



PLANO NACIONAL DE COMBATE À RESISTÊNCIA AOS ANTIMICROBIANOS

A VISÃO AMBIENTAL

APA

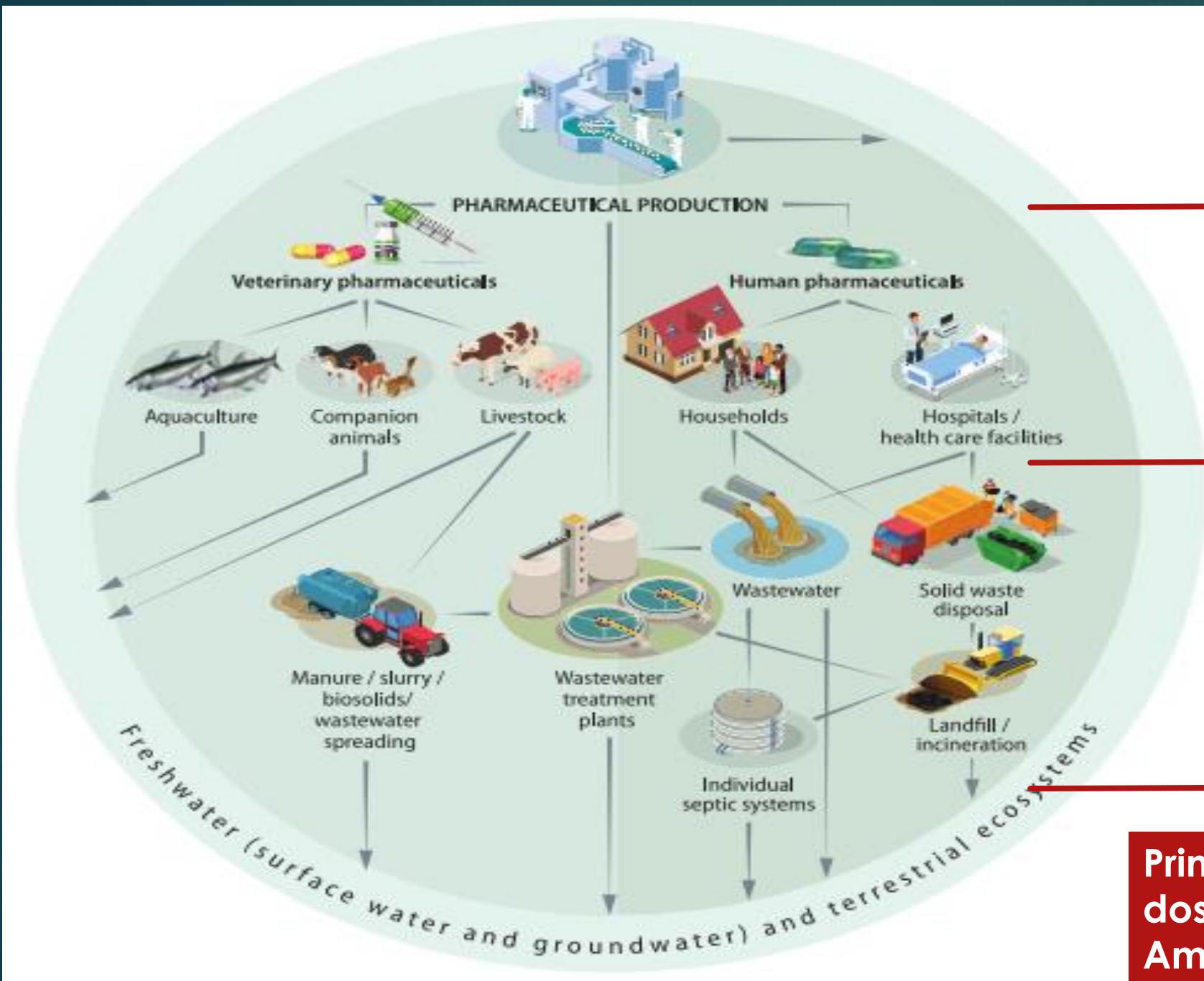
TERESA NÚNCIO

Pharmaceutical Residues in Freshwater Hazards and Policy Responses

POLICY HIGHLIGHTS



A VISÃO AMBIENTAL



PRODUÇÃO

CONSUMO

REJEIÇÃO

**Principais Vias de Libertação
dos Medicamentos no
Ambiente**

Efeitos no Ambiente

CARACTERÍSTICAS
DOS MEDICAMENTOS

CARACTERÍSTICAS DOS
MEIOS RECETORES

ESTADIO DE
DESENVOLVIMENTO
CIENTÍFICO E TECNOLÓGICO

FATORES DE RISCO



2000

ACTIVE PHARMACEUTICAL INGREDIENTS

About 2,000 active pharmaceutical ingredients are being administered worldwide in prescription medicines, over-the-counter therapeutic drugs and veterinary drugs (Burns et al., 2018).



1/3

OF PRESCRIPTION ITEMS BECOME WASTE IN THE UNITED STATES

In the United States, it is estimated that about one-third of the four billion prescription items annually become waste (Product Stewardship Council, 2018).



30-90%

ORAL DOSES EXCRETED AS ACTIVE SUBSTANCES

Pharmaceuticals administered to humans or animals are excreted via urine and faeces, with 30 to 90% of oral doses generally excreted as active substances (BIO Intelligence Service, 2013).



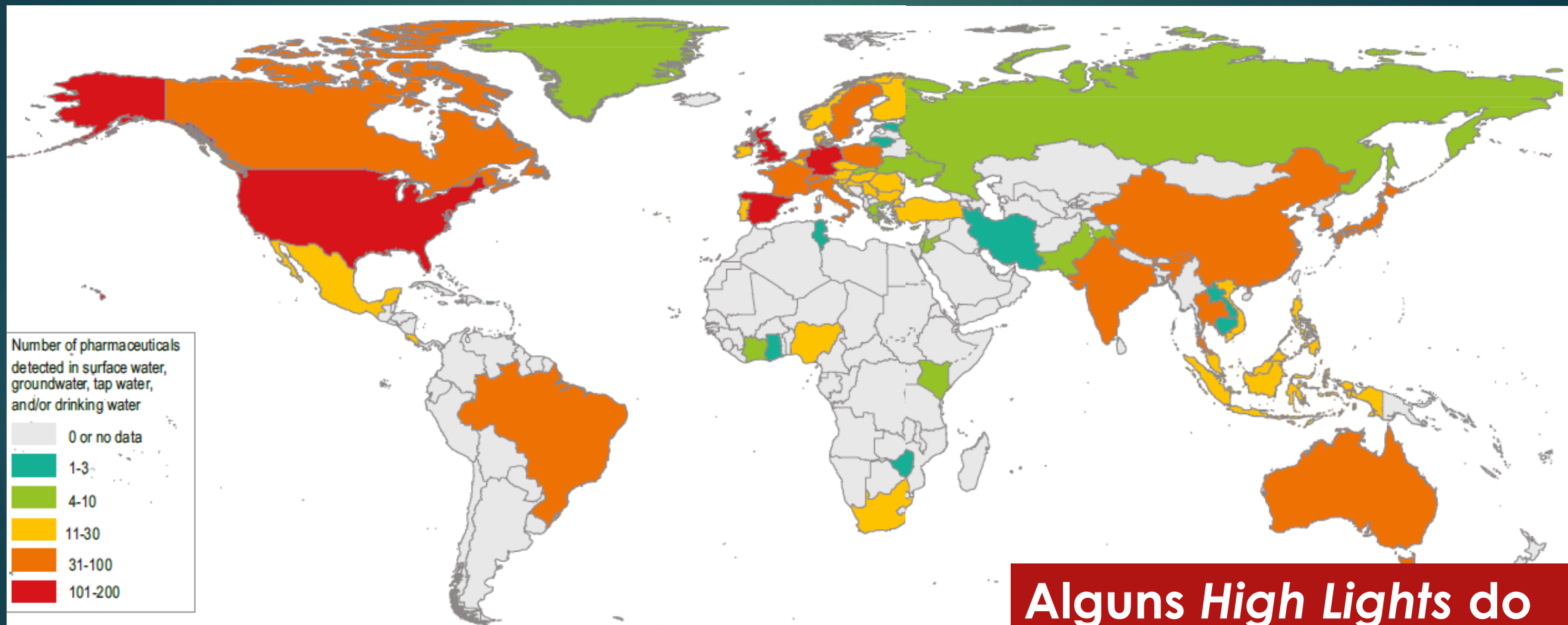
HIGH ENVIRONMENTAL CONCENTRATIONS OF PHARMACEUTICALS DETECTED

Extremely high pharmaceutical concentrations (in the order of mg/l), have been detected in industrial effluents and recipient streams in China, India, Israel, Korea and the USA (Larsson, 2014).



**Alguns High Lights do
Documento da OCDE**

Nº de Medicamentos Detetados nas Águas Superficiais, Águas Subterrâneas e Água Canalizada.



Alguns *High Lights* do Documento da OCDE

6.5%

PHARMACEUTICAL INDUSTRY ANNUAL GROWTH RATE

Projected growth rate of the pharmaceutical industry: 6.5% per year by 2022 (UN Environment, 2019).



43-67%

INCREASE IN PHARMACEUTICAL USAGE, GERMANY

In Germany, pharmaceutical usage is projected to increase by 43-67% by the year 2045 (from a baseline of 2015). An ageing population is thought to be the main driver (Civity, 2017).



67%

PROJECTED INCREASE IN LIVESTOCK ANTIBIOTICS WORLDWIDE BY 2030

Projected increase in antibiotics administered to livestock animals in feed: 67% worldwide by 2030 (from 2015 levels) (Van Boeckel et al., 2015). Much of this increase will come in emerging economies.



CLIMATE CHANGE TO INCREASE RISK OF DISEASE

Millions of people are predicted to be newly at risk to mosquito-borne and tick-borne diseases under climate change. (Cavicchioli et al., 2019).

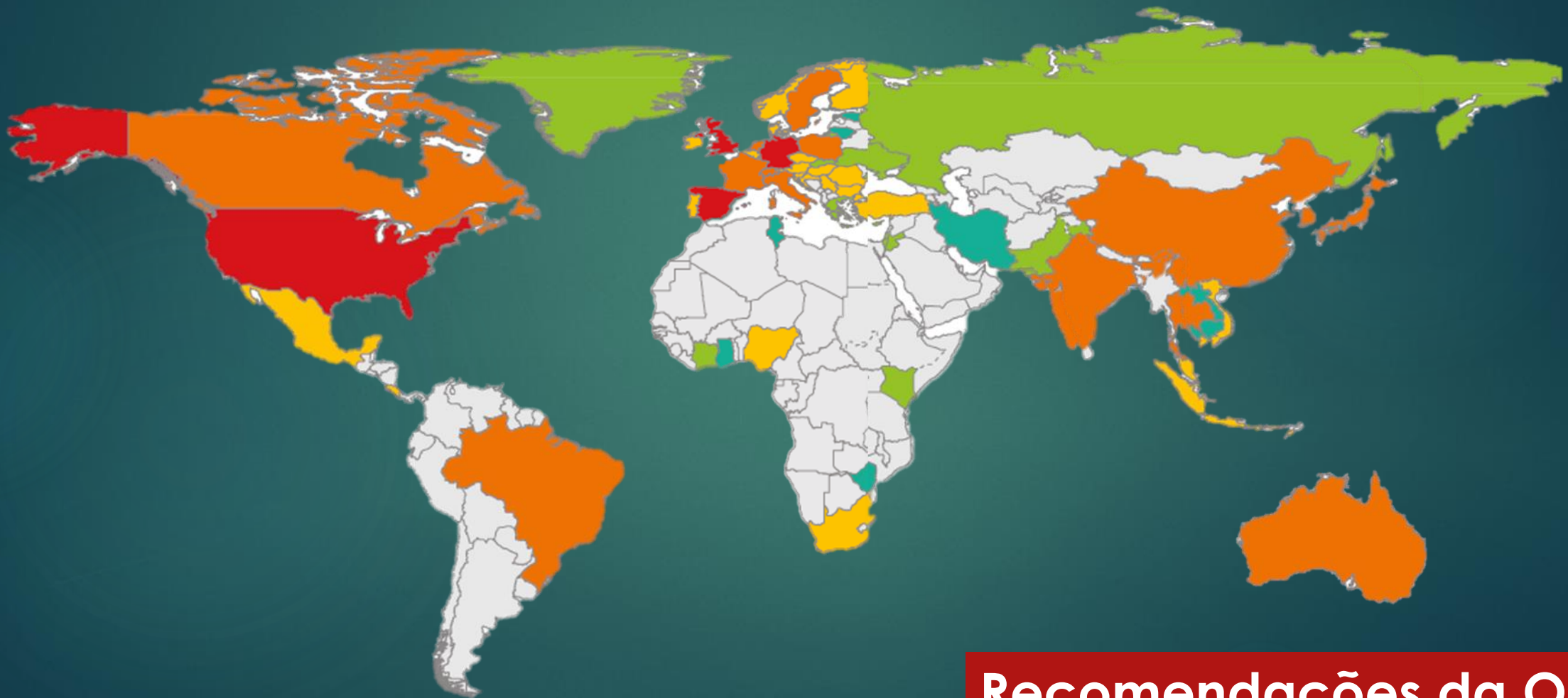
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Staphylococcus aureus with different patterns of resistance on an agar plate.

Alguns *High Lights* do Documento da OCDE

ABORDAGEM GLOBAL E DO CICLO DE VIDA DOS FÁRMACOS



Recomendações da OCDE

O PLANO PORTUGUÊS 2018 - 2022 NA ÁREA AMBIENTAL

OBJETIVO 3 – FORTALECER A BASE DE CONHECIMENTO



MEDIDA 3.2 – ZONAS AQUÁTICAS POTENCIALMENTE CONTAMINADAS POR AM



MEDIDA 3.3 – ESTUDO DA CONTAMINAÇÃO DE EFLUENTES E LAMAS DE ETAR'S E DE PROCESSOS DE TRATAMENTO DOS MESMOS

INFARMED
DGAV
DGADR
DRAP'S
EG- AdP e CM



EG - AdP
UNIVERSIDADES



OBJETIVO 5 – OTIMIZAR O USO DOS AM



MEDIDA 5.2 – REFORÇO DA SUPERVISÃO DA UTILIZAÇÃO DE AM

INFARMED
DGAV
EG - FER

