



# National Action Plan

## Example from Switzerland

Strategy on Antibiotic Resistance



# Swiss One Health Strategy on AMR



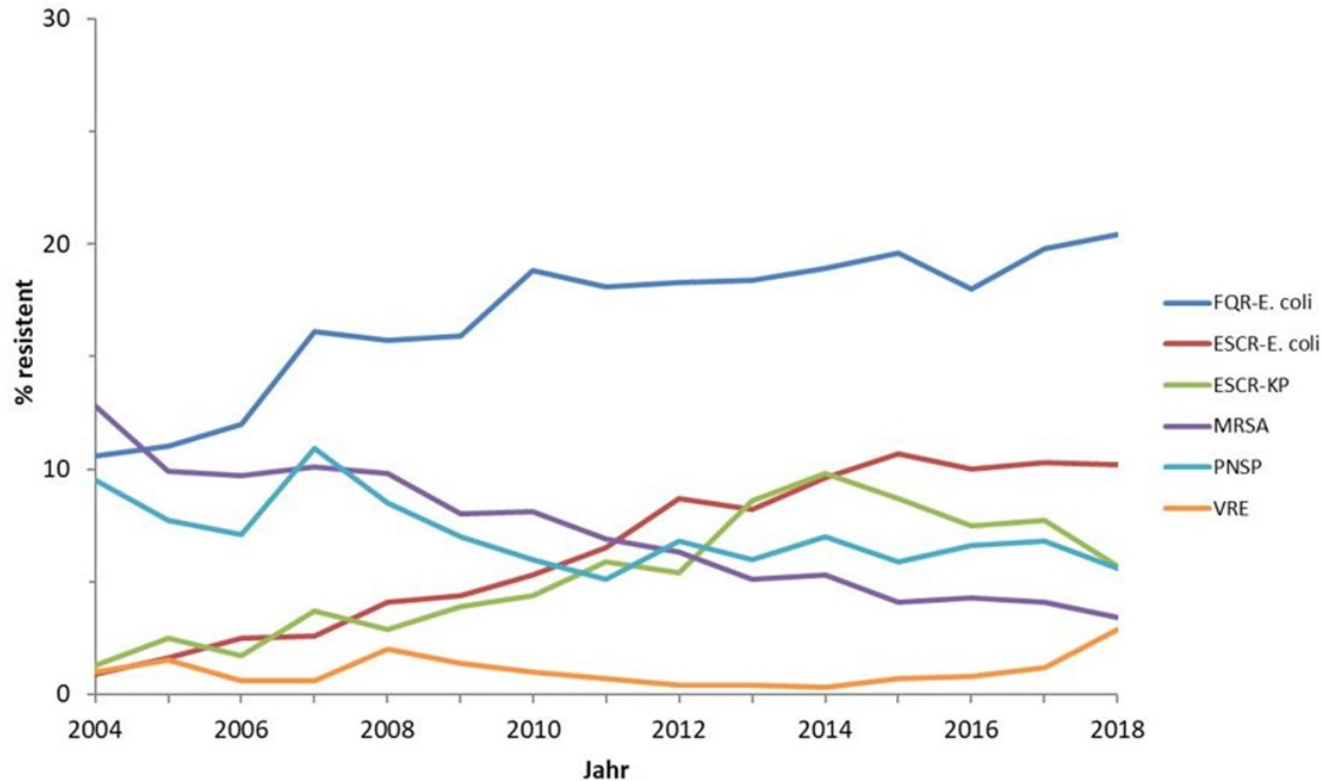
Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

**Federal Department of Home Affairs (FDHA)  
Federal Office of Public Health (FOPH)  
Federal Food Safety and Veterinary Office  
(FSVO)**

**Federal Department of Economic Affairs,  
Education and Research (EAER)  
Federal Office for Agriculture (FOAG)**

**Federal Department of the Environment,  
Transport, Energy and Communications  
(DETEC)  
Federal Office for the Environment (FOEN)**

# Selected multiresistant microorganisms in Switzerland in human medicine



**FQR-E. coli:** Fluoroquinolon-resistent

**MRSA:** Methicillin-resistente *Staphylococcus aureus*

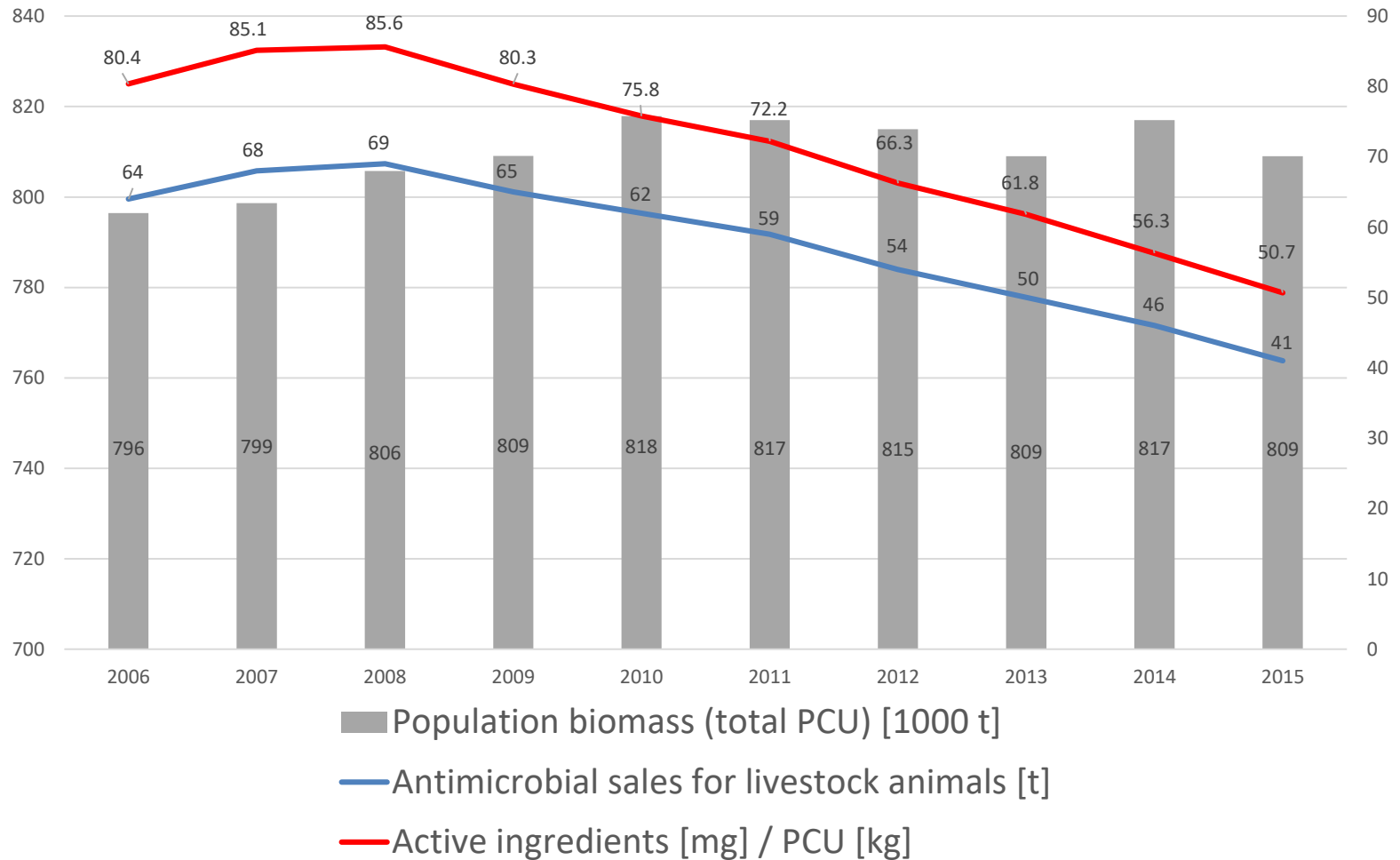
**ESCR-E. coli:** Extended-spectrum cephalosporin-resistent

**PNSP:** Penicillin-resistente *Streptococcus pneumoniae*

**ESCR-KP:** Extended-spectrum cephalosporin-resistent

**VRE:** Vancomycin-resistente Enterokokken

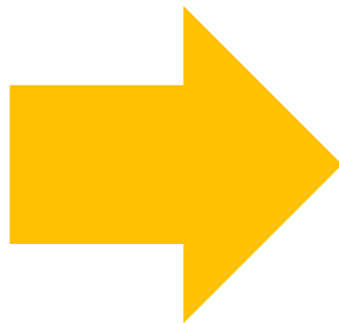
# Veterinary medicine: Sales of antimicrobials



# Surveillance of antibiotic use and resistance patterns is key

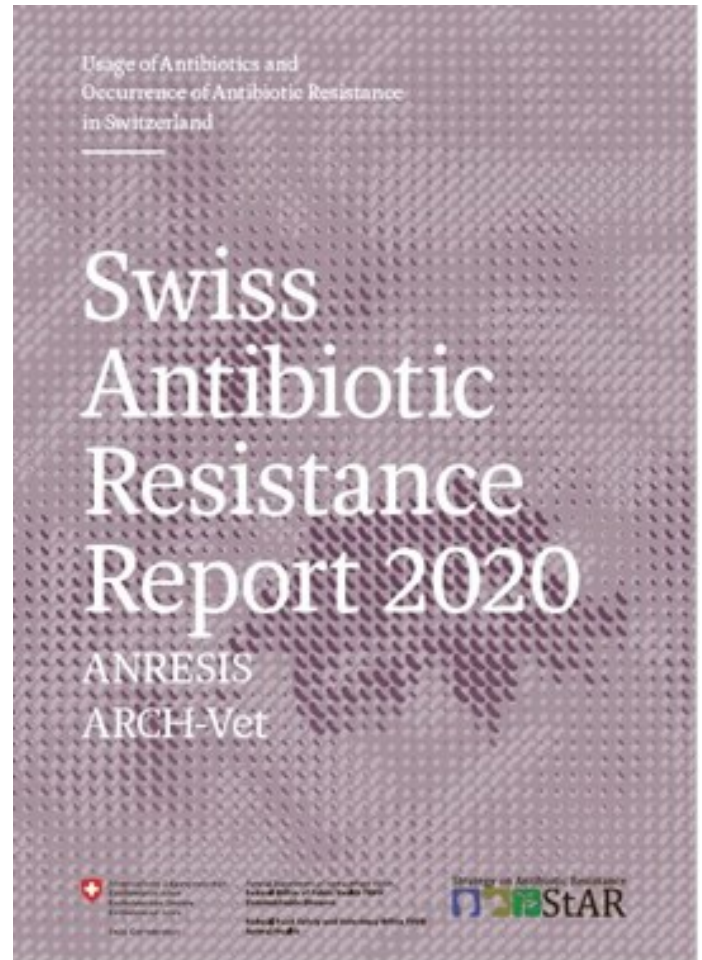
Antibiotic resistances are:

- increasing
- stable
- falling



Depending on:

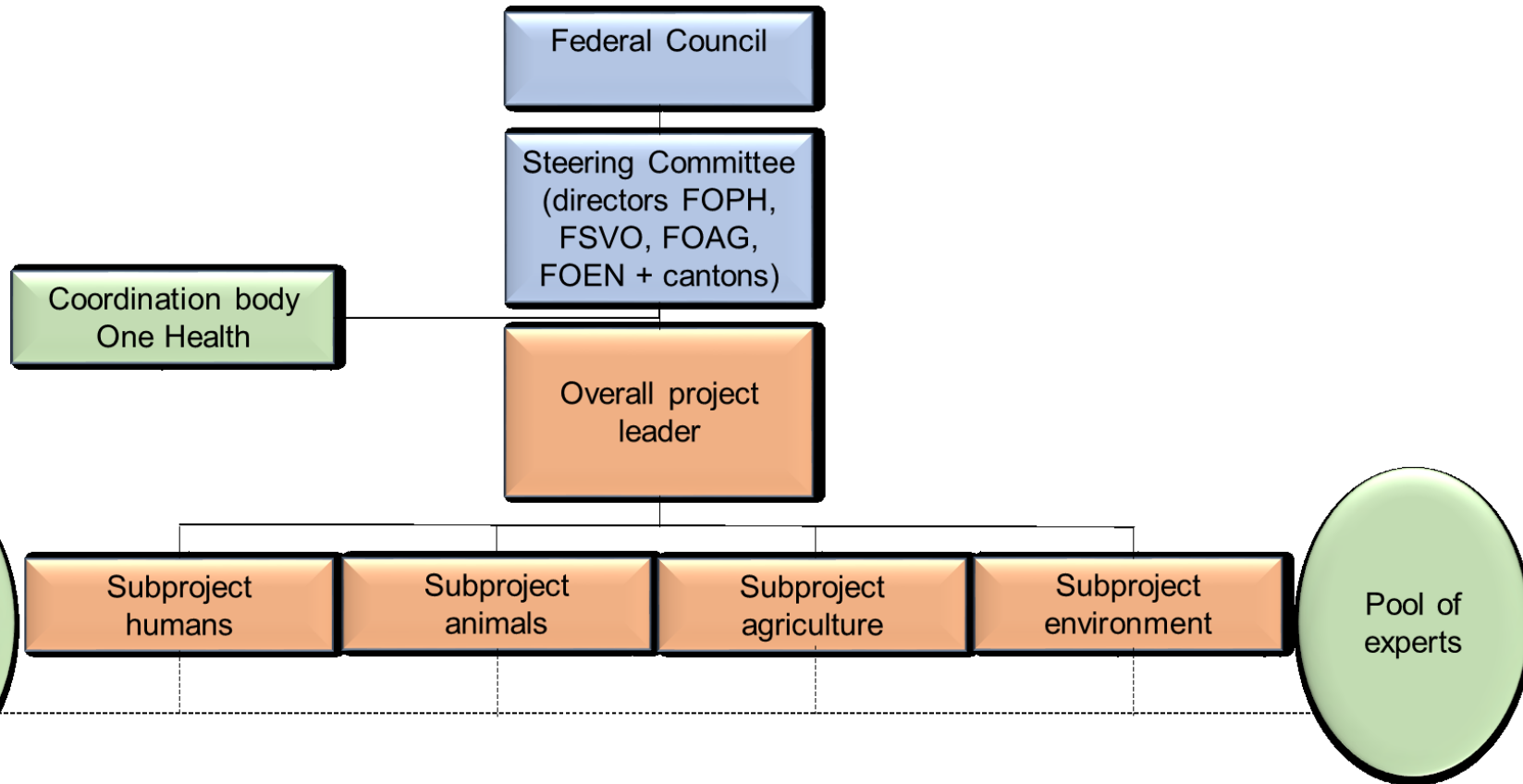
- species
- sampling
- type of antibiotic



# Swiss Strategy on AMR 2016 - 2026

- Developed 2013–2015 by 4 federal offices (health, agriculture, veterinary, environment)
- In close collaboration with stakeholders
- Adopted by Federal Council on 18 November 2015
- **Goal:** Ensure long-term efficacy of antibiotics for humans and animals, while protecting the environment
- Focus is on a **One Health approach**

# Joint implementation



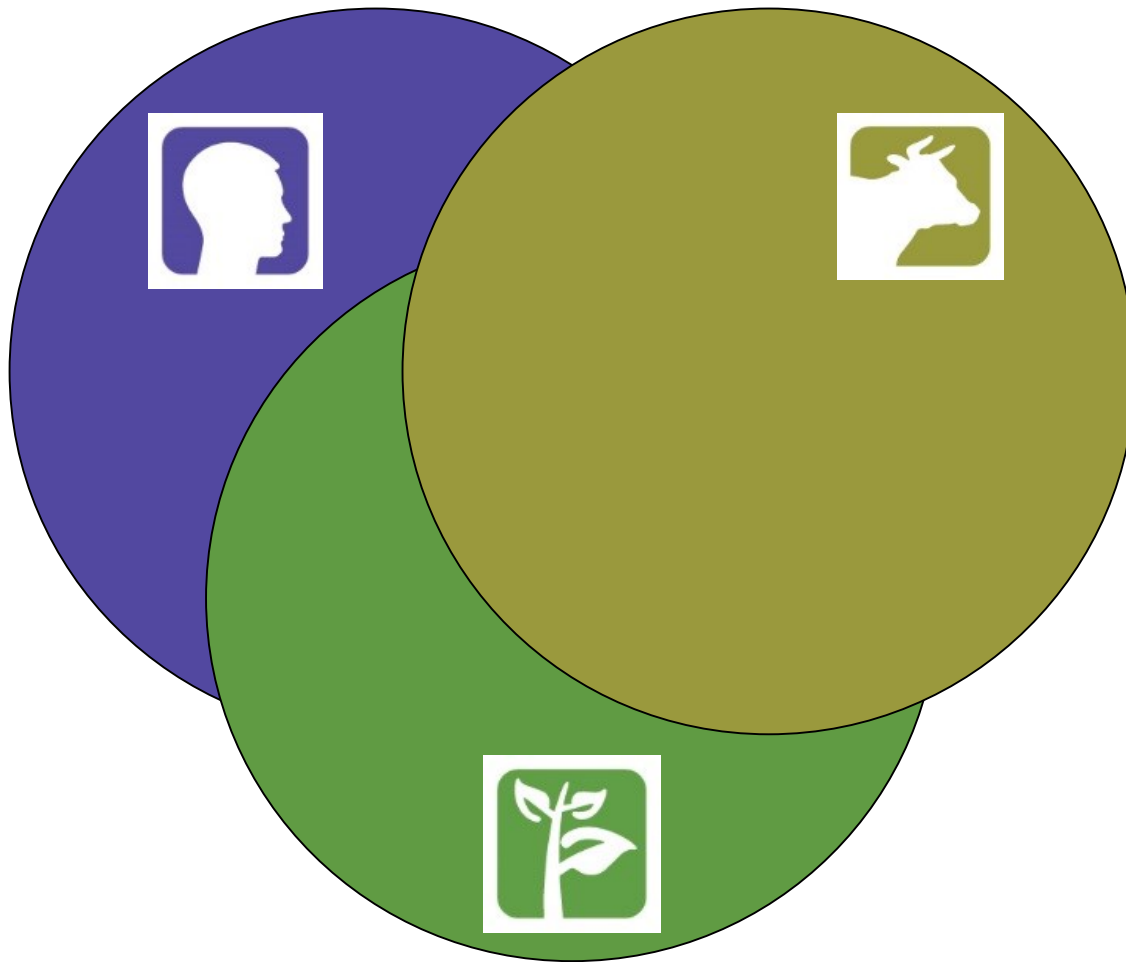
**+ many partners (i.e. learned societies)**




# Eight fields of action





# 35 measures



-  Human sector
-  Animal and agriculture sector
-  Environment

# One Health Stakeholder **Communication**

- Creating a brand
- Yearly progress report
- Website [www.star.admin.ch](http://www.star.admin.ch)
- Newsletter to all stakeholders

# One Health **Public Perception**

- Consumer perception on risks/ benefits of antibiotics in humans /companion animals
- Analysis of the public discourse, roles and responsibilities
- Results used for communication activities and awareness raising:
  - Patient leaflets
  - Information for farmers
  - Public campaign

# Challenges and Benefits of the One Health Approach

## **Challenges**

- Slow, time consuming
- Differences in cultures
- Needs constant commitment of everybody
- Needs constant advocacy across all sectors

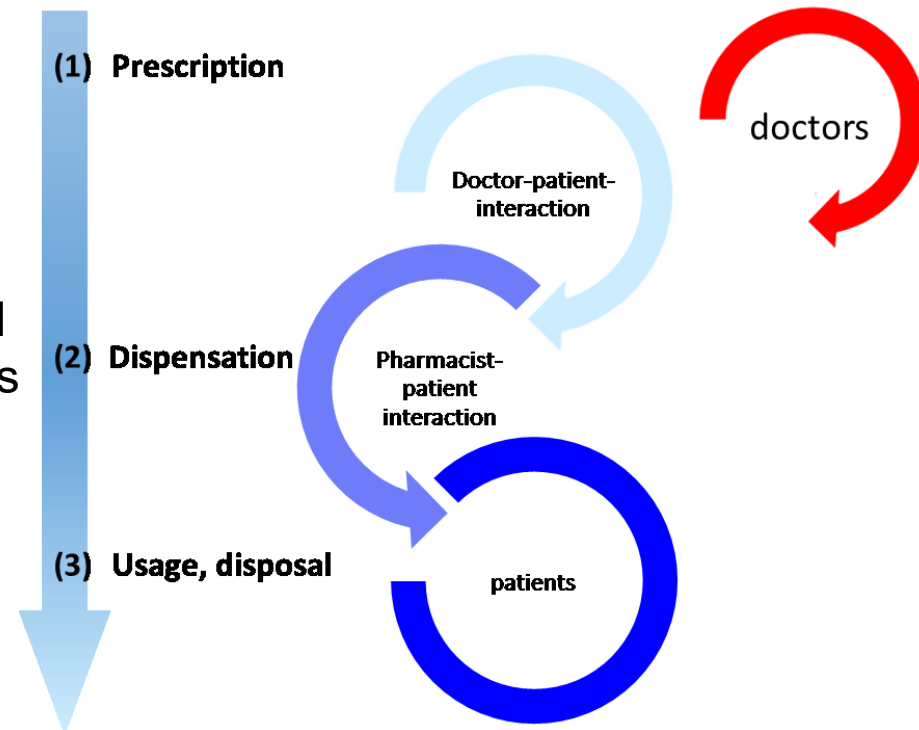
## **Benefits**

- Good acceptance of mutual responsibility
- Sustainability
- Ignites One Health thinking among stakeholders
- Economic benefits (?)

# Examples of implementation



- Development of **prescription guidelines** in collaboration with medical societies, stage-by-stage publication starting 2018
- Establishment of a National **Reference Laboratory** for the identification of new resistances and the development of quality standards
- **Communication:** Addressing key moments of AB usage, public campaign



# Patient leaflet an Website on ABR



## IF YOU ARE GIVEN ANTIBIOTICS...

### DO THE RIGHT THING

**PLEASE DO PAY ATTENTION**

- do not save antibiotics** according to your doctor's prescription, i.e. the right dose for the right amount of time.  
The individually prescribed dose guarantees that your antibiotics are as effective as possible. Keep taking the prescribed course of antibiotics even if you start to feel better after a few days.
- do not skip doses.**  
If you forget to take your antibiotics, it may prolong the infection, which will have a negative effect on your recovery. If you experience side effects, please speak to your doctor or pharmacist.
- do not share antibiotics** prescribed for you with others.  
Your specific antibiotic has been prescribed for your condition to meet your special needs.
- please return partially used packs.**  
Do not dispose of partially used packs in (if your hospital needs) the antibiotic may enter the environment (e.g. contaminating water mains). Do not keep antibiotics in your other drawers.

### ANTIBIOTICS KEY INFORMATION ATA of LANCE

Antibiotics are medicines to kill bacteria or prevent their spreading. They are used to treat bacterial infections in humans and animals. Different diseases require their specific antibiotics. Antibiotics do not work for viral infections (e.g. a cold).

Please speak to your doctor or pharmacist for further information.

[www.correct-use-of-antibiotics.ch](http://www.correct-use-of-antibiotics.ch)

Protect yourself and your family by using antibiotics correctly.

## CORRECT USE OF ANTIBIOTICS

## IF YOU ARE NOT GIVEN ANTIBIOTICS...

### IMPORTANT WHAT YOU NEED TO KNOW

- Use of antibiotics is only effective to treat bacterial infections.**  
Some bacterial infections may clear up on their own without antibiotics. Your doctor will only prescribe antibiotics not until really needed. Antibiotics do not work for viral infections (e.g. flu or cold).
- In many cases, your body's immune system is strong enough.**  
A healthy body generally fights simple infections with great efficiency. Fever, for example, is a sign of an active reaction of the immune system.
- Incorrect intake can cause resistance to antibiotics.**  
Some of us taking antibiotics have lost their efficiency to fight resistant bacteria. Therefore treatment of infectious diseases has become much more difficult or may even lead to failure of treatment.

**Antibiotics can sometimes produce harmful side effects.**  
Used incorrectly, the side effects of antibiotics may outweigh the benefits, as the antibiotics, for example, could harm and reduce the essential bacteria and even support the development of resistance against antibiotics.

### RESISTANCE WHEN ANTIBIOTICS NO LONGER WORK

Antibiotic resistance means that bacteria do not respond or respond less effectively to antibiotics. Increased or misuse of intake of antibiotics can help the development of resistance of this kind. Resistant bacteria can be transmitted further people.

Please speak to your doctor or pharmacist for further information.

[www.correct-use-of-antibiotics.ch](http://www.correct-use-of-antibiotics.ch)

## CORRECT USE OF ANTIBIOTICS

**A joint campaign**

Initiated by the Swiss

Suchbegriff eingeben

# Akute bakterielle Sinusitis (D)

▸ Diagnose

▾ Indikation zur antibiotischen Therapie

## Initiales Management (Erwachsene & Kinder)

- Meist abwartendes Verhalten («watchful waiting») gerechtfertigt.

## Indikation für Antibiotika-Behandlung bei

- **Langdauernde Symptome:**
  - Symptome vereinbar mit akuter Rhinosinusitis
  - ohne klinische Besserung nach  $\geq 10$  Tagen
- **Schwere Symptome oder Anzeichen von**
  - hohem Fieber ( $\geq 39,0^\circ\text{C}$ ) und
  - eitriger Nasenausfluss oder Gesichtsschmerzen
  - die mindestens 3-4 aufeinanderfolgende Tage anhalten
- **Sich verschlechternde Symptome nach initialer Besserung**
  - Fieber, Kopfschmerzen oder vermehrtem Nasenausfluss
  - nach typischer viralen Infektion der oberen Atemwege (URI)
  - die 5-6 Tage andauerte und sich anfänglich verbesserte ("double-sickening")

Guidelines hilft Ihnen, Ihre Leitlinien zu verwalten und zu teilen.

[Mehr über Guidelines.ch](#)

### OPERATIONEN

[PDF erstellen](#)

### INFORMATIONEN

Verantwortlicher Autor  
SSI Guidelines

Co-Autoren -

Gültig für [SGInf-Guidelines...](#)

Stichworte -

# Link resistance data to prescription guidelines via smart phones



Search Filters

Search filters



Population and

Offsets

Region

All regions

West

East

South

Geneva

Central West

Central East

North East

North West

Sample Size N ≥ 20

0 ≥1000

Susceptibility ≥20%

0% 100%

	Amoxicillin	Penicillin G	Penicillin V	Flucloxacillin	Amoxicillin/Clavulanate	Piperacillin/Tazobactam	Cefazolin	Cefuroxime	Cefuroxime axetil	Cefotaxime	Ceftazidime	Ceftriaxone	Cefepime	Ertapenem	Imipenem	Meropenem	Aztreonam	Ciprofloxacin	Levofloxacin	Moxifloxacin	Norfloxacin	Ofloxacin	Gentamicin	Tobramycin	Azithromycin	Clarithromycin	Erythromycin	Clindamycin	Teicoplanin	Vancomycin	Linezolid	Doxycycline	Minocycline			
	Penicillinase-s	Pen	Beta-lact	1G C	2G Cepha	3G Cephalosp	4G C	Carbapenem			Mon	Quinolone				Aminogly	Macrolide	Linc	Glycopep	Oxa	Tetracycline															
	Beta-lactam														Quinolone				Aminogly	Macrolide	Linc	Glycopep	Oxa	Tetracycline												
<i>Acinetobacter sp.</i>	4		7 67	0	8 6	3 54 7	84	2 92 90	9	91 91	82	91 92	8					91 92	61 0	67	0 0										73 50					
<i>Bacteroides fragilis</i>	2 1		86 87				38	78 96 95		40 81	38	32 67	50	14 6																						
<i>Burkholderia sp.</i>			8 73		29 14	50 76 56	75											32 67	50				14 6													
<i>Campylobacter sp.</i>	91		96 0				0											42 67				94		98 97 96		44							61			
<i>Citrobacter sp.</i>	0 0		57 89		56 60	88 90 89	98	100 100 100	83	97 96 97 95 98								97 96 97 95 98				99 97												92 61		
<i>Enterobacter sp.</i>	0		0 77		37 28	75 76 76	92	92 99 99	67	95 95 96 92								95 95 96 92				98 97												81 62		
<i>Enterococcus faecalis</i>	99 99		0 99 99		1 0			50 100 100		94 94 94 88								94 94 94 88				2 0		0 0 0		0		100 100	100		23					
<i>Enterococcus faecium</i>	24 24	2	25 17		0 1		0	0 14 30		28 28 24 18								28 28 24 18				3 0		1 1 0		2	98 97	100		70						
<i>Escherichia coli</i>	55 50		79 93		85 83	92 92 92	93	100 100 100	75	82 81 84 78 82								82 81 84 78 82				93 90				83 75	27 60						75 71			
<i>Haemophilus influenzae</i>	64 52		87 87		85 53	96	99 97		50	97 98 98								97 98 98				97												50		
<i>Helicobacter pylori</i>	93																	69																98		
<i>Klebsiella sp.</i>	0		85 88		83 85	91 92 92	93	99 99 99	75	89 88 92 86 95								89 88 92 86 95				96 90					50		25	0 50				87 86		
<i>Moraxella catarrhalis</i>	2 1		96		26	96	96			99 99								99 99					17		98 91 92											
<i>Morganella sp.</i>	0 0		0 96		7 1	86 88 92	99	99 79 100	94	89 91 90 87								89 91 90 87				94 96			50									0 0		
<i>Neisseria gonorrhoeae</i>		29																52																	33	
<i>Neisseria meningitidis</i>		48																96																		
<i>Proteus mirabilis</i>	68		93 99		97 97	98 99 98	99	98 89 100	98	84 85 83 83 81								84 85 83 83 81				87 89													0 0	
<i>Pseudomonas aeruginosa</i>	0 50		0 86		1 1	1 87 6	91	0 86 87	38	84 78 20 74 64								84 78 20 74 64				92 95					50								2 0	
<i>Salmonella sp.</i>	75		68 67		1 1	68 68 68	68	68 68 68	68	67 68 68 68 68								67 68 68 68 68																		75



# Examples of implementation



- Revision of **legislation**: Farmers have less access to AB
- Development of system to collect veterinary **prescription data** (IS-ABV):
  - Generates knowledge
  - Enables targeted measures
  - Allows follow-up on effects

# Examples of implementation



- **Upgrading of waste water treatment plants** with additional processes for the elimination of micropollutants (incl. AB)
  - ➔ lowered input of AB in the environment

# Thank you!

For more information:

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