



Pan troglodytes troglodytes

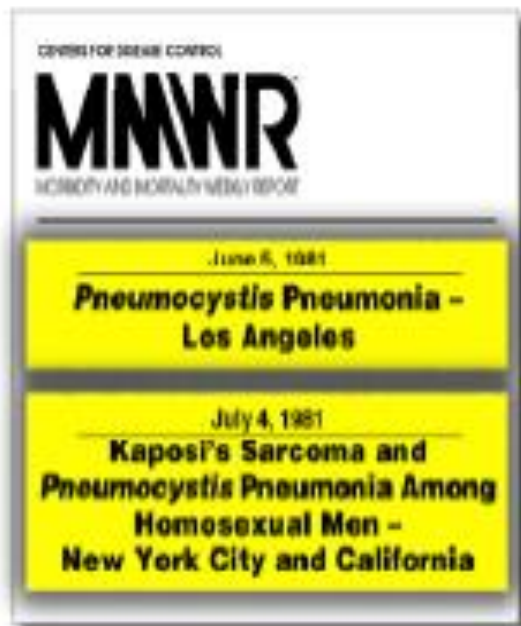
SIV cpz – HIV - 1

Circa 1900: From Apes to Humans

Between 1884 and 1924, somewhere near modern-day Kinshasa in West Central Africa, a hunter kills a chimpanzee. Some of the animal's blood enters the hunter's body, possibly through an open wound. The blood carries a virus harmless to the chimp but lethal to humans: HIV. The virus spreads* as colonial cities sprout up, but deaths are blamed on other causes.

* A relevant role could be attributed to semi-prostitutes women iatrogenically infected (campaigns for syphilis)

1981: identification of the first cases of AIDS



CENTERS FOR DISEASE CONTROL

June 5, 1981 / Vol. 30 / No. 27

MMWR

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Epidemiologic Notes and Reports

Pneumocystis Pneumonia - Los Angeles

In the period October 1980-May 1981, 5 young men, all active homosexuals, were treated for biopsy-confirmed *Pneumocystis carinii* pneumonia at 3 different hospitals in Los Angeles, California. Two of the patients died. All 5 patients had laboratory confirmed previous or current cytomegalovirus (CMV) infection and candidal esophageal infection. Case reports of these patients follow.

Patient 1: A previously healthy 33-year-old man developed *P. carinii* pneumonia and oral mucosal candidiasis in March 1981 after a 2-month history of fever, anorexia, and weight loss. He denied liver enzyme, leukopenia, and CMV viremia. The least consistent fixed CMV titer in October 1980 was 256; in May 1981 it was 32.* The patient's condition deteriorated despite courses of treatment with trimethoprim-sulfamethoxazole (TMP/SMX), pyrimethamine, and erythromycin. He died May 3, and postmortem examination showed evidence of *P. carinii* and CMV pneumonia, but no evidence of neoplasia.

Patient 2: A previously healthy 30-year-old man developed *P. carinii* pneumonia in April 1981 after a 5-month history of fever each day and at least 4 days each on both CMV viremia, and documented seroconversion to CMV, i.e., an acute-phase titer of 16 and a convalescent-phase titer of 257 in anticomplement immunofluorescence tests. Other features of his illness included leukopenia and mucosal candidiasis. His pneumonia responded to a course of intravenous TMP/SMX, but, as in the latest reports, he continued to have a fever each day.

Patient 3: A 30-year-old man was well until January 1981 when he developed oral pharyngeal and oral candidiasis that responded to Amphotericin B treatment. He was hospitalized



1985

- Actor Rock Hudson dies of AIDS.
- Actress Elizabeth Taylor becomes the founding international chairman of AmFAR, the American Foundation for AIDS Research.

1991

Annals of Internal Medicine

ESTABLISHED IN 1927 BY THE AMERICAN COLLEGE OF PHYSICIANS

Combination Therapy with Zidovudine and Didanosine Compared with Zidovudine Alone in HIV-1 Infection

Ann C. Collier, MD; Robert W. Coombs, MD, PhD; Margaret A. Fischl, MD; Paul R. Skolnik, MD; Donald Northfelt, MD; Paul Boutin, BS; Carol J. Hooper, MD; Lawrence D. Kaplan, MD; Paul A. Volberding, MD; L. Gray Davis, PhD; Denis R. Henrard, PhD; Stephen Weller, MS; and Lawrence Corey, MD

Ann Intern Med. 15 October 1993;119(8):786-793

Conclusions: Combination therapy with zidovudine and didanosine produced larger and more sustained increases in CD4+ cell counts, more frequent decreases in plasma HIV-1 RNA titers, and more stable hematologic status than zidovudine therapy alone.



1993

- ACT UP and retailer Benetton put a giant condom on the Place de la Concorde in Paris.



1996-1997

A treatment breakthrough: The AIDS drug cocktail -- highly active anti-retroviral therapy or **HAART** -- can cut the HIV viral load to almost invisible levels. Hope surges when AIDS researcher David Ho, MD, suggests treatment **may eliminate HIV** from the body. He's wrong -- it's later found that HIV can hide in cells -- but U.S. **AIDS deaths decline** by more than 40%



1998-2000

Awareness grows that HAART has **serious side effects**. Treatment failures highlight the need for newer, more powerful drugs. The FDA later approves new **classes of drugs** that make HIV treatment safer, easier, and more effective. But the drugs **do not cure AIDS**.

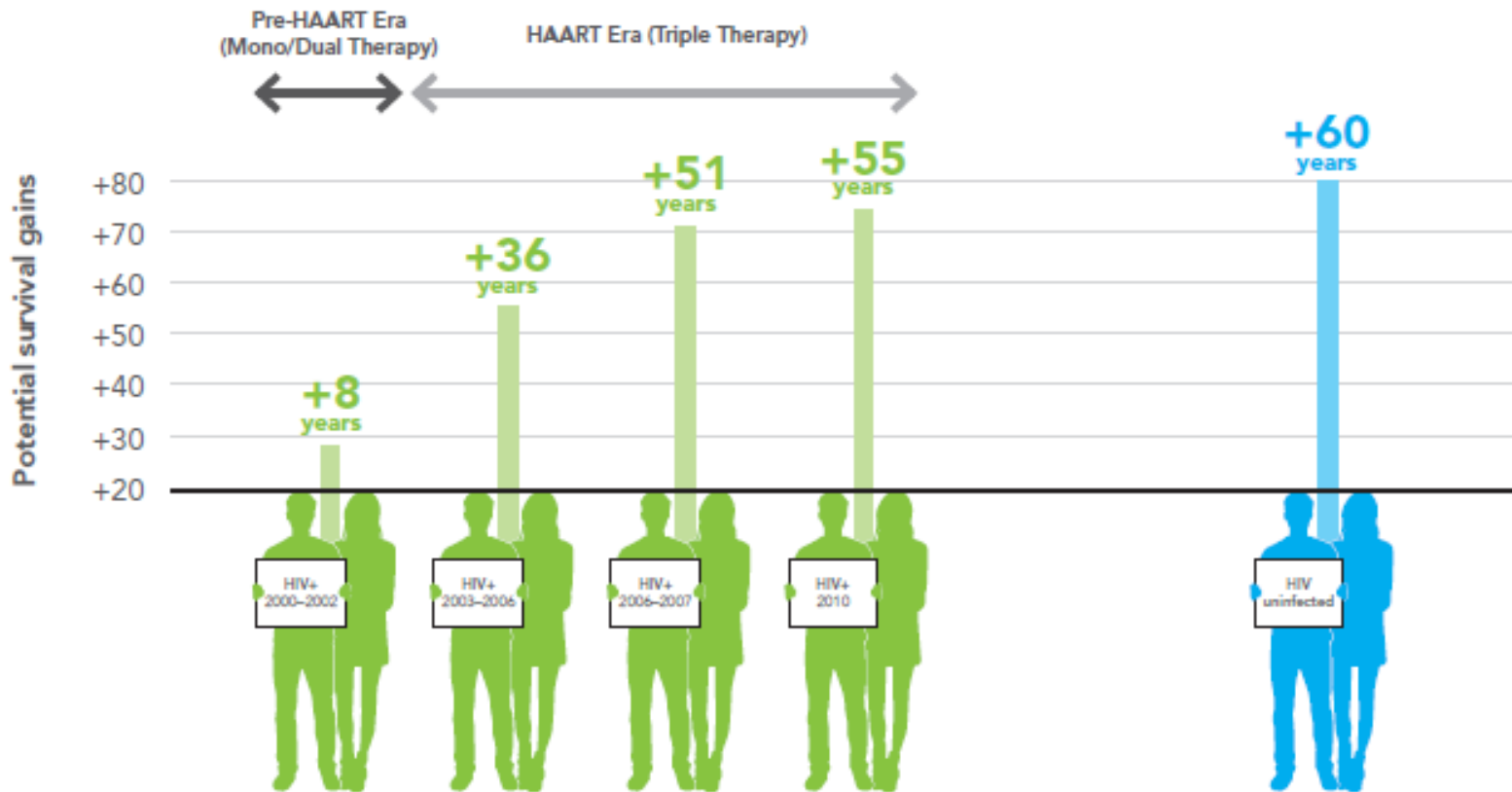


AIDS Timeline

The life expectancy of Americans with HIV is higher than ever, almost **reaching the life expectancy of the general population** -- age 78.

New medicines and treatments make it easier to manage HIV, especially if you've been diagnosed early and take care of yourself.

HIV TREATMENT CAN NORMALIZE SURVIVAL



Expected impact of HIV treatment in survival of a 20 years old person living with HIV in a high income setting (different periods)

Source: Samji H et al., PLoS ONE, 2013.

EPP/Spectrum estimates for **ITALY**, 2012

	Estimate
Number of PLHIV : adults aged 15+	123,000
Number of new HIV infections : adults aged 15+	3,000
Number of AIDS deaths : adults aged 15+	1,500
Number of individual receiving ART : adults aged 15+	93,000

Proportion of HIV cases diagnosed late (CD4 < 350 cells/mm³), 2013, EU/EEA

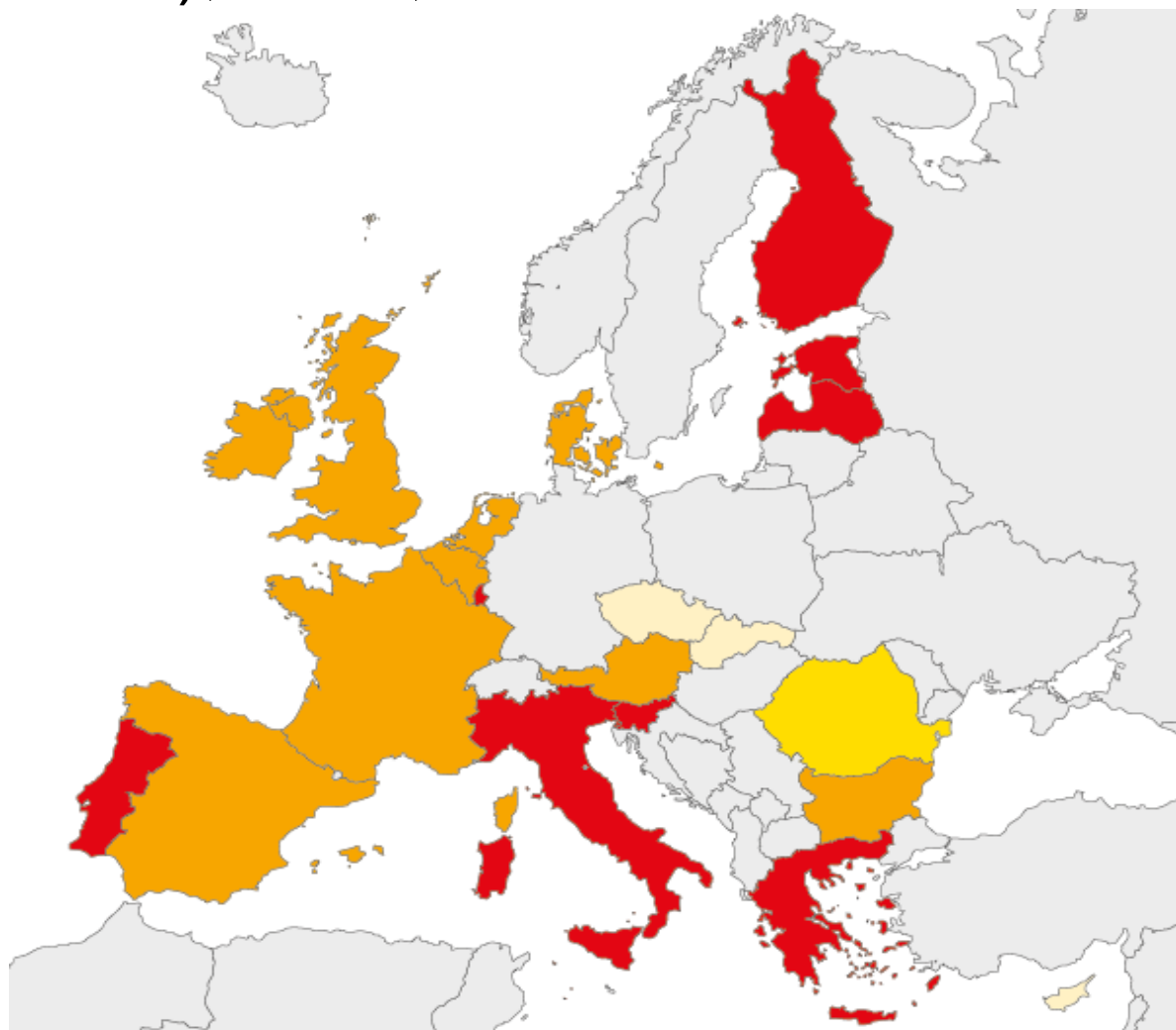
< 30%

30 to <40%

40 to 50%

> 50%

Not included or
not reporting



Source: ECDC/WHO (2014). HIV/AIDS Surveillance in Europe, 2013

Source: ECDC/WHO (2014). HIV/AIDS Surveillance in Europe, 2013

*Among cases with CD4 count at diagnosis reported



Ministero della Salute

DIREZIONE GENERALE DELLA PREVENZIONE SANITARIA
UFFICIO V –MALATTIE INFETTIVE E PROFILASSI INTERNAZIONALE

OGGETTO: Sindrome respiratoria Medio-Orientale da coronavirus - Aggiornamento 29 luglio 2015

29Luglio 2015

Tra il 16 e il 25 luglio 2015, il Focal Point Nazionale per il RSI dell'Arabia Saudita ha notificato all'OMS 8 ulteriori casi di infezione da sindrome respiratoria Medio Orientale da coronavirus (Mers - CoV), incluso 1 decesso.

Tabella 1. Casi importati di febbre Chikungunya e Dengue in Italia, dal 2012 al 2014

*

Regione	2012		2013		2014	
	Chikungunya	Dengue	Chikungunya	Dengue	Chikungunya	Dengue
Piemonte	0	5	0	12	1	5
Valle D'Aosta	0	0	0	0	0	0
Lombardia	0	25	2	42	8	14
P.A. Bolzano	0	0	0	0	0	3
P.A. Trento	0	0	0	1	0	0
Veneto	5	12	0	17	1	11
Friuli Venezia Giulia	0	0	0	0	0	0
Liguria	0	0	0	0	0	1
Emilia-Romagna	0	11	1	24	15	17
Toscana	0	10	0	15	2	5
Umbria	0	1	0	0	0	1
Marche	0	1	0	0	2	3
Lazio	0	14	0	25	7	17
Abruzzo	0	0	0	0	0	1
Campania	0	0	0	0	0	0
Puglia	0	0	0	5	0	1
Basilicata	0	0	0	0	0	0
Calabria	0	0	0	0	1	0
Sicilia	0	0	0	1	2	1
Sardegna	0	0	0	0	0	0
Totale	5	79	3	142	39	80

* Zika Virus: 3 casi in Toscana (Polinesia)

Febbre Dengue, tre casi in Italia dal 6 luglio

A Prato e Bologna i primi malati. Oggi la segnalazione di un bambino colpito a Mantova



Febbre West Nile Italia

Ultimi aggiornamenti

(6 agosto 2015) Sorveglianza delle malattie neuroinvasive da West Nile virus: il primo caso in Italia

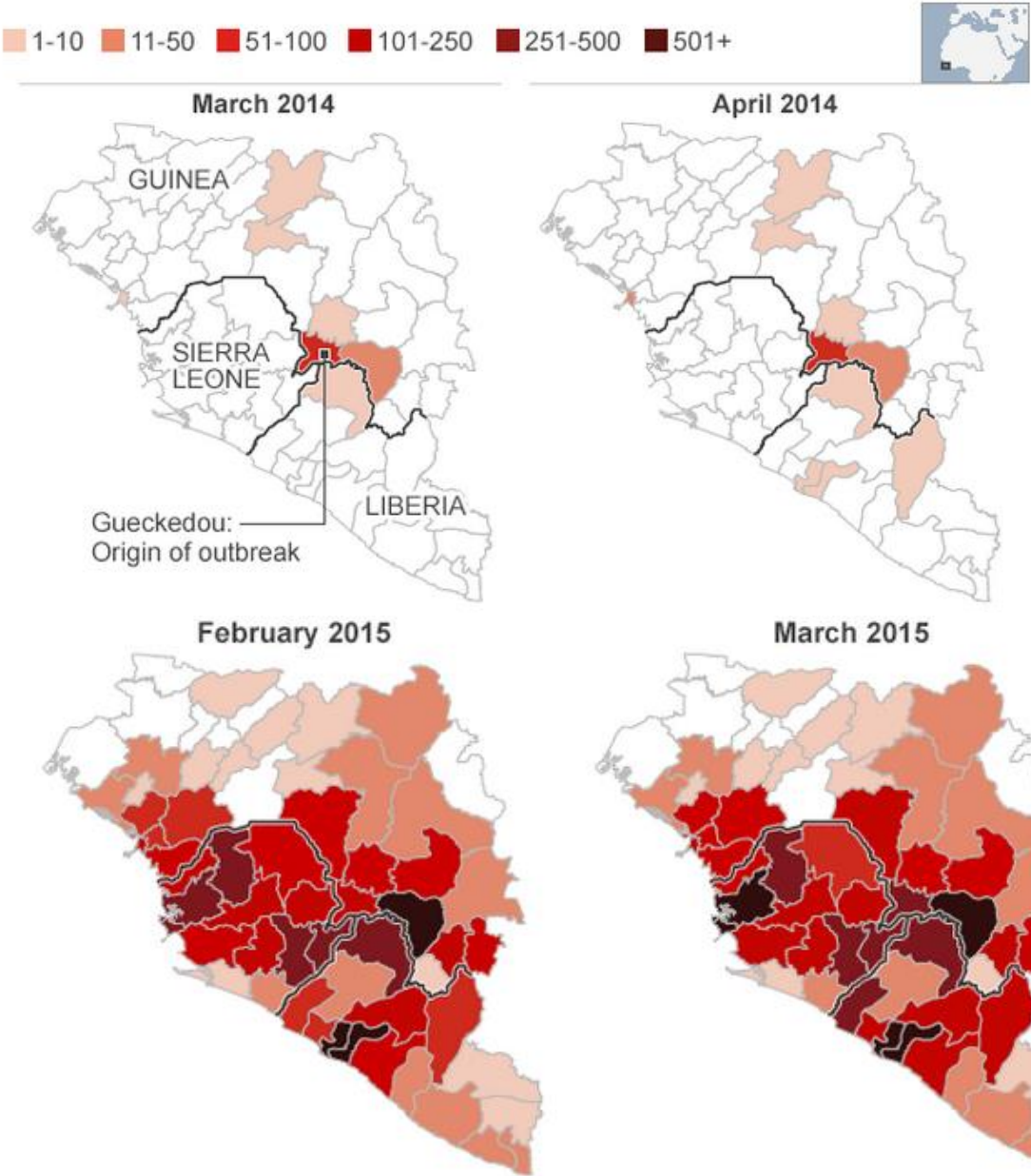
(3 settembre 2015) Sorveglianza dei casi umani di West Nile Disease in Italia: il punto della situazione

In Italia da giugno sono stati segnalati 14 casi confermati di malattia neuroinvasiva da West Nile Virus (Wnnd). La Regione Emilia-Romagna ha segnalato 4 casi confermati di febbre con infezione da Wnv. Inoltre è stata segnalata positività per Wnv in 12 donatori di sangue: 4 in Emilia Romagna, 7 in Lombardia e 1 in Friuli Venezia Giulia.



GUINEA, SIERRA LEONE E LIBERIA I PAESI PIÙ COLPITI

How the virus spread: Ebola death toll



Source: WHO, national health ministries and HDX

The total number of reported cases is more than 27,741.

Ebola deaths

Figures up to 19 July 2015

11,284

Deaths - probable, confirmed and suspected
(Includes one in the US and six in Mali)

4,808 Liberia

3,949 Sierra Leone

2,512 Guinea

8 Nigeria

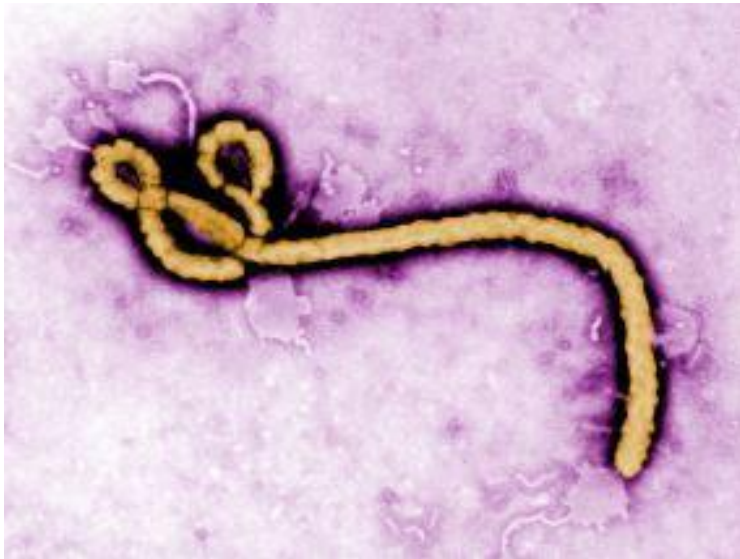
Source: WHO



Getty

Sicurezza ed efficacia di un vaccino basato su vettore rVSV che esprime la glicoproteina di superficie del virus Ebola*

Le analisi ad interim suggeriscono che il virus rVSV-ZEBOV potrebbe essere efficace nel prevenire la malattia da virus Ebola a livello di popolazione quando somministrato usando una strategia di vaccinazione “ad anello”



* Henao-Restrepo AM, Longini IM, Egger M, et al. Efficacy and effectiveness of an rVSV-vectored vaccine expressing Ebola surface glycoprotein: interim results from the Guinea ring vaccination cluster-randomised trial. *The Lancet*, 2015; doi.org/10.1016/S0140-6736(15)61117-5

Reduce selective pressure Stewardship

Clinical Infectious Diseases 2007; 44:159-77

Processo integrato che si propone di controllare ed indirizzare la somministrazione di antibiotici in ospedale con la collaborazione di diverse figure professionali

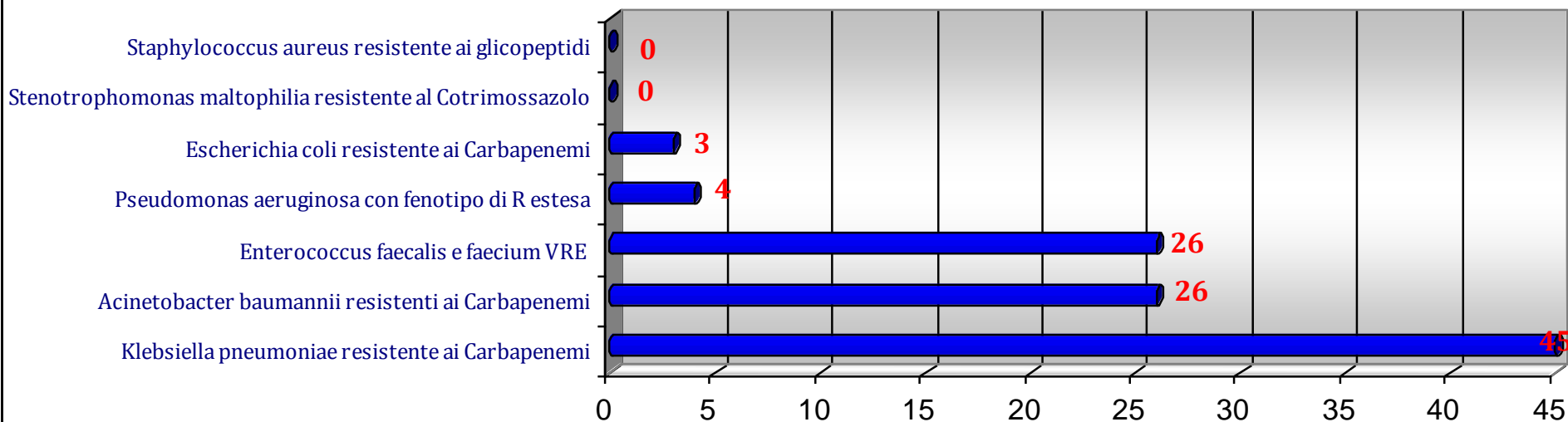
Interventi di provata efficacia

- Istituzione di un gruppo di lavoro (A II)
- Audit e feed back dei dati (AI)
- Restrizione del formulario (AII)
- Pre-autorizzazione e monitoraggio dell'uso (BII)
- Linee guida/algoritmi decisionali multidisciplinari (AI)
- Semplificazione e de-escalation (AII)
- Ottimizzazione della dose (AII)
- Switch parenterale-orale (AI)
- Supporto decisionale informatico (AIII)
- Collaborazione del laboratorio di microbiologia (AIII)

SORVEGLIANZA MDRO 2014

Nell'anno 2014, nei 5 presidi ospedalieri aziendali, sono state notificate **104 infezioni e/o colonizzazioni** di alerts organisms in **81 pazienti**.

Sorveglianza MDRO 2014
Microrganismi



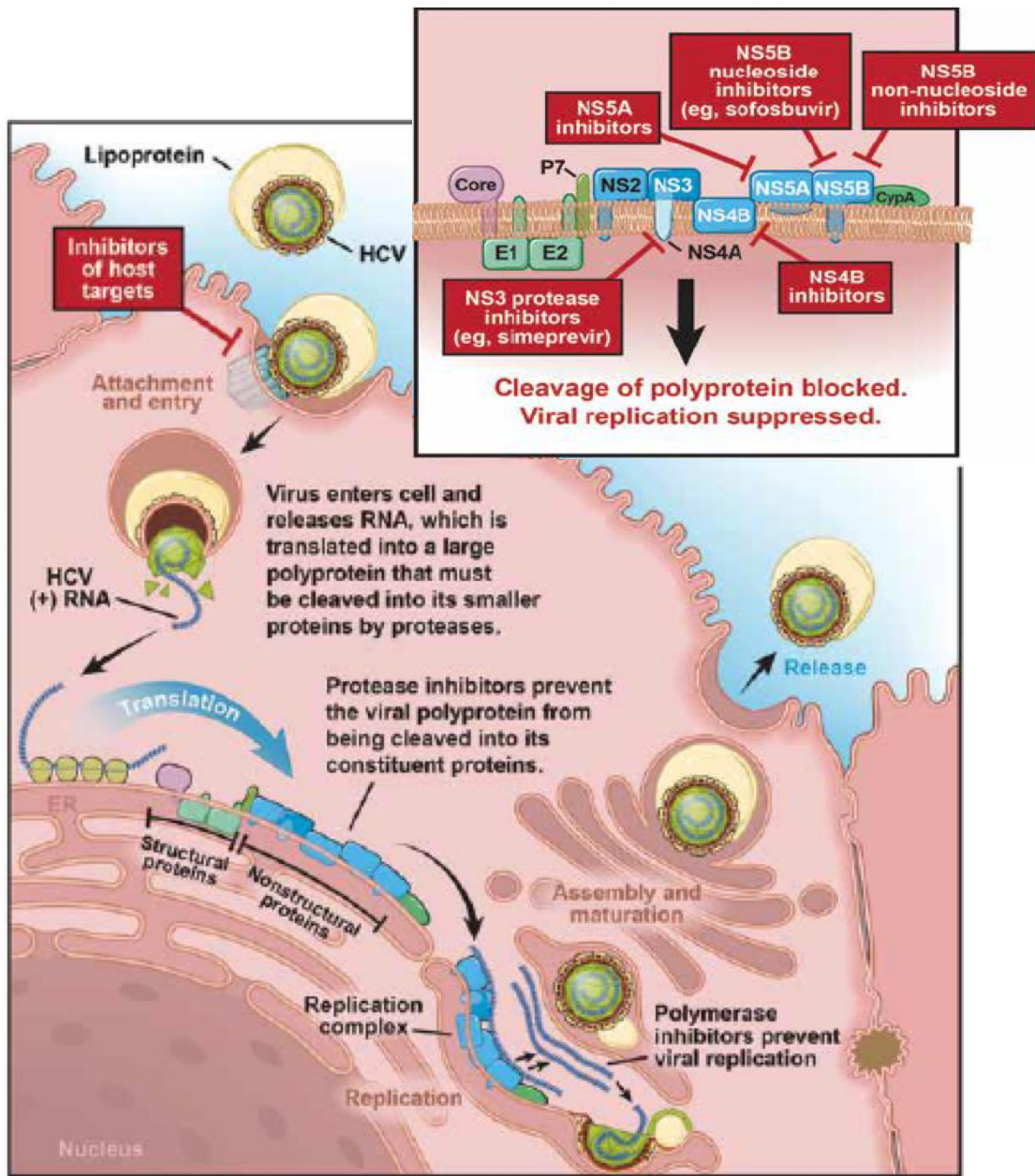
"USO RAZIONALE DELLA TERAPIA ANTIMICROBICA"

I SESSIONE. Le basi razionali della terapia antibiotica

- L'evoluzione del rischio infettivo in comunità ed ospedale. Infection Control
- Antimicrobial Stewardship
- Germi Gram positivi e Gram negativi e le resistenze nell'ASL 10
- I test di chemiosensibilità, ruolo, limiti e criteri interpretativi
- Il ruolo delle caratteristiche PK/PD dei farmaci nelle scelte terapeutiche
- Il ruolo del farmacista dell'ambito del programma di stewardship
- Terapia antibiotica: dalla prescrizione empirica a quella mirata
- Terapia antibiotica: quando e come sospenderla

II e III SESSIONE. Casi clinici e schemi di terapia empirica

- Infezioni delle vie urinarie
- Polmoniti
- Infezioni intra-addominali
- Infezioni cute e tessuti molli

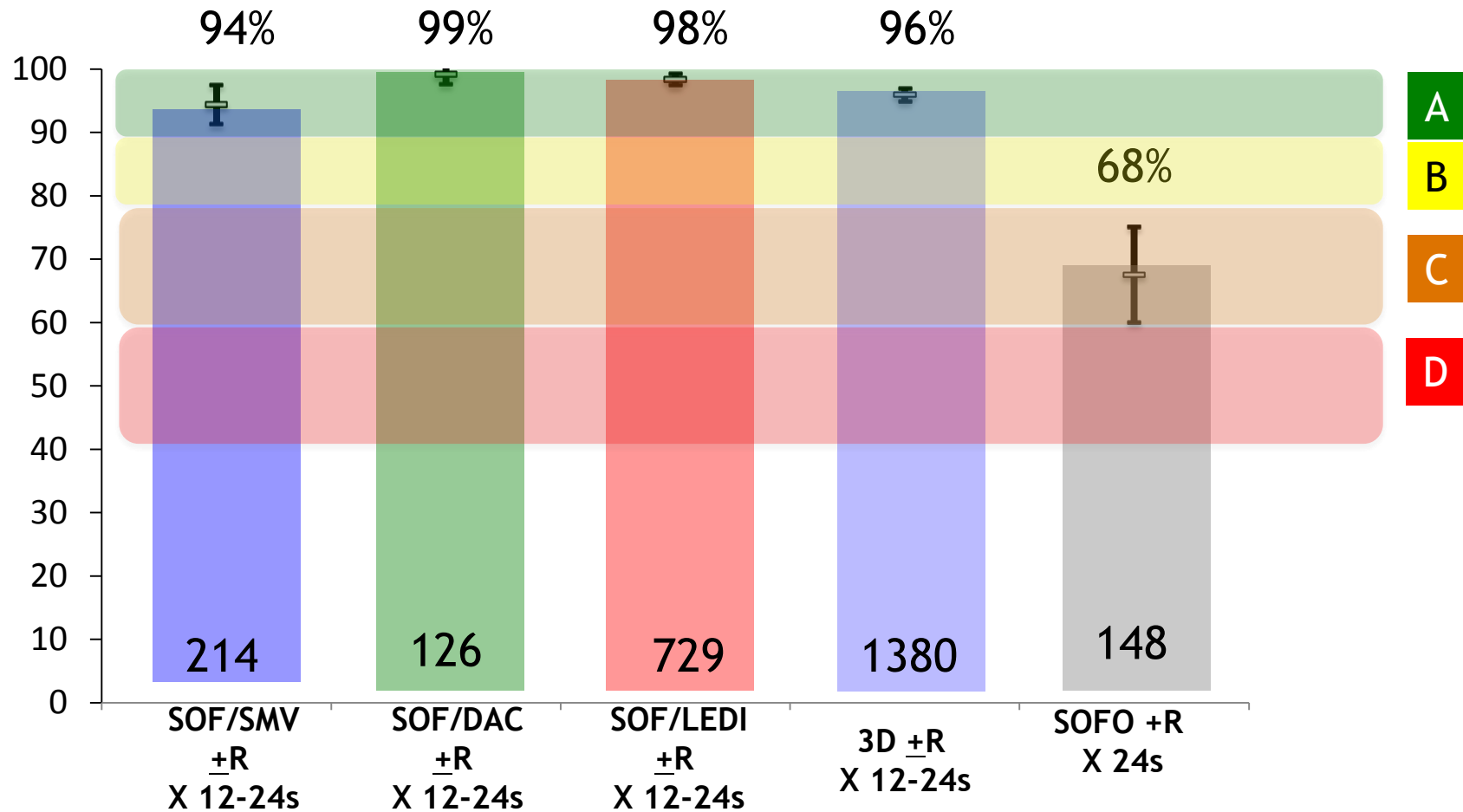


DAA classes and subclasses: antiviral potency and resistance barrier according to HCV genotype

Drug Class	Subclass	1 b	1a	2	3	4
Protease inhibitors	1 st Generation first wave i.e. Telaprevir/Boceprevir	●	●	●	●	●
	1 st Generation 2 nd wave i.e. Simeprevir Paritaprevir/r	●	●	●	●	●
	2 nd Generation Grazoprevir ABT 493	●	●	●	●	●
NS5a Inhibitor	1 st Generation Daclatasvir Ledipasvir Ombitasvir Elbasvir	●	●	●	●	●
	2 nd Generation GS 5816 ABT 530	●	●	●	●	●
NN Polymerase Inhibitors	Dasabuvir	●	●	●	●	●
Nucleos/tides Polymerase inhibitors	2 nd Generation : Sofosbuvir	●	●	●	●	●

● High ● Moderate ● Low ● Very low

Summary of SVR rates to IFN free regimens in HCV G1 HIV- and HIV+ Naives non Cirrhotics



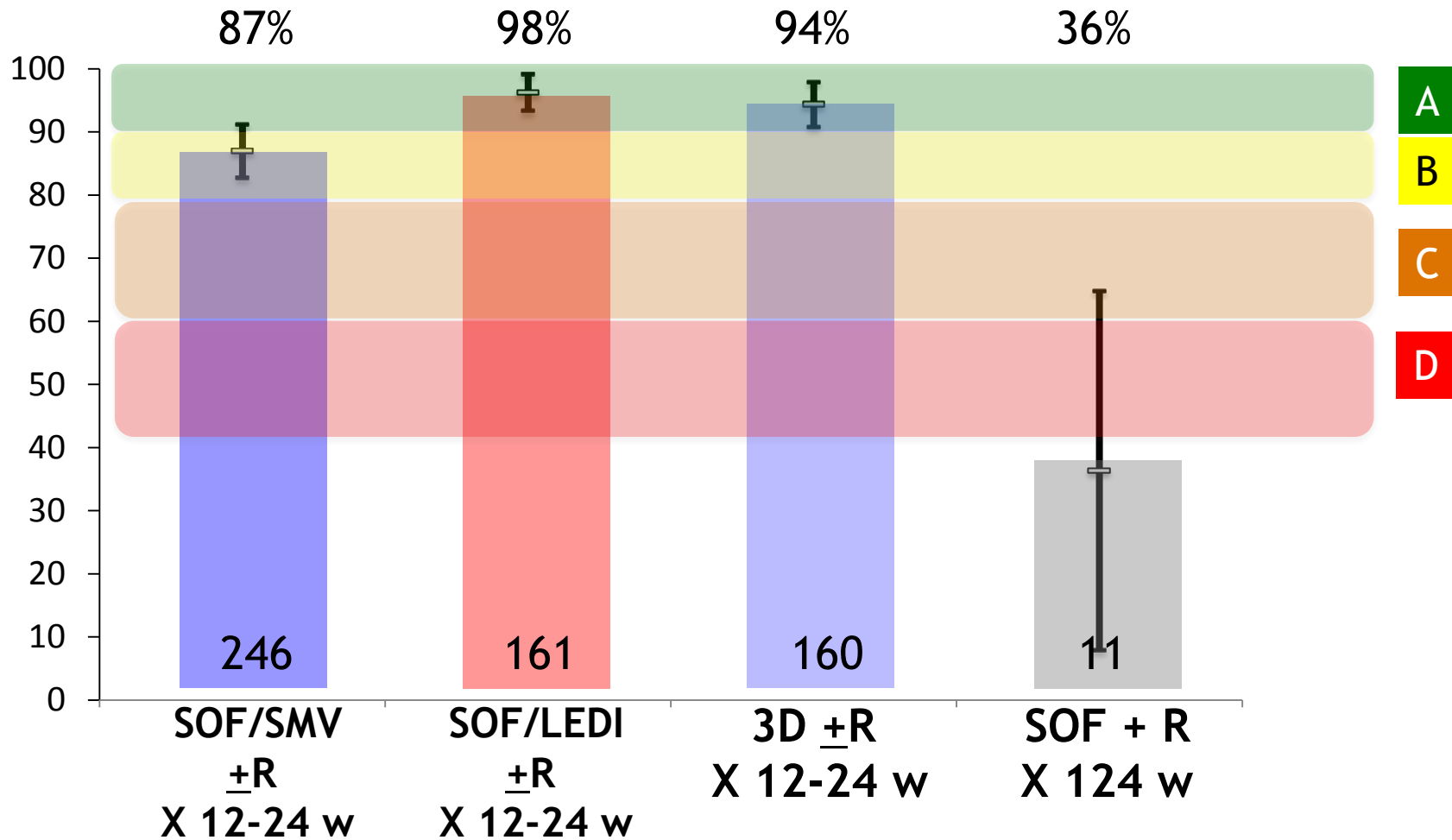
SIM/SOF study Cosmos, cohorts: TRIO, TARGET

SOF/LED studies ION-1 ION-3

3D: studies PEARL SAPPHIRE

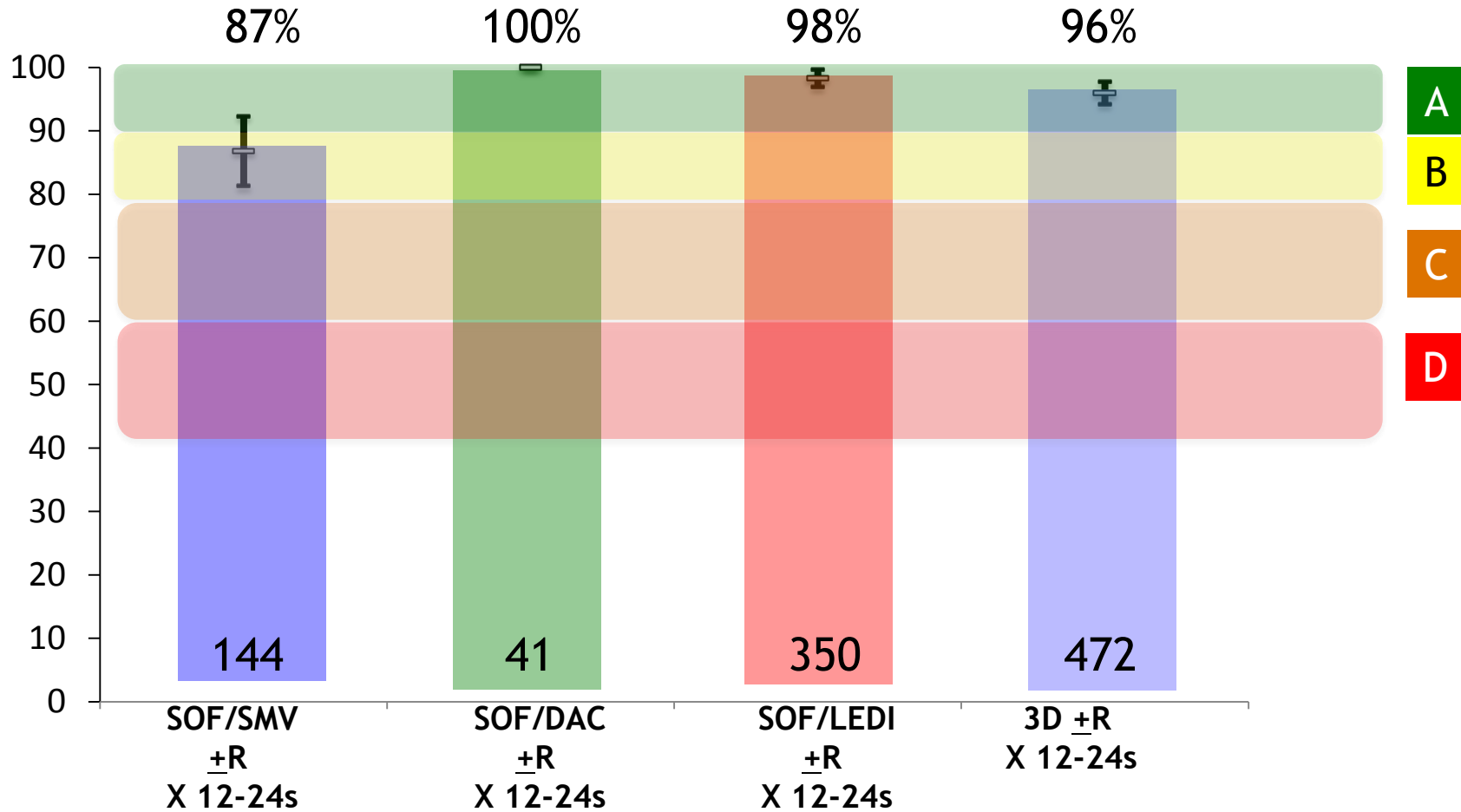
SOFO + R: SPC Sovaldi

Summary of SVR rates to IFN free regimens in HCV G1 HIV- Naives Cirrhotics



SIM/SOF study Cosmos, cohorts: TRIO, TARGET
 SOF/LED study meta analysis AASLD 2014
 3D: studies Turquoise II

Summary of SVR rates to IFN free regimens in HCV G1 HIV- Experienced non Cirrhotics



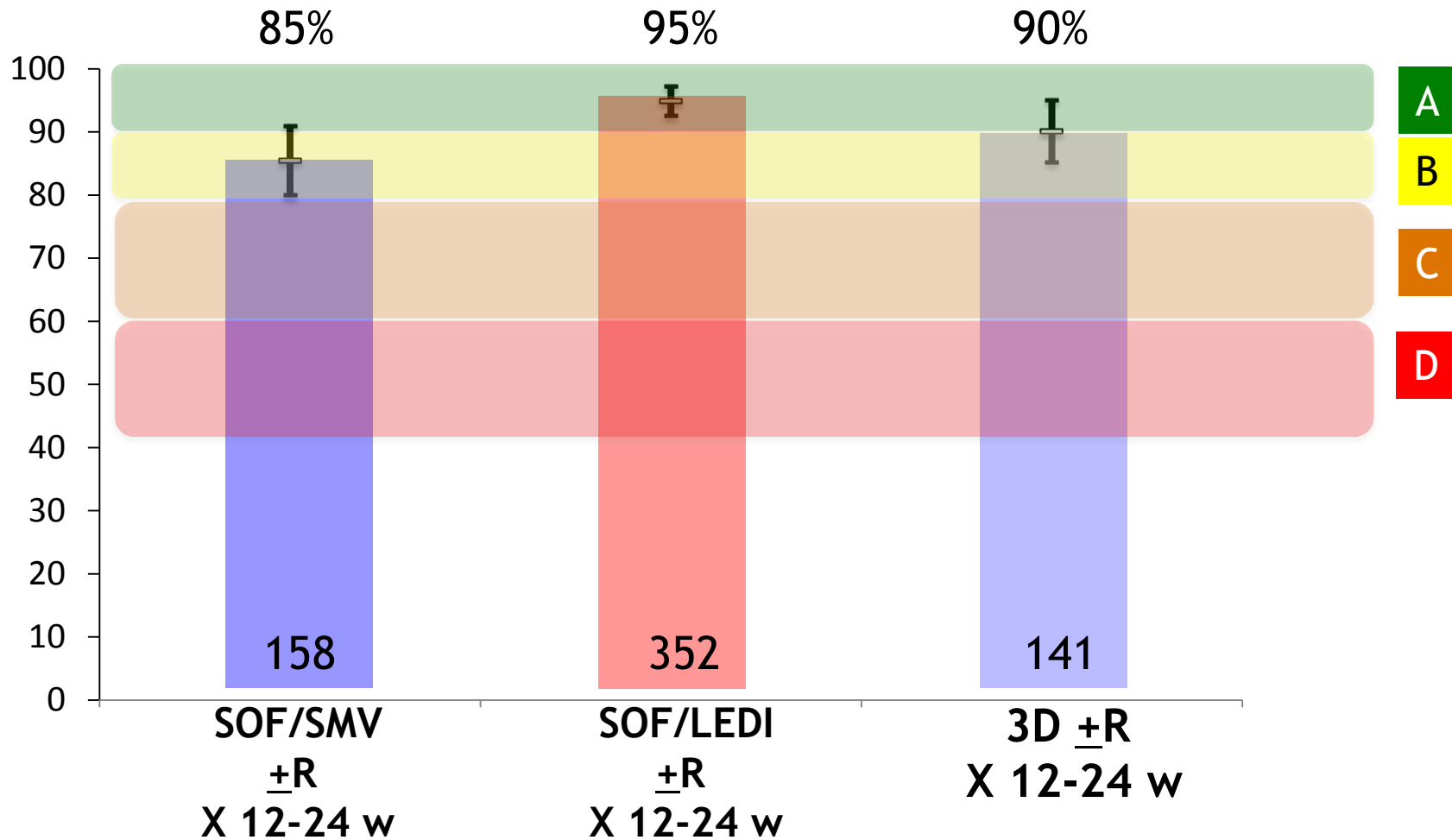
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Summary of SVR rates to IFN free regimens in HCV G1 HIV- Experienced Cirrhotics



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 3D: studies Turquoise II



PROGRAMMA SCIENTIFICO

SOCIETÀ MEDICA DI SANTA MARIA NUOVA



**Giornate Mediche di
Santa Maria Nuova 2015**

VII EDIZIONE

III Sessione

Novità in tema di Malattie Infettive

Introduzione

F. Mazzotta

DAA classes and subclasses

Drug Class	Subclass	Potency	Resistance barrier
Protease inhibitors “- previr”	1 st Generation first wave i.e. Telaprevir/Boceprevir	Medium-Low	Low
	1 st Generation 2 nd wave i.e. Simeprevir/Asunaprevir Paritaprevir/r	Medium	Low
	2 nd Generation Grazoprevir (in vivo) ABT 493 (in vitro)	High	High
NS5a inhibitor “..asvir”	1 st Generation Daclatasvir, Ledipasvir Ombitasvir, Elbasvir	High	Medium- High
	2 nd Generation GS 5816 (in vivo) ABT530 (in vitro)	High	High
Ppolymerase inhibitors “..buvir” NN	Dasabuvir Beclobuvir	Low-Medium	Low
Nucleos/tides	2 nd Generation : Sofosbuvir	High	High

Strategies of DAA based HCV eradication

- Sofosbuvir based
 - Sofosbuvir (high resistance barrier) + RBV
 - Sofosbuvir (high resistance barrier) + 1 DAA \pm RBV
- Sofosbuvir free
 - 3 (2) DAAs low resistance barrier

Still challenging

Phase IV

Adjusted for
HCV
Genotype.

Fine tuning
by RBV &
Tx duration
In PR
failures &
Cirrhosis