



## Project StAR-2

# StAR National Antimicrobial Stewardship Programmes: 1<sup>st</sup> SwissASP Networking Zoom call, 25 Nov 2020, 9-11h *Meeting report*

### 1. Summary

This report presents key points, recommendations and next steps discussed in the interactive two-hour SwissASP Networking Zoom call on 25 Nov 2020. The event focused on the exchange of experiences and discussion of strategies for the implementation of antibiotic stewardship programs in hospitals in Switzerland as part of the national StAR strategy.

### 2. Background and meeting purpose

The call was part of the StAR-2 second phase of the FOPH-funded national Strategy against Antibiotic Resistance in the human sector. The SwissASP framework conditions and portfolio documents, developed during the StAR-1 project phase, provide recommendations on successful implementation of sustainable antibiotic stewardship programs (ASP) in hospitals in Switzerland.

The StAR-2 project aims to create a functioning network for the development and implementation of bottom-up ASP activities and sharing of stewardship tools and experiences.

A networking and educational workshop was originally planned for March 2020 but needed to be postponed due to the Covid-19 pandemic. Until a face-to-face event can take place next year, networking using Zoom allowed for a first update on the current SwissASP strategy, feedback from experiences of local ASP leads in order to define priorities and next steps for SwissASP.

### 3. Audience

Invitees included all participating hospitals of the Swissnoso AMS (M. Osthoff, 2016) and link hospital pharmacists of the Anresis network. The 51 participants were acute care hospital senior physicians (infectious diseases, IPC and internal medicine) and hospital pharmacists, involved (or interested to get involved) in antibiotic stewardship → **see Annex - Participant list**.



#### 4. Meeting format, content and speakers

*The first part of the meeting* included presentations on the current status of StAR-2 (Julia Bielicki, JB), Anresis reporting (Catherine Pluess-Suard, CP) and progress and challenges of AS implementation through a feedback summary of a pre-call REDcap survey among participants (Marcus Eder) as well as reports on ASP activities from four local leads in different hospitals across Switzerland (Benedikt Wiggli, BW, KSp Baden; Beat Sonderegger, BS, LUKS; Rami Sommerstein, RS, Hirslanden Central Switzerland; and Benedikt Huttner, BH, HUG).

*In the second part, an interactive session* included ad-hoc participant feedback (Zoom polling) structured by different topics to identify key areas for further development and focus for SwissASP, which were summarized as priorities & next steps in the wrap up and Q&A session. → see Annex – Agenda

#### 5. Main discussion points

##### *First part of meeting*

JB on national approach to ASP in Switzerland so far and the StAR Strategy 2nd phase:

- Local leads already active in the field of AS contributed to the SwissASP guidance documents: “living documents”, open for further updates and input from the network.
- Functioning network/platform of local leads important for successful AS implementation, existing bottom-up activities give directions in acute care hospitals.
- The call should provide an exchange on how interaction should go forward, which tools and activities are considered essential/critical to AS, how Swissnoso can support.

CP update- current status of Anresis reporting of antibiotic consumption → **PDF (attachments)**

- Yearly basic reporting: data for hospital/ICU sent to Anresis → feedback/benchmarking report to improve awareness and identify room for improvement at the local hospitals.
- Monthly/quarterly data (yearly data subdivided): Anresis supports local hospitals to generate their own reports (csv file for further analysis) → report may help to review impact of local stewardship activities and other factors around antibiotic consumption.
- Despite limitations of non-patient specific data, they may provide useful information on what is happening clinically, a useful exercise (if resources available).
- Further work to enroll more hospitals; perform analysis of 2020 data in relation to Covid-19 pandemic; adding patient-specific data (collaboration with LUKSO) and data on appropriateness of antibiotic prescriptions.



ME presented pre-meeting survey feedback on progress and challenges of AS implementation

- 21 participants (REDcap), 60% physicians, 40% pharmacists, from different-size hospitals. Perceived local AS implementation advancement mean 42% amongst participants, slightly higher among physicians than pharmacists, similar regarding satisfaction with progress (mean 38%). Most progress reported in monitoring and surveillance and reporting and communication; most important areas with room for improvement interventions (62%) and education and training and expertise and technology.
- Participants provided very useful feedback on progress and challenges in their setting across different topics/areas. → **see PDF (attachments)**

Shorts presentation from local ABS leads:

BW presented local experience with export tool on patient management systems (collaboration with IT as separate initiative from Anresis reporting):

- Progress: additional information on prescribing trends by department, regularly updated.
- Challenges: time consuming, data quality/validation often limited, tools (e.g. stop dates).
- Suggestions: better 'translation' needed between demands of IT vs. ID/Infection control; dashboards. More resources/personnel/FTEs needed, also for IT support.

BS presented his local experience in AS with new electronic medical record (EPIC) based analysis and antibiotic administration monitoring (in addition to Anresis consumption data):

- Progress: pilot phase - more data on AB, shared reports with clinics, automatic 5-d stop.
- Challenges: own solution very time consuming (commercial tool expensive, 30-40K/yr.); data validation; ID/Pharmacy teams to monitor automatic stop.
- Suggestions: more exchange on technical solutions, more resources/personnel/FTEs.

RS made general comments on defining stewardship implementation

- Progress: In some places already more ID input available, e.g. in settings with Belegärzte,
- Challenges: Stewardship goals differ according to hospital size/settings, insuff. FTEs.
- Suggestions: Availability of prescription guidelines, overview/feedback on consumption; Stewardship goals and priorities to be better defined according to hospital size/setting (especially for smaller-medium size hospitals, "networks within network"), for better negotiation with hospital leadership; More FTEs needed.

BH made comments on local experience of AS implementation, including COMPASS study

- Progress: Compass study transferrable to other centers; joint IT system across centers; antibiotic app advanced stage - already good buy-in from different departments.
- Challenges: data processing (time consuming); linking with microbiology results; stop order flagging for physicians (get them to act). Importance/ownership of AS (ID vs. IPC).
- Suggestions: More resources/personnel/FTEs and IT support/tools, dashboard.



## ***Second part of meeting***

JB summarized results of the interactive Zoom poll (31 participants) → **see Annex–Zoom poll**

- Focus area 1 (governance, education and training, and intervention): the majority (45%) of voters defined assignment of dedicated AS team/ resources embedded in quality improvement as most important. Other items ranked quite similarly at lower scores.
- Focus area 2 (monitoring and surveillance, reporting and communication): the majority (45%) of voters found allocation of IT resources for AS to support automation in handling data as most important, allowing wider monitoring within hospitals. Other items voters found important were the establishment of dashboards for near-real time interaction with prescribers/medical staff (29%) and definition/sharing of quality indicators (26%).

In subsequent wrap-up and Q&A discussions, different participants made further suggestions, including: local review of data/situations of medication errors as a result of lacking stewardship; sharing local experiences across hospitals to identify commonalities, e.g. ways to influence executive organs and small projects on improving specific areas.

Swissnoso will take these items up with the AS working group that has diverse representation also outside Swissnoso and come up with proposals for the next meeting in 2021. At some stage hopefully a face-to-face meeting will be possible, which would focus also on ASP training for local pharmacists, ID and ICP physicians. In the meantime, Swissnoso remains available for any information needed and suggestions from the AS community on future interactions within smaller or larger networks.

## **6. Recommendations and next steps**

- SwissASP documents open for further input during StAR-2 phase.
- Anresis expanding support of local hospitals, e.g. for generation of own consumption reports for local reviews.
- Effective interaction with hospital leadership and other stakeholders for establishing dedicated FTEs/AS teams and resources remains key priority for many local leads.
- Define stewardship focus, approach and priorities according to different hospital size and settings (create networks within network).
- Allocation of IT resources to provide automated data for wider monitoring within hospitals; linking with patient management tools; dashboards providing oversight and near-real time interaction with prescribers.
- Swissnoso and AS working group to prepare ideas for next SwissASP meeting in 2021.



## 7. References

SwissASP Portfolio Version 2/31 Oct 2019

SwissASP framework conditions V2/27 Oct 2019

## 8. Annex

### I. Agenda

Time	Subject	Speaker
#8:45	Call opening	
09:00	Welcome and introduction	Dr. Julia Bielicki UKBB/Swissnoso
09:05	Presentation: SwissASP documents (StAR-1) and StAR-2 strategy	Dr. Julia Bielicki UKBB/Swissnoso
09:15	Presentation: ANRESIS monitoring of antibiotic consumption	Catherine Plüss-Suard Anresis
09:30	Presentation: Feedback summary- survey on ASP implementation (local stewardship leads): Progress and Challenges	Dr. Marcus Eder Swissnoso
09:40	Interactive session: Case studies and actions/priorities for SwissASP where there is room for improvement (via Zoom polling)	Dr. Julia Bielicki UKBB/Swissnoso
10:30	Wrap up of Meeting: Priorities and next steps, Q&A session	Julia Bielicki UKBB/Swissnoso
11:00	End of meeting	

## II. Presentation: ANRESIS monitoring of antibiotic consumption



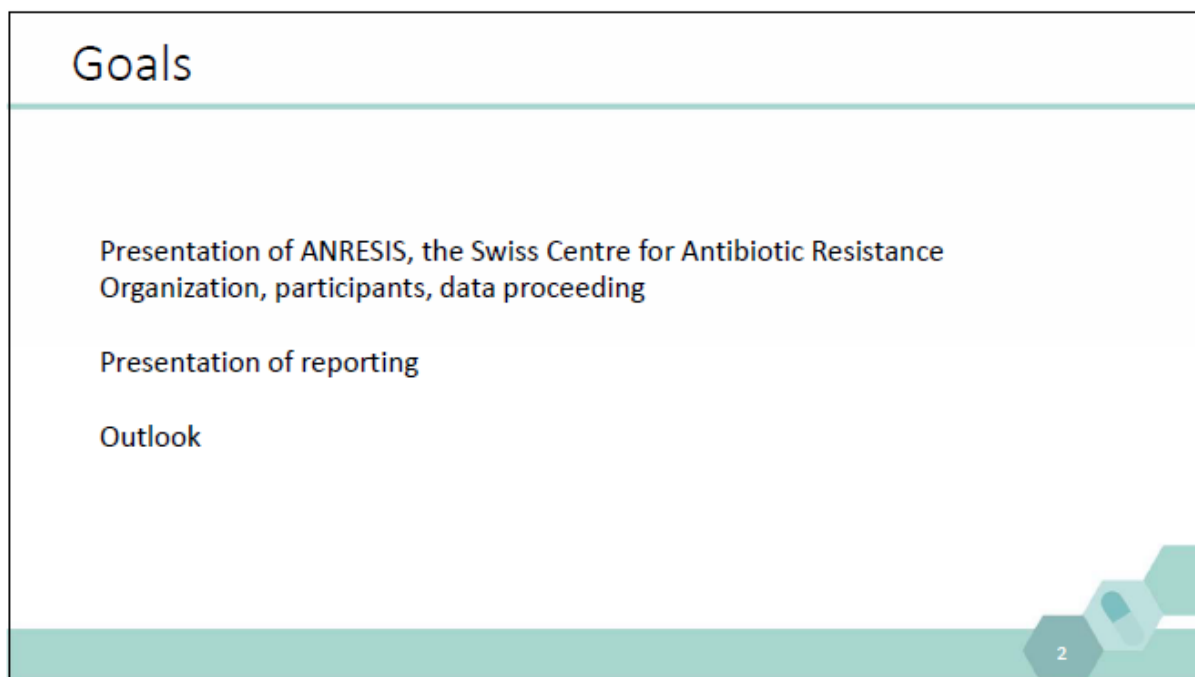
ANRESIS  
antibiotic consumption monitoring tool

Catherine Plüss-Suard 25.11.2020

anresis.ch

u UNIVERSITÄT BERN

The slide features a light teal background with a pattern of hexagons. On the right side, there are three hexagons containing icons: a blue bacterium, a white and blue pill, and a silhouette of a person. The text is positioned on the left side of the slide.

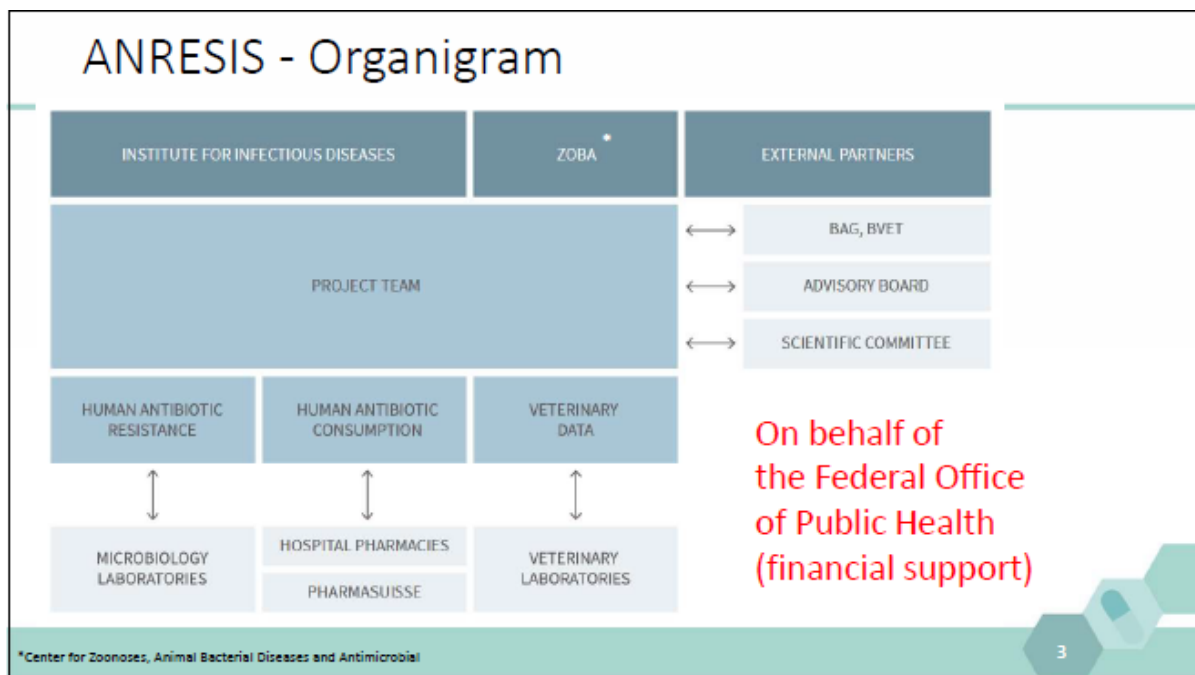


### Goals

- Presentation of ANRESIS, the Swiss Centre for Antibiotic Resistance  
Organization, participants, data proceeding
- Presentation of reporting
- Outlook

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The slide has a light teal background with a horizontal line separating the title from the content. The content is listed in a simple, clean font. A small graphic of three hexagons is located in the bottom right corner.



## Participants

**41 acute care hospitals/hospital networks in 2019**  
(60 sites)

Corresponding to **41% of acute care hospitals**  
**75% of all bed-days**

Code	Text_DE	Text_FR	
K111	Allgemeinspital, Zentrumsversorgung (Niveau 1, Universitätsspital)	Hôpital de soins généraux, prise en charge centralisée (niveau 1, hôpital universitaire)	100% (5/5)
K112	Allgemeinspital, Zentrumsversorgung (Niveau 2)	Hôpital de soins généraux, prise en charge centralisée (niveau 2)	77% (30/39)
K121	Allgemeinspital, Grundversorgung (Niveau 3)	Hôpital de soins généraux, soins de base (niveau 3)	20% (3/15)
K122	Allgemeinspital, Grundversorgung (Niveau 4)	Hôpital de soins généraux, soins de base (niveau 4)	11% (3/27)
K123	Allgemeinspital, Grundversorgung (Niveau 5)	Hôpital de soins généraux, soins de base (niveau 5)	1% (1/16)

**Enhance our representativity in smaller hospitals**

[www.bfb.admin.ch](http://www.bfb.admin.ch)

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## Data proceeding

The hospital pharmacist (or ID physician) sends the number of packages/units of antiinfectives delivered to the wards and the number of hospital beddays, admissions.

Data are imported in the database.

After plausibility check, we send back a feedback report (own data, within one month) and a benchmarking report (when data from all hospitals are validated).

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## Data and reporting

### *Basic*

Yearly data  
for whole hospital, ICU



Feedback report  
Benchmarking report

Data by ward or division  
Monthly/quarterly data



Feedback report

Get a csv File !

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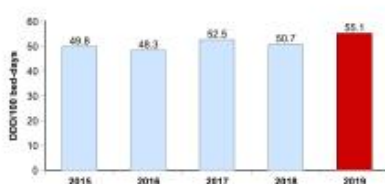
**Feedback Report**

**Yearly data** useful for

- Infectious diseases specialist
- Clinical/hospital pharmacist

To improve awareness (use for continuing education, communication), identify room for improvement

**1.1 Global antibiotic consumption**



**Top ten overall**

Rank	Antibiotic	2018	2019	% change
1	Amoxicillin-clavulanic acid	10.0 (20.2%)	10.5 (22.4%)	4.6
2	Ceftriaxone	7.2 (14.6%)	6.6 (14.1%)	-7.8
3	Piperacillin-tazobactam	3.4 (6.9%)	3.4 (7.3%)	0.4
4	Ciprofloxacin	4.1 (8.3%)	3.2 (6.8%)	-20.7
5	Metronidazole	2.6 (5.3%)	2.6 (5.5%)	-0.5
6	Cefepime	1.9 (3.8%)	2.1 (4.5%)	6.7
7	Trimethoprim-sulfamethoxazole	2.1 (4.2%)	1.9 (4.1%)	-8.7
8	Meropenem	1.5 (3.0%)	1.8 (3.8%)	19.2
9	Vancomycin	1.6 (3.2%)	1.6 (3.4%)	-11.6
10	Levofloxacin	1.8 (3.6%)	1.5 (3.2%)	



**Feedback Report**

**Monthly/quarterly data** useful

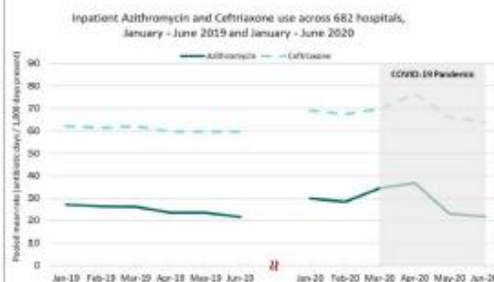
to see the impact of your antibiotic stewardship activities, the impact of COVID-19 on antibiotic consumption

**Factors that may favour an increase in AMR**

- About 70% of hospitalised COVID-19 patients receive antibiotics [33,34]
- COVID-19 patients often receive empiric broad-spectrum antibiotic therapy [34-36]
- 56% of hospitalised COVID-19 patients develop a secondary bacterial infection [34], which will necessitate antibiotic therapy
- Possible increased use of azithromycin and teicoplanin (because of the initial absence of clear guidelines for the treatment of COVID-19 patients) [4,6,8]
- Difficulties in accessing advice from experts before prescribing antimicrobial agents [4]
- Antimicrobial stewardship efforts may be undermined because of high workloads and shifting priorities related to COVID-19 [37,38]
- Possible aggravation of existing shortages of certain narrow-spectrum antimicrobial agents [39,40]

**Factors that may favour a decrease in AMR**

- Bacterial co-infection (estimated on presentation) in only 3-5% (95% CI: 1-7%) of COVID-19 patients [33]
- Bacterial/fungal infection in only 8% of hospitalised COVID-19 patients vs 11% in non-COVID-19 patients [34]; the percentage for COVID-19 patients may be underestimated because many may have received empiric antimicrobial therapy [4]
- Only 1.3% of COVID-19 patients in ICUs, and apparently no patients in other units, developed a healthcare-associated superinfection with antimicrobial-resistant bacteria [19]
- Postponed planned surgical interventions result in fewer antibiotic courses for surgical prophylaxis [42]
- Fewer emergency and planned hospital admissions [43,44], including chronically ill patients (e.g. oncology patients, diabetic patients, transplant patients), resulting in fewer antibiotic prescriptions



Monnet & Herberth, Eurosurveillance, Euro Surveill. 2020;25(43):pii=2001886. <https://doi.org/10.2807/1960-7917.ES.2020.25.43.2001886>; CDC National Healthcare Safety Network Antimicrobial Use Option;

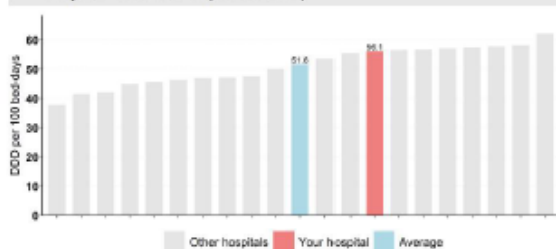


Useful for

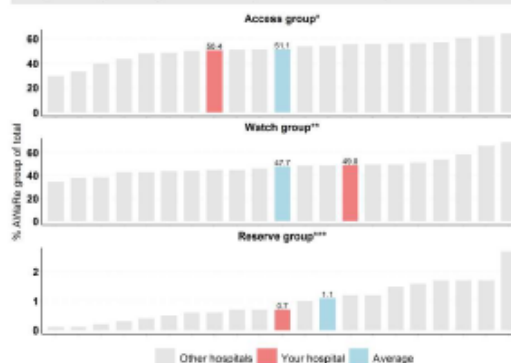
- Infectious diseases specialist
- Clinical/hospital pharmacist
- Hospital leadership (monitoring of indicators)

To compare the consumption of your hospital with other similar size hospitals, identify room for improvement

2.3. Antibiotic consumption in DDD/100 bed-days in your hospital compared to hospitals of similar size (200-500 beds)



2.8. Antibiotic consumption by the AWaRe classification in percent of total at your hospital compared to all hospitals of similar size (200-500 beds)



## Outlook

- Continue yearly surveillance
- Enroll new hospitals for yearly and monthly/quarterly surveillance
- Collection and analysis of monthly data for 2020 (impact of COVID-19)
- Patient-specific data (PhD student (L. Renggli) in collaboration with Beat Sonderegger)
  - More about appropriateness of antibiotic prescriptions:
    - % of antibiotic prescriptions reviewed
    - % of antibiotic prescriptions correctly documented
    - % of patients with antibiotics for a specific indication



You want to participate ? Let us know.  
Contact us !

[catherine.pluess@ifik.unibe.ch](mailto:catherine.pluess@ifik.unibe.ch)  
French- and italian-speaking part

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German-speaking part

[www.anresis.ch](http://www.anresis.ch)

Any questions ?

### III. Presentation: Feedback summary- survey on ASP implementation (local stewardship leads): Progress and Challenges





National Center  
for Infection Control

## Short survey: Antibiotic stewardship implementation in Swiss hospitals.

### Summary

Dr Marcus Eder, Swissnoso

SwissASP networking Zoom call- interactive workshop - 25. November 2020

### Participants, via REDcap, n=21

- Participant roles
- Clinicians 12 (57%)
- Pharmacist 8 (38%)
- Other 1 (5%)


- Hospital size (beds)
- Univ – 6\*
- >500 other - 5
- 200-500 beds - 4
- <200 beds - 5\*\*

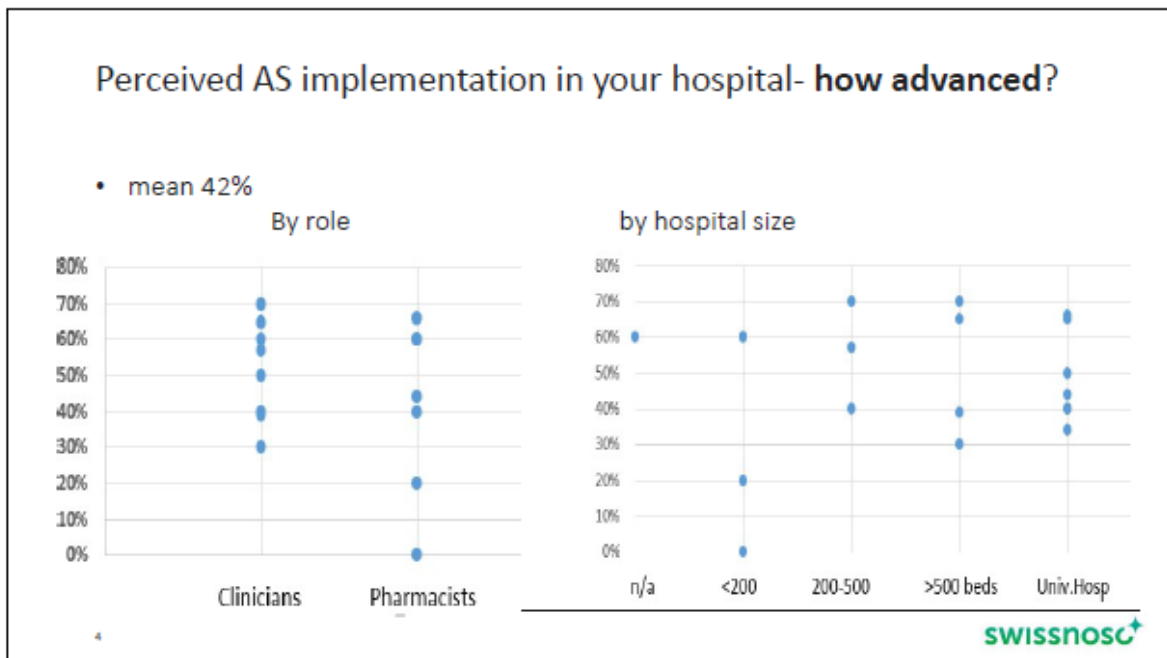
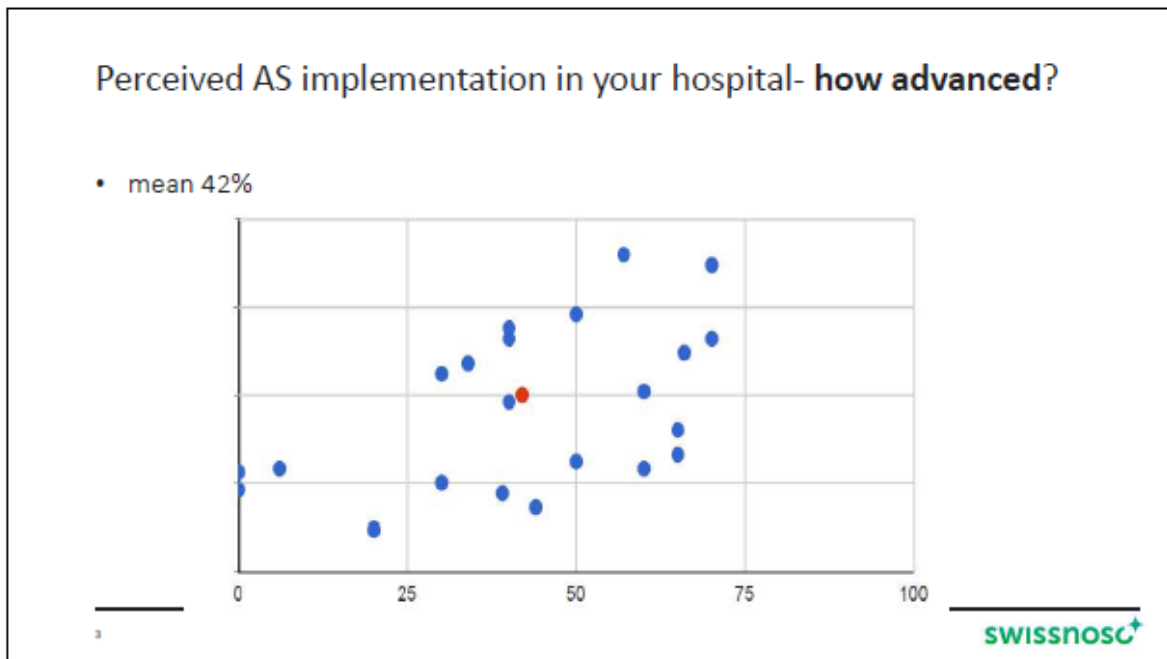
\* 4 participants from same hospital  
 \*\*2 participants from same hospital

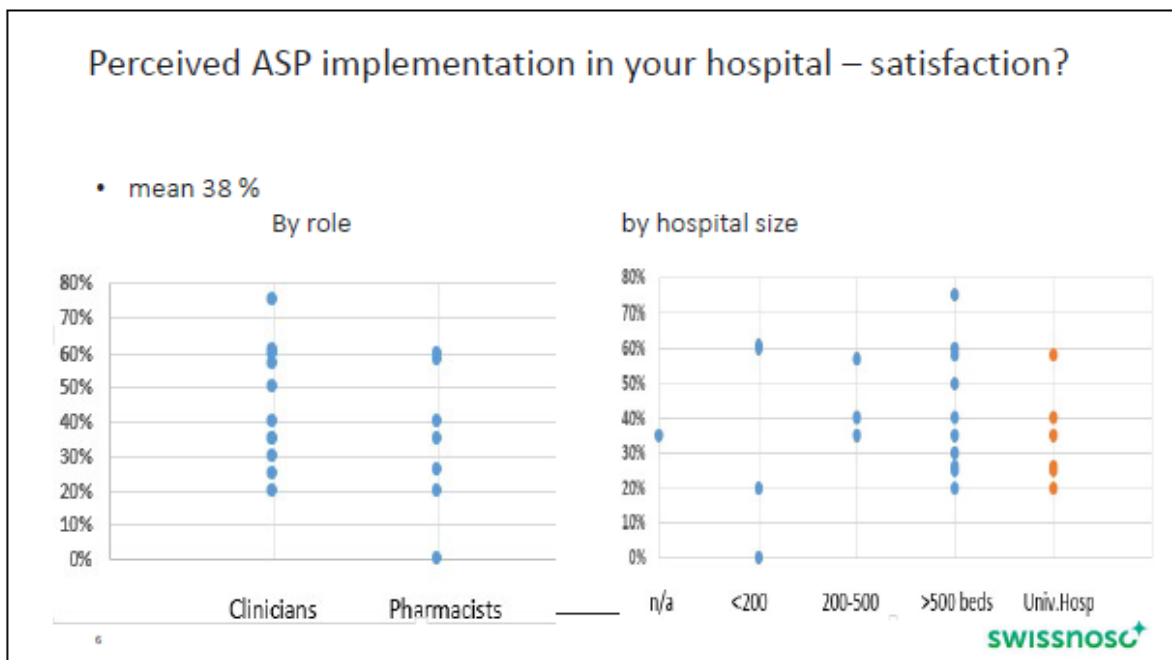
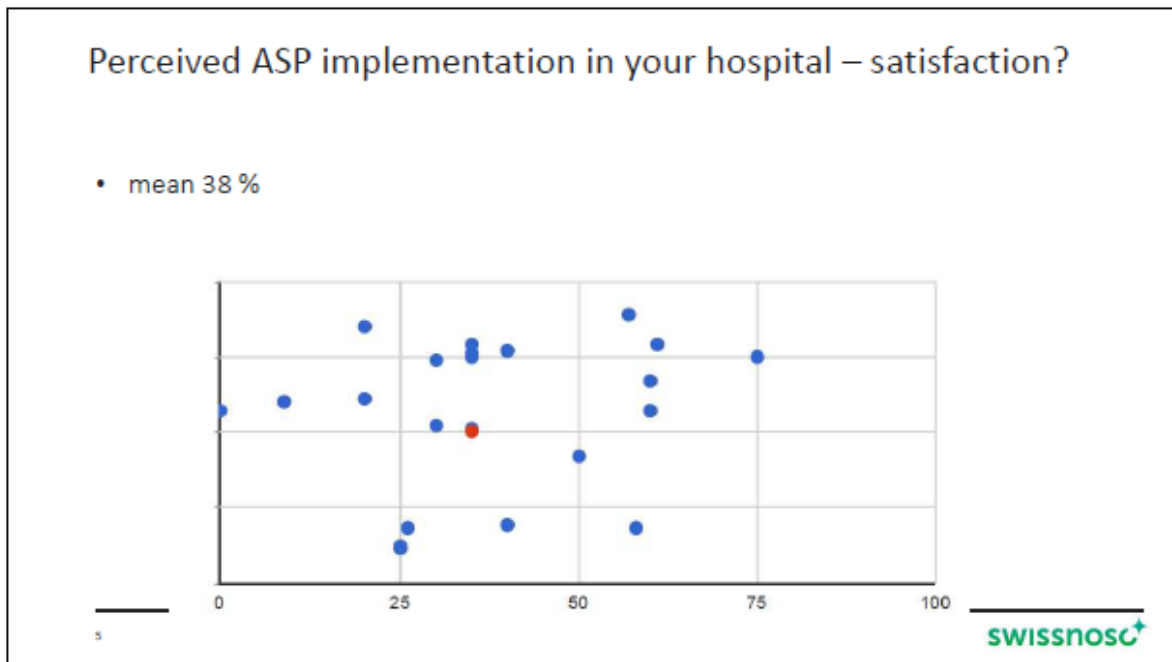
Role	Percentage
Clinician ID	29%
Clinician IPC	19%
Clinician other	9%
Pharmacist	38%
Other	5%

Hospital Size	Percentage
University hospital	29%
Non-univ >500	24%
200-500	19%
<200	24%

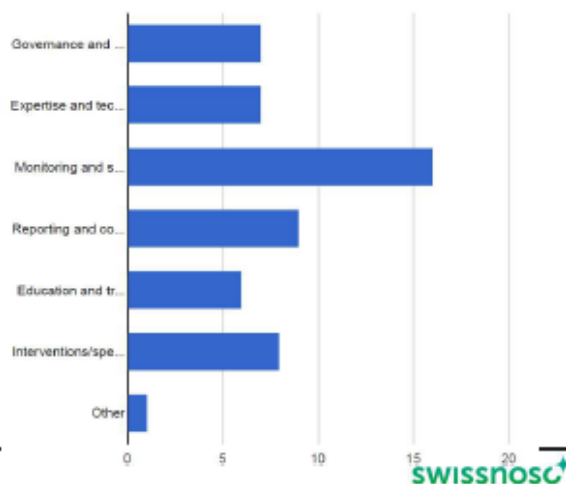






## Progress in which different areas of ASP?

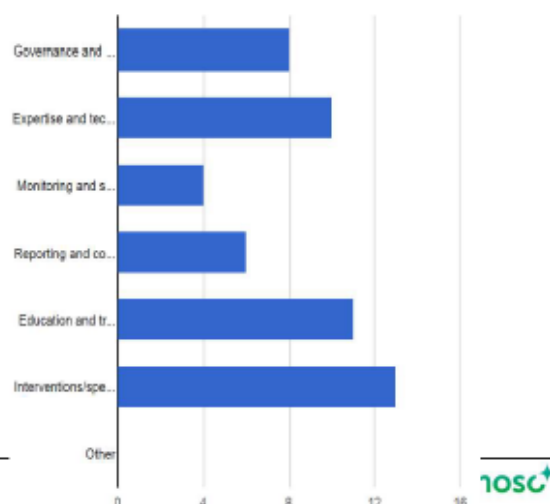
- Governance and accountability  
7 (32%)
- Expertise and technology  
7 (32%)
- **Monitoring and surveillance**  
**16 (73%)**
- **Reporting and communication**  
**9 (41%)**
- Education and training  
6 (27%)
- **Interventions/specific activities**  
**8 (36%)**
- Other 1 (4.5%)



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## Areas of ASP with room for improvement?

- Governance and accountability  
8 (38%)
- **Expertise and technology**  
**10 (48%)**
- Monitoring and surveillance  
4 (19%)
- Reporting and communication  
6 (29%)
- **Education and training**  
**11 (52%)**
- **Interventions/specific activities**  
**13 (62%)**



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## Comments: "Governance and accountability" in your hospital or setting.

### Progress

- Drug Therapeutics Committee/CMO support
- Founded AS group-hospital executive support
- ASP official task (of ID specialist) by the CMO
- Hiring 3 additional clinical pharmacists (AS team)
- Provision of small resources at hospital level for infection specialist
- Directive for all doctors: AB prescription with working diagnosis, diagnostics, and start and end dates. Mandatory review after 5 days (if no indication/new prescription → stop)

### Room for improvement

- Creating a team with dedicated resources and accountability, recognition as priority (hospital)
- More interest in ASP by leading persons/chief physicians
- Financial support (e.g. financing a FTE physician for a ASP)
- Task should be spread also to hospital pharmacy, including resources
- Provision of resources also for settings that are interdisciplinary
- Binding commitment for prescribers, esp. for attending physicians, to respect guidelines

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## Comments: "Expertise and Technology" in your hospital

### Progress

- Second ID specialist, ABS training-pharmacists
- Computerized decision support/ABX use app
- Development of AS monitoring and prescribing restriction tool
- To collect data on antibiotics, first needs access data to check plausibility/validity
- Achieved via new electronic medical record system (structured data, reporting, clinical decision support, transparency)
- Building a 'almost Real-time' tool to quantify and survey antibiotic usage in our hospital

### Room for improvement

- Results/tools developed for COMPASS study to be introduced into daily clinical practice.
- No ABS special structure or official group
- Automatization: platform for reporting, data exportation and analysis
- Automated AB resistance, ward-specific monitoring AMR and targeted interventions
- IT providing specific alerts about ABX use and automatic involvement of the ABS team
- IT Specialist directly involved in ASP project
- continuous staffing

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## Comments: "Monitoring and Surveillance" in your hospital or setting.

### Progress – selection

- Near-Real-time tool to quantify/survey AB use
- IT elaborated appropriate report in ERP/KIS
- Clinics- systems allow efficient data extraction
- In future, use of antibiotics on different wards also monitored by prescribing routines
- New quality indicators linked to CDSS
- Monitoring of HAI, Anresis reporting, current use, DDDs and DOTs/ patient days on various levels/for individual substances.  
Working with ANRESIS PhD Student on patient specific antibiotic consumption data.

### Room for improvement

- Still too cumbersome to get, clean and analyze the data
- Implementation of the Monitoring and Surveillance Tool is slow and hindered by technical issues. Data needs to be validated and feedback-loops are yet to be established

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## Comments: "Reporting and Communication" in your hospital or setting.

### Progress

- Regular consumption reporting to anresis-benchmarking report.
- Resistance and antibiotic consumption report
- ANRESIS data discussed/shared within Drug & Therapeutics Committee and ID specialists; report to commission for infection prevention
- Antibiotic consumption report, yearly communication to head physicians - PPS
- Published guidelines, antibiotic leaflet
- Internal report on resistance data >physicians
- Phone reporting of clinical cases to ID

### Room for improvement

- Ideally dashboards, more frequent feedback with actionable items
- Need easy, fast and real-time consumption data reporting for clinicians.
- Still fine-tuning our consumption data, need to improve communication of those results: Accountability, inter-clinical benchmarking
- Automated reporting (consumption, 'reserve' antibiotics, internal resistance report, trough level reporting for AB such as Vancomycin)
- Monitoring/surveillance tool implementation slow/technical issues. Data need validation, feedback-loops yet to be established

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## Comments: "Education and Training" in your hospital or setting

### Progress

- AB guidelines 'enforced' by ID personnel
- Regular training sessions for mainly internal medicine physicians regarding rational antibiotic use
- Diagnostic guidelines published, training and started to integrate into electronic lab system
- MSc teaching in medicine at the newly started biomedical faculty at USI include basic concepts of AS and appropriate antibiotic prescribing

### Room for improvement

- Better dissemination of guidelines content
- Mandatory AS training for all prescribers, e.g. bi-annually to improve prescribing patterns
- Regular training in nosocomial infections, e.g. through Swissnoso/Anresis
- Mainly rely on ID consults (no training). Consider **targeted interventions/training** in clinics/wards with high antibiotic consumption, e.g. carbapenem use in surgery
- training for nurses, prescribers, pharmacists
- weekly rapports from ID to other doctors

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## Comments: "Interventions and specific activities" in your hospital or setting.

### Progress

- Management pathways/treatment guidelines for most common IDs
- AB prescription App (2019-ongoing updates)
- Web app identifying target patients for ABS
- Last resort AB: validation by pharmacist/ID
- Some clinics: **pharmacists intervene** if mismatch AB prescription vs. guidelines
- Antibiotic rounds (audit and feedback), focus indication, correct switch, and de-escalation
- perioperative prophylaxis, selective reporting
- CDSS in context of a RCT

### Room for improvement

- More pro-active role of pharmacists (technology and HR!), joint rounds with clinical pharmacologists
- Dashboard for ABS team, adequate resources
- Individual/ward-level feedback, education & training interventions
- Alert algorithms on AB indication, doses, anticipated duration of therapies, for certain antibiotics, Penicillin Allergy intervention
- COMPASS study tools → daily clinical practice.
- Regular info on resistance – adequate treatment

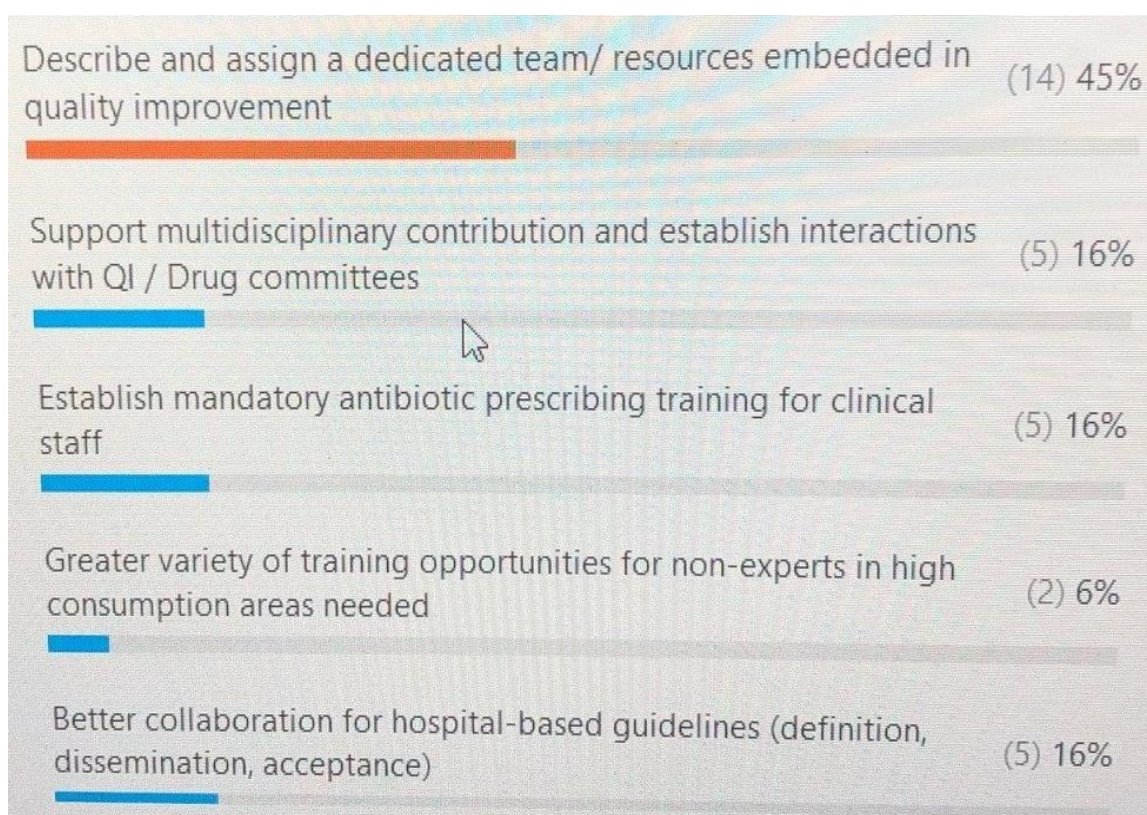
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#### IV. Zoom polling

**Focus area 1: Governance, education and training, and intervention (5 items): Please select 1 item.**

- Describe and assign a dedicated team/ resources embedded in quality improvement
- Support multidisciplinary contribution and establish interactions with QI / Drug committees
- Establish mandatory antibiotic prescribing training for clinical staff
- Greater variety of training opportunities for non-experts in high consumption areas needed
- Better collaboration for hospital-based guidelines (definition, dissemination, acceptance)





## Focus area 2: Monitoring and surveillance, reporting and communication (10 items):

Please select at least one and at most two items.

- Ensure IT resources are allocated for AS to support automation in handling data
- Share electronic decision support tools, especially if not bound to specific IT software
- Allocate resources and create plan for data collection and local sharing
- Improved approaches to data validation
- Clear recommendations for data analysis with script that supports automated analysis
- Define/share quality indicators
- Establish “Dashboards” for near real-time interaction with prescribers/medical staff
- Accountability at prescriber level: evaluation and reporting of divergence from guidance
- Define optimal approaches to internal benchmarking (e.g. between wards/clinical areas)
- Automated reporting of key performance indicators to hospital board and main stakeholders

