

# Improving health of LGBTIQ+ communities on the Maltese Islands

Valletta, 21. June 2016

*“What do we live for  
if not to make life less difficult for each other”*  
George Eliot

# Closing LGBTIQ+ sexual health gaps saves €200 million 2016–21 vs. continuing as is— 2016–21 investment of ~€12 million needed

## Summary



1. A defined list of mental, physical and sexual health challenges faced by general population have higher prevalence in LGBTIQ+ communities
2. Sexual health seen as first area to tackle
3. Solving HIV/AIDS issues closes all LGBTIQ+ sexual health gaps, saving over €200 million
  - i. 92 LGBTIQ+ sexual health gaps identified—HIV as vehicle can solve all of these
  - ii. HIV situation is critical—since 2009, new cases +20% p.a. driven by +57% p.a. for MSM
  - iii. Continuing as is, by 2021 Malta will have
    - a. 674 new HIV cases p.a., 97% MSM
    - b. >2,000 HIV cases in total
    - c. €279 million lifetime treatment costs for new cases 2016–21
  - iv. Best 2021 scenario has just 2 new MSM cases, saving €240 million over continuing as is
  - v. Three urgent steps to reduce new MSM HIV cases, cumulatively costing €12 in 2016–21
    - a. Prioritise: 1. Raise sense of urgency, 2. Account transparently
    - b. Stop transmission: 1. Test widely, 2. Eliminate pathogens, 3. Suppress pathogens
    - c. Stop reception: 1. Educate at-risk groups, 2. Repel pathogens at barriers
4. Immediate action in five areas proposed

# A defined list of health challenges faced by general population have higher prevalence in LGBTIQ+ communities

## Health issues with higher LGBTIQ+ prevalence



Health issue		Lesbian	Gay	Bisexual	Trans*	Intersex	Queer+
i. Sexually acquired	Bacterial vaginosis	●		●		No research found	No research found
	Chlamydia	●	●	●			
	Genital herpes	●	●	●			
	Gonorrhea	●	●	●			
	Hepatitis A		●	●			
	Hepatitis B		●	●			
	Hepatitis C		●	●			
	HIV/AIDS		●	●			
	HPV (human papilloma virus)	●	●	●			
	Parasites (pubic lice, trichomoniasis, etc.)	●	●	●			
	Syphilis		●	●			
ii. Mental	Anxiety, depression, suicide	●	●	●	●		
	Body image & eating disorders (anabolic steroid abuse, anorexia nervosa, bulimia, obesity, etc.)	●	●	●	●		
	Domestic violence	●	●	●	●		
	Substance abuse (alcohol, drugs, tobacco)	●	●	●	●		
iii. Other	Cancer, anal		●	●			
	Cancer, breast & endometrial	●					
	Cancer, cervical	●					
	Cancer, colon	●	●	●			
	Cancer, ovarian	●					
	Cancer, prostate		●	●			
	Cancer, testicular		●	●			
	Cardiovascular health				●		
	Injectable silicone				●		
	Polycystic Ovary Syndrome	●					

● Health challenges present in general population with higher prevalence in LGBTIQ+ community

(1) Exclusively or primarily a sexually acquired infection

Notes: Trans\*: Transgender, transsexual; genderqueer, genderfluid, non-binary, agender, non-gendered, transman, transwoman, bigender, two-spirit, etc.

Sources: National Institutes of Health, USA; CDC, USA; Mayo Clinic, USA; West Hollywood; WeHoVille.com, USA; www.womenshealth.gov, USA; www.glma.org, USA

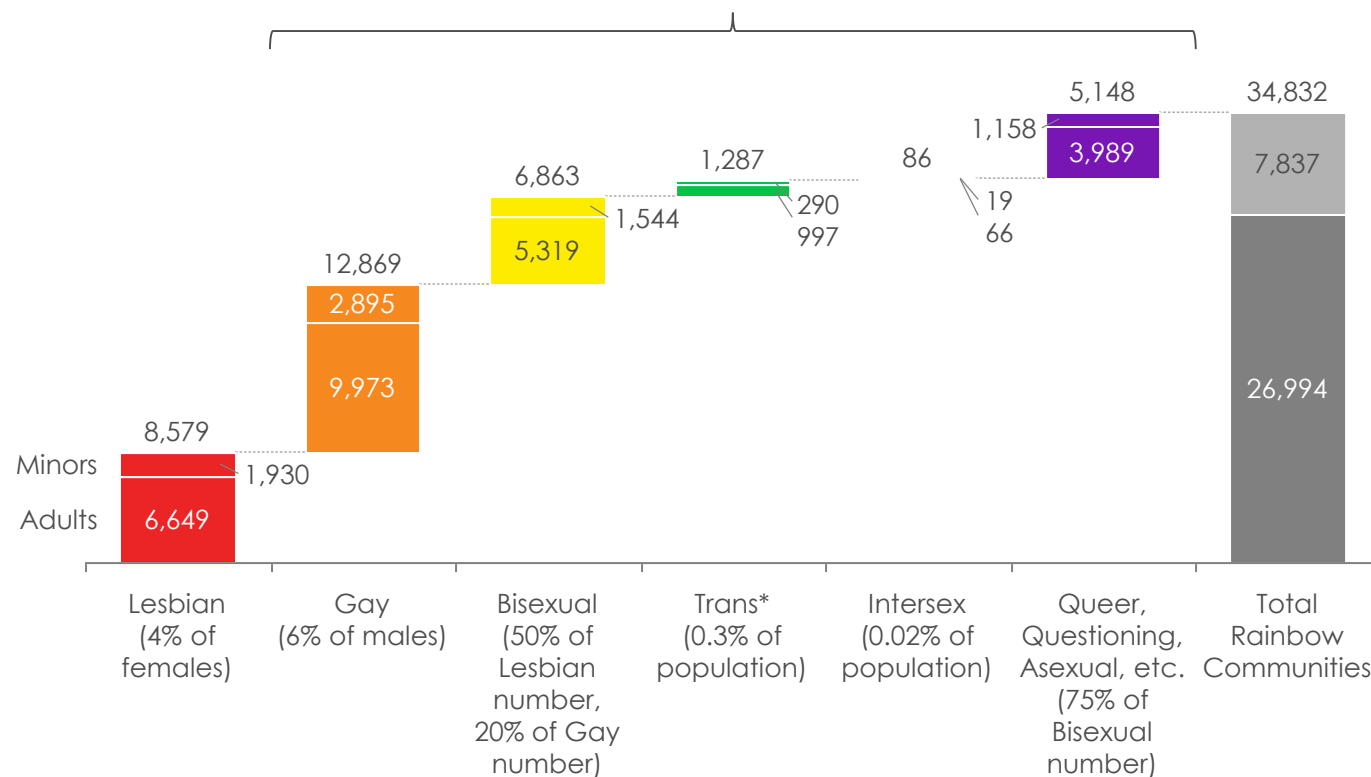
# Approximately 35,000 LGBTIQ+ residents on Malta in 2015

## Rainbow communities sizing, Malta, 2015



MSM<sup>(1)</sup> population is ~18,000 (~4.2% of population), assuming

- 100% of Gay community + 50% of BTIQ communities
- 100% of adults and 20% of minors in these communities



(1) MSM: Men who have sex with men

Notes: 80 year lifespan; Equal distribution by age; 428,960 total population; 50:50 gender balance; Trans\*: Transgender, transsexual; genderqueer, genderfluid, non-binary, agender, non-gendered, transman, transwoman, bigender, two-spirit, etc.

Sources: World bank; Google; Wikipedia; HM Treasury, UK; Office of National Statistics, UK; American Intersex Society; arc analysis

# arc LGBTIQ+ Health Working Group was founded in September 2015 and has first successes raising funds for LGBTIQ+ health

## Arc LGBTIQ+ Health Working Group key data



- People
  - Dr. Norman Shaw, doctor (medical judgment)
  - Mr. Clint Pace, pharmacist (pharmaceutical review)
  - Mr. Nicholas Bugeja, activist (community interviews)
  - Mr. Peter Gatt, activist (community interviews)
  - Mr. Eamonn Gomez Jimenez, management consultant (economics, analytics)
- Founded September 2015
- Key achievements to date
  - Raised €2,500 to help improve the diagnosis of bacterial Sexually Acquired Infections (SAIs) and agreeing the resulting training program with the GU clinic—two specialists sent to London for training
  - Raised €3,000 plus co-paid advertising from the dating app industry for a social media based public education campaign regarding SAIs including HIV for launch for the summer season 2016

### Our approach

As a first step only look at issues from LGBTIQ+ communities' point of view, to generate position on what is desirable in an ideal world

Only, in the second step, discuss with decision makers and providers to investigate what is possible

This report represents Step 1 only



*Developing best practices to deal with LGBTIQ+ health challenges also benefits general society*







*Example: Ramps for disabled people also help the general population, e.g. for members of general population going on holiday with a wheeled suitcase*

*Our proposal:  
Use us, the LGBTIQ+ population as a focused group to implement best practices for all. We'll give regular feedback, to ensure optimal implementation.*

# Sexual acquired infections seen as first area for action

Prioritisation order for areas of health challenges



Dimension	i. Sexually acquired infections	ii. Mental issues	iii. Other
Avoidability			
Community interest			
Proposed priority	<b>1</b>	<b>2</b>	<b>3</b>



# Solving HIV/AIDS issues closes most LGBTIQ+ sexual health gaps, saving over €200 million

## Solving HIV crisis as vehicle: Analysis and solutions

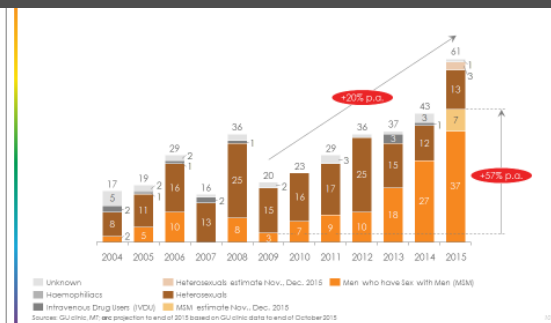


92 LGBTIQ+ sexual health gaps identified—HIV as vehicle can solve all of these

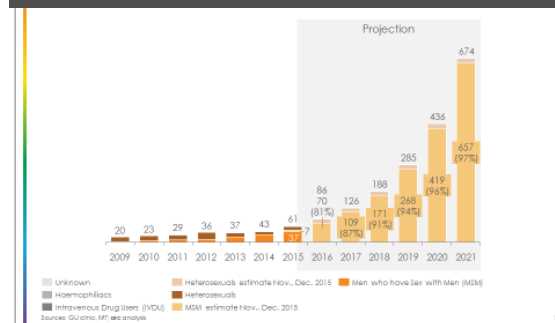
Step	Action	Area	LGBTIQ+ Sexual Health Challenge									
			Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified
a. Prioritize	Communicate	Series of urgency										
	Account	Publish statistics										
	Test widely	Test acceptance										
b. Stop transmission	Eliminate pathogen	Kill bacteria										
	Suppress pathogen	Cure Hepatitis										
	Suppress pathogen	Best suppression										
c. Stop reception	1. Educate at-risk groups	Best adherence										
	2. Repel pathogen	Staying ahead										
	2. Repel pathogen	Message										

Legend: Gap identified (red dot), Areas covered by HIV/AIDS driven program (orange dot)

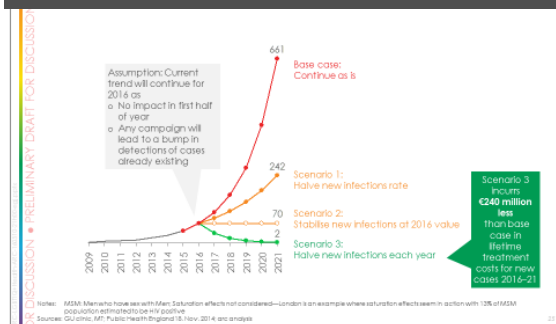
HIV situation is critical—since 2009, new cases +20% p.a. driven by +57% p.a. for MSM



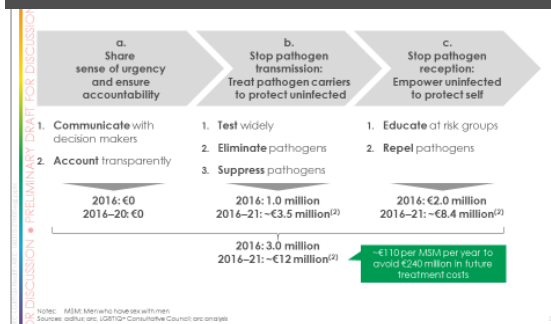
Continuing as is, by 2021 674 new HIV cases p.a., 97% MSM



Best 2021 scenario has just 2 new MSM cases, saving ~€240 million over continuing as is



Three urgent steps to reduce new MSM HIV cases, cumulatively costing ~€12 million in 2016–21



2016–21:  
 €240 million less costs -  
 €12 million investment =  
 ~€226 million net saving

# 92 LGBTIQ+ sexual acquired infection health gaps identified—tackling HIV as vehicle can solve all of these

HIV as vehicle

LGBTIQ+ sexual health gaps identified for Malta



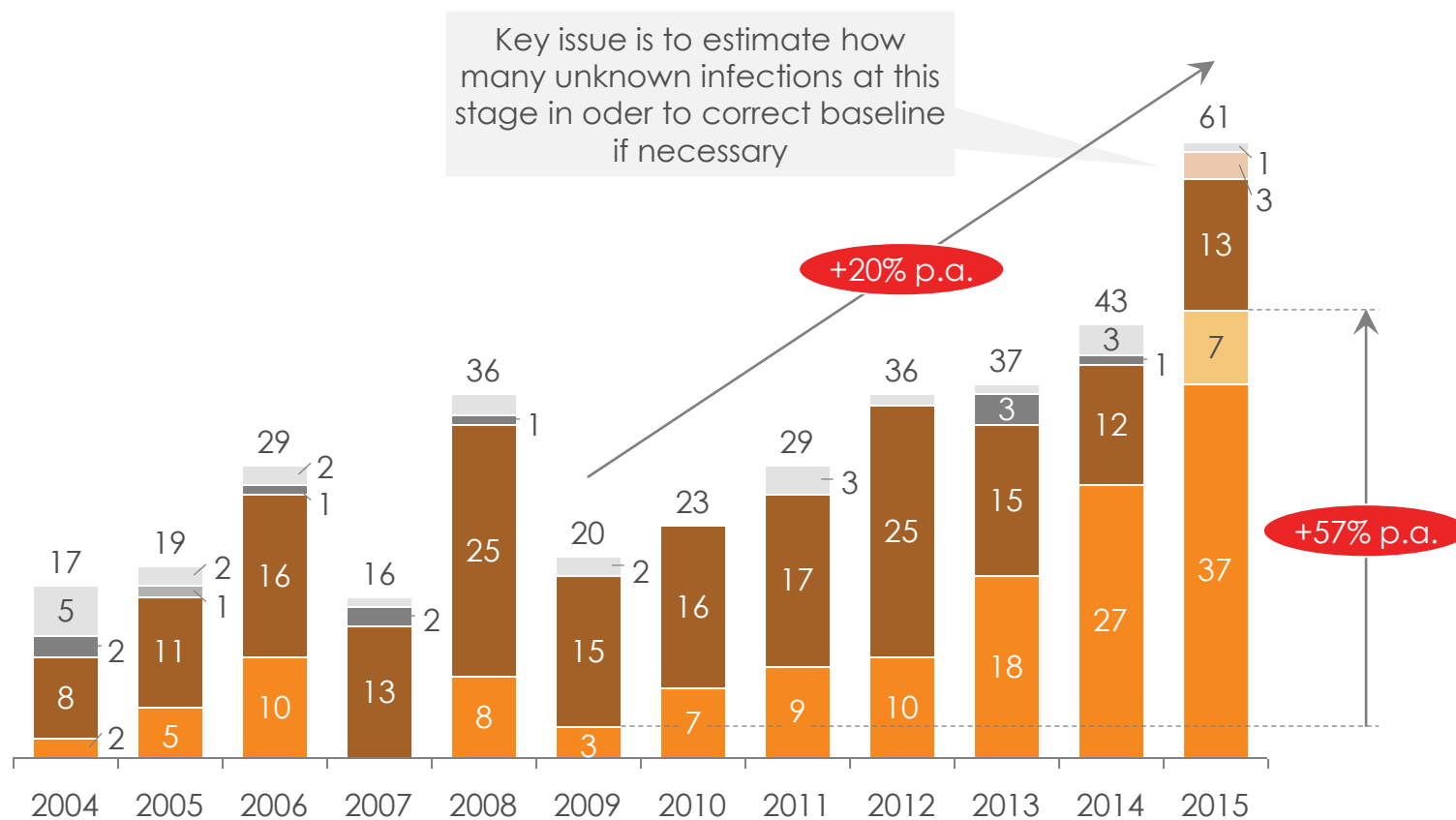
Step	Action	Area	LGBTIQ+ Sexual Health Challenge										
			Bacterial vaginosis	Chlamydia	Genital herpes	Gonorrhoea	Hepatitis A	Hepatitis B	Hepatitis C	HIV/AIDS	HPV (human papilloma virus)	Parasites (pubic lice, tricom. etc)	Syphilis
a. Prioritise	Communicate	Sense of urgency			●	●			●	●	●		●
	Account	Publish statistics	●	●	●	●	●	●	●	●	●	●	●
b. Stop transmission	Test widely	Test acceptance								●			
		Test execution	●	●	●	●	●	●	●	●	●		●
	Eliminate pathogen	Kill bacteria									●		
		Cure Hepatitis							●				
	Suppress pathogen	Best suppression			●					●			
		Best adherence								●			
		Staying ahead	●	●	●	●	●	●	●	●	●	●	●
c. Stop reception	1. Educate at-risk groups	Message	●	●	●	●	●	●	●	●	●	●	●
		Resources	●	●	●	●	●	●	●	●	●	●	●
		Target groups	●	●	●	●	●	●	●	●	●	●	●
	2. Repel pathogen	Physical barrier	●	●	●	●	●	●	●	●	●	●	●
		Pharmac. Barrier								●			
		Immunolog. barrier					●	●			●		

● Gap identified      Areas covered by HIV/AIDS driven program

Sources: arc LGBTIQ+ Health Working Group

HIV situation is critical—since 2009, new cases  
+20% p.a. driven by +57% p.a. for MSM

HIV: New cases detected, Malta



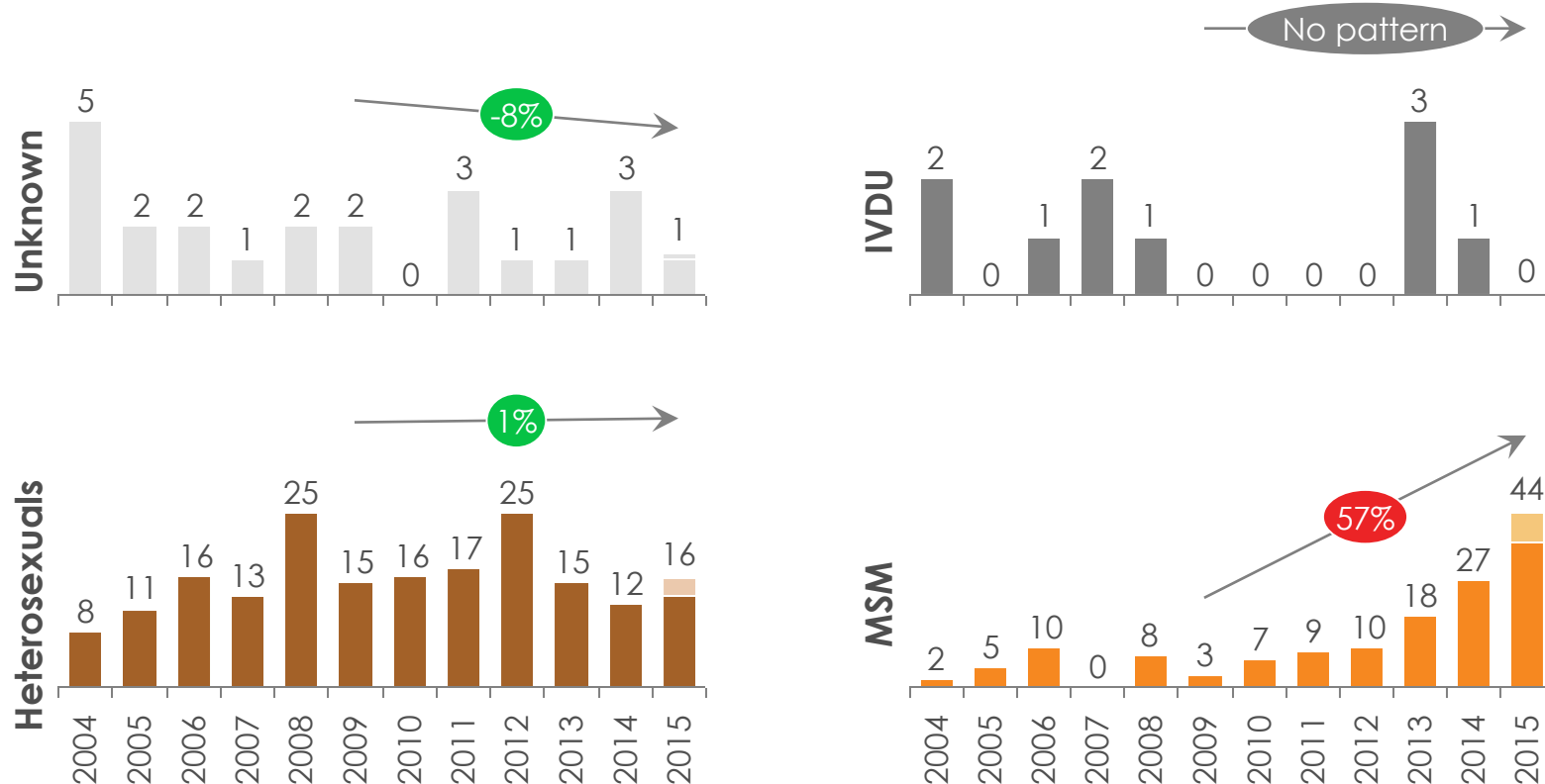
Unknown  
 Haemophiliacs  
 Intravenous Drug Users (IVDU)  
 Heterosexuals estimate Nov., Dec. 2015  
 Heterosexuals  
 MSM estimate Nov., Dec. 2015  
 Men who have Sex with Men (MSM)

Sources: Health Minister report to Parliament on figures from GU clinic, MT; arc projection to end of 2015 based on GU clinic data to end of October 2015

# Increase in cases detected since 2009 is driven by MSM—57% annual increase in new cases represents a health crisis for MSM

HIV: New cases detected, Malta, by segment

HIV as vehicle: Now  
Backup



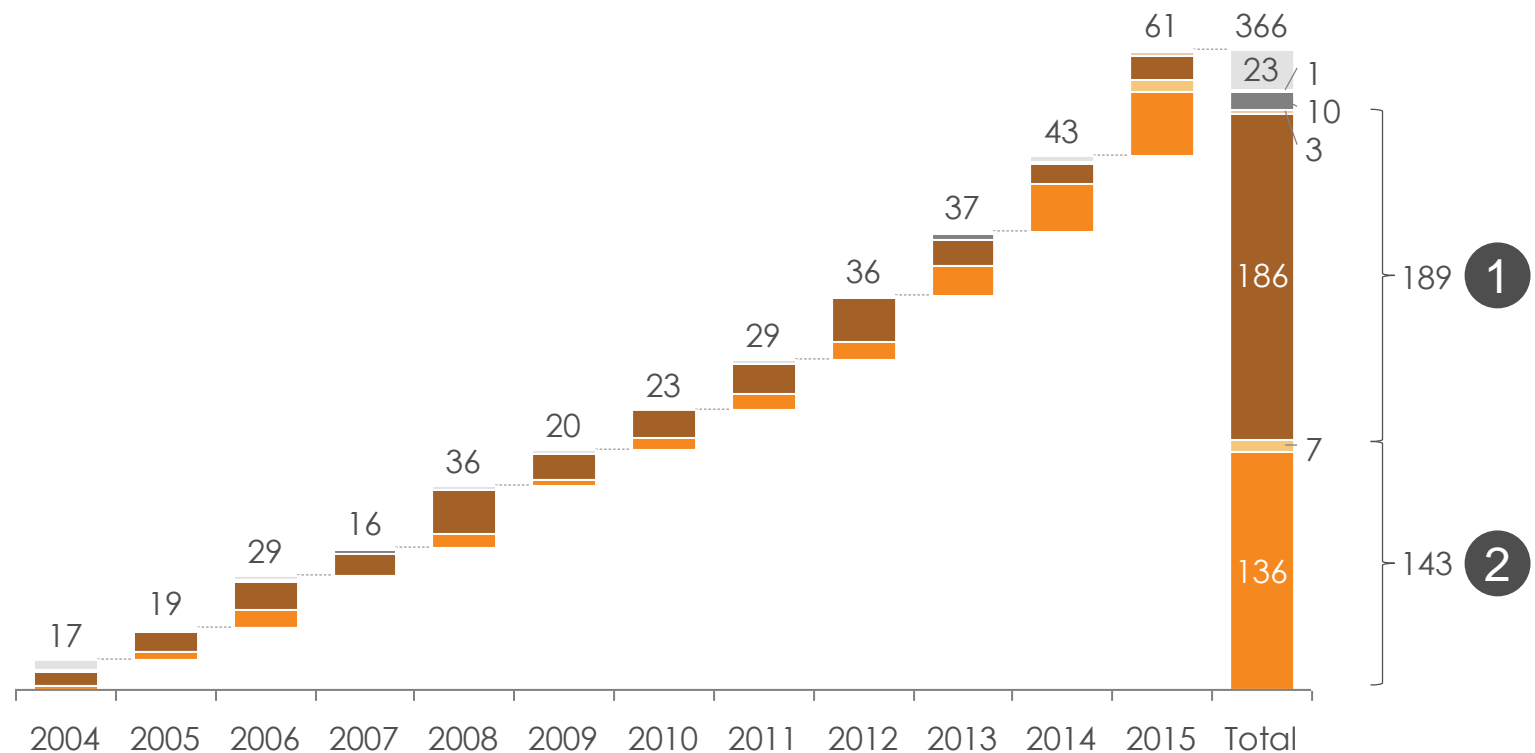
Unknown  
Haemophiliacs  
Intravenous Drug Users (IVDU)  
Heterosexuals estimate Nov., Dec. 2015  
Heterosexuals  
MSM estimate Nov., Dec. 2015  
Men who have Sex with Men (MSM)

Sources: GU clinic, MT; arc projection to end of 2015 based on GU clinic data to end of October 2015

In 2015, the 143 HIV+ MSM are second largest group of HIV+ people on Malta after the 189 heterosexuals

HIV: Persons living with HIV, Malta

HIV as vehicle: Now  
Backup



Unknown  
Haemophiliacs  
Intravenous Drug Users (IVDU)  
Heterosexuals estimate Nov., Dec. 2015  
Heterosexuals  
MSM estimate Nov., Dec. 2015  
Men who have Sex with Men (MSM)

Sources: GU clinic, MT; arc projection to end of 2015 based on GU clinic data to end of October 2015

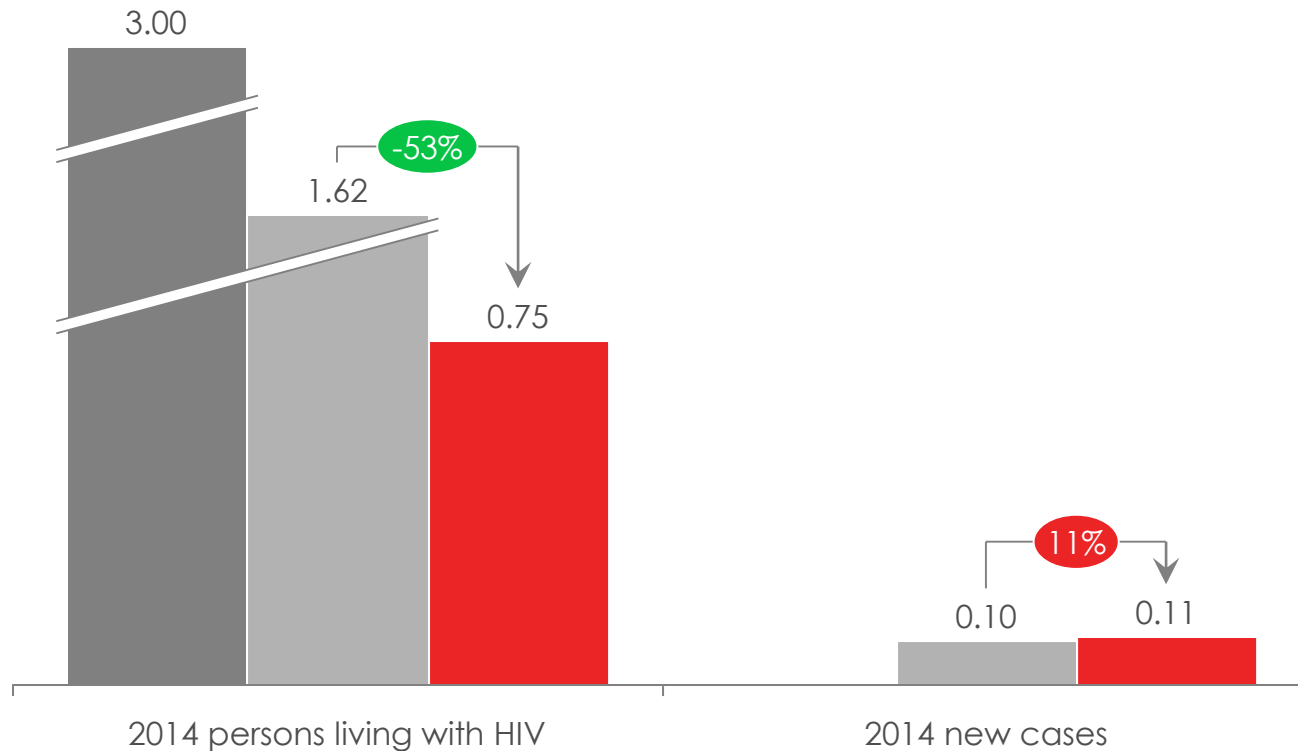
In 2014, rate of people living with HIV on Malta is half UK rate, but Maltese rate of new cases is 11% is higher

HIV: Comparison UK & Malta

HIV as vehicle: Now  
Backup



‰ of relevant population

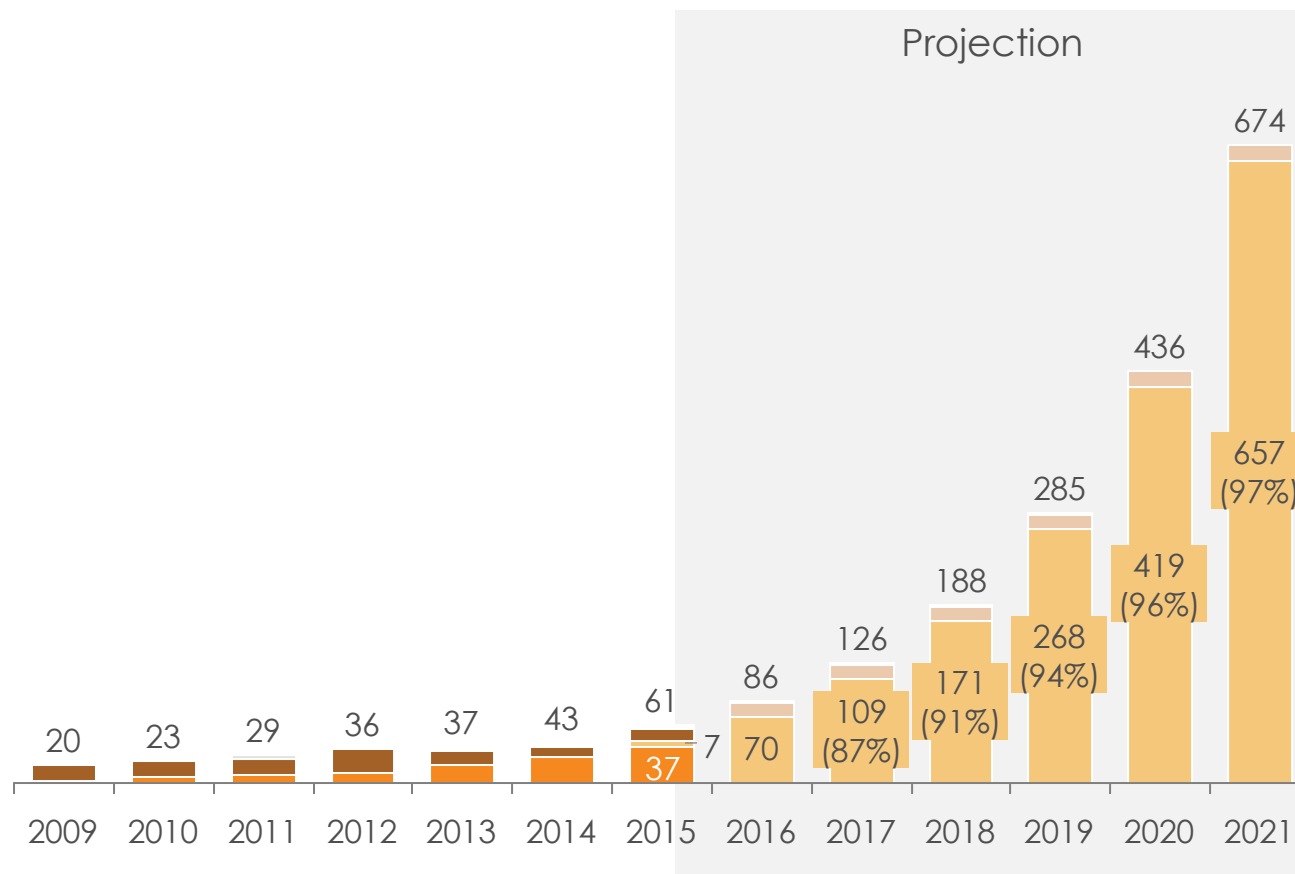


■ Western, Central Europe, & North America ■ UK ■ Malta

Sources: GU clinic, MT; UNAIDS 2015, National Aids Trust, UK

Continuing as is, by 2021 Malta will have  
674 new HIV cases p.a., 97% MSM

HIV: New cases detected, Malta, projection

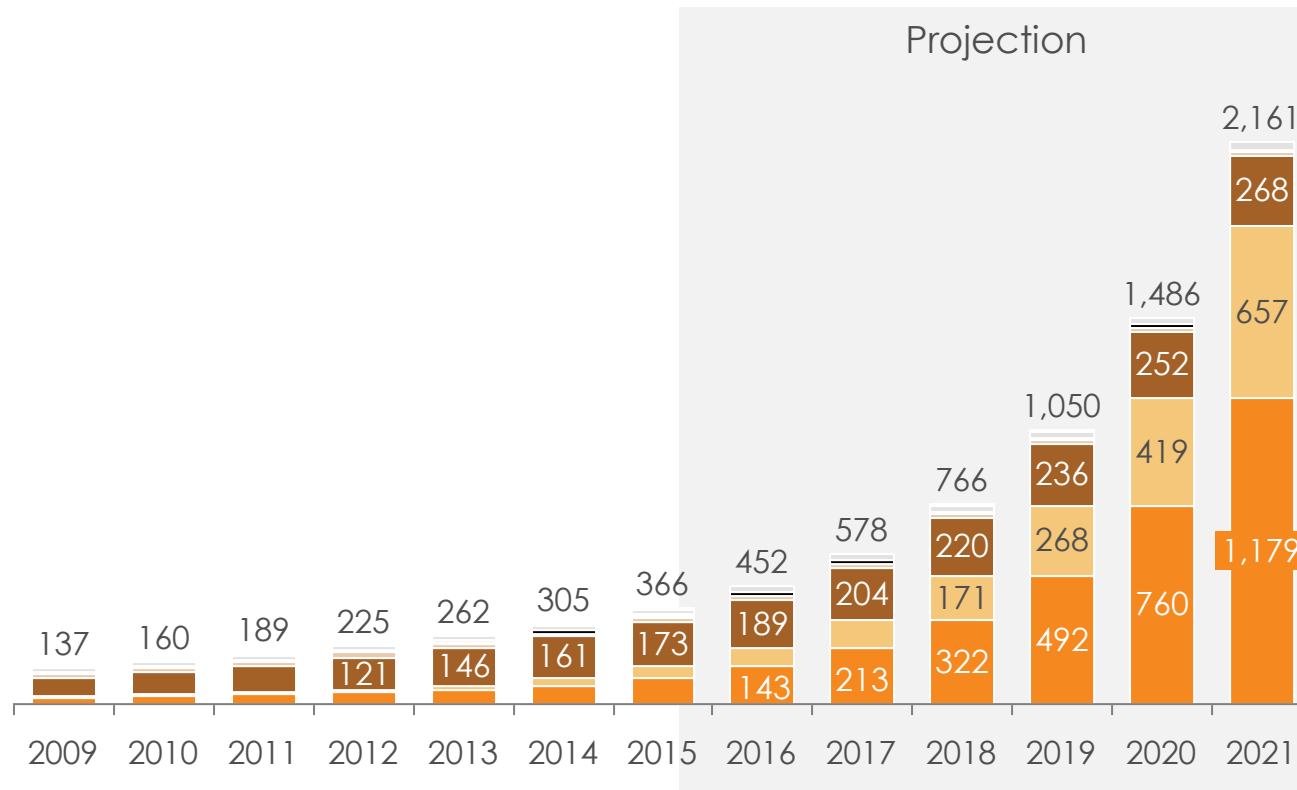


Unknown    Intravenous Drug Users (IVDU)    Heterosexuals    Men who have Sex with Men (MSM)  
 Haemophiliacs    Heterosexuals estimate    MSM estimate

Sources: GU clinic, MT; arc analysis

Continuing as is, by 2021 Malta will have  
>2,000 HIV cases in total

HIV: Persons living with HIV, Malta, projection



- Unknown, new cases
- Unknown, previous year
- Haemophiliacs, new cases
- Haemophiliacs, previous year
- Intravenous Drug Users (IVDU), new cases
- Intravenous Drug Users (IVDU), previous year
- Heterosexuals, new cases
- Heterosexuals, previous year
- MSM, new cases
- Men who have Sex with Men (MSM), previous year

Sources: GU clinic, MT; arc analysis



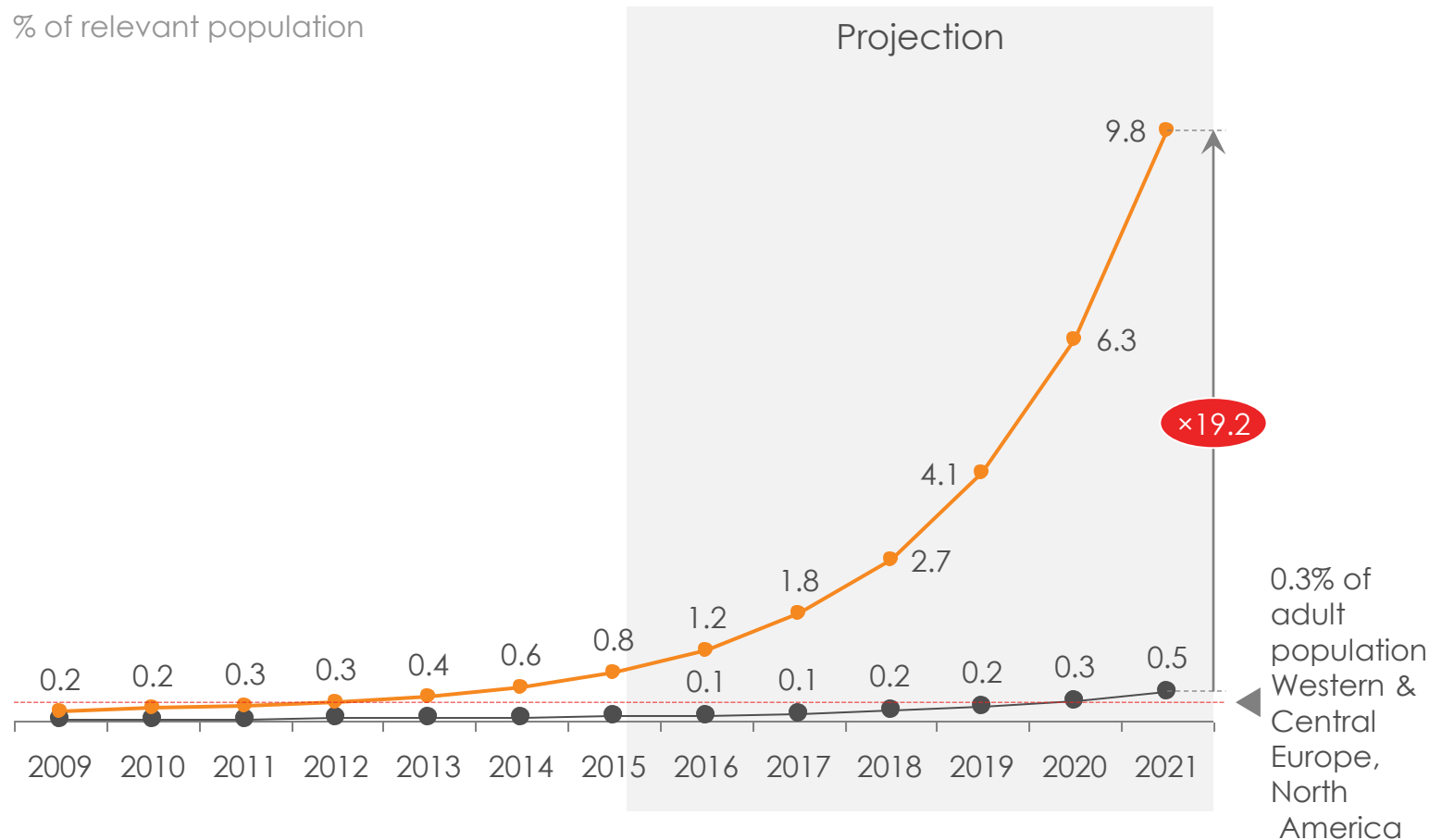
# Continuing as is will lead to 9.8% of MSM population and 0.5% of whole population infected in 2021

HIV: Infection rates, Malta

HIV as vehicle: Continue as is  
Backup



% of relevant population



—●— Infection rate, overall    —●— Infection rate, MSM

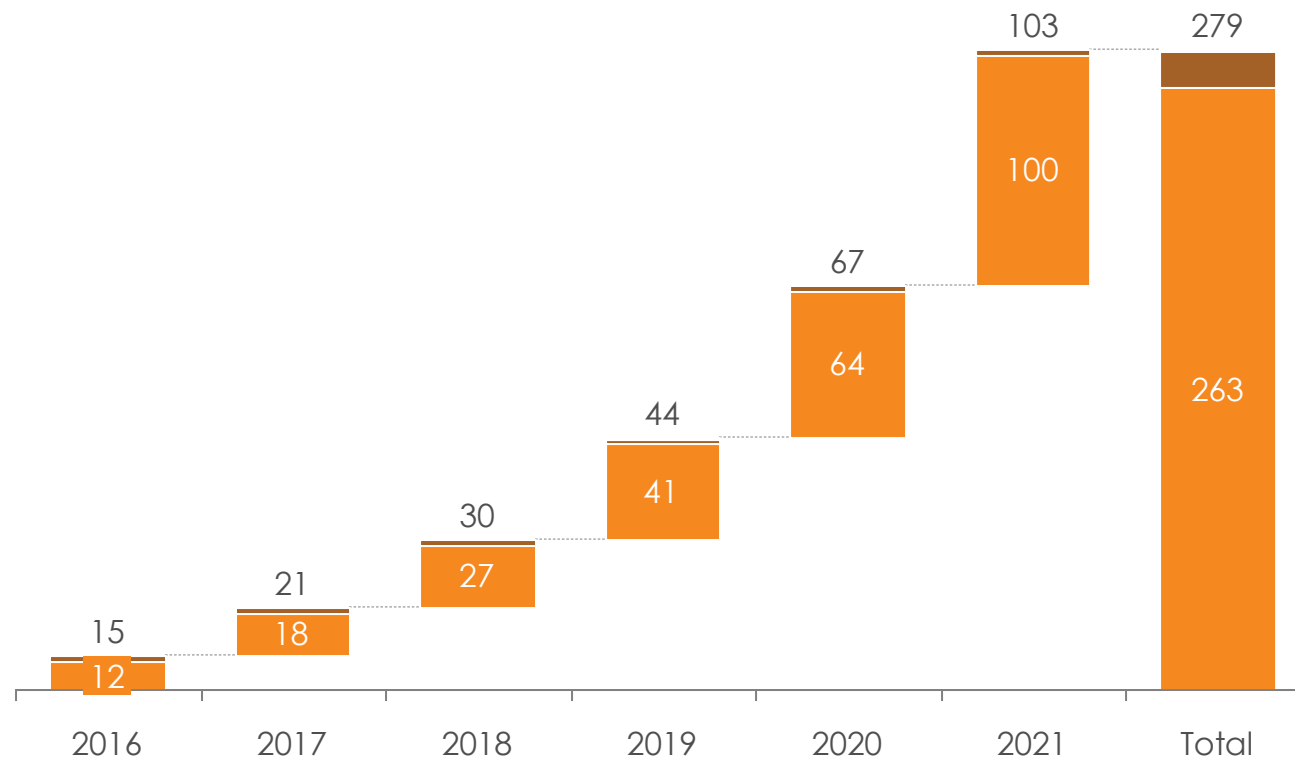
# Continuing as is, by 2021 Malta will have incurred €279 million lifetime treatment costs from new infections

HIV: Lifetime costs, new cases

HIV as vehicle: Continue as is



€ millions



Unknown    Intravenous Drug Users (IVDU)    Men who have Sex with Men (MSM)  
Haemophiliacs    Heterosexuals

Sources: aidsmap.com; Nakagawa F et al, PLOS One 2015; healthline.com; Julian Perelman et al, sciello.br, 2013; arc analysis

# Lifetime cost of treatment is falling as major drugs come off patent in 2018 allowing replacement with less expensive generics

HIV: Cost of treatment

HIV as vehicle: Continue as is  
Backup

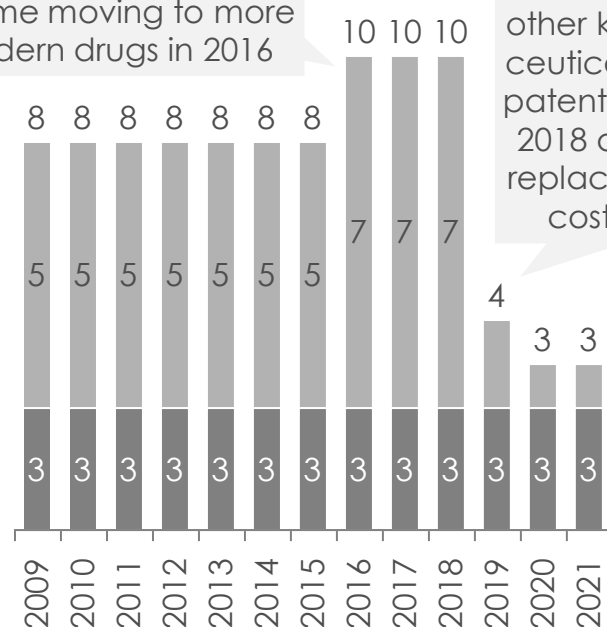


€ thousands

**Annual costs per case**

Assume moving to more modern drugs in 2016

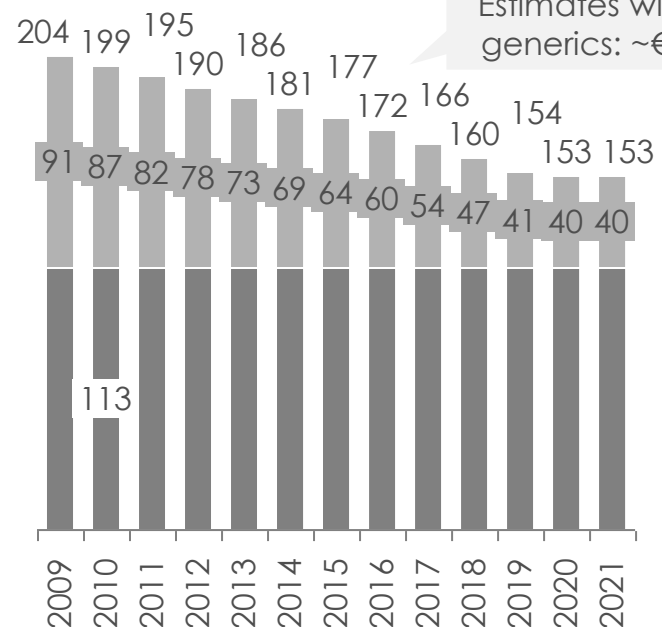
Truvada<sup>(1)</sup> and other key pharmaceuticals come off patent in Europe in 2018 and can be replaced by lower cost generics



€ thousands

**Lifetime costs per case, by year of discovery**

Estimates without generics: ~€500K



■ HIV pharmaceuticals ■ Other care

(1) Tenofovir disoproxil/emtricitabine

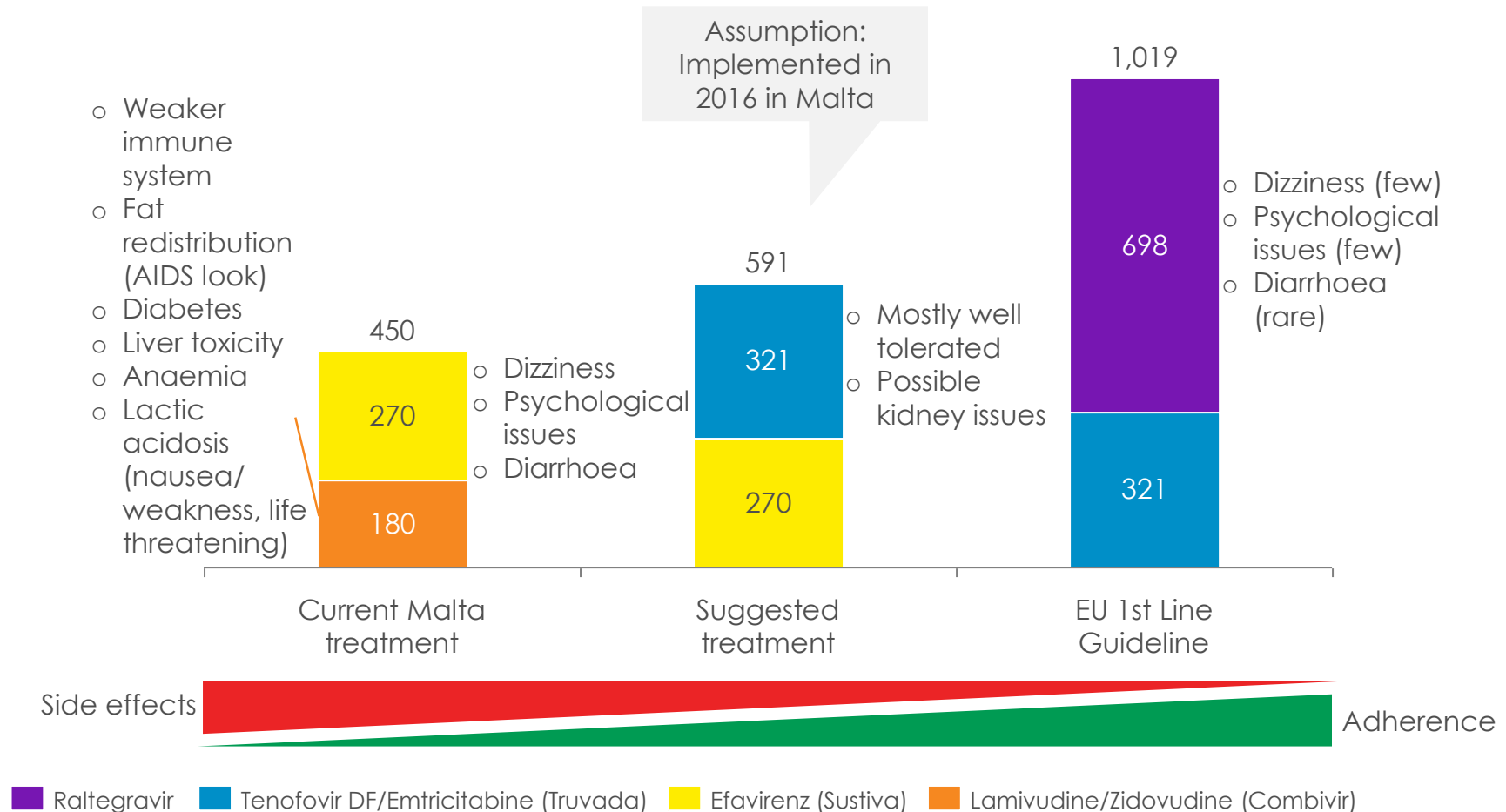
Notes: Indirect costs (loss of ability of work, social care, disability payments) not included. Key next step is to verify this data for Malta as Portugal and UK data used for this analysis may not fully represent Malta's situation. At time of implementation, aggressive generic substitution program is a prerequisite for success

Sources: aidsmat.com; Nakagawa F et al, PLOS One 2015; healthline.com; Julian Perelman et al, sciello.br, 2013; arc analysis

# Lifetime cost of treatment is falling as major drugs come off patent in 2018 allowing replacement with less expensive generics

## HIV: Cost of treatment

HIV as vehicle: Continue as is  
Backup



# Key HIV treatment drugs are coming off patent in Europe in 2018

HIV: Gilead pharmaceuticals and patent expiry



← → ↻ [https://en.wikipedia.org/wiki/Gilead\\_Sciences](https://en.wikipedia.org/wiki/Gilead_Sciences) ☆ G ↻ 🔍 ☰

Product Portfolio						
Brand Name	Drug Name(s)	Indication	Date Approved (USA) <sup>[49]</sup>	Marketing Partner(s)	U.S. Patent Expiration <sup>[50]</sup>	European Patent Expiration <sup>[50]</sup>
<b>AmBisome</b>	liposomal amphotericin B	fungal infection, cryptococcal meningitis, Aspergillus, Candida, Cryptococcus infections	1997-08-11	Astellas Pharma(USA)Rapiscan(EU)	2016	expired
<b>Atripla</b>	tenofovir, emtricitabine, and efavirenz	HIV, AIDS	2006-07-12	Bristol-Myers Squibb	2021	2018
<b>Cayston</b>	Aztreonam	Cystic Fibrosis	2010-02-22		2021	2021
<b>Complera/Eviplera</b>	tenofovir, emtricitabine, and rilpivirine	HIV, AIDS	2011-08-10	Johnson and Johnson		
<b>Emtriva</b>	emtricitabine	HIV, AIDS	2003-07-02		2021	2016
<b>Fiolan</b>	epoprostenol sodium	pulmonary hypertension	1995-09-20	GlaxoSmithKline	expired	expired
<b>Harvoni</b>	sofosbuvir, ledipasvir	Hepatitis C	2014-10-10			
<b>Hepsera</b>	adefovir dipivoxil	hepatitis B (HBV)	2002-09-20		2014	2011
<b>Letairis</b>	ambrisentan	Pulmonary arterial hypertension	2007-06-15	GlaxoSmithKline	2015	2015
<b>Lexiscan</b>	regadenoson	myocardial perfusion imaging	2008-04-10	Astellas	2019	2020
<b>Macugen</b>	pegaptanib sodium solution	age-related macular degeneration	2004-12-17	OSI and Pfizer	2017	2017
<b>Ranexa</b>	ranolazine	angina	2006-01-27	Hoffmann–La Roche	2019	2019
<b>Sovaldi</b>	sofosbuvir	Hepatitis C	2013-12-06			
<b>Stribild</b>	elvitegravir, cobicistat, emtricitabine, tenofovir	HIV, AIDS	2012-08-27			
<b>Tamiflu</b>	oseltamivir phosphate	Influenza	1999-10-27	Hoffmann–La Roche	2016	2016
<b>Truvada</b>	emtricitabine and tenofovir	HIV, AIDS	2004-08-02		2021	2018
<b>Tybost</b>	cobicistat	HIV, AIDS	2013-09-25 (EU), 2014-09-24 (US)			
<b>Viread</b>	tenofovir	HIV, AIDS, hepatitis B	2001-10-26		2017	2018
<b>Vistide</b>	cidofovir	CMV retinitis	1996-06-26	Pfizer	expired	expired
<b>Vitekta</b>	elvitegravir	HIV, AIDS	2013-09-25 (EU), 2014-09-24 (US)			
<b>Zydelig</b>	idelalisib	oncology, lymphoma	2014-07-23			

# Generic Truvada<sup>(1)</sup> costs only €31.50 per month in South Africa

HIV: Medicine price example



**TOTHILLS PHARMACY**  
LOWER BURG STREET  
CAPE TOWN  
8001  
Tel: 421-2421 Fax: 425-1263

**Certified Copy of Prescription**

Date Dispensed 2016/04/19 SCRIPT REF. NO: 00261873

Main Member: [REDACTED] 14:36  
CAPE TOWN

Medical Scheme: PRIVATE PATIENT  
Scheme Code: PR Number of Items: 1

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**TYRICTEN 200/300MG TAB 30**  
NAPPI CODE : 715071001 ICD10 : Z76.9 R538.64  
TAKE ONE TABLET DAILY  
(RPT 0 OF 6)

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ITEMS: 1	GROSS	R472.49
	+ VAT	R66.15
	TOTAL	R538.64

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DISPENSER: PVL RAMS NO: 6003176

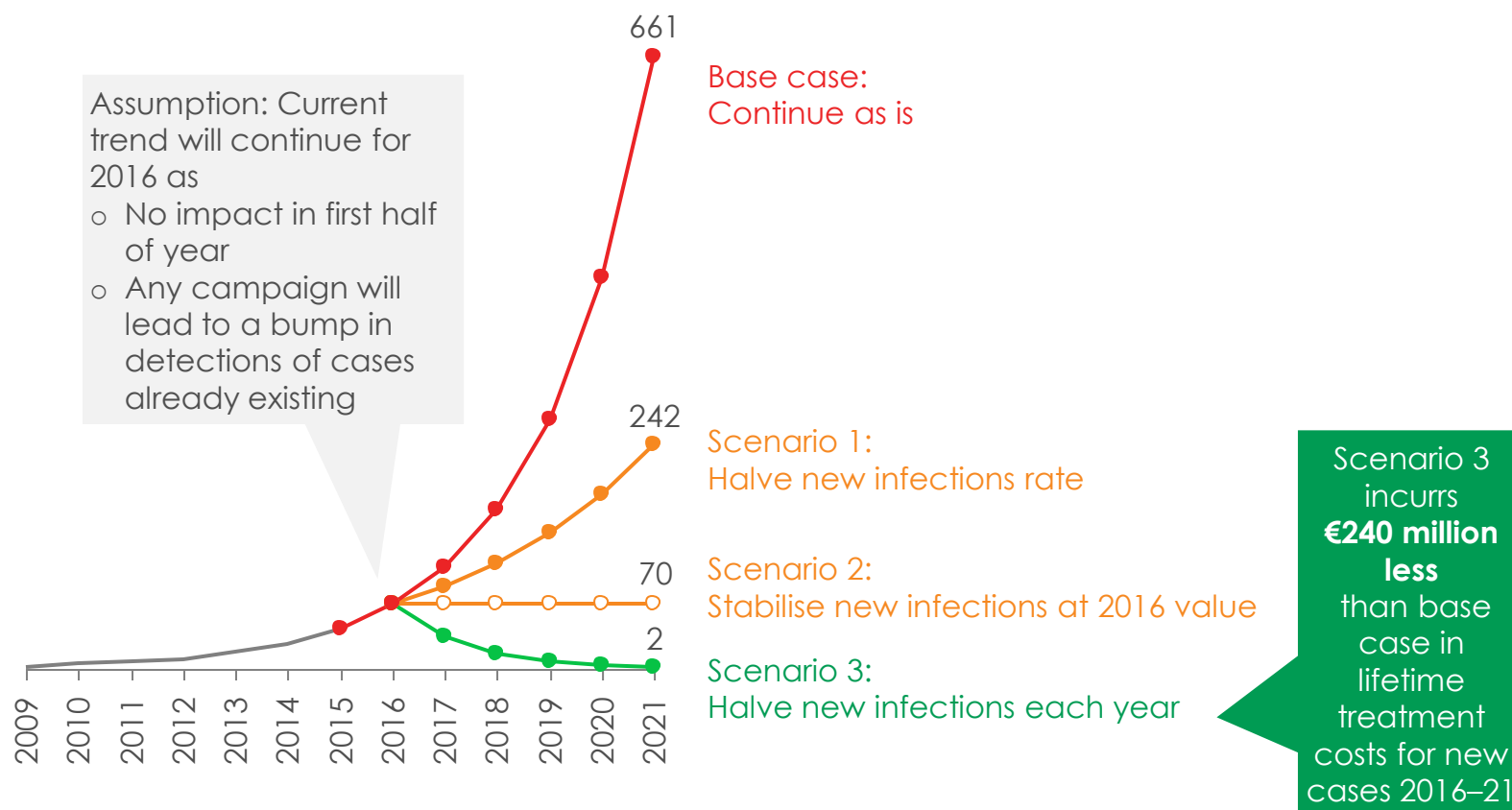
Generic Truvada:  
Tenofovir  
disoproxil/  
emtricitabine

For PrEP, consider grey imports as Pharmaceutical companies cannot prove damages—no loss of sales as PrEP would not be introduced at current high prices

€31.50,  
10.05.2016:  
zar17.1/eur

(1) Tenofovir disoproxil/emtricitabine  
Sources: arc; xe.com

Best 2021 scenario has just two new MSM cases, saving €240 million over continuing as is  
HIV: MSM new cases detected, Malta, by scenario

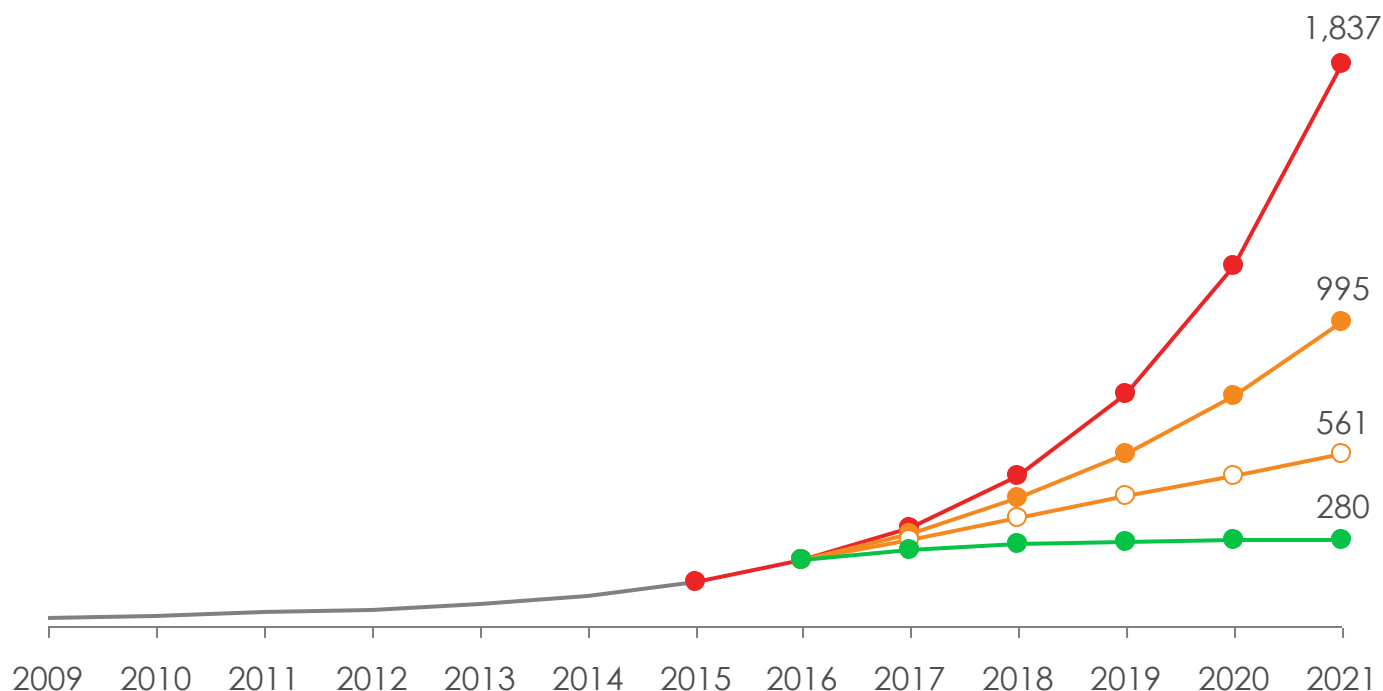


Notes: MSM: Men who have sex with Men; Saturation effects not considered—London is an example where saturation effects seem in action with 13% of MSM population estimated to be HIV positive

Sources: GU clinic, MT; Public Health England 18. Nov. 2014; arc analysis

# Number of MSM living with HIV on Malta in 2021 can be as high as 1,800 or low as 280

## HIV: MSM persons living with HIV, Malta, by scenario



● Base case: Carry on as is    
 ○ 2: Stabilise new infections at 2016 value    
 — Actual  
● 1. Halve new infections rate    
● 2. Halve new infections each year

Notes: MSM: Men who have sex with Men; Saturation effects not considered—London is an example where saturation effects seem in action with 13% of MSM population estimated to be HIV positive

Sources: GU clinic, MT; Public Health England 18. Nov. 2014; arc analysis



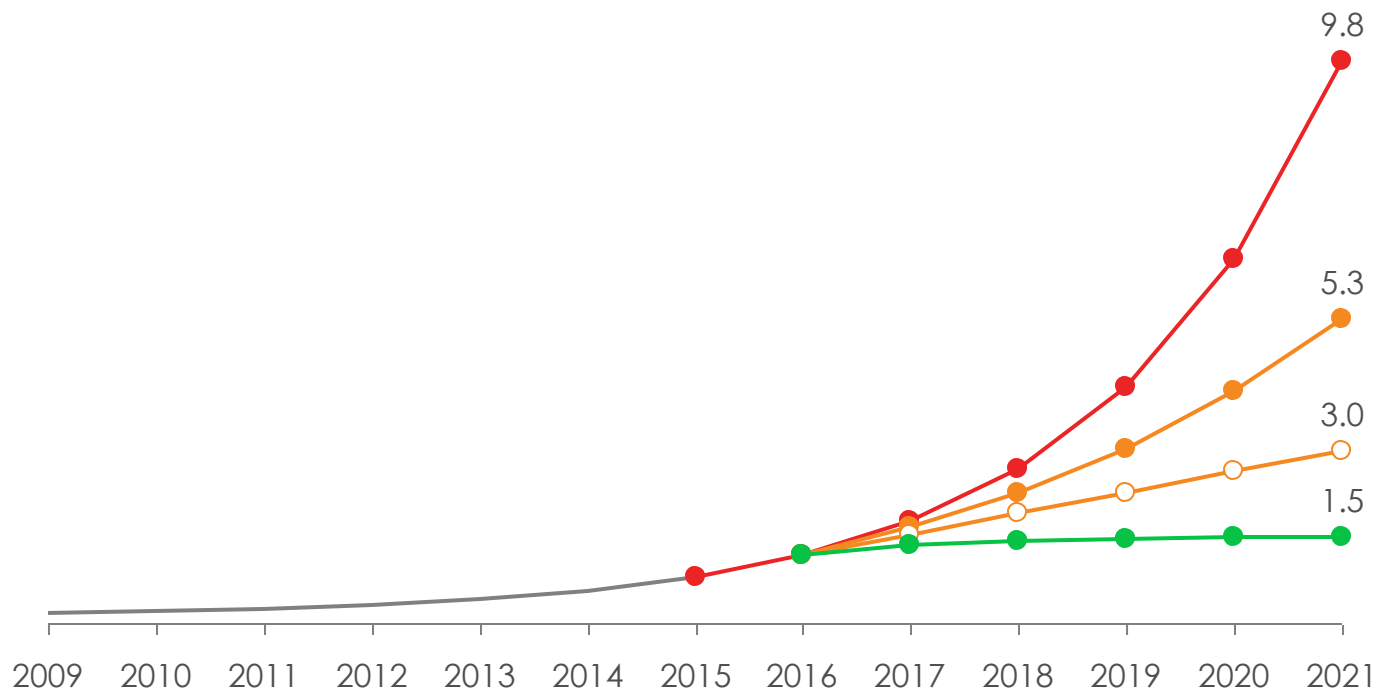
# Infection rate can be held similar to today or let rise to as much as 10% of MSM population being infected in 2021

HIV: MSM infection rates, by scenario

HIV as vehicle: Future



% of MSM population



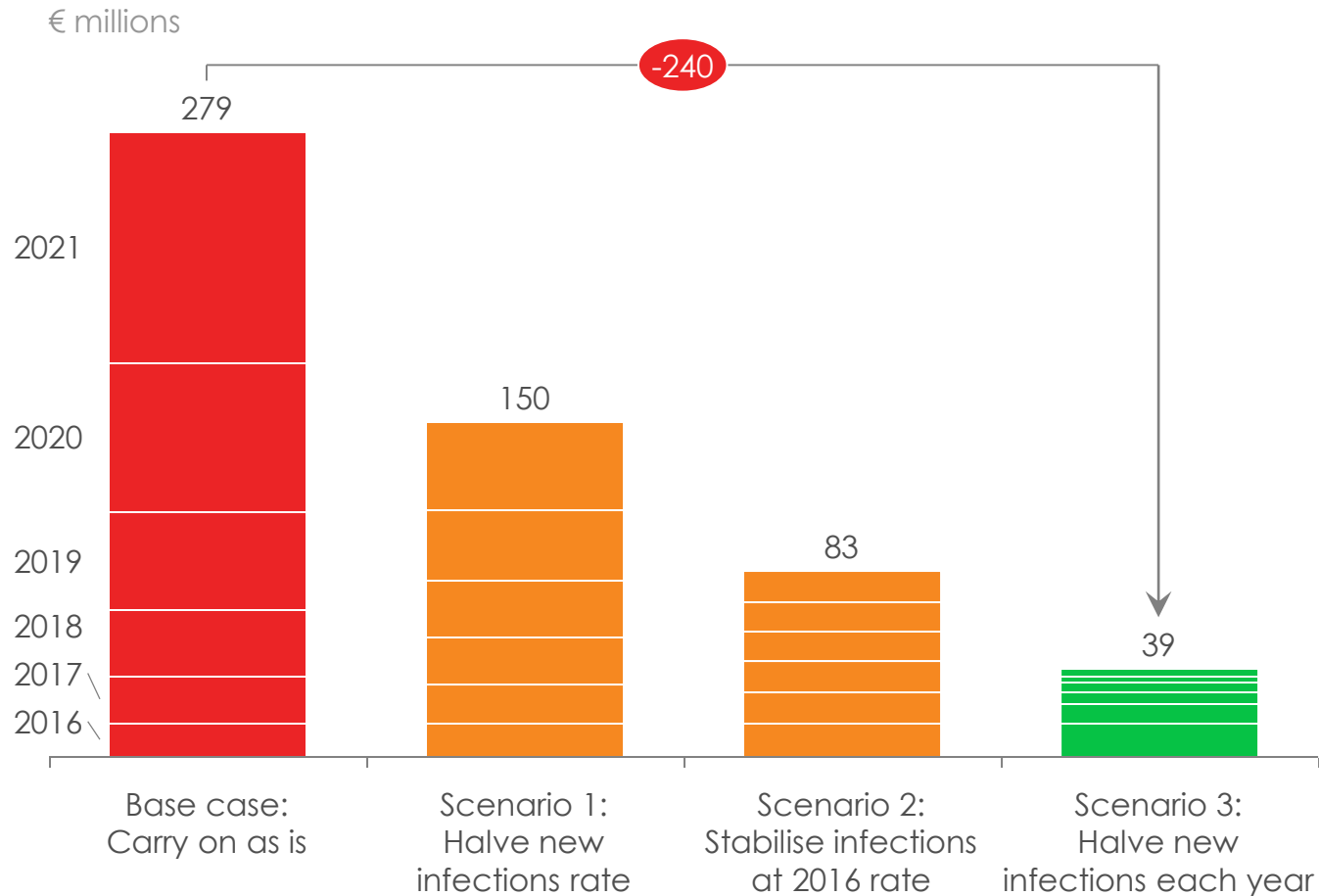
- Base case: Carry on as is
- 1. Halve new infections rate
- 2. Stabilise new infections at 2016 value
- 2. Halve new infections each year
- Actual

Notes: MSM: Men who have sex with Men; Saturation effects not considered—London is an example where saturation effects seem in action with 13% of MSM population estimated to be HIV positive

Sources: GU clinic, MT; Public Health England 18. Nov. 2014; arc analysis

# Halving new MSM cases each year saves ~€240 million over continuing as is

HIV: MSM lifetime costs incurred, new cases 2016–21



Notes: Cash flows not discounted as medical inflation assumed to be equal to government's discount rate

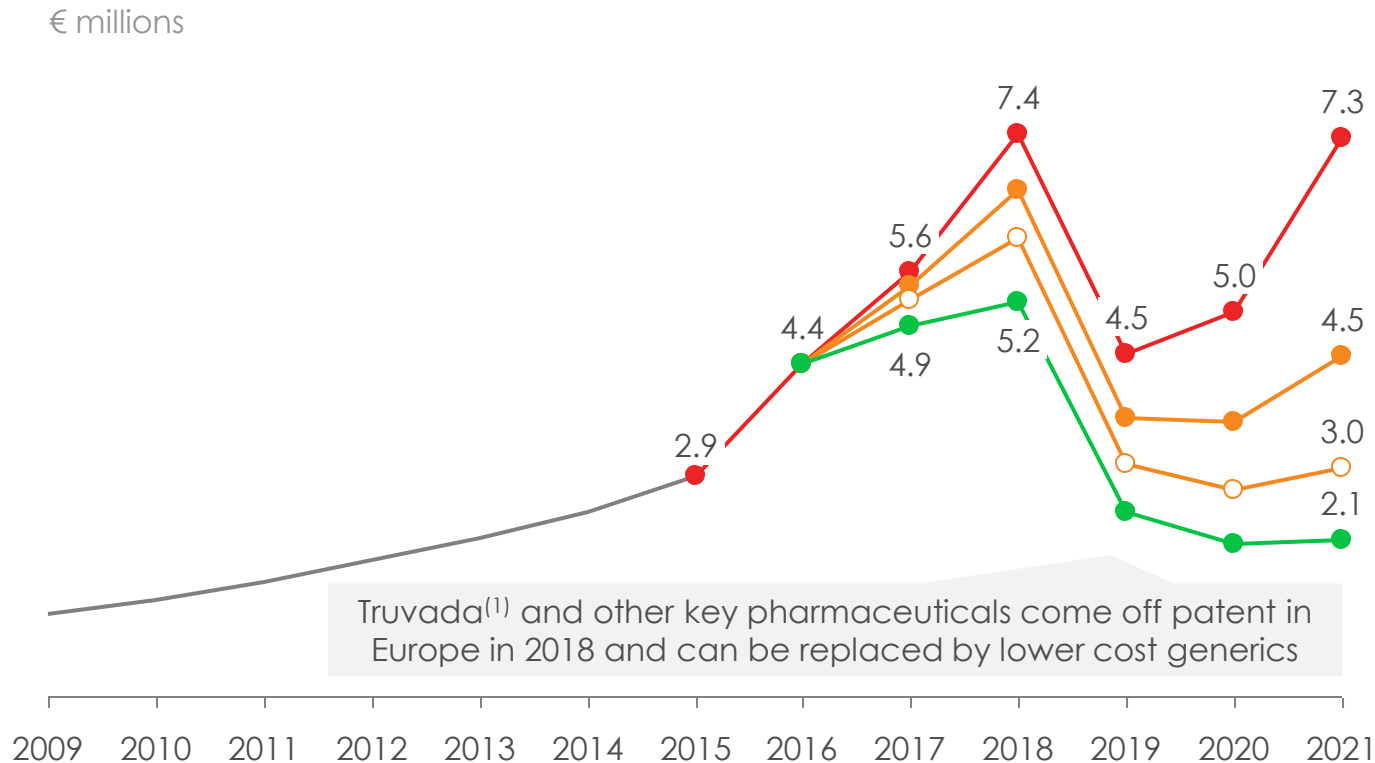
MSM: Men who have sex with men

Sources: arc analysis

# Annual cost for keeping HIV+ MSM healthy can be as high as ~€7 million or as low as ~€2 million in 2021

HIV: MSM annual cost of care HIV+ persons

HIV as vehicle: Future

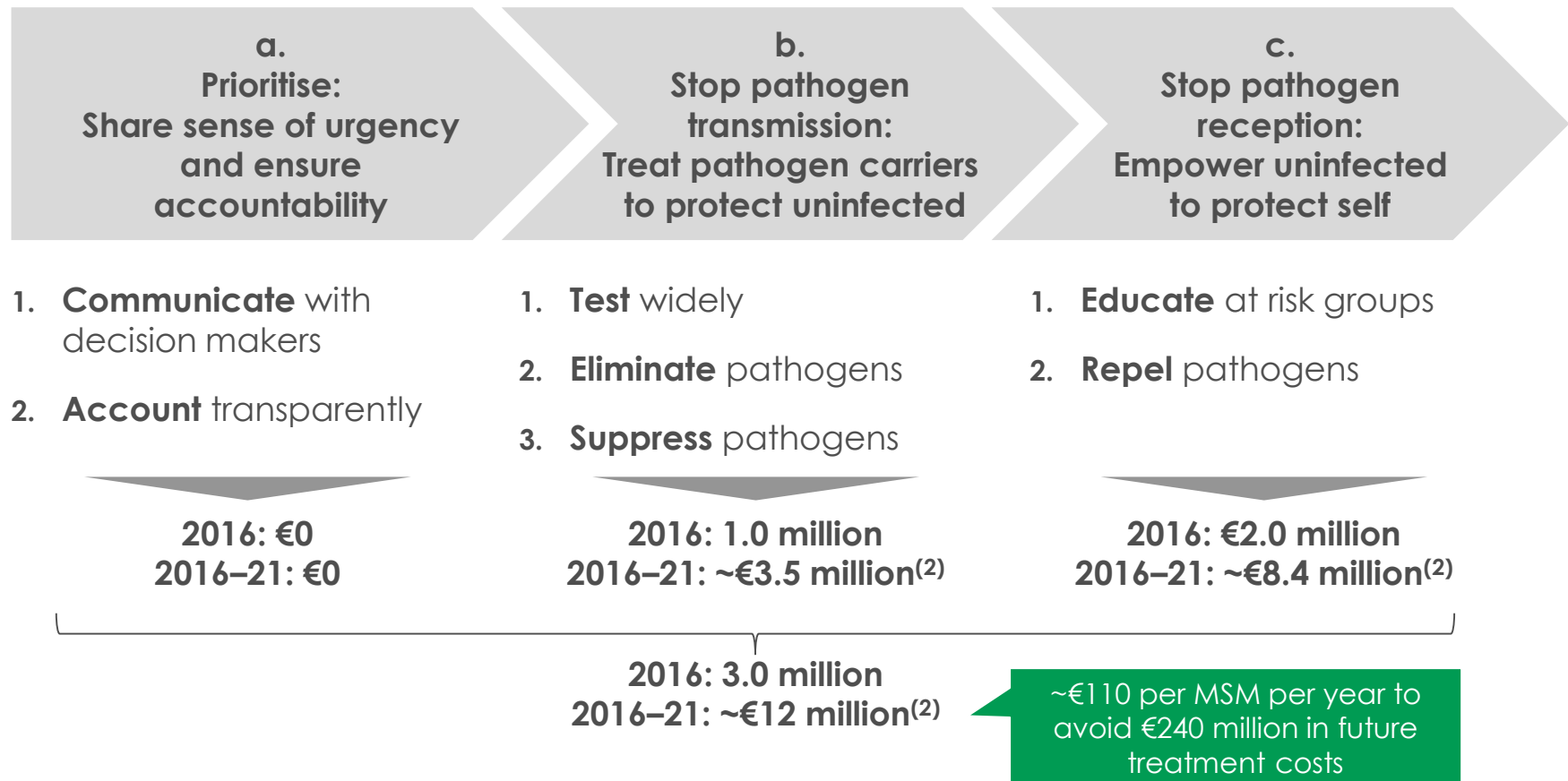


- Base case: Continue as is
- 1. Halve new infections rate
- 2. Stabilise new infections at 2016 value
- 2. Halve new infections each year
- Actual

(1) Tenofovir disoproxil/emtricitabine  
 Notes: MSM: Men who have sex with men  
 Sources: arc analysis

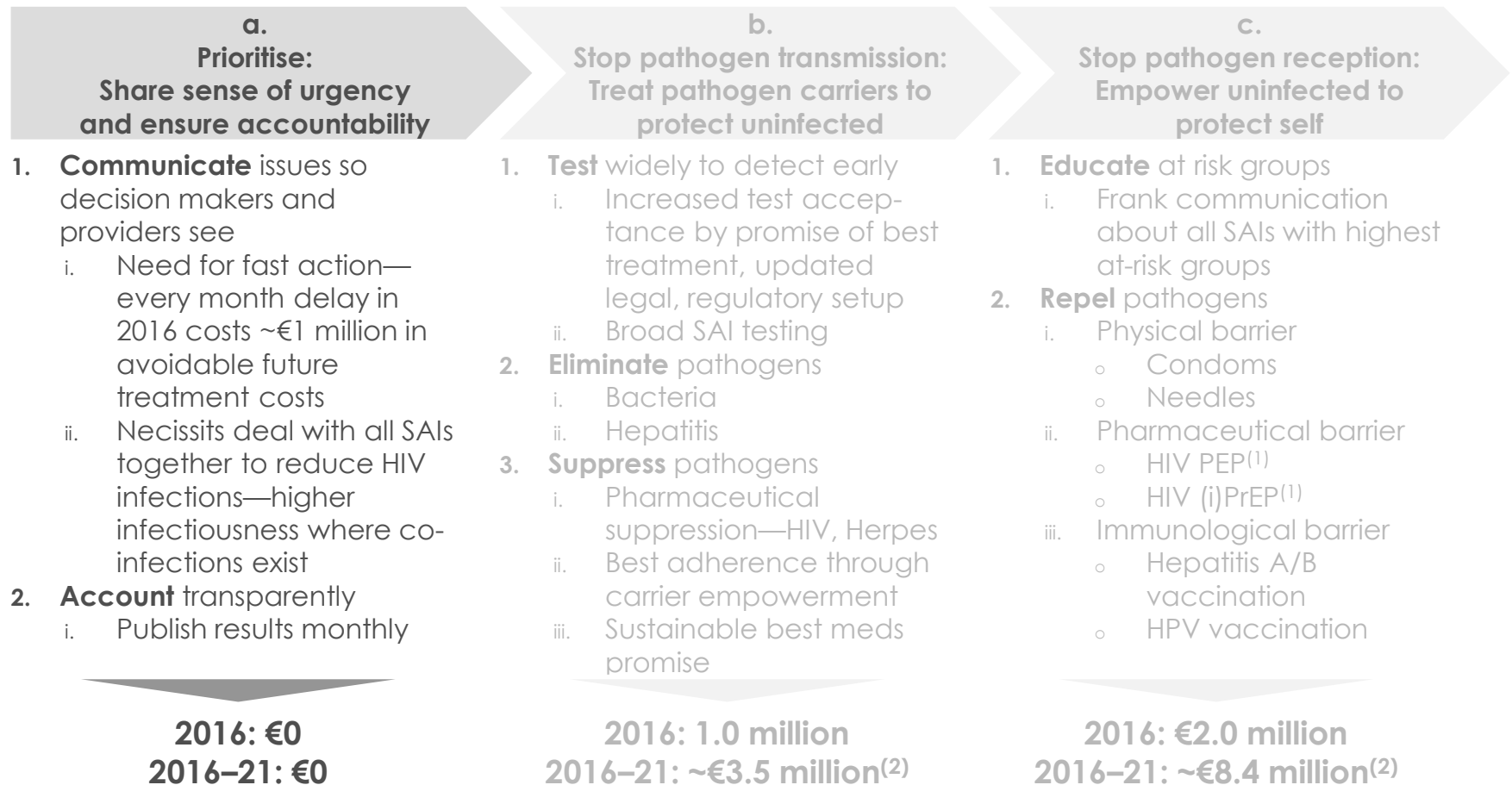
# Three urgent steps to optimally reduce new MSM HIV cases for ~€12 in 2016–21, a cost of ~€110 per MSM per year

Key actions to reduce new MSM HIV infections



# Two steps to get the program moving: 1. Prioritise, 2. Account

## HIV: Key actions to reduce new MSM HIV infections



(1) PEP: Post Exposure Prophylaxis; PrEP: Pre Exposure Prophylaxis; iPrEP: Intermittent PrEP: 2x Truvada, 2x hours before sex, 1x Truvada 24 hours after unprotected sex, 1x Truvada 48 hours after unprotected sex

(2) Cumulative cost

Notes: MSM: Men who have sex with men; Truvada: Tenofovir disoproxil/emtricitabine

Sources: aditus; arc, LGBTIQ+ Consultative Council; arc analysis

# Change in mind-set is necessary

## a. Share sense of urgency



*“Our vision is to have a world in which people living with HIV can live long, healthy lives while infection rates gradually decline.”*

Dr. Fearne, Minister for Health,  
June 2016



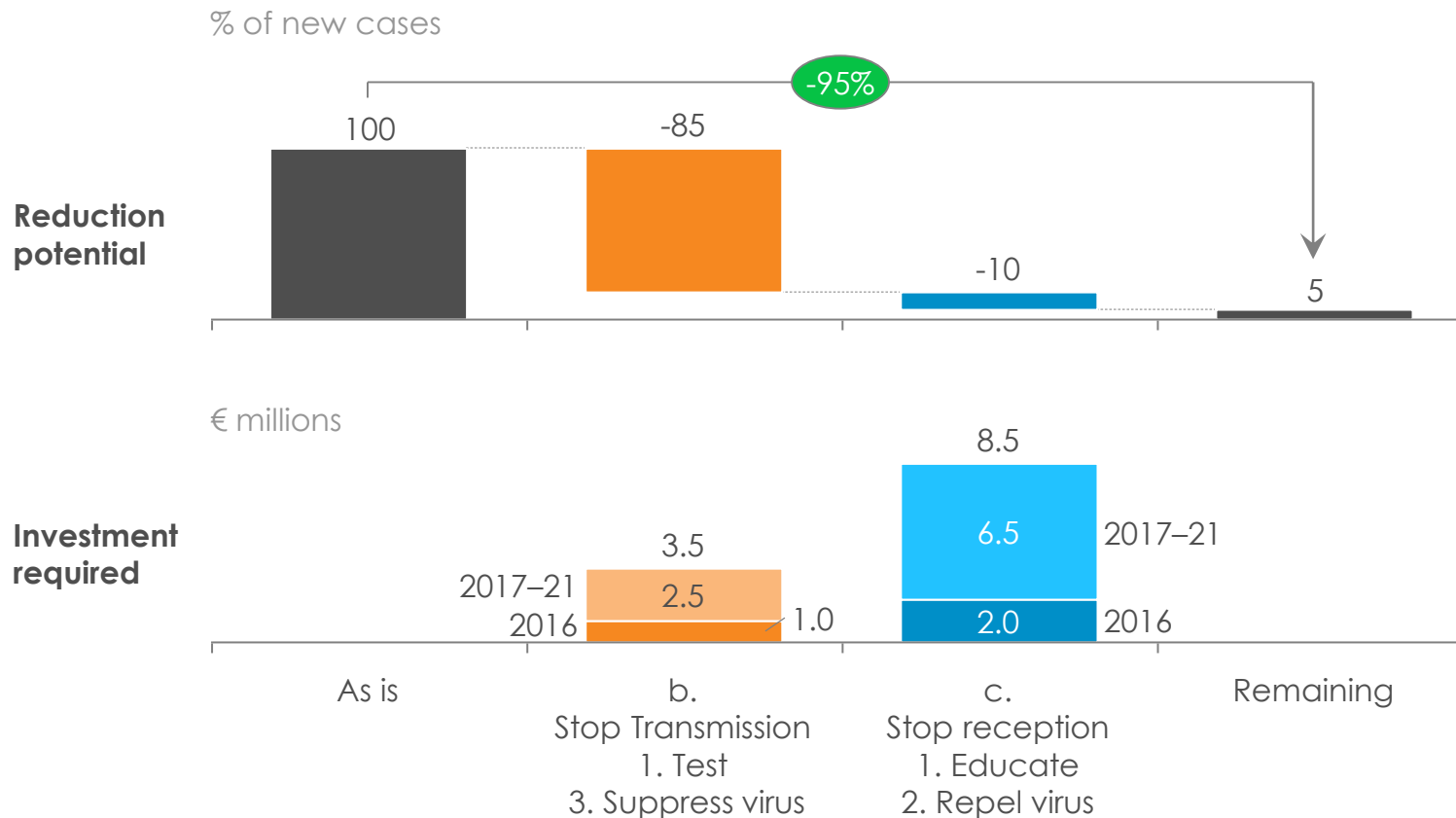
*“Minimize incidence of HIV on Malta quickly and cost effectively, while ensuring that carriers have long, healthy, productive lives.”*

arc vision  
June 2016

# Most positive scenario modeled requires halving new cases per year—we know how to reduce by 95% per year

HIV: Lifetime costs, new cases

HIV as vehicle: Proposals



Test widely to diagnose carriers early, then suppress virus consistently to reduce new cases by 85%—best protection for uninfected

b. Stop pathogen transmission—example HIV



**9** in **10**

**new infections from carriers  
undiagnosed or  
not retained in care**

**-94%**

**transmission risk  
if virally suppressed  
vs infected but undiagnosed**

**-85%**

**new cases**

1. Test widely to find carriers early
2. Suppress virus consistently

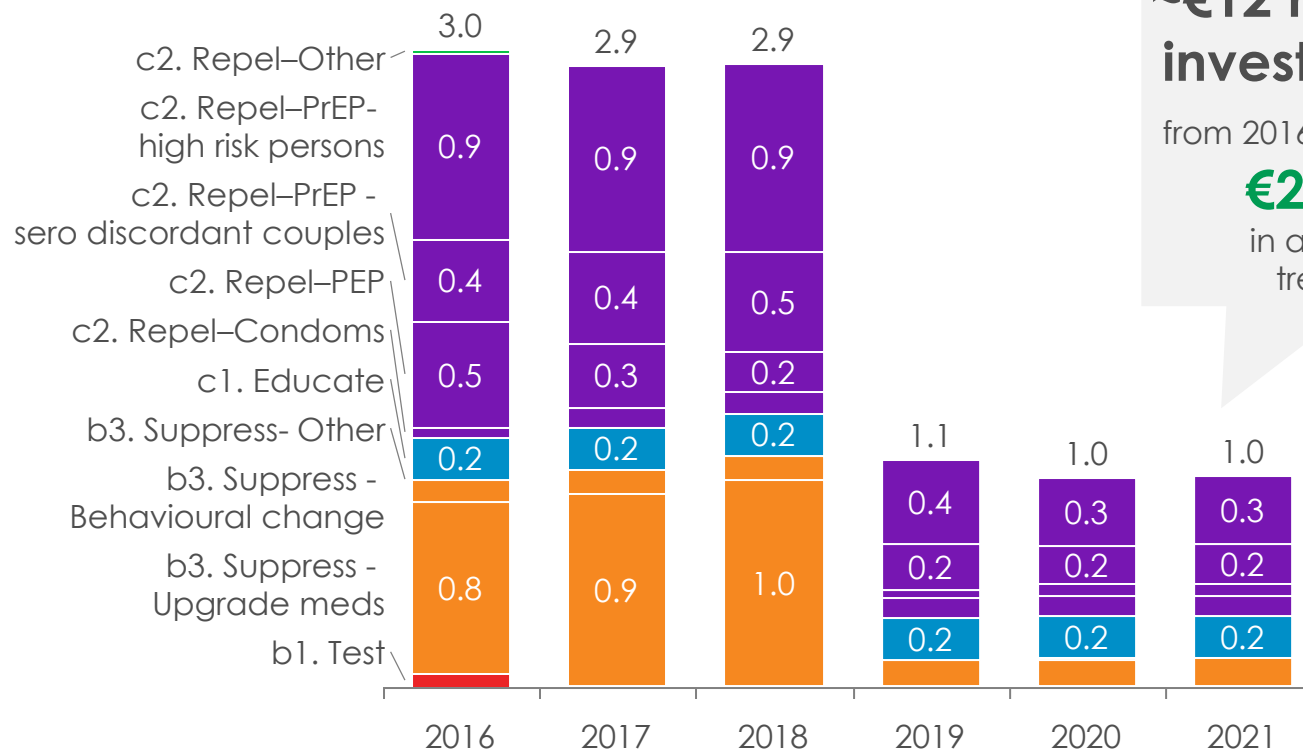


# Up front investment of ~€3 million p.a. in 2016–18 to save €240 million in avoidable future treatment costs

## a. Share sense of urgency



Costs of stopping pathogen transfer, in € millions



**~€12 million** cumulative investment over period from 2016 to 2021 **to save €240 million** in avoidable future treatment costs

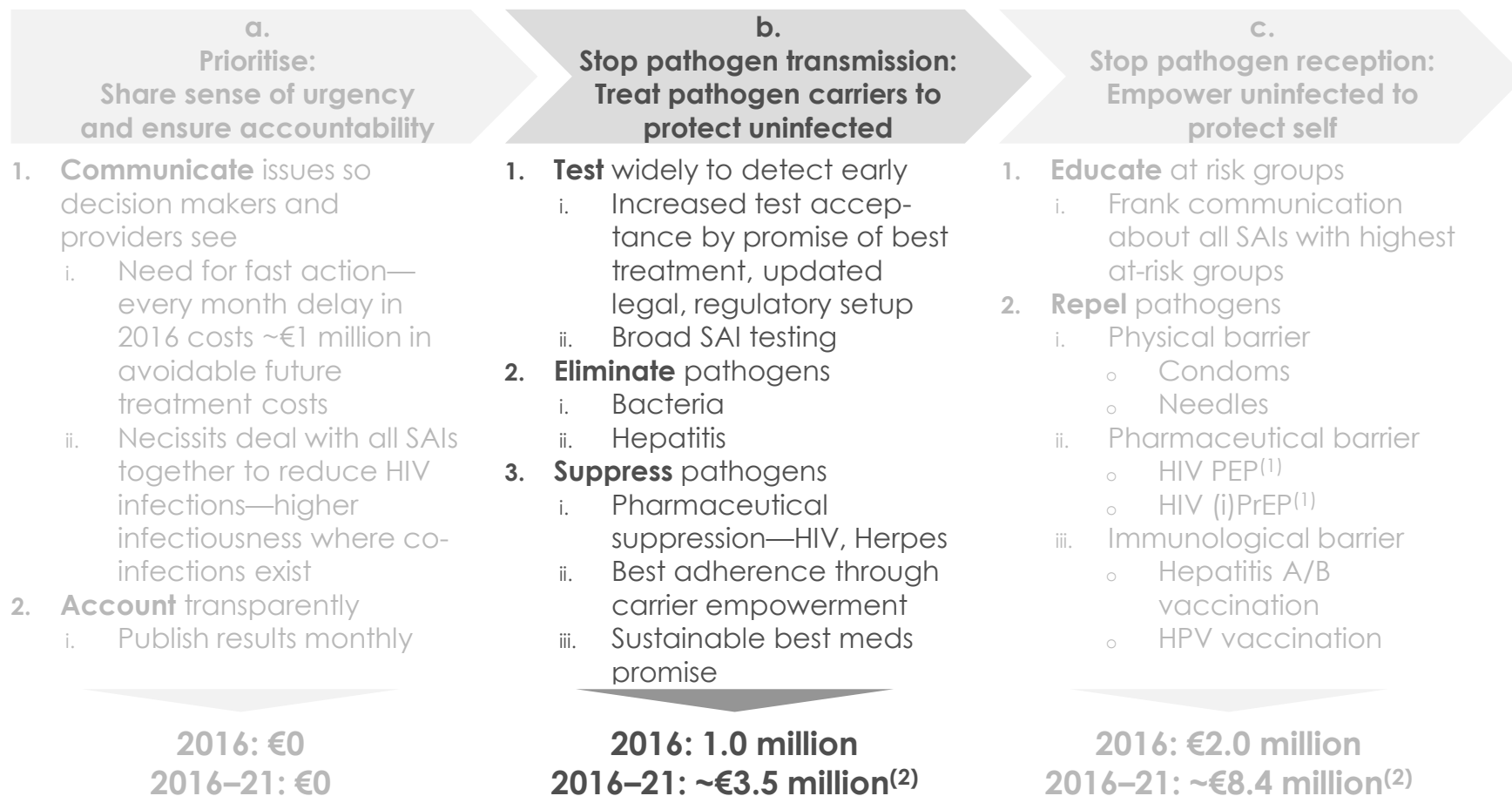
- c. Stop reception (incoming transfer)
  - 1. Educate at risk groups
  - 3. Repel pathogen
- b. Stop transmission (outgoing transfer)
  - 1. Test widely
  - 3. Suppress pathogen

# Three steps to stop pathogen transmission:

## 1. Test, 2. Eliminate pathogens, 3. Suppress pathogens

HIV: Key actions to reduce new MSM HIV infections

HIV as vehicle: Proposals



(1) PEP: Post Exposure Prophylaxis; PrEP: Pre Exposure Prophylaxis; iPrEP: Intermittent PrEP: 2× Truvada, 2× hours before sex, 1× Truvada 24 hours after unprotected sex, 1× Truvada 48 hours after unprotected sex

(2) Cumulative cost

Notes: MSM: Men who have sex with men; Truvada: Tenofovir disoproxil/emtricitabine

Sources: aditus; arc, LGBTIQ+ Consultative Council; arc analysis

# Detect SAI carriers soon after pathogen transmission early for cumulative 2016–21 cost of ~€160K

## b. Stop transmission—1. Test



Area	Measure	Cost <sup>(1)</sup>
1. Test .i. Increased test acceptance	o Make a promise: “If you test positive, you will always receive the best meds with the lowest side effects, comprehensive counselling support, supportive legal framework”	€0
	o Make testing, even in case of positive result, completely anonymous	€50K <sup>(2)</sup>
	o Decriminalise HIV transmission, sex work	
	o Adjust employment law to allow for episodic disability while keeping diagnosis confidential	
	o Decriminalise all drug use, seeing drug user and patient needing treatment, not a criminal	
	o Adjust law so sexually active teenagers can access sexual health care on own without fear—1. Define competence as actual competency, not age of legal competency, 2. Reduce age of consent and introduce age gap legislation to match best practice countries, 3. Allow doctors to treat minors twelve and over in sexual matters without parental consent	
	o Increase anti-human-trafficking resources and activities	
1. Test .i. Broad SAI testing	o Distribute comprehensive SAI home test kit (chlamydia, gonorrhea, syphilis, hepatitis A/B/C, herpes, HIV p24, HPV) at nominal charge through pharmacies, MSM venues	€0K
	o Provide on demand, easy, free, fast, anonymous comprehensive SAI test in all hospitals, health centers	€0K <sup>(3)</sup>
	o Provide on demand, easy, free, fast, anonymous comprehensive SAI test (chlamydia, gonorrhea, syphilis, Hepatitis A/B/C, Herpes[TBD], HIV p24, HPV [TBD]) in MSM venues, sex worker venues, prison, as well as entry/annual/exit test for prison	€50K <sup>(3)</sup>
	o Proactively provide immediate and follow-up counselling on receiving any positive test result, not ~90 days later, sometimes only on request as currently	€5K
	o Implement lower cost, rapid HIV PCR, at €200 or less	€10K <sup>(4)</sup>
	o Implement PAP smear for at-risk men	€TBD

(1) Cumulative 2016–21 cost;

(2) First estimate legal costs to change various laws

(3) Test kit price: €5, personnel cost per test: €5; €10 payment by patient, covered by health system for ~500 prison inmates, test 2×p.a.

(4) First estimate for practice and materials, already available in Germany for €120 with 48-hour turnaround time

Notes: MSM: Men who have sex with men

Sources: aditus; arc, LGBTIQ+ Consultative Council; arc analysis

# Comprehensive SAI test kits possible for approx. €5 in bulk

HIV: Antibody testing kit pricing



€0.1 per kit,  
9 kits plus  
overhead =  
~€5 per kit

The screenshot shows a search for 'hiv test kit' on Alibaba.com. The results list several products:

- HIV test kits**: US \$0.15-0.5 / Piece (FOB Price), 2000 Pieces (Min. Order). Type: Pathological Analysis. Certificate: FDA/ISO9001/L. Place of Origin: CN:JIA. Brand Name: OEM.
- Whole Blood HIV 1+2 Rapid Test Kit**: US \$0.1196-0.1794 / Piece (FOB Price), 200 Pieces (Min. Order). Type: Pathological Analysis. Certificate: CE&ISO&FSC. Place of Origin: CN:JIA. Brand Name: Voyage HIV 1+2. Accuracy: Over 99.5%.
- HIV (1+2) Test (Cassette) / HIV Rapid Test Kit**: US \$0.25-0.45 / Piece (FOB Price), 1000 Pieces (Min. Order). Type: Blood Pressure Monitor. Certificate: B.V&ISO13485. Brand Name: Innovita. Model Number: HIV-00021. Place of Origin: CN:BEI. Name: HIV Rapid Test Kit.

Other details visible include 'Suppliers by Area' (East Asia, South Asia, Southeast Asia, North America) and 'Suppliers by Country/Region' (China, India, Singapore, Pakistan, Canada, Hong Kong, Japan).

Similar kits at similar price available for

- Bacterial infections
  - i. Chlamydia
  - ii. Gonorrhea
  - iii. Syphilis
- Viral infections
  - i. Hepatitis A
  - ii. Hepatitis B
  - iii. Hepatitis C
  - iv. Herpes (TBD)
  - v. HIV (p24)
  - vi. HPV (TBD)

# HIV testing kit available for ~€2 in pharmacy in South Africa

HIV: Antibody testing kit pricing – example SA



Approximately €2

If pathogen can't leave carrier, new infections not possible—minimise outgoing transmission of pathogens, for ~€6,5 million in 2016–21

b. Stop transmission—2. Eliminate, 3. Suppress

Area		Measure	Cost <sup>(1)</sup>	
2. Eliminate pathogen		Bacterial infections	o Eliminate quickly to reduce heightened risk of HIV transmission where coinfections exist	€0
		Hepatitis C	o Treat with 'newer pan-genotypic drugs	€TBD
3. Suppress pathogen	Suppress pharmaceutically optimally	Hepatitis A/B	o Manage as per current treatment regiment	€0
		Herpes	o Get generic famciclovir available on Malta at ~€2 per gram	€1K
			o Provide continuous suppression therapy/higher dose intermittent remission therapy	€0K
		HIV	o Add Truvada to national outpatient formulary list	€0
			o Provide newer once-per-day, low-side-effect pharmaceuticals as standard to support best adherence and so best ensure viral suppression indicated by undetectable viral load for the longest period, decreasing risk of transmission	€1 mio <sup>(2)</sup> p.a. 2016–18
		o Use data and CD4/PCR testing to identify people not receiving optimal care as i. never linked to care, ii. dropped out of care, have persistent low CD4 or detectable viral load	€TBD	
	Get best adherence by empowering carriers and sustained provision of meds with lowest side effects	Hepatitis A/B/C, Herpes, HIV, HPV	o Educate on how to best manage disease and how avoid transmission to others	€635K <sup>(3)</sup> p.a.
		o Provide abundant (estimate: 6 p.a. on average) counselling sessions and support groups for patient and key support persons in their lives (partners, family, etc.), to support adherence to medication protocol and reduction in pathogen transmission by dealing with issues arising from of living with viral SAls, such as feelings of increased responsibility for others, guilt, depression, and substance abuse		
	All SAls	o Actively prepare for and introduce generics, proactively granting molecules and manufacturers approval for Malta as soon as patents expire and, molecule or manufacturer is approved by any one of a group of trusted regulators such as Australia, France, Germany, Ireland, New Zealand, South Africa, UK <sup>(3)</sup>	€20K p.a.	

(1) Unless otherwise stated, cumulative 2016–21 cost;

(2) €1,700 per year gap estimate between cost of current medications and most desirable medications

(3) 6 counselling sessions per year, €35 per session

(4) Possible suitable activity for Medicines Intelligence and Access Unit; May require negotiations with trade partners

(5) First estimate legal costs to change various laws

Notes: MSM: Men who have sex with men; Truvada: Tenofovir disoproxil/emtricitabine

Sources: aditus; arc, LGBTIQ+ Consultative Council; arc analysis

# Famciclovir 500mg available from €2 per gram in Canada vs €32 per gram<sup>(1)</sup> on Malta

## Herpes: Famciclovir generic



PharmacyChecker.com®  
Find the best drug prices from verified online pharmacies

Compare Drug Prices Español

Enter drug name

or Search Alphabetical List >

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### Famciclovir 500 mg Prices — Generic Version

Find the lowest cost before you buy Famciclovir. Compare Famciclovir 500 mg prices below.

But if you're in the U.S., you can compare drug prices at your local pharmacies using a prescription discount card or coupon.

Search U.S. Local Pharmacy Pricing

Beta - Try this New Feature!

**PRICE ALERTS**

To help you save money, sign up for our free price comparison alerts for Famciclovir 500 mg.

Enter Your Email Address

Monthly

Manage Alerts

Online Pharmacy	Quantity	Price Per Pill or Unit	Total Price*	PharmacyChecker Approved?	Pharmacy Locations**	Check Pharmacy Price
CANADIAN PHARMACY KING	100	\$1.19	\$129.00	Yes	Canada, India, Mauritius, NZ, Singapore, Turkey, UK, USA	<input type="button" value="GO"/>
OFFSHORE CHEAP MEDS	90	\$1.38	\$134.31	Yes	India	<input type="button" value="GO"/>
BIG MOUNTAIN DRUGS	100	\$1.49	\$159.00	Yes	Canada, India, Mauritius, NZ, Singapore, Turkey, UK	<input type="button" value="GO"/>
CANADA Pharmacy Online	100	\$1.49	\$159.00	Yes	Australia, Canada, India, Mauritius, NZ, Singapore, Turkey, UK, USA	<input type="button" value="GO"/>
FiveStarDrugs.com	90	\$1.49	\$143.91	Yes	India	<input type="button" value="GO"/>
OFFSHORE CHEAP MEDS	60	\$1.66	\$109.45	Yes	India	<input type="button" value="GO"/>
FiveStarDrugs.com	60	\$1.79	\$117.32	Yes	India	<input type="button" value="GO"/>

€1.04 for  
500mg =  
€2.08 per  
gram,  
10.05.2016:  
usd1.14/eur

(1) Verbal price quote Airport Pharmacy, 28.05.2016 €166,72 for 21 tablets of 250mg = €31.76 per gram

Notes: MSM: Men who have sex with men

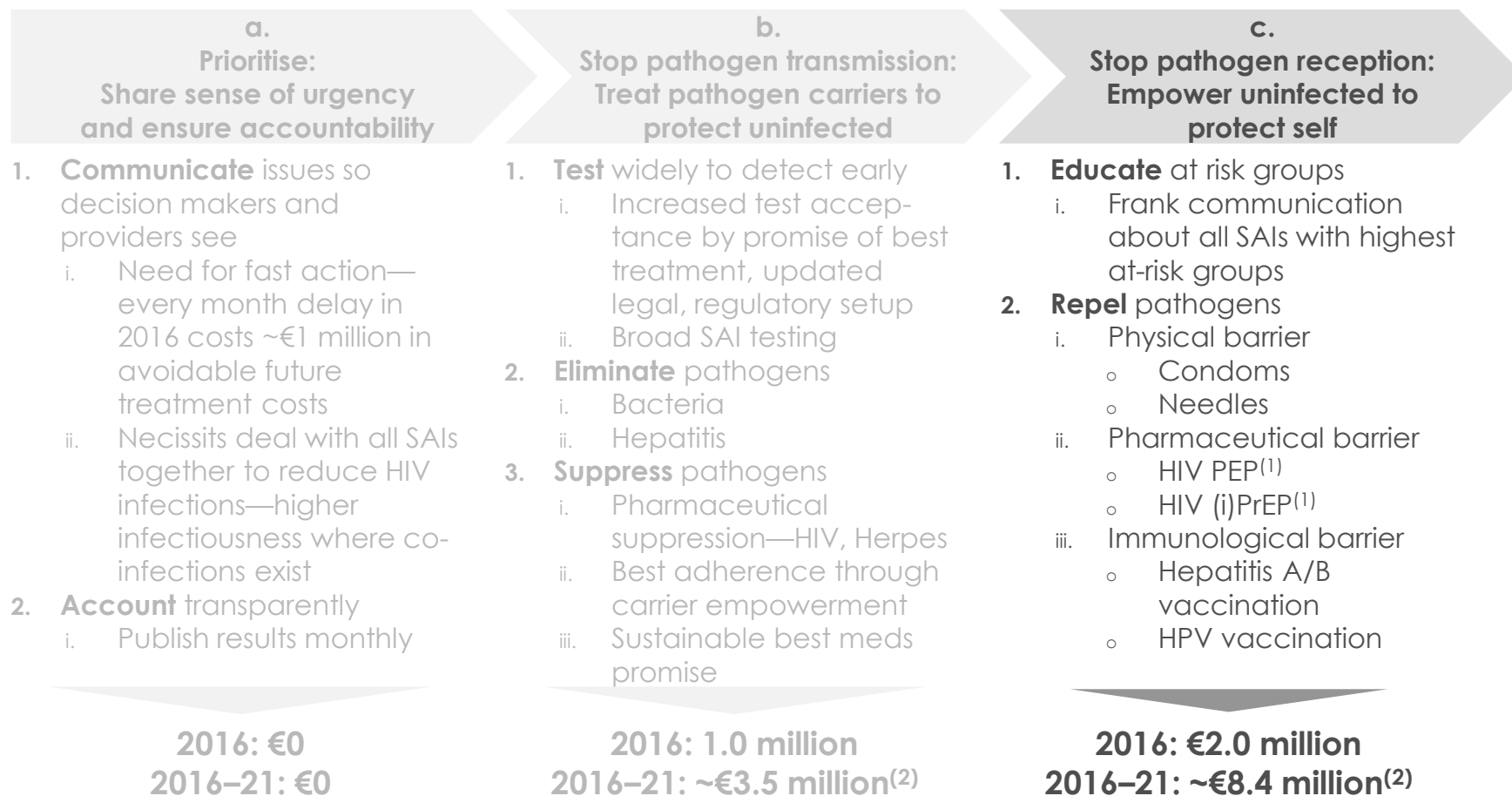
Sources: arc interviews; pharmacychecker.com; xe.com



# Stop pathogen reception by the uninfected with two measures for ~€1,5 million in 2016:

## 1. Educate, 2. Repel

HIV: Key actions to reduce new MSM HIV infections



(1) PEP: Post Exposure Prophylaxis; PrEP: Pre Exposure Prophylaxis; iPrEP: Intermittent PrEP: 2× Truvada, 2× hours before sex, 1× Truvada 24 hours after unprotected sex, 1× Truvada 48 hours after unprotected sex

(2) Cumulative cost

Notes: MSM: Men who have sex with men; Truvada: Tenofovir disoproxil/emtricitabine

Sources: aditus; arc, LGBTIQ+ Consultative Council; arc analysis



# Educate MSM at-risk groups to empower them to self-protect for ~€1.2 million cumulatively in period from 2016–21

HIV as vehicle: Proposals

## c. Stop reception—1. Educate



Area	Measure	Cost <sup>(1)</sup>
1. <b>Educate</b> i. Message	o Infection rates: HIV and other SAls still exist and are spreading rapidly	€0
	o Impact: SAls can be cured or managed. Persons living with HIV are normal people, non infectious when on treatment, with normal vitality and life expectancy	
	o Transmission methods: HIV—sex (HIV: pre-cum, cum, blood), needles; Other—TBD	
	o Protection methods: All SAls—Physical barrier (condoms), HIV—additionally, pharmaceutical barrier (PEP, [i]PrEP); Hepatitis A, B, HPV—additionally immunological barrier	
	o Self responsibility: Responsibility is for negative person to protect self, not for carrier to avoid transmission	
	o Know your status: Test regularly for ease of mind, get treatment early if needed, get best result	
	o Testing availability: On demand, easy, free, fast, anonymous,	
1. <b>Educate</b> ii. Resources	o Treatment availability: Easy, free, fast, effective	€600K <sup>(2)</sup>
	o Increase resources, knowledge in Health Promotion group, 179 Helpline for promotion of sexual health	
	o Train health professionals, social workers, police, prison guards in LGBTIQ+/MSM needs	
	o Adjust school curriculum and train teachers in LGBTIQ+/MSM needs	
1. <b>Educate</b> iii. Target groups	o Expand cooperation with NGOs	€600K <sup>(3)</sup>
	o MSM adults: Implement dating app, MSM venues, social media, NGO based, frank education campaign	
	o Teenagers & young adults: Set up schools & educational institute based, frank education campaign	
	o Sex workers: Implement sex worker venue based, frank education campaign	
	o Prison population: Implement prison based, frank education campaign	

(1) Cumulative 2016–21 cost

(2) Two to three trainers/communication specialists

(3) First estimate from arc interviews

Notes: MSM: Men who have sex with men

Sources: aditus; arc, LGBTIQ+ Consultative Council; arc analysis

# Stop virus reception—Repel incoming pathogen with physical, pharmaceutical, immunological barrier for ~€7.2 million 2016–21

HIV as vehicle: Proposals

## c. Stop reception—2. Repel



Area		Measure	Cost <sup>(1)</sup>
2. <b>Repel</b> i. Physical barrier	Condoms	o Provide appropriate (anal sex/vaginal sex) condoms, lube free at MSM venues, sex worker venues, and in prison	€530K <sup>(2)</sup>
		o Ensure condoms designed for anal sex are available at all condom sales points	
		o Assign condoms lowest VAT rate to encourage use	
	Needles	o Implement needle exchange program in prison for intravenous drug users	TBD
2. <b>Repel</b> ii. Pharma- ceutical barrier	PEP	o Provide modern (Truvada + Lamivudine) PEP (Post Exposure Prophylaxis) free, on demand, starter-kit based, 24x7 at all hospital emergency rooms, also for cases of rape, abuse	€1.2 mio <sup>(3)</sup>
	(i)PrEP <sup>(4)</sup>	o Make PrEP (Pre-Exposure Prophylaxis) available <ul style="list-style-type: none"> <li>• free of charge to sero-discordant couples</li> <li>• free of charge to high risk groups such as sex workers or multiple-time PEP patients</li> <li>• for own account on demand</li> </ul> supported by adherence management regime (sms, regular check-up, molecules' plasma level checks on demand with processing in Malta)	€5.6 mio <sup>(5)</sup>
		o Reduce cost of PrEP to ~€50 per month before 2018 by negotiating with pharmaceutical suppliers. Consider grey imports, as no economic damage provable	€10K <sup>(5)</sup>
		o Approve iPrEP <sup>(6)</sup> (2211) for use on Malta to reduce PrEP cost ~60%	€10K <sup>(5)</sup>
2. <b>Repel</b> i. Immuno- logical barrier	Hepatitis A/B	o Publicise availability widely	€0
	HPV	o Make vaccination available for MSM immediately and then for all boys	€TBD

(1) Cumulative 2016–21 cost;

(2) ~18.000 MSM, 2x sex per week, €0,1 per condom, self purchase rate of 50%

(3) PEP x5 case rate; €1,150 per PEP for medicines and care

(4) iPrEP—Intermittent PrEP: 2x Truvada, 2x hours before sex, 1x Truvada 24 hours after unprotected sex, 1x Truvada 48 hours after unprotected sex,

(5) Sero-discordant: 30% of HIV+ persons are in a couple, 30% sero-discordant; Multiple PEP: 1% of relevant population

(6) iPrEP 30% of cost of full PrEP, Full PrEP Reduces to €1.1K per from 2019 due to patent expiry

(7) Consultants, travel, etc.

Notes: MSM: Men who have sex with men; PEP also in cases of rape or sexual abuse; Truvada: Tenofovir disoproxil/emtricitabine

Sources: aditus; arc, LGBTIQ+ Consultative Council; arc analysis

# Easy-to-use HIV PEP starter-kit available at emergency rooms in South Africa

HIV: PEP starter kit for emergency room in SA, 2010




Example  
starter-kit 2010:  
Includes easy  
instructions for  
doctor and for  
patient—at-risk  
communities  
trained to ask  
for PEP kit.

# Specific action on HPV for LGBTIQ+ men recommended by CDC

## HPV: CDC recommendations



1. Vaccinate young male adults and virus free older men against HPV
  2. Vaccinate pre-sexually active boys in addition to girls currently vaccinated
  3. Actively offer screening to MSM for HPV induced cancers
- 
- In MSM, HPV vaccine protects against
    - genital warts
    - anal cancer
    - oropharyngeal cancer
    - other HPV-associated conditions
  - Give to MSM up to 26 years and others not yet exposed to HPV
  - Vaccinate boys along with girls to protect future MSM and improve protection of heterosexuals by increasing coverage

Notes: MSM: Men who have sex with men

Sources: arc, <http://www.timesofmalta.com/articles/view/20130508/local/hpv-vaccine-to-be-given-to-girls-born-in-2000.468864>; [www.cdc.gov](http://www.cdc.gov) Center for Disease Control and Prevention

# Immediate action in five areas proposed

## Next steps and target dates



1. Verify data and assumptions (June 2016)
  - New infections
    - Verify unconfirmed verbal reports that only 29 new infections in 2015
    - Break down MSM HIV data by age group—if new cases are happening e.g. only from 25, then we have time to educate after leaving school and school intervention may not be so high priority
    - Break down MSM HIV data by source—if new cases are happening e.g. only outside prison, then prison program can maybe be lower priority
    - Get data on Hepatitis infections
  - Get access to and verify HIV cost of treatment, annual and lifetime, using actual, official Maltese data.
  - Develop an opinion on reported trend is for younger people to be less hung up about labels and to try MSM sex
2. Agree proposals within LGBTIQ+ community (June 2016)
3. Engage with decision makers and service providers (June 2016)
  - Transmit sense of urgency to decision makers
  - Liaise with GU and other medical establishment
4. Optimise measures (July 2016)
  - Get input from behavioral change/social science point of view to optimse implementation of measures
  - Sequence measures puitting easy/impactful/cheap measures first
  - Principle of “minimum effective dose” to achieve for societal change
  - Propose cross-silo management structure to optimize implementation of measures
5. Implement (July 2016)

# Thank you!