



Vall Companies
G R O U P

**IMPACT OF DISEASES ON
THE AB CONSUMPTION
INDEX. REDUCTION
THROGUH VACCINATION**

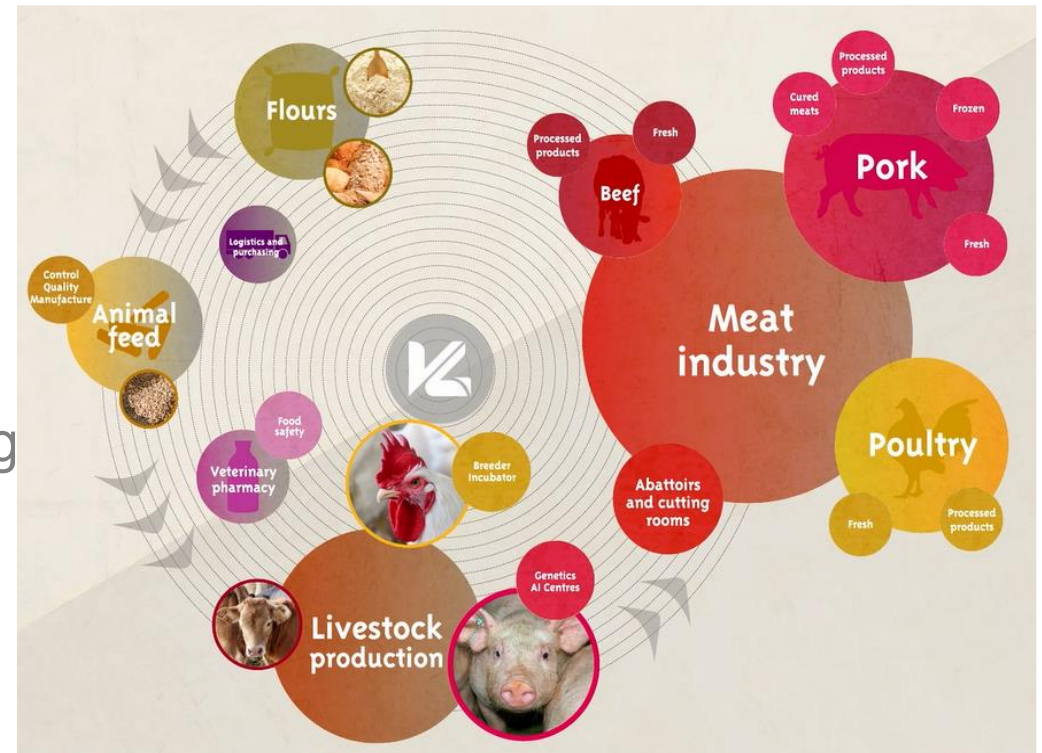
Responsible use of antibiotics



- The consumer demands NAE meat (Non Antibiotic Ever).

- **Challenges:**

- Animals get sick
- Welfare
- Disease dissemination
- Veterinary judgment
- Is not a matter of food safety
- What's wrong with a treated pig
- Consumer education





- **Vall Companys use of antibiotic index**
 - Calculation
 - Comparison with the French and Dutch model
- **Economics vs index**
- **Disease influence in the index in the finishers**
 - APP
 - Swine Dysentery
 - PRRS
 - SIV
 - PCV 2
 - Viral Diarreas
 - Mycoplasma
 - Glasser disease
 - E Coli diarrea
- **Use of vaccination to reduce the index**

Antibiotics use indicators



Dutch (MARAM-2008)

AB consumed

/Daily dose

Kg treated meat

/n° animal*Kg animal
(70 kg pig)

Indicador (DDD)

French (ANSES-2014)

AB consumed

/Daily dose*days
of treatment

Kg treated meat

/n° animales*Kg
Animal (live
slaughter
weight)

Indicador (ALEA)

Company

AB consumed

/Daily dose

Kg treated meat

/Kg animales
salida granja

Indicador

Economic

AB consumed

*Amount

/100 Kg
animales
salida granja

Indicador



- **Finisher total weight out**

- 1000 pigs
- In our system 100,000 Kg.
- In Holland 70,000 Kg.
- In France 100,000 Kg
- ESVAC 65,000 Kg

- **Amoxicillin indicator**

- 1 DDD will be $100,000 \text{ kg} * 20 \text{ mgr/kg/day} = 2 \text{ Kg}$ of amoxi will be 1DDD (company)
- 1 DDD will be $70,000 \text{ Kg} * 20 \text{ mgrs/kg/day} = 1,4 \text{ Kg}$ of amoxi will be 1DDD (dutch)
- 1 DDD will be $100,000 \text{ kg} * 200 \text{ mgrs/kg/treatment} = 10 \text{ Kgs}$ of amoxi will be 1DDD (french)

Example of calculation



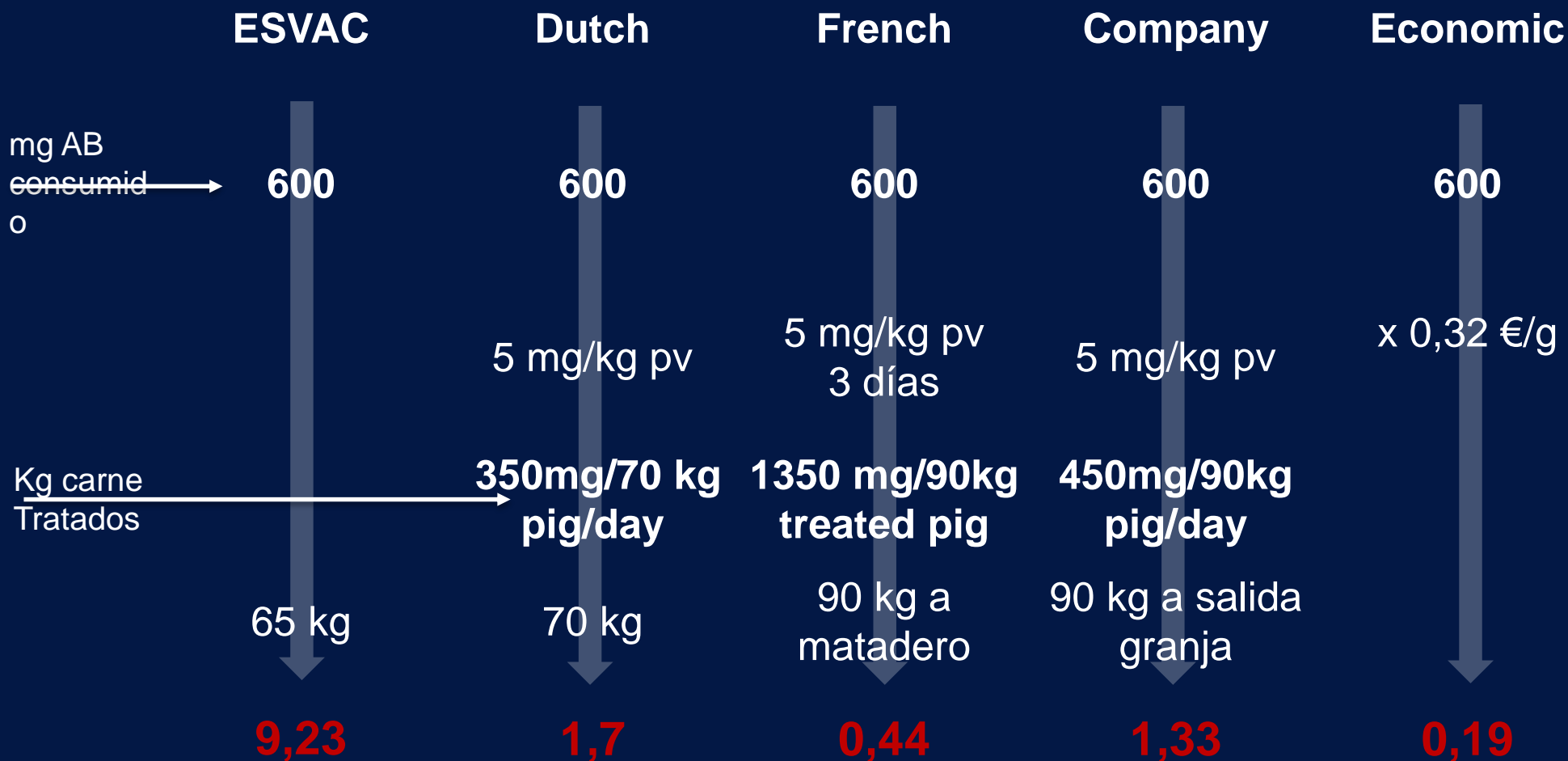
Example 1: Treatment with doxycycline for one week a 40 kg pig

	ESVAC	Holandés	Francés	Compañía	Económico
mg AB consumido	2574	2574	2574	2574	2574
Mg needed per day		10 mg/kg pv 70 Kg*10mg/kg	10 mg/kg pv 7 days 90K+10m/7	10 mg/kg pv 90 Kg*10mg/kg	x 0,07 €/g
Weight	65 kg	70 kg	90 kg weight out	90 kg weight out	
Cost	39,6	3,7	0,4	2,9	0,45

Index calculation



EXAMPLE 2: Treatment with enrofloxacin for three days in a 40 kg pig



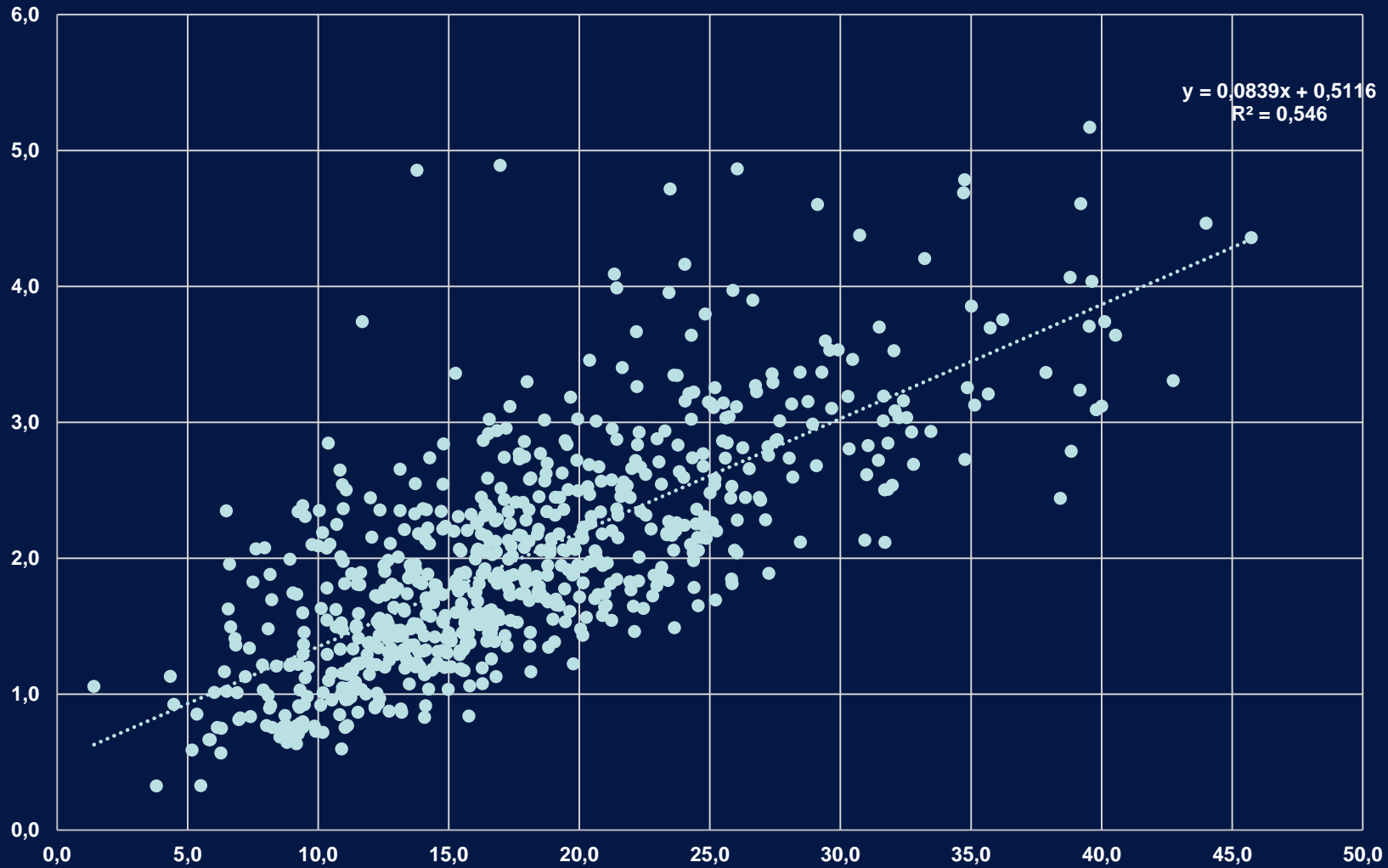
Index calculation



Example 3: Treatment with one shot of Tulathromycin in a 100 kg pig

	ESVAC	Holandés	Francés	Compañía	Económico
mg AB consumido	250	250	250	250	250
		2,5 mg/kg pv	2,5 mg/kg pv 1 day	2,5 mg/kg	x 0,03 €/mg
Mg needed per day		70 Kg*2,5mg/kg	100 kg*2,5/1	100 kg *2,5mg/kg	
	65 kg	70 kg	100 kg weight out	100 kg weight out	
	3,84	1,42	1	1	7,5

Economics (€/100 kg) vs VC Index





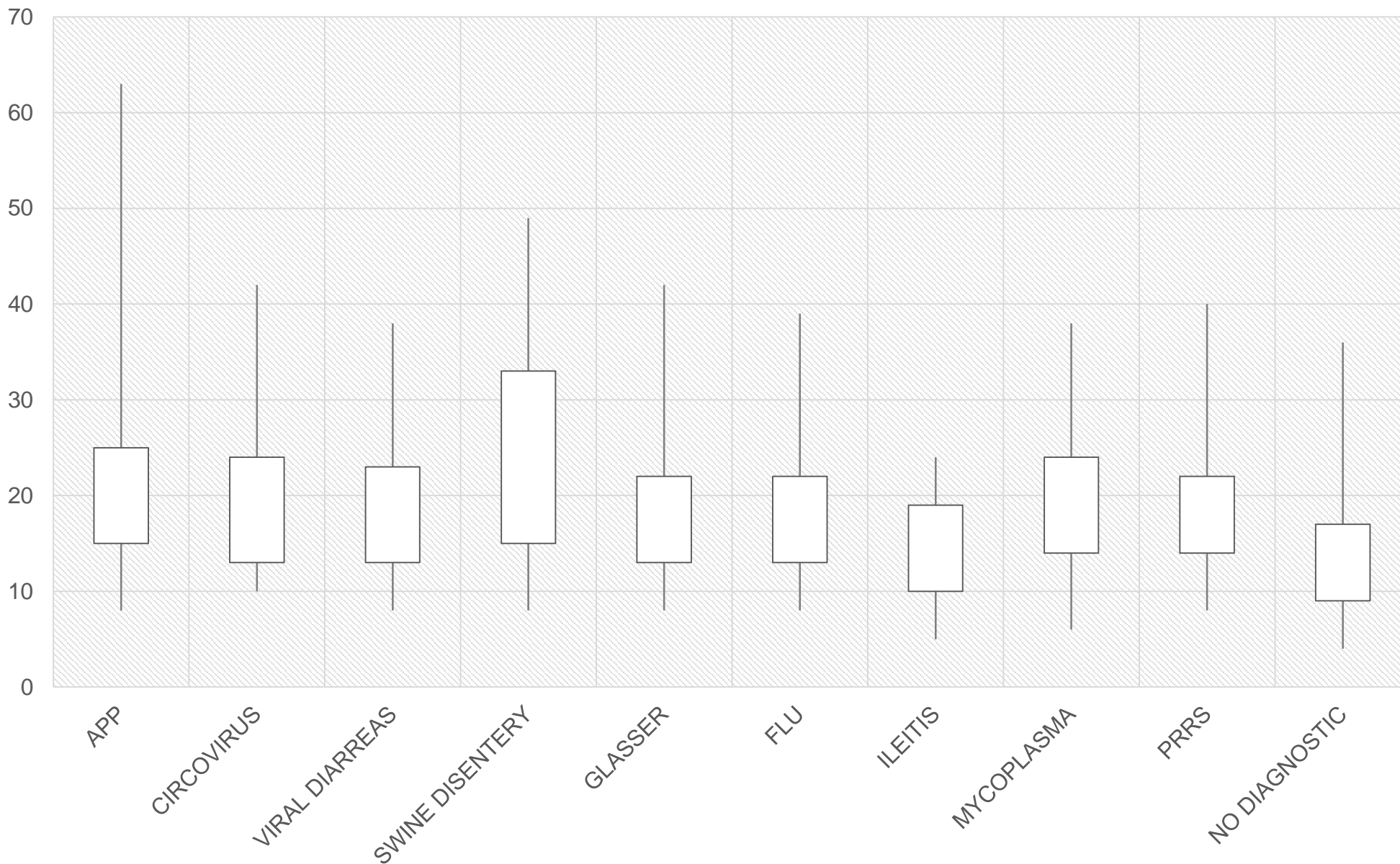
- **In the next future, treatment strategies may not be exclusively based in the cost/efficiency criteria, but also in the reduction in the number of treatment, DDD's**

Diseases and Index

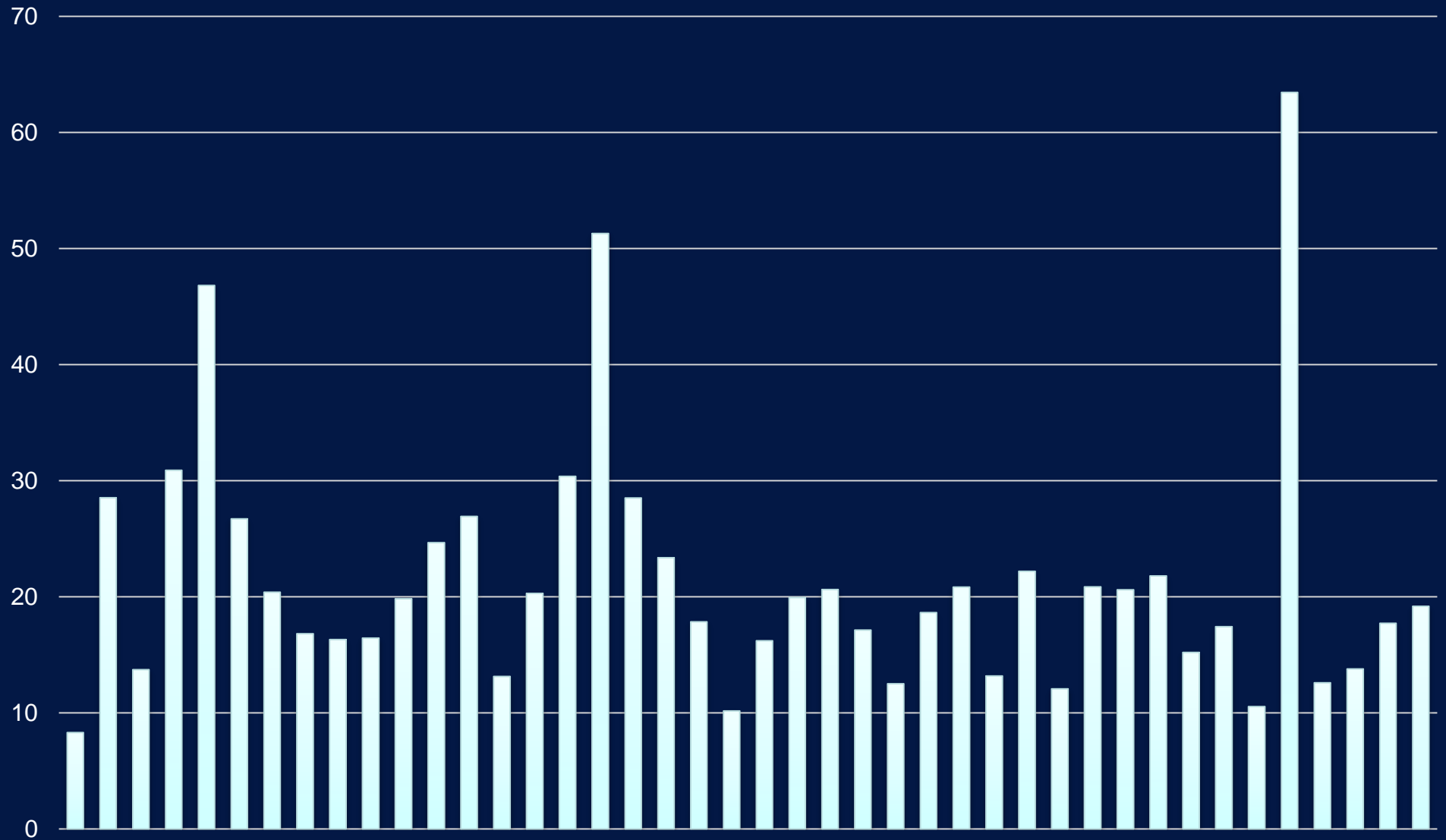


	VC INDEX	Medic.€ /100kg
APP	21,75	2,6
CIRCOVIRUS	20,39	2,1
VIRAL DIARRHEAS	19,2	2,2
DISENTERIA	27,66	2,7
GLÄSSER	18,9	1,9
FLU	19,1	2,4
ILEITIS	15,4	1,8
ENZOOTIC PNEUMONIA	20,3	2,3
PRRS	19,2	2,1
NO DIAGNOSTIC	14,2	1,6

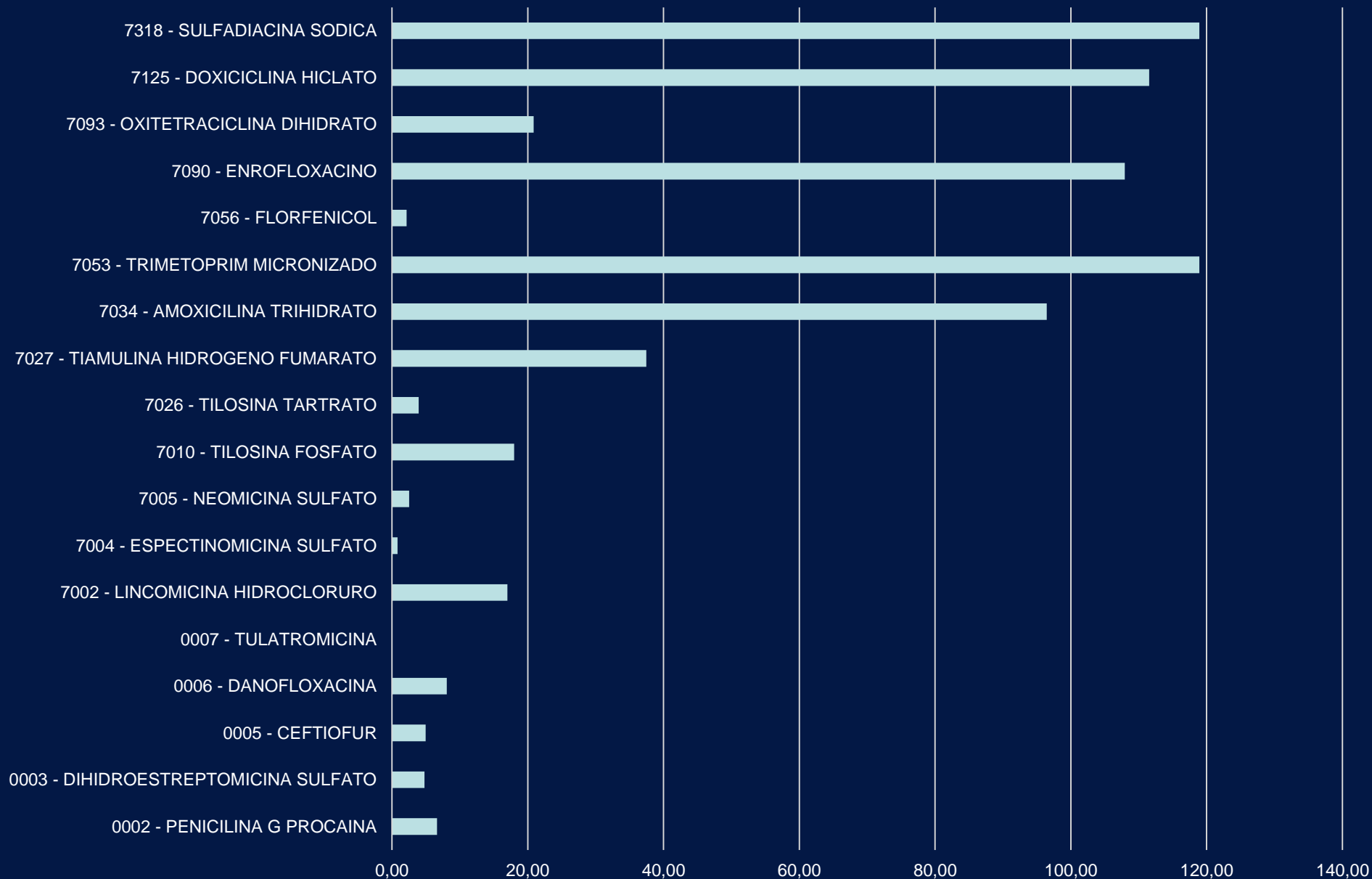
AB CONSUMPTION INDEX/DISEASE



APP Global Index (21,7)



Active principles used in APP outbreaks



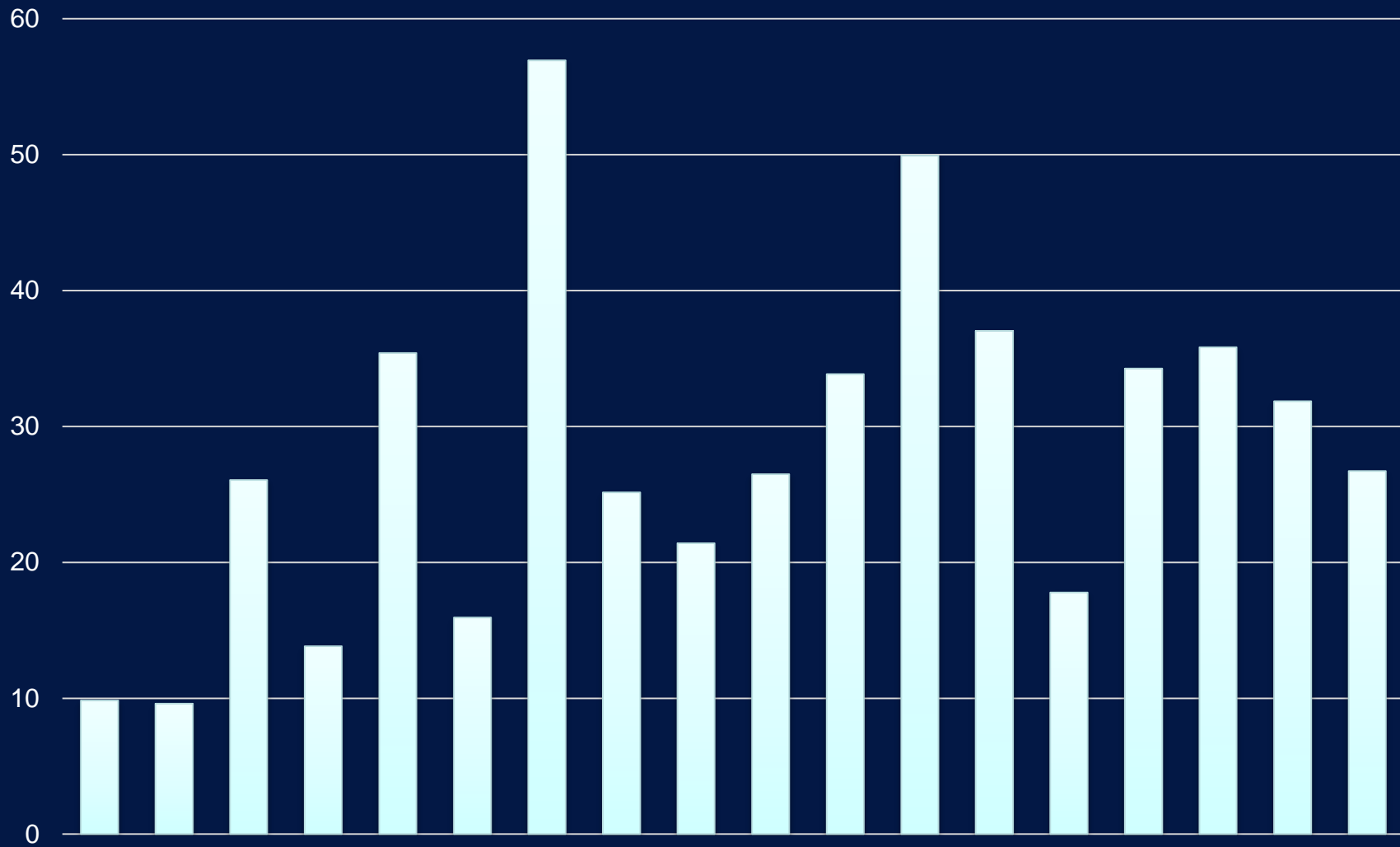
App vaccinated vs non vaccinated



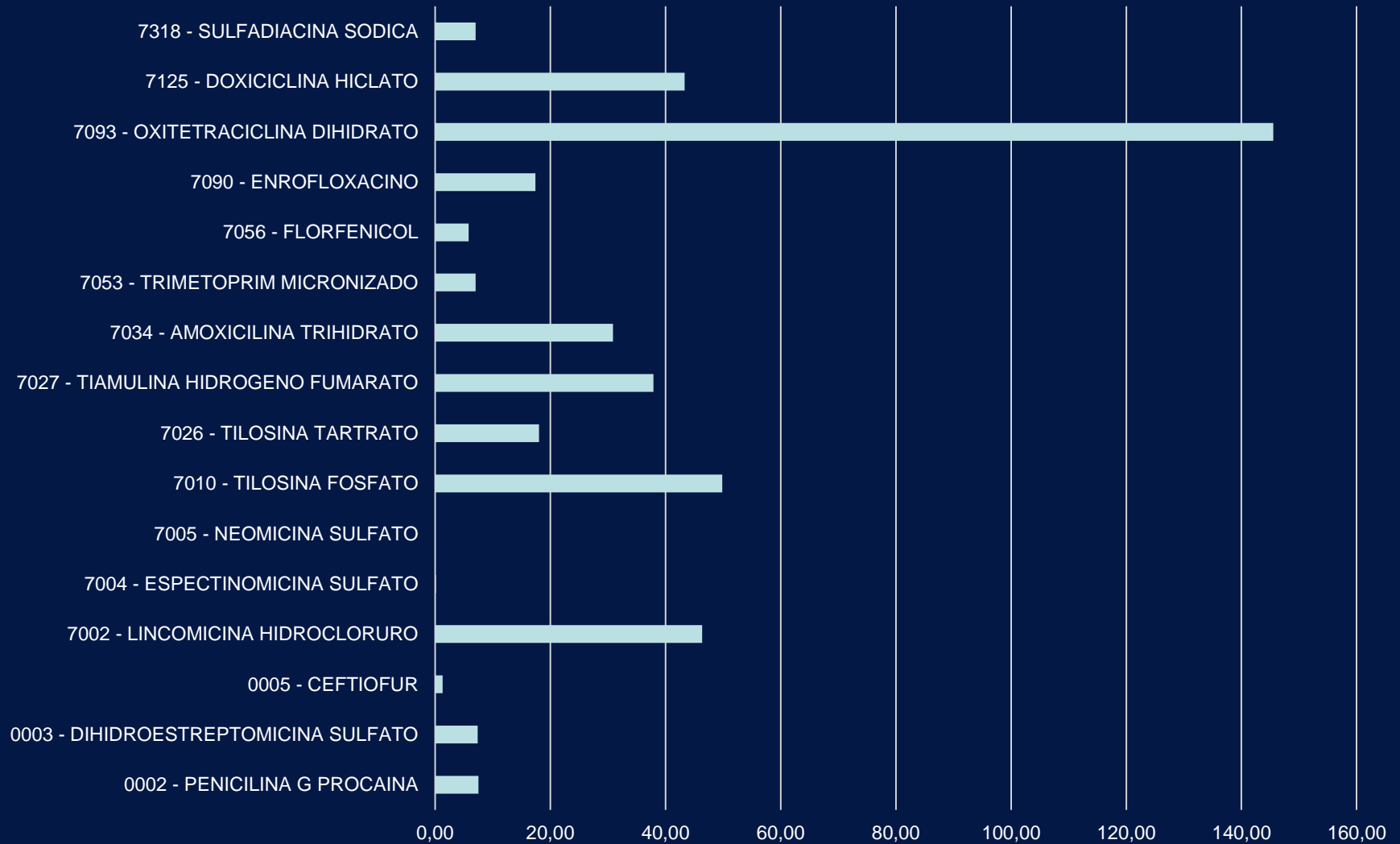
Group	Pigs	VC Index	Med (€/100 kg)	Injectable	Oral	Feed	Vaccine cost
App Vaccinated	35080	17,7	2,9	0,9	0,8	0,3	0,9
Non App vaccinated	44798	21,7	2,1	0,5	1	0,4	0,2

20 % reduction

Swine Disentery total index (27,6)



Active principles swine Dysentery





- **Autogenous vaccines**

- Sow vaccination
- Reduce vertical transmissión and clinical signs in the sow population
- In our experience very effective

- **Outbreak management**

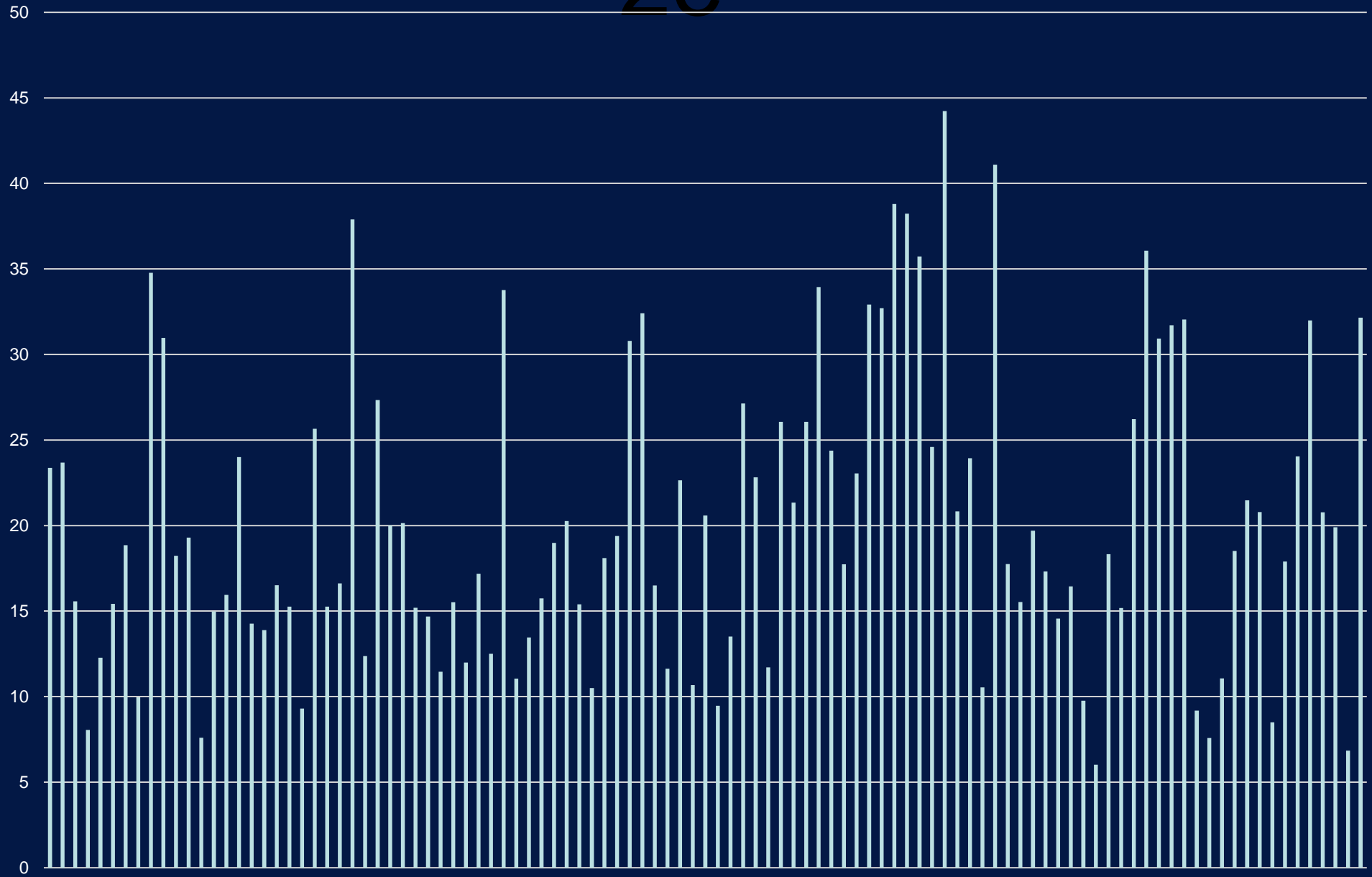
- Pig Zix

- **Sow herd medication**

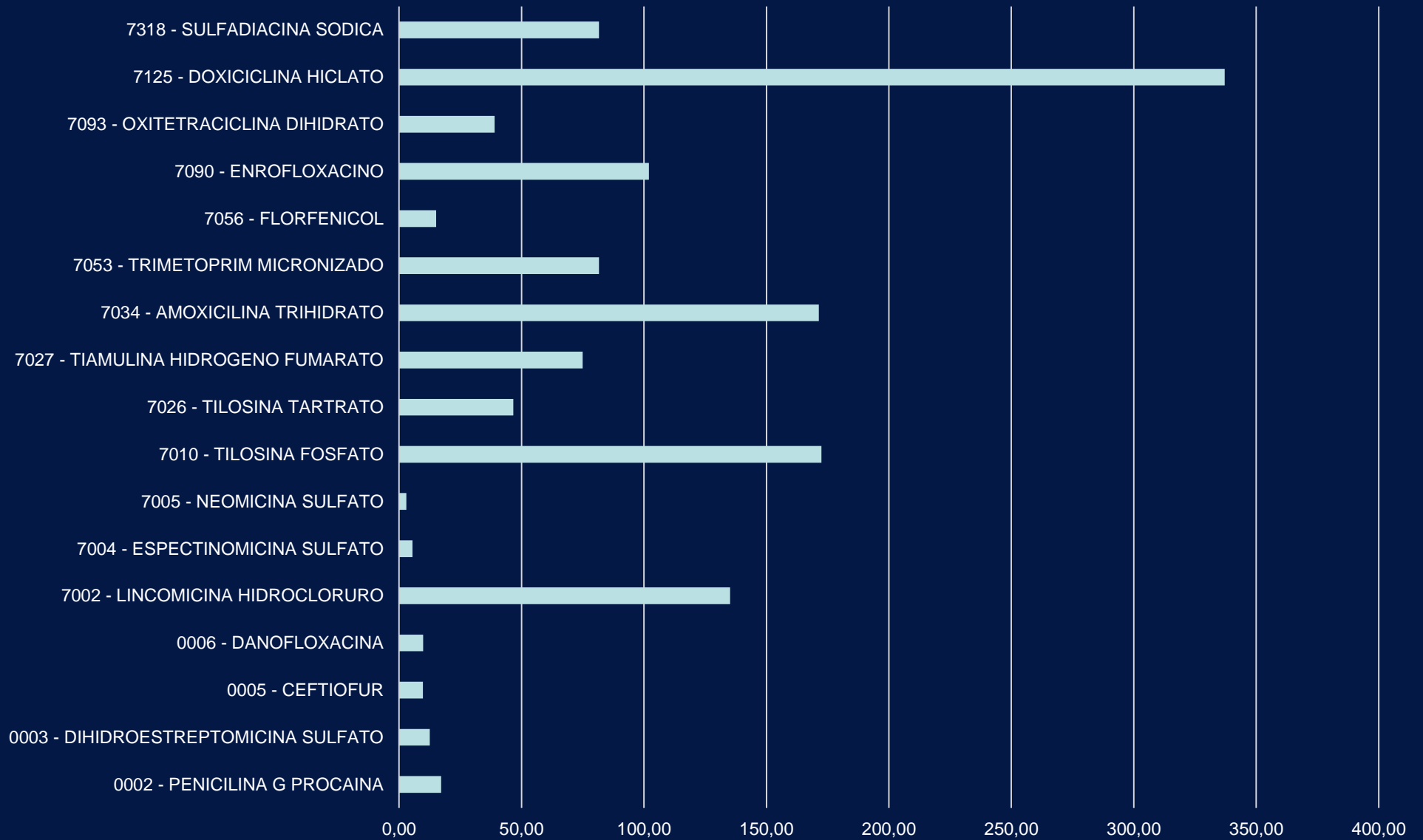
- Strategic sow herd medication can eliminate vertical transmissión and therefore outbreaks in the flow

- **The reduction controlling Swine dysentery would be 50 %**

ENZOOTIC PNEUMONIA (20,3)



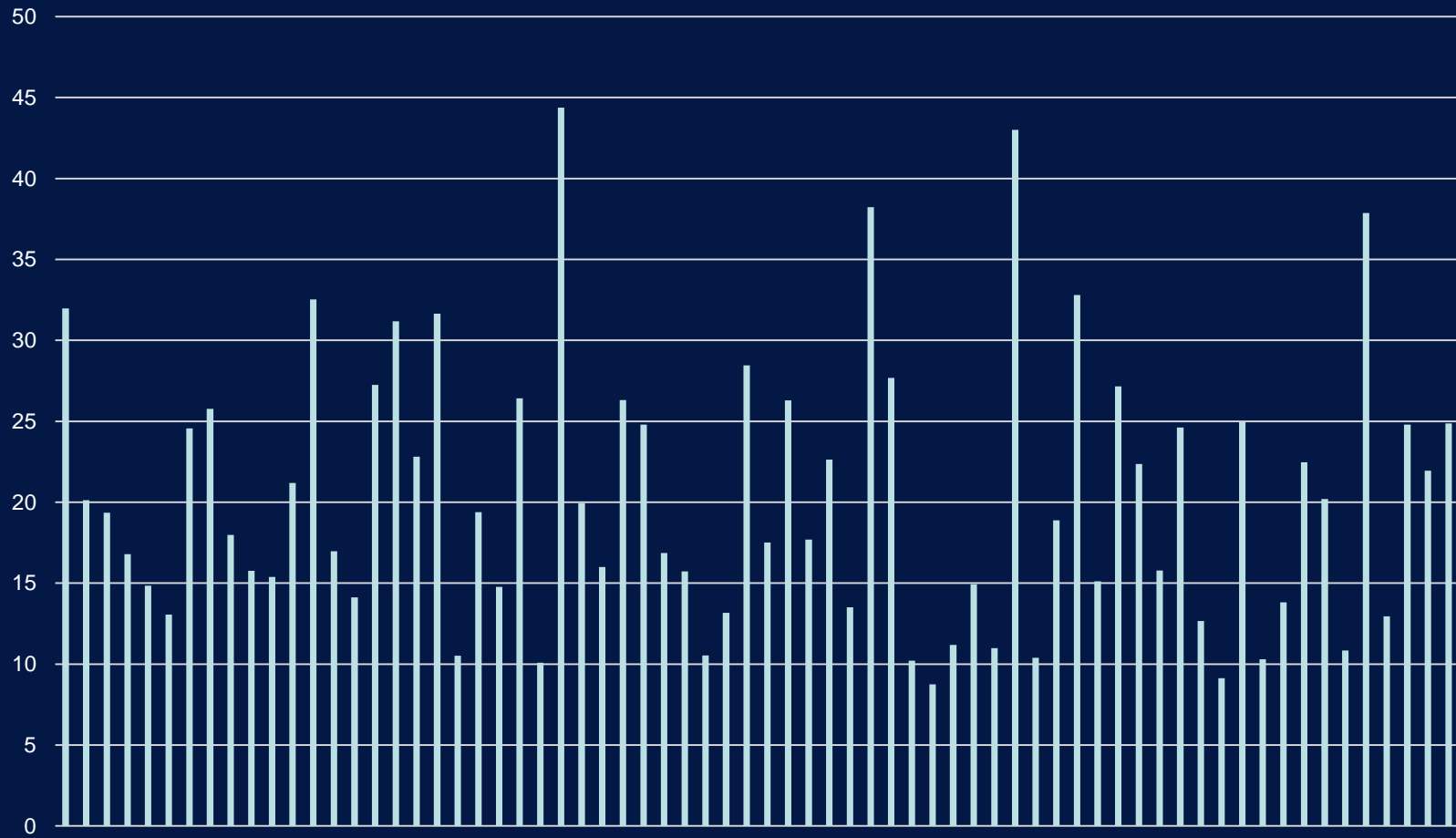
Active principles for EN



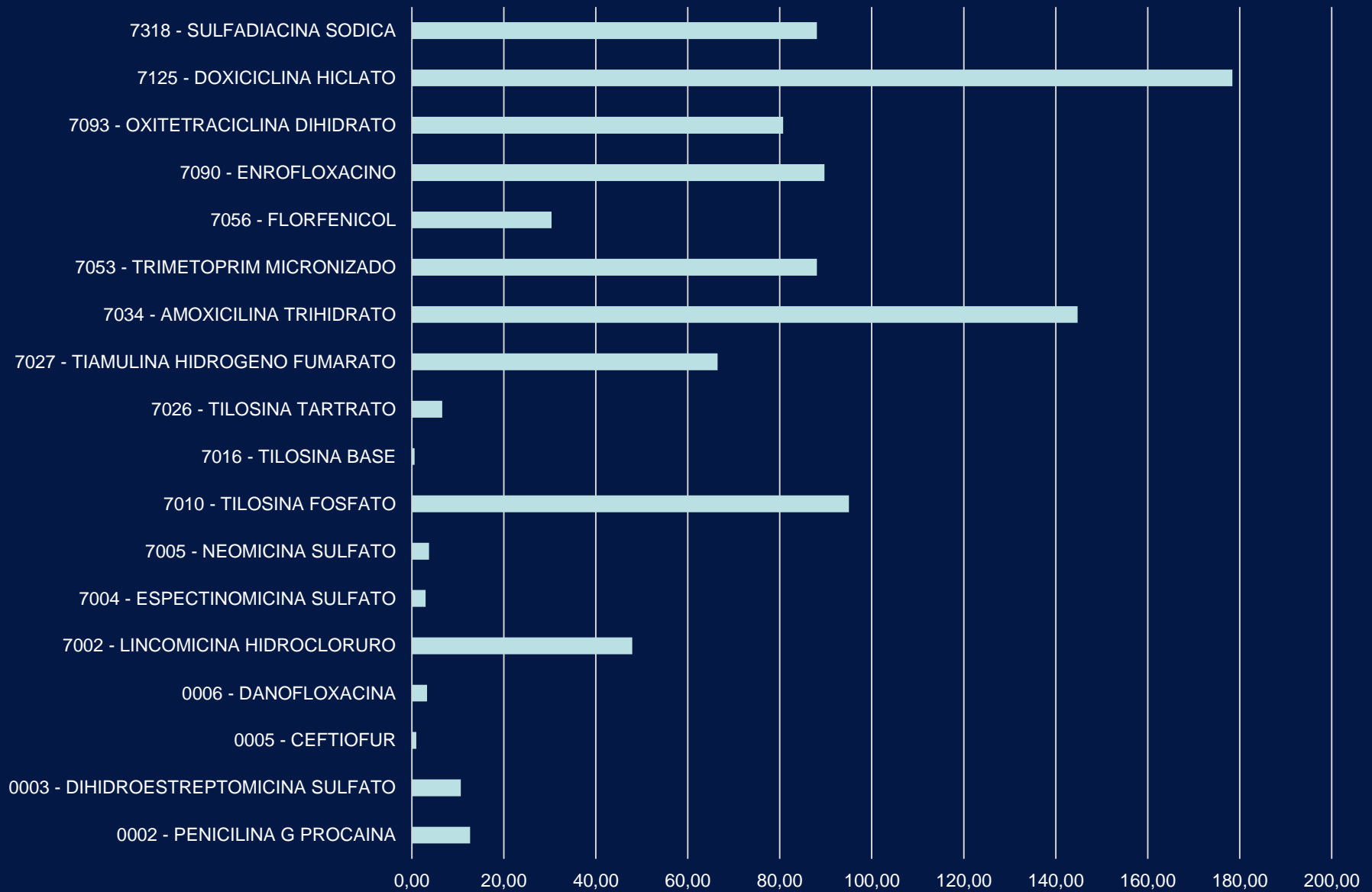


- **The average Index in the Mycoplasma Vaccinated farms is 28,12**
 - 144.873 pigs vaccinated
 - Other diseases are present
 - We only vaccinated flows that are problematic or continuous flows
- **In the next future, mycoplasma vaccination will have to be the option to control the diseases**
- **Infection chain**

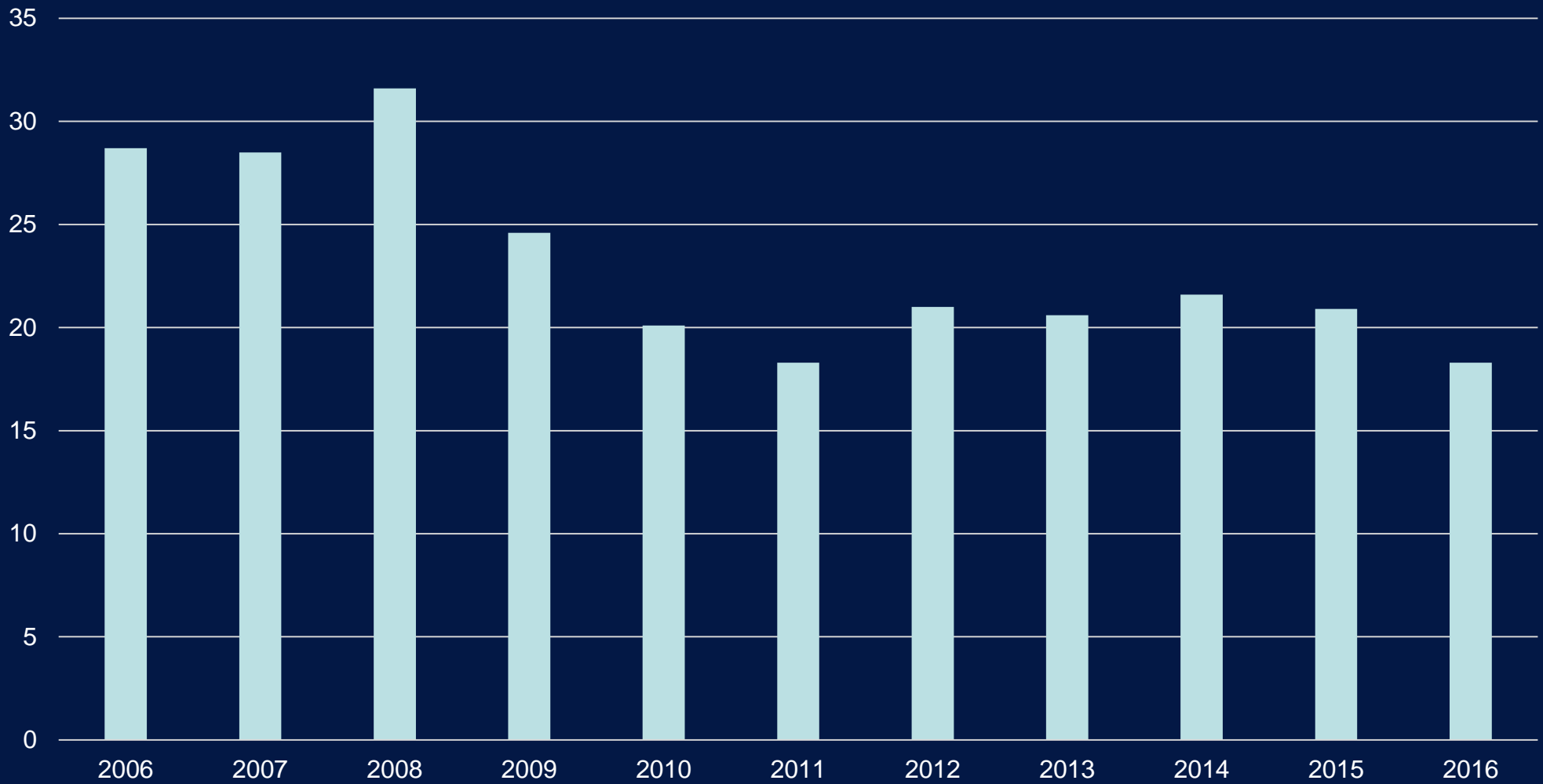
PCV 2 (20,39)



Active principles for PCV 2

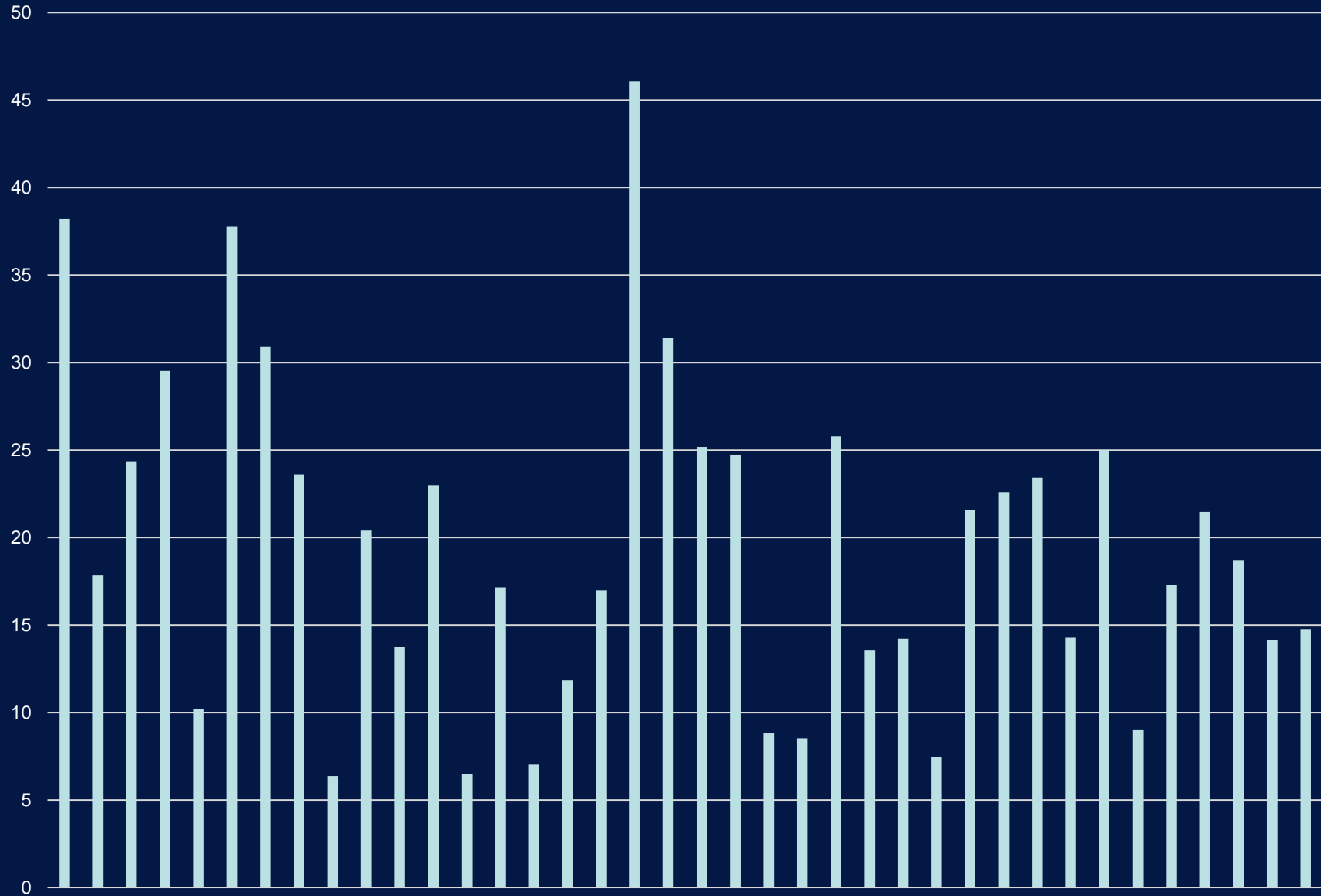


EFFECT OF PVC2 VACCINATION IN THE AB INDEX

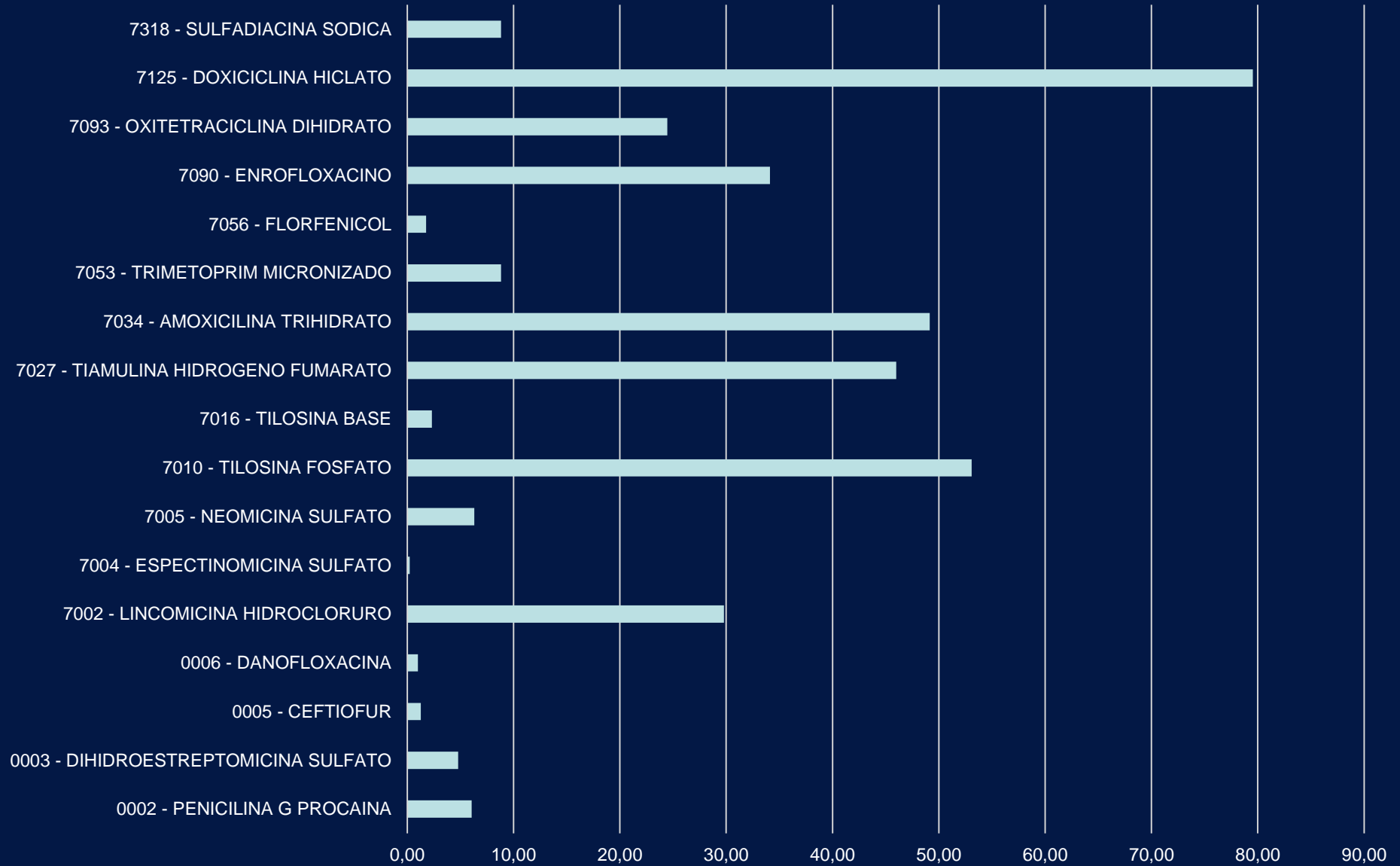


30 % reduction

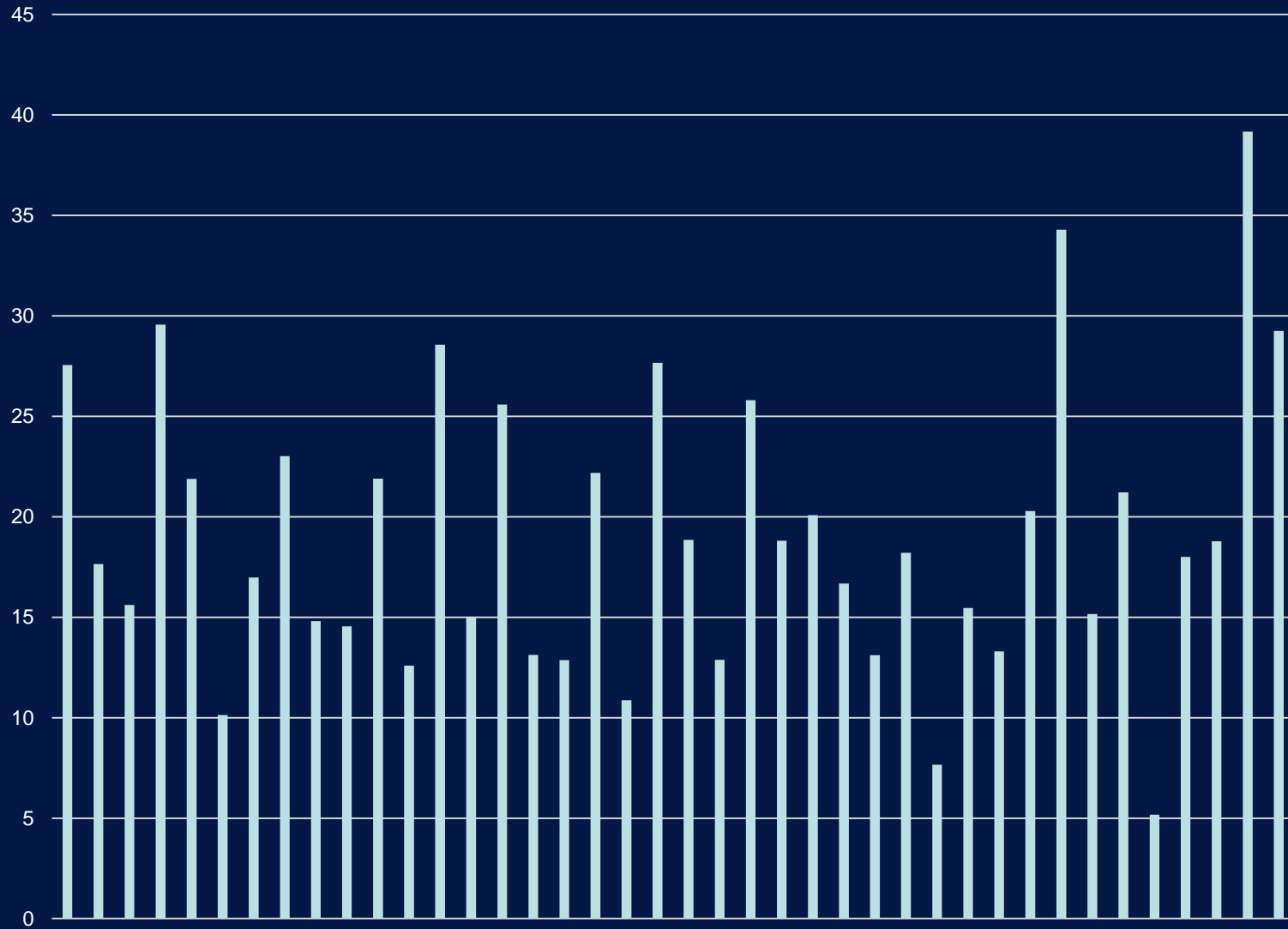
Viral diarrheas



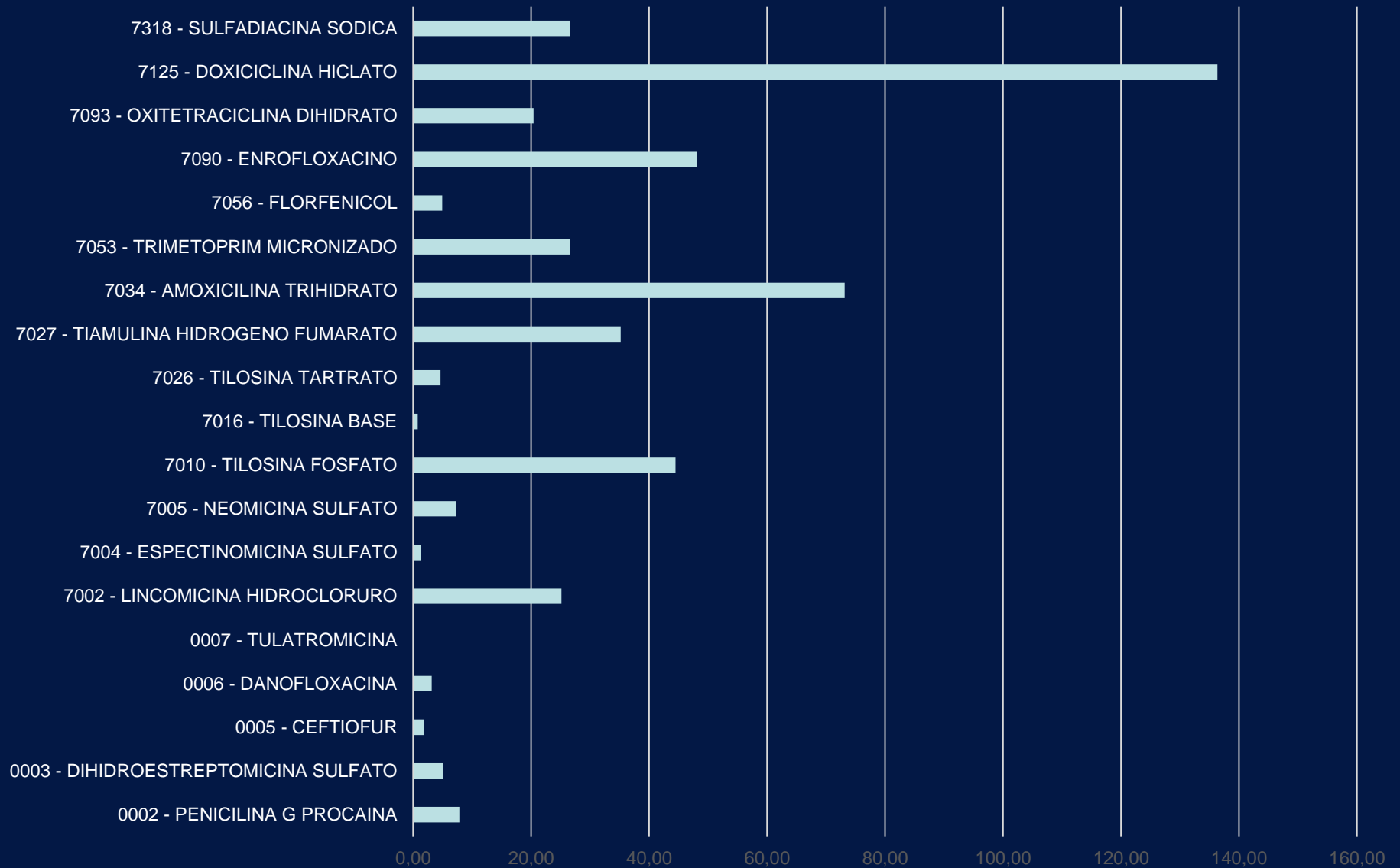
Active principles for viral diarrheas



INFLUENZA (19,1)



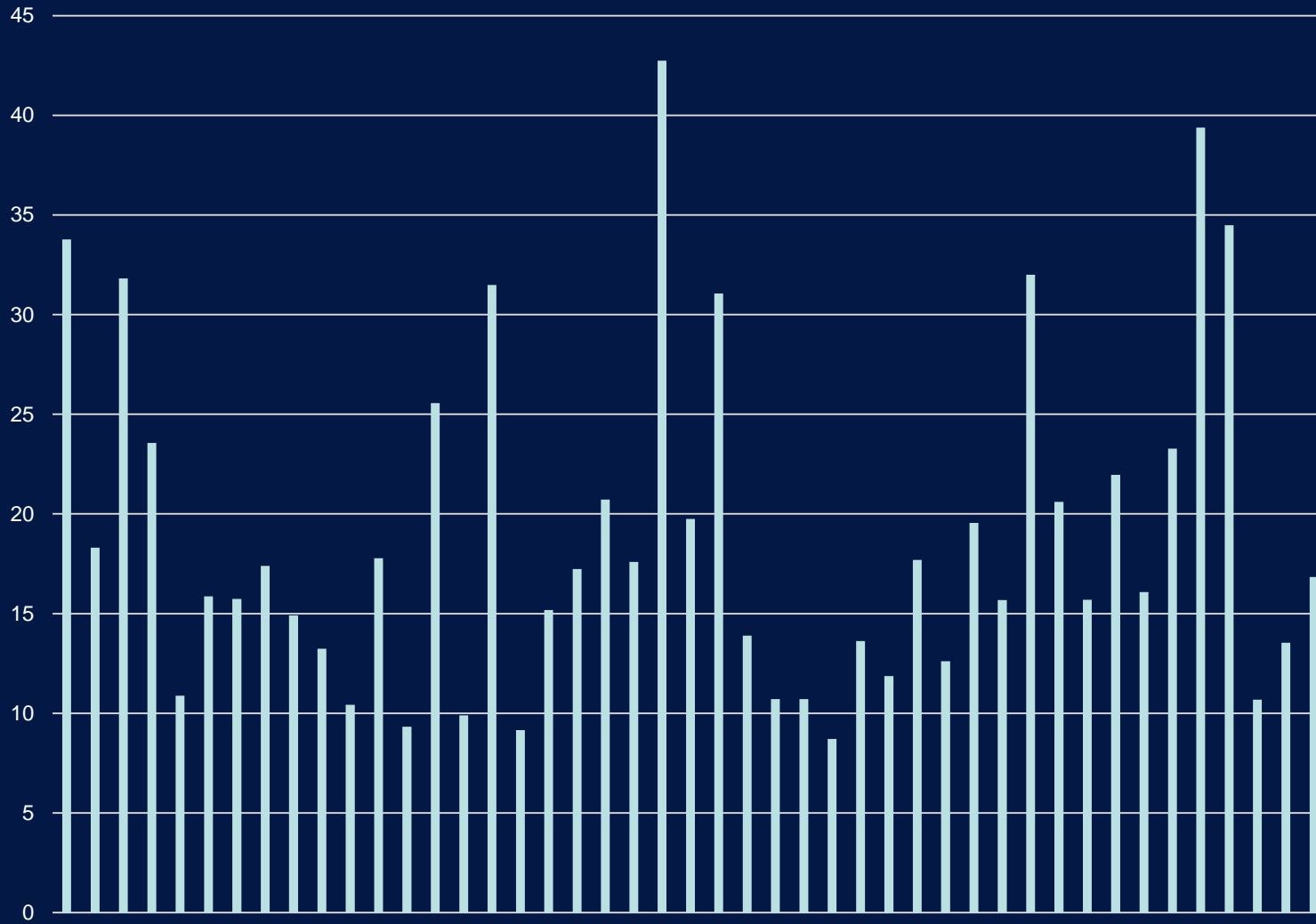
Active principles for FLU outbreaks



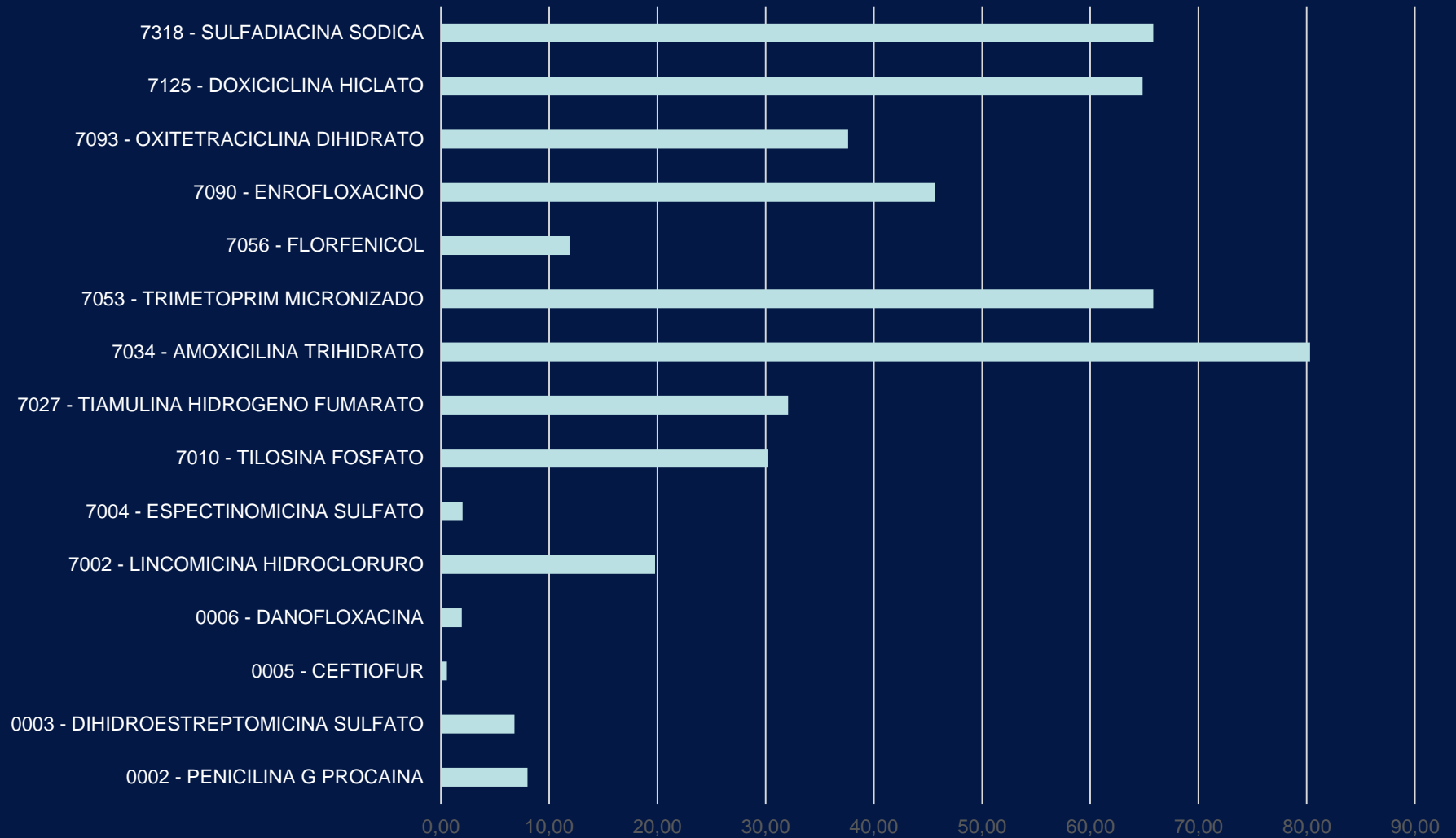


- **Same situation as with Mycoplasma vaccination. Farms vaccinated with Influenza have an index of 29,12 (325.000 pigs vaccinated)**
- **We vaccinate pigs in continuous flows**
- **Or high pig dense areas**

Glässer Disease (18,9)



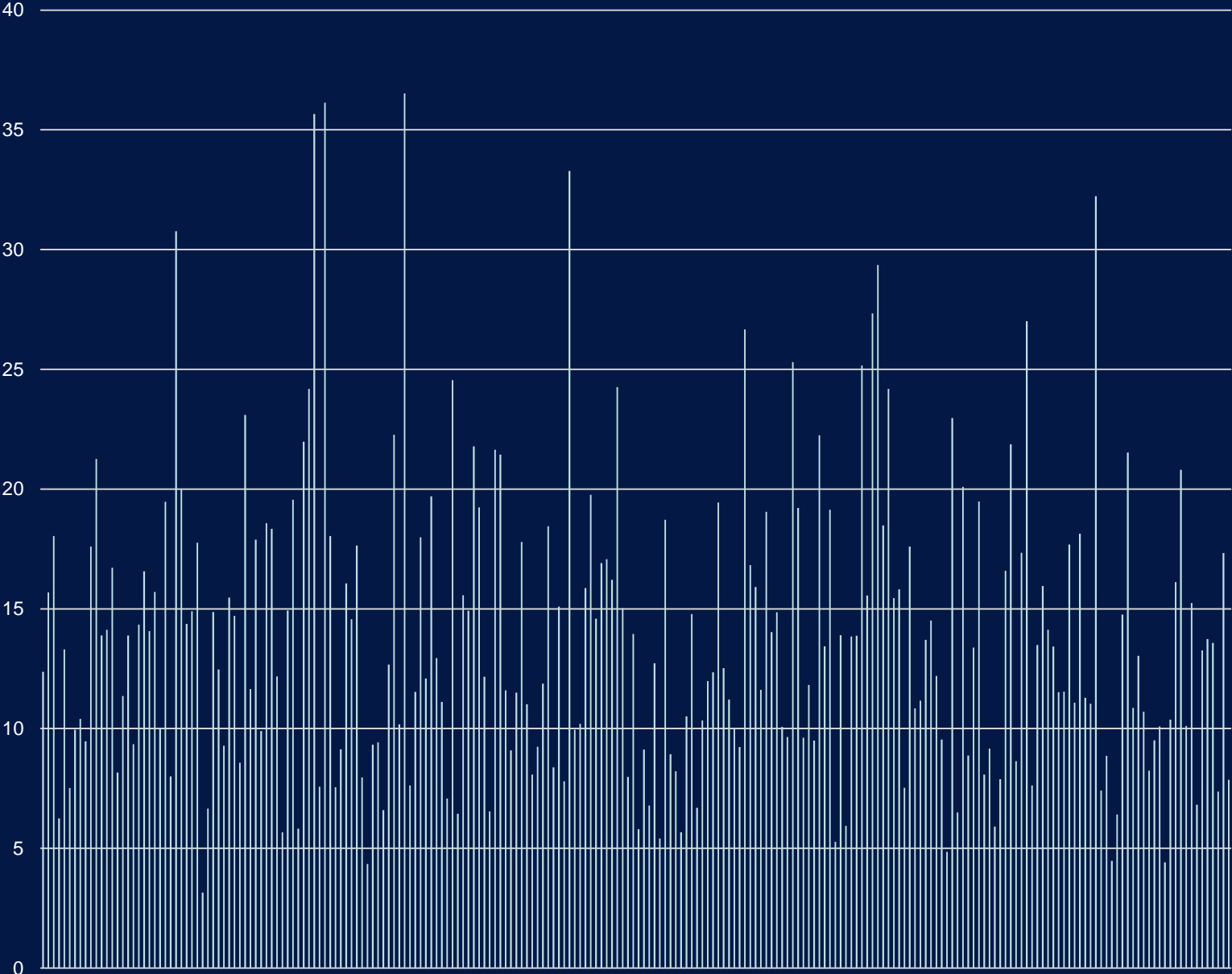
Actives principles for Glässer





- We do not have experiences with the vaccines against *Haemophilus parasuis*.
- Although it has been published an effective universal vaccine, it is not yet in the market.
- This vaccine will be very important to reduce the need of using Amoxicillin. The reduction would be around 20 %

Sin Diagnostic (13,86)



Summary

- Reduction in the use of antibiotics is a priority
- Evaluating strategies is very difficult because there is a lot of variability
- Vaccination is as a tool to reduce antibiotics, but not alone

Summary

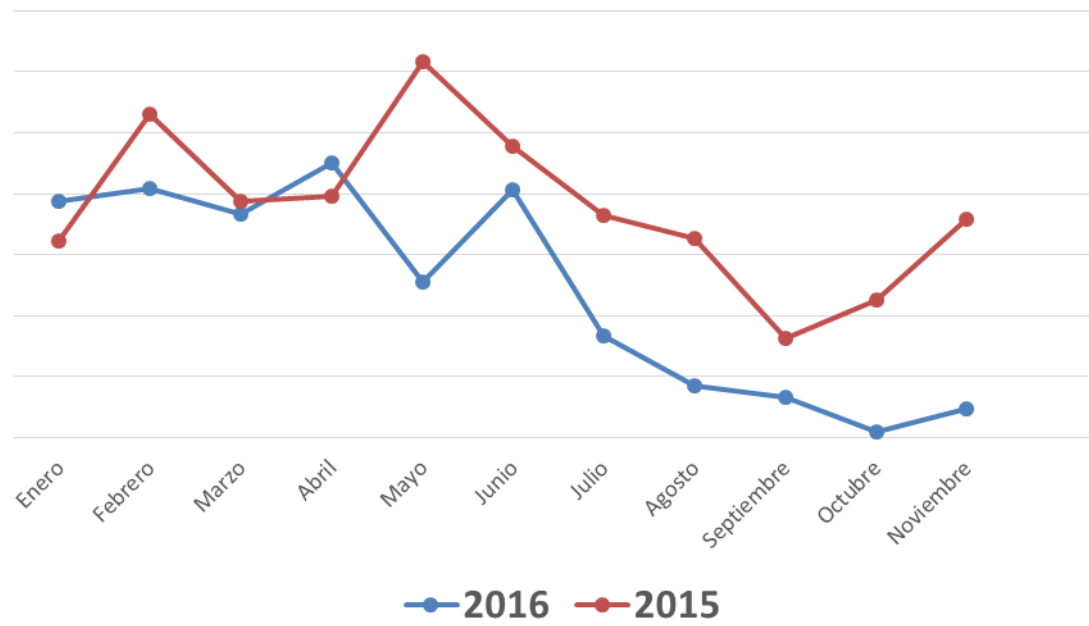
- Understanding disease transmission and infection chain is very important.
 - Herd immunity, gilt acclimation
 - Colostrum intake
 - Piglet movement. Age integrity
 - Flow management
- Autogenous vaccines

Summary

- We have to review our prescription procedures
 - Farms without diagnosis with 30 DDD's?
 - Just in case treatments
 - Farmers pressure
- Euros per pig is not a good way to measure antibiotic use

Take home messages

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**Thanks
for your attention**