and conducted four training courses in three of the linguistic regions of Switzerland; two in German-speaking part, one in French-speaking part and one in the canton of Ticino. The following table presents the locations of the above-mentioned courses.

Table 1: Training-the trainer courses schedule

Date	Place	Language
20.03.2019	Bern, BE	DE
28.03.2019	Bern, BE	DE
10.04.2019	Bellinzona, TI	FR
10.05.2019	Delémont, JU	FR

List of participating hospitals

Thirty-four hospitals accepted to participate in the survey (Table 2).

Table 2: Participating hospitals by canton in alphabetic order

AG	Spital Muri Hirslanden Klinik Aarau
AI	Kantonales Spital und Pflegezentrum Appenzell
AR	Hirslanden Klinik Am Rosenberg
BE	SRO AG - Spital Region Oberaargau Spitäler fmi ag – Interlaken Spitäler fmi ag – Frutigen Hirslanden Bern AG, Beau-Site Privatklinik Linde AG
BL	Hirslanden Klinik Birshof
BS	Universitätsspital Basel St. Claraspital Klinik Merian Iselin
GE	Hôpitaux Universitaires de Genève Hôpital de La Tour Clinique Générale-Beaulieu
JU	Hôpital du Jura – Delémont
LU	Hirslanden Klinik St. Anna AG
SG	Hirslanden Klinik Stephanshorn

SH	Hirslanden Klinik Belair
SO	Solothurner Spitäler AG - Bürgerspital Solothurn Solothurner Spitäler AG - Olten Solothurner Spitäler AG - Dornach
TI	EOC – Ospedale Civico di Lugano EOC – Ospedale Regionale Bellinzona e Valli EOC – Ospedale Regionale di Locarno EOC – Ospedale Regionale di Mendrisio EOC – Ospedale Regionale di Lugano Italiano Clinica Luganese SA
ZG	Hirslanden AndreasKlinik Cham Zug
ZH	Universitätsspital Zürich GZO AG - Spital Wetzikon Spital Bülach AG Klinik Hirslanden Zürich

Swiss PPS website

The CH-PPS website (<https://www.swissnoso.ch/forschung-entwicklung/punktpraevalenz-erhebung-2017/ueber-die-punktpraevalenz-erhebung/>) included all PPS-related information such as the project description, protocols, dates of training courses, web link for data collection, and contact details of the Coordination Center.

Data management

The PPS database, which was not changed since 2017, served for data collection by the local investigators. Hospitals which have already participated in 2017 or 2018 could use their existing credentials for database access.

Results

Results are presented in comparison with previous PPS, and for hospitals participating in both surveys.

Table 3: Characteristics of hospitals and patients

		2017	2018	2019
Hospitals				
	N	96	21	34
	<200	63	14	20
	200-650	26	4	11
	>650	7	3	3
	University-affiliation	5	3	3
Patients				
	N	12'931	4'828	5'706
	Age	64 (48-80)	69 (48-81)	63 (52-81)
	Male gender	47.8 (47.0-48.7)	48.1 (46.7-49.5)	48.1 (46.8-49.4)
	Fatal McCabe	19.2 (18.5-19.9)	20.7 (19.6-21.9)	17.8 (16.8-18.8)

Figure 1: HAI Prevalence in 2019 compared to previous years

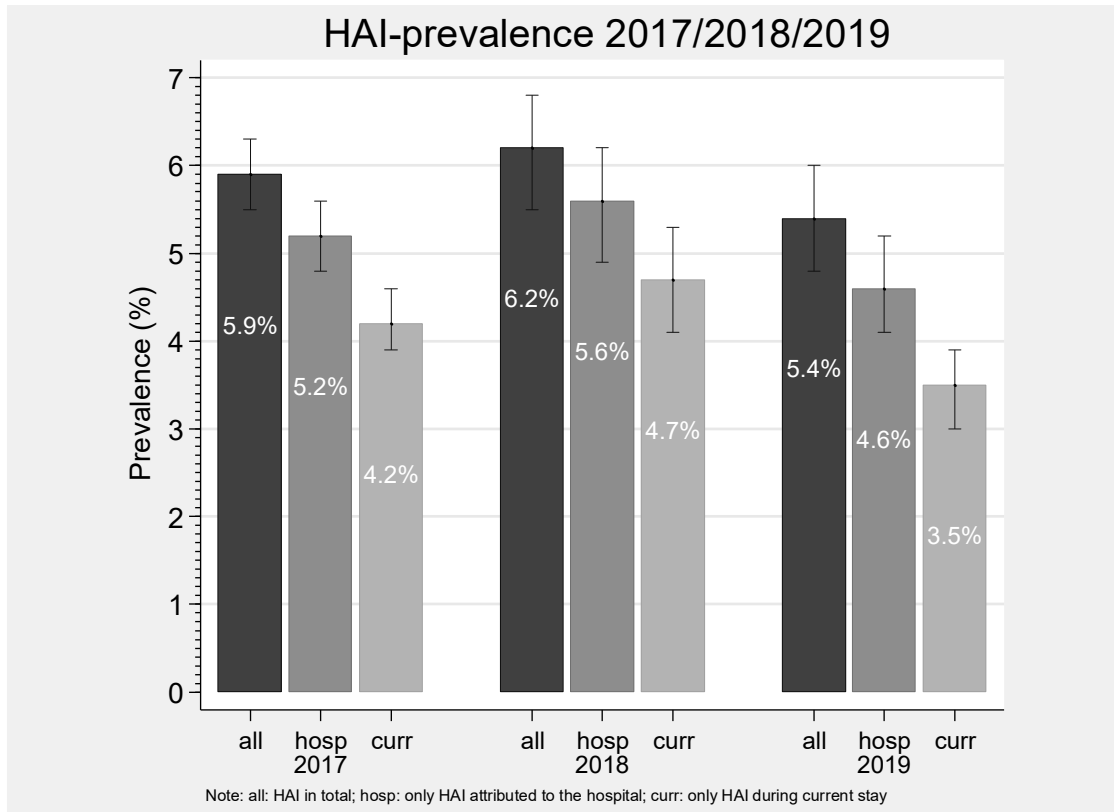


Figure 2: HAI prevalence for hospitals participating in all surveys

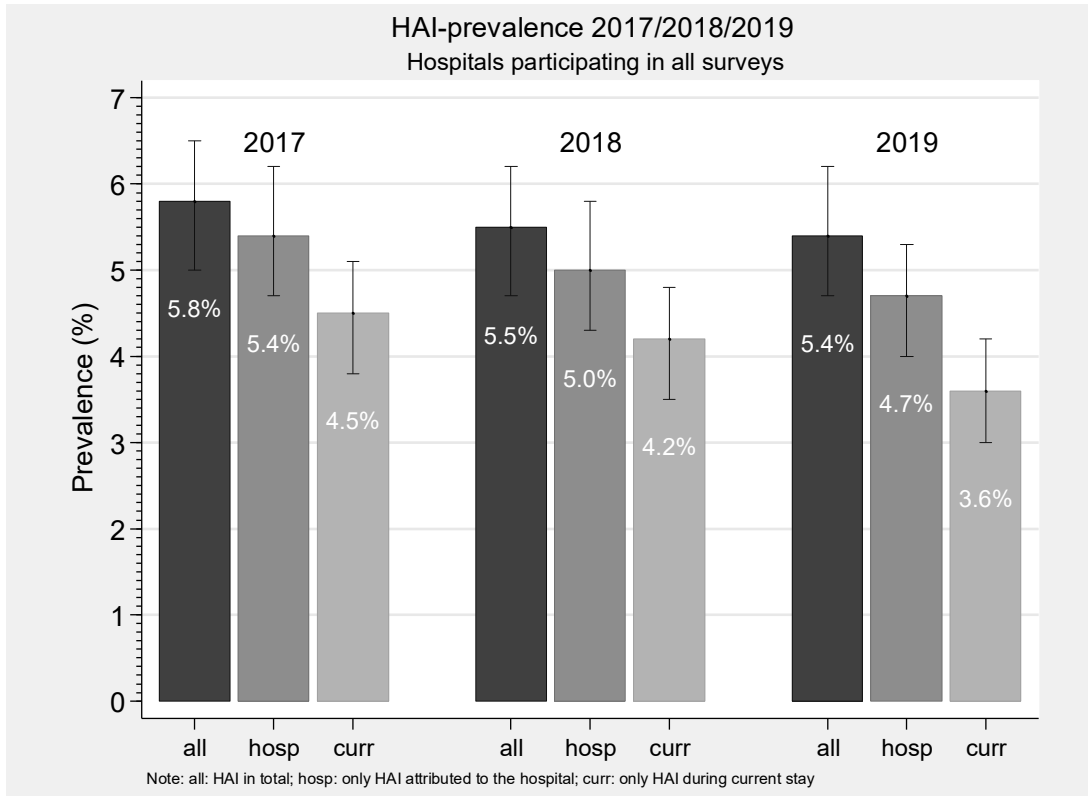
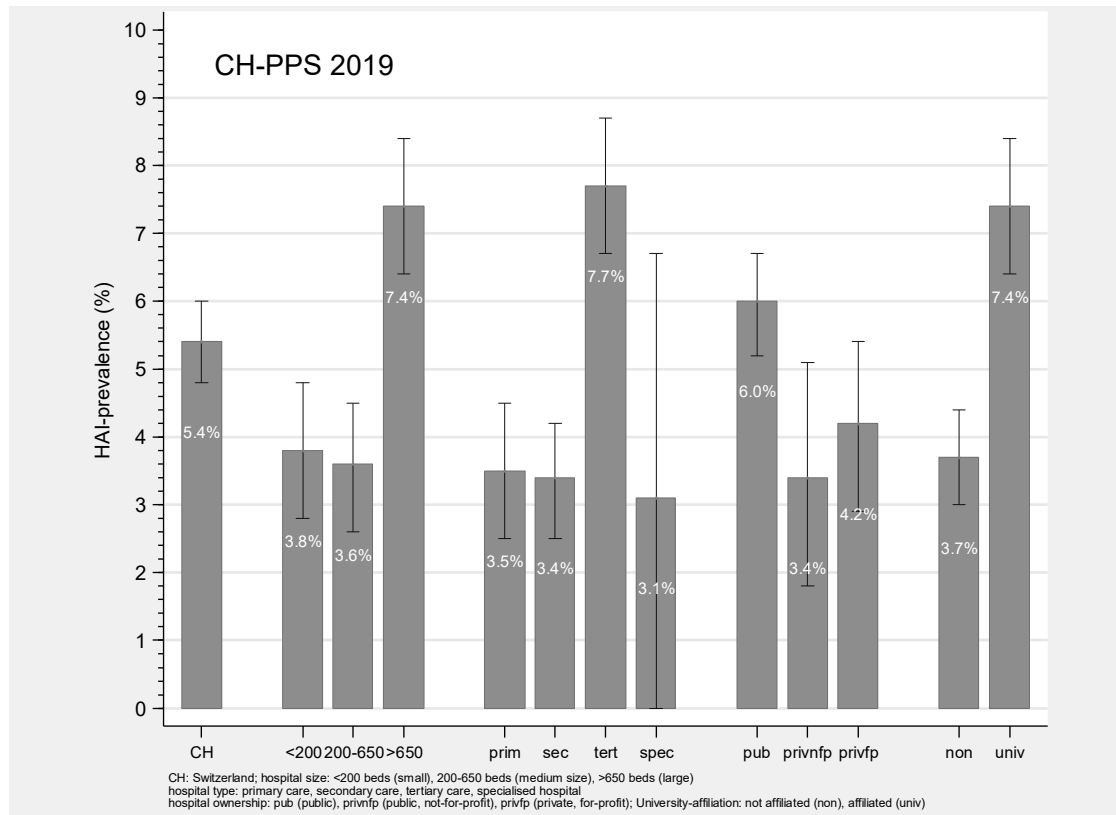
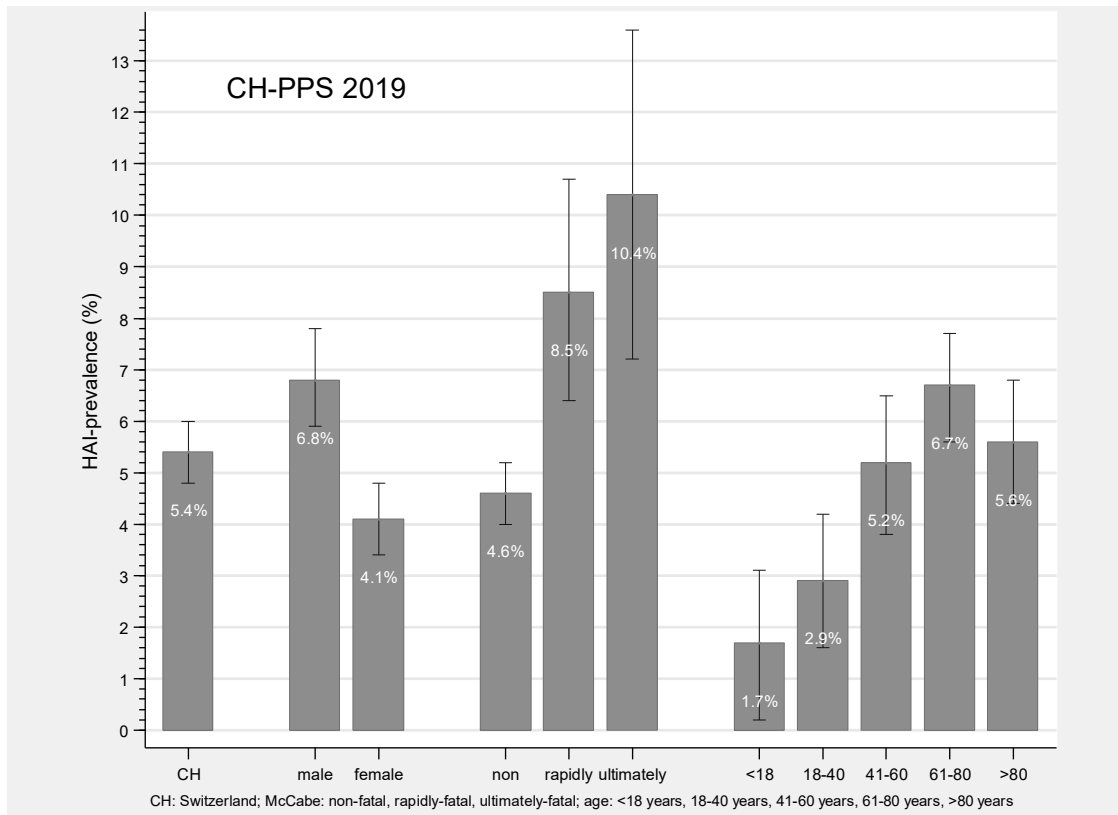


Figure 3: HAIs by hospital-size, type and ownership



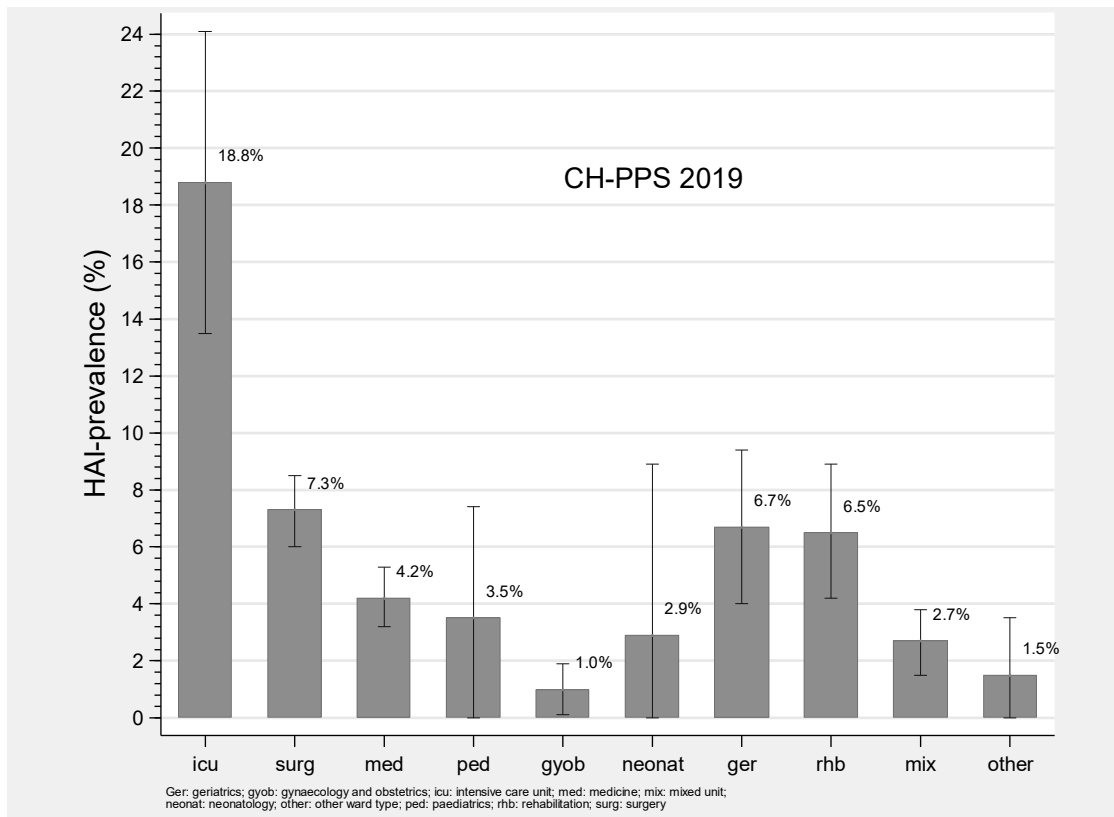
<200: small-size hospitals; 200-650: medium-size hospitals; >650: large-size hospitals; prim: primary care hospitals; sec: secondary care hospitals; tert: tertiary care hospitals; spec: specialized hospitals; pub: public hospitals; privnfp: private not-for-profit hospitals; privfp: private for-profit hospitals; non-univ: non-university affiliated hospitals; univ: university affiliated hospitals

Figure 4: HAIs by patient gender, McCabe score and age (in years)



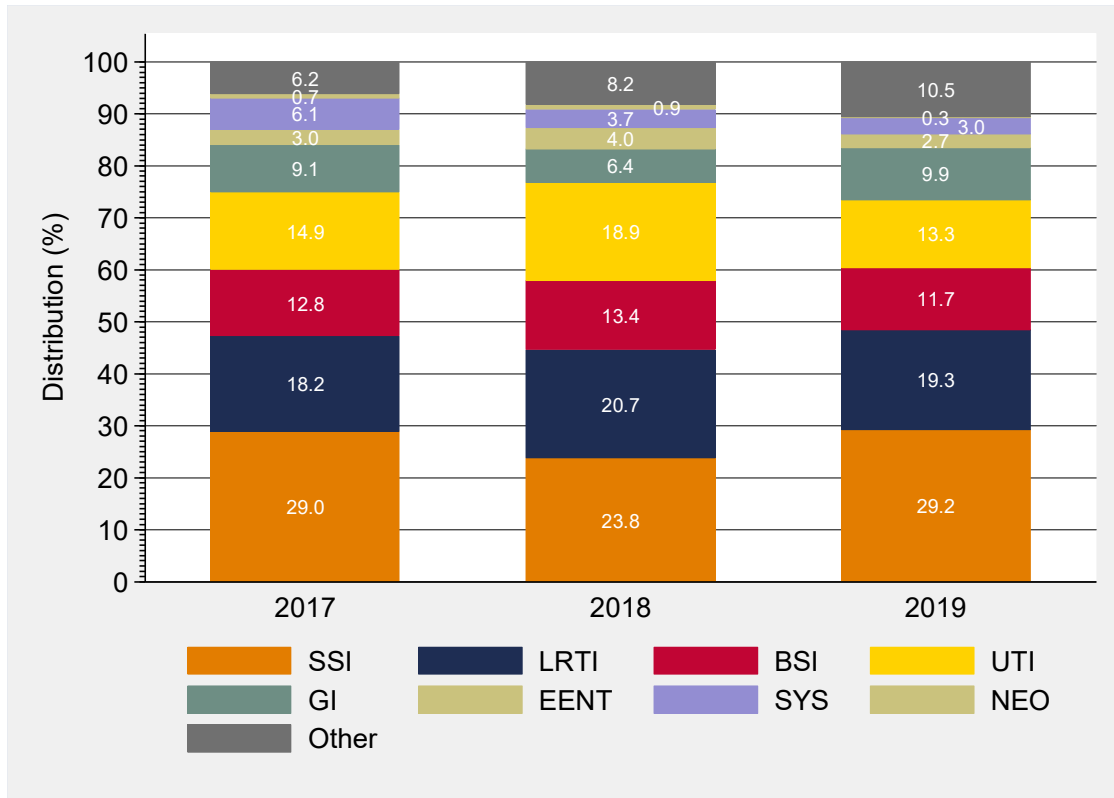
McCabe score: non: non fatal (>5 years of expected survival); rapidly: rapidly fatal (1-5 years of expected survival); ultimately: ultimately fatal (<1 year of expected survival)

Figure 5: HAIs by hospital unit



ICU: Intensive care unit; surg: surgery; med: medicine; ped: paediatrics; gyob: gynaecology-obstetrics; neonat: neonatology, ger: geriatrics; rhb: rehabilitation; mix: mixed

Figure 6: HAI distribution by infection type



SSI: surgical-site infection, LRTI: lower respiratory tract infection, BSI: bloodstream infection, UTI: urinary tract infection, GI: gastrointestinal infection, EENT: eye ; ear ; nose ; throat ; or mouth infection, SYS: systemic infection, NEO: specific neonatal case definitons

Figure 7: Antimicrobial use in 2019 PPS and in previous surveys

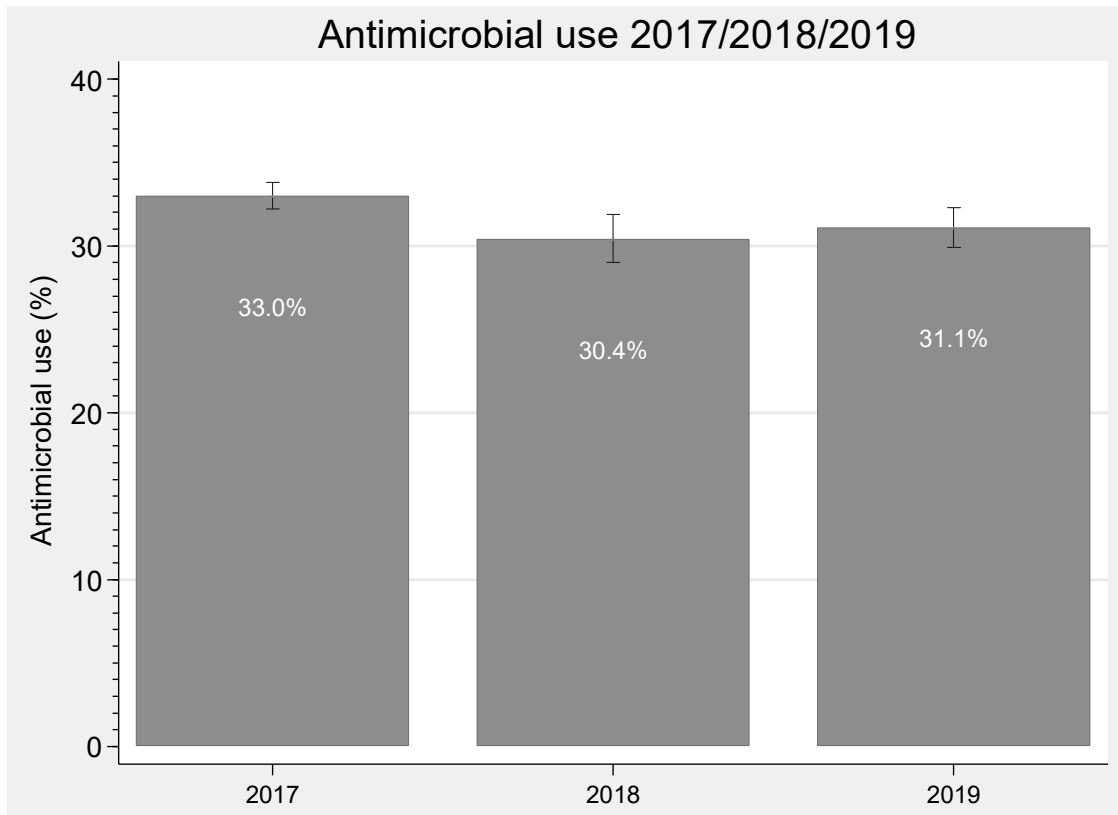


Figure 8: Antimicrobial use in hospitals participating in all surveys

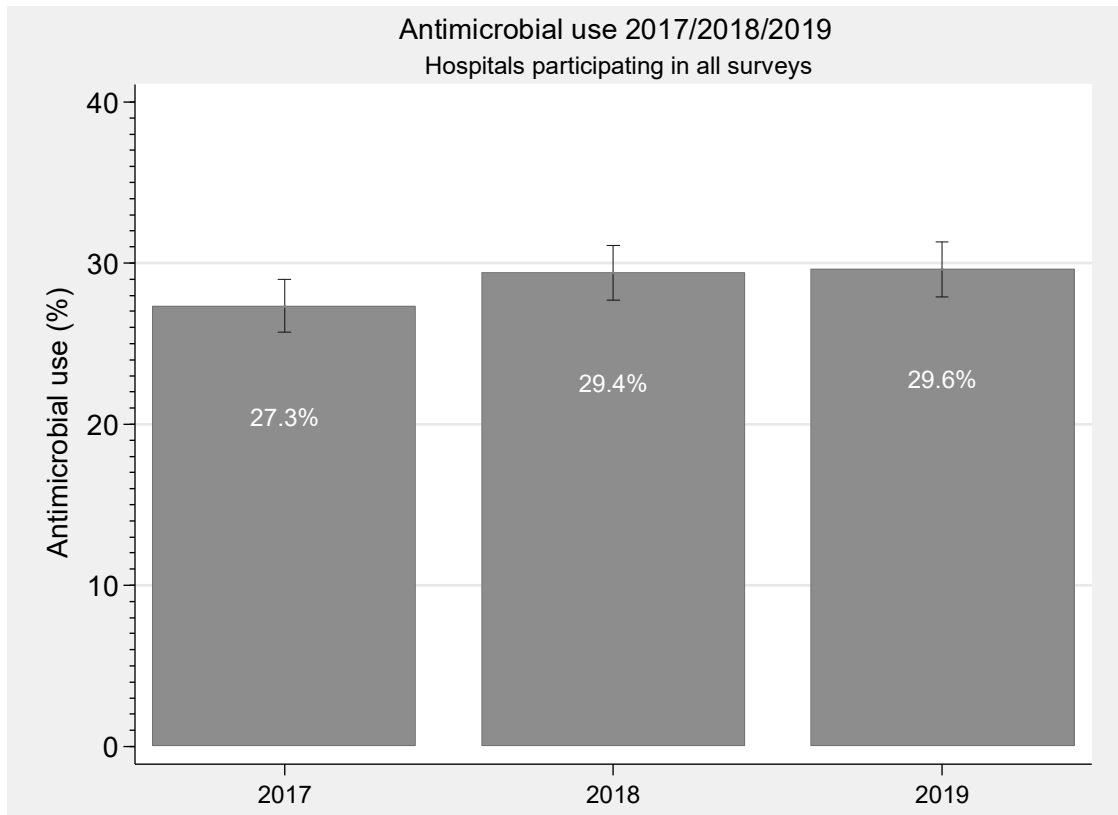


Figure 9: AU by patient gender, McCabe score and age (in years)

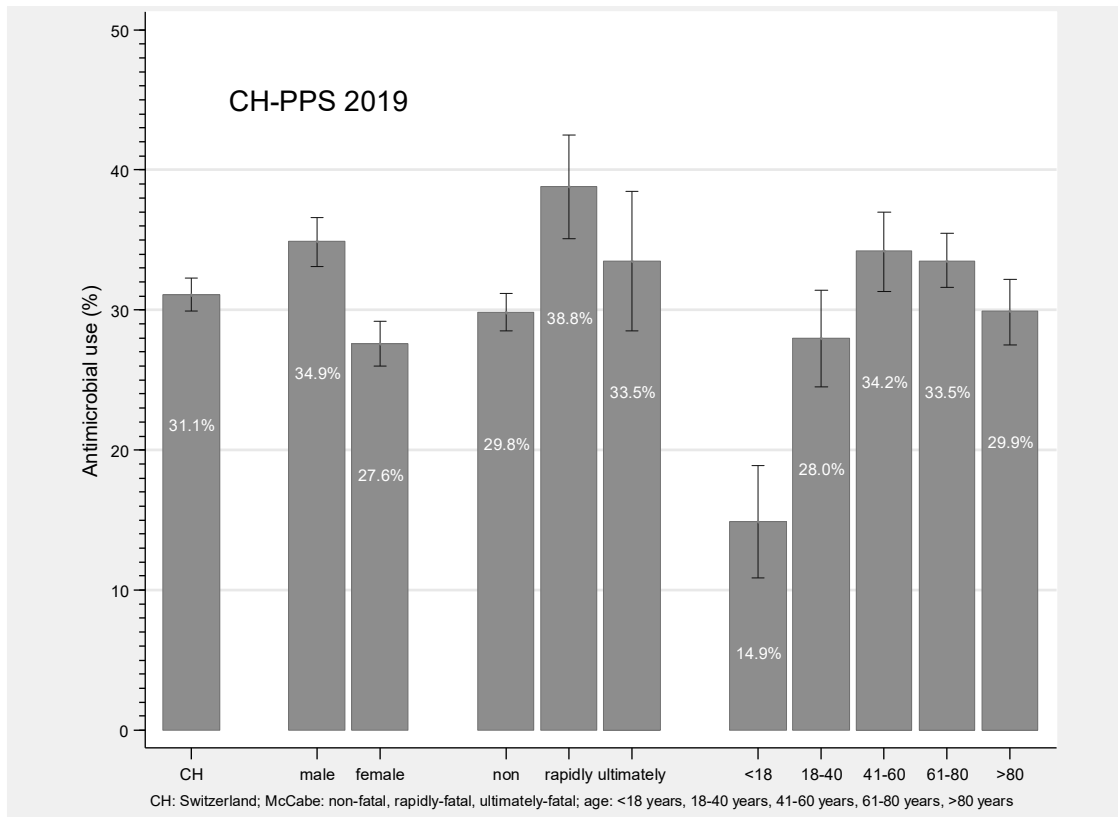


Figure 10: Antimicrobials accounting for 75% of any antimicrobial use

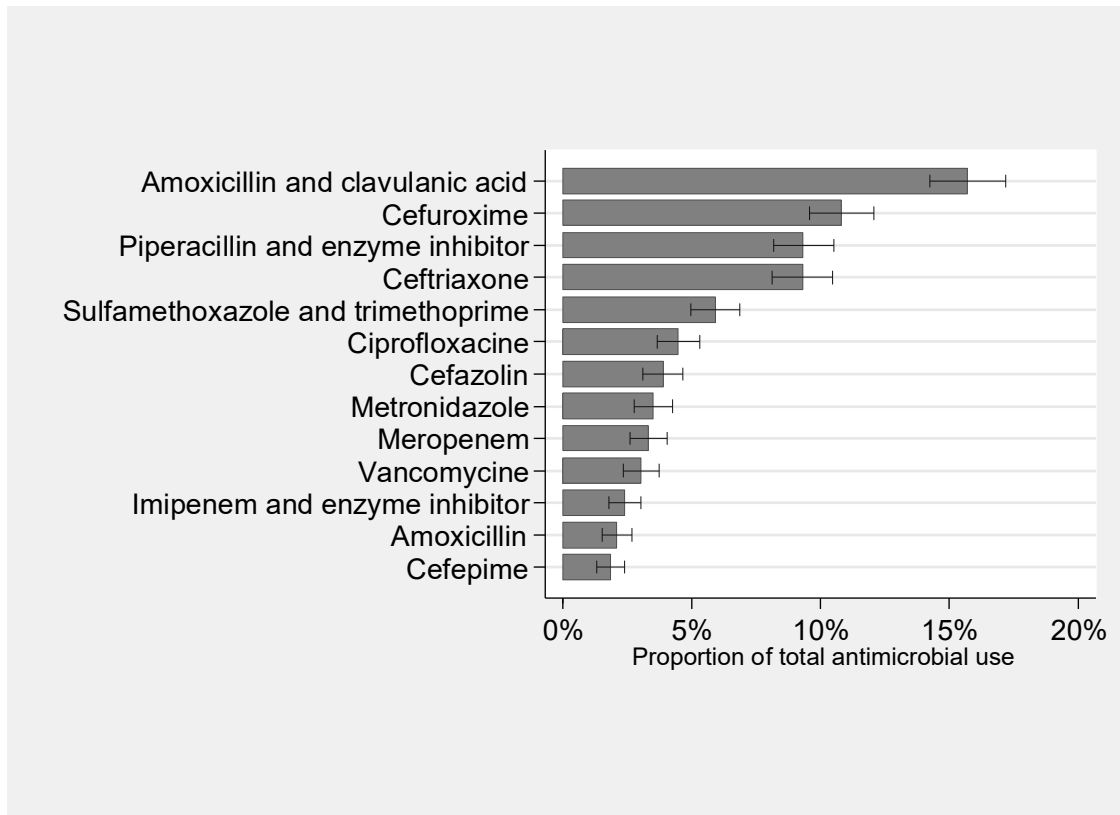


Figure 11: Antimicrobials accounting for 75% of therapeutic use

