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GSMA

Socio-economic impact of mHealth

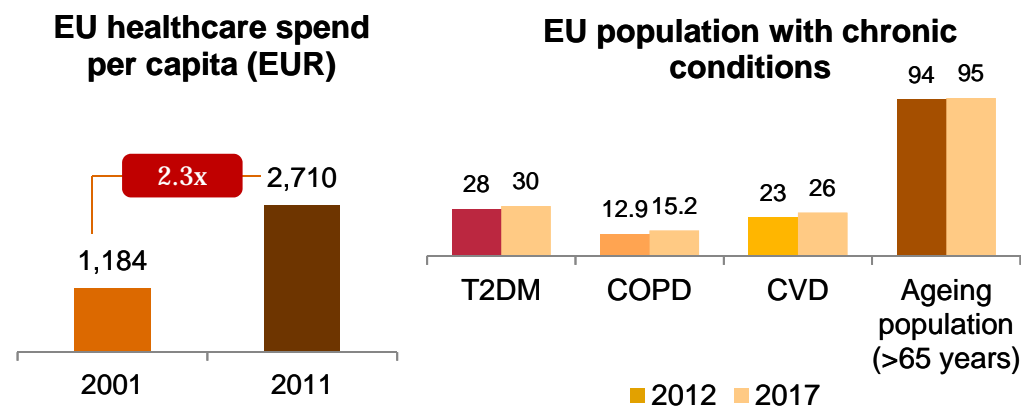
Executive Summary – The EU

June 2013

pwc

The impact chronic conditions have on healthcare costs, resources and patients' productivity could make the currently strained EU healthcare systems unsustainable

- **9% of EU GDP is spent on healthcare and 77% of this spend is publicly sourced**
- **More than 50% of EU's care costs are spent on elderly care and chronic diseases**, which need continuous care
- **Chronic conditions** lower employee productivity, **aggravating the economic stress and financial strain on healthcare systems**
- Furthermore, the **prevalence** of lifestyle disorders, chronic diseases and ageing people **continues to grow**
- As a result, **the healthcare burden and economic burden would increase**
- Many EU states are amidst a **healthcare resource crisis** that **mHealth could relieve**
- **These factors could combine to make EU healthcare systems unsustainable**



Economic impact of chronic diseases, 2017	T2DM	COPD	CVD
Absenteeism (days per year) per patient	42	19	47
Early retirement per patient (years)	1.2	6.7	3
Labour hours lost (bn)	15	34	11
Wages lost (bn EUR)	194	403	121

60
bn

Labour hours lost

718
bn

Wages lost (EUR)

Source: OECD Healthcare at a glance, Europe 2012, World Bank, PwC analysis
 Note: T2DM – Type 2 Diabetes Mellitus, COPD – Chronic Obstructive Pulmonary Disorder, CVD – Cardiovascular Diseases

mHealth can limit the healthcare and economic burden by making chronic care more effective and healthcare resources more efficient

Enhance effectiveness of chronic and elderly care

Transition to preventive care

- Motivate and involve patients to improve their lifestyles
- Lower risk of chronic diseases and lifestyle disorders by 50-73%*

Increase patient centricity

- Equip patients to self manage care and diagnose symptoms
- 50% of patients could comply more to care, reducing complications

Enable remote care

- Allow patients to be treated at home
- Lower the need of hospitalisation by 30% for chronic care and 75%** for elderly care

Reduce burden on healthcare resources

Lower healthcare cost burden

- Improve clinical outcomes to lower care costs for chronic diseases by 30 to 35%
- Reduce cost of elderly care by about 45%

Improve resource efficiency

- Free up 30% of doctors' time with better access to data
- Integrate levels of care to optimise use of resources

Treat more patients

- Increase availability of doctors and hospitals
- Allow doctors and hospitals to treat more patients, without having to add resources

Improve quality of life

Max. potential in 2017 **EU**

Unique mobile users (mn) 450

Regular mHealth users-wellness & prevention(mn) 350

Regular mHealth users-Diagnosis (mn) 9

Regular mHealth users-treatment & monitoring (mn) 40

- ***Improved effectiveness*** of care can lower disease burden
- ***Increased efficiency*** of healthcare resources and quality of care can lower care costs
- ***Healthier patients*** can work more and limit economic burden

Source: PwC analysis, ITU, Wireless Intelligence, OECD Health at a Glance- 2012, Silverchain.org, American Heart Association (AHA)

Note: *Improved lifestyles can help lower the risk of CVD by 50%, (AHA) T2DM by 60% (OECD) and COPD by 73% (Silverchain.org) , **As per study conducted by Senior Bridge

By using mHealth, 185 mn patients across the EU can be treated more effectively, preventing 589,000 incidences of chronic diseases

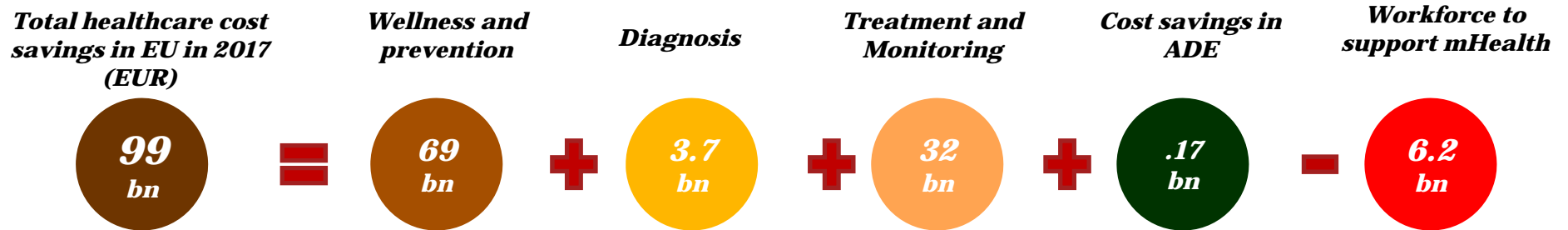
	Unit	EU*
<i>Total patients that could benefit from mHealth</i>	Mn	185
<i>Patients that could improve lifestyles</i>	Mn	141
<i>Patients suffering from or at risk of developing chronic diseases that could benefit</i>	Mn	22.57
<i>Population that could be diagnosed with chronic diseases earlier</i>	Mn	0.84
<i>Chronic and ageing population that could benefit from treatment and monitoring</i>	Mn	20
<hr/>		
<i>Incidences of chronic diseases prevented</i>	'000	589
<i>Days of hospitalisation avoided or saved</i>	Mn	169
<i>Life years added</i>	'000	158

- mHealth could benefit 11.2 million existing chronic patients by enabling them to improve their lifestyle and stay healthier
- Of the 39.9 million patients at high risk of developing chronic diseases, 11.37* million patients at would be able to manage their lifestyles better
- Of these 11.37 million patients, 6.9** million patients could significantly lower the risk of developing chronic diseases at all
- Early diagnosis and remote monitoring can help improve clinical outcomes and emergency response
- Enhanced quality of care can help reduce mortality and increase life expectancy

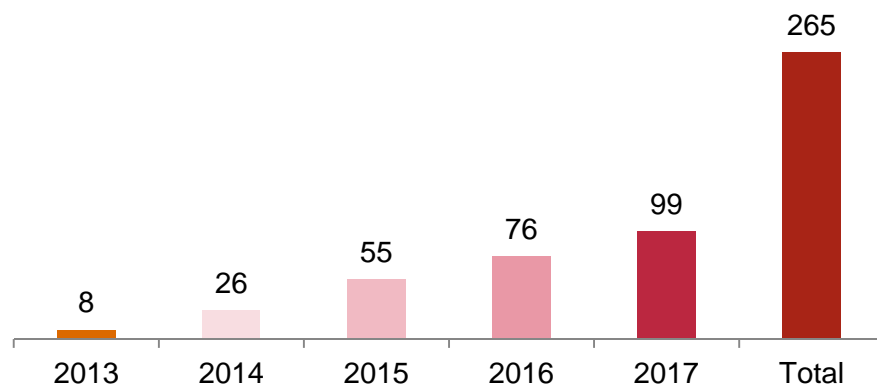
Source: PwC analysis

Note: * 11.37 mn people at risk of chronic diseases that improve lifestyles by using mHealth include 8.4 mn for T2DM, 1.3 mn for COPD and 1.7 mn for CVD; ** 6.9 mn patients that reduce risk of chronic diseases include 5 mn for T2DM, 1.1 mn for COPD and 0.8 mn for CVD

As a result, 99 bn EUR could be saved in care costs by 2017 after taking into account the 211,000 jobs needed to support mHealth deployments



Between 2013 and 2017, a total of 265 bn EUR could be saved in healthcare costs by using mHealth



- mHealth enabled cost efficiencies will help EU economies to sustain social healthcare systems
- Payers will be able to treat additional patients for the same costs
- Each of the 185 mn patients benefitting from mHealth will cut their annual healthcare costs by 537 EUR
- Since every individual bears 14% of the annual per capita healthcare costs out of one's pocket, the reduction in healthcare costs for the 185 mn patients would translate to a saving of about 75 EUR per year for each of them

Source; PwC analysis

Note: *OPE - Out of pocket expenditure that an individual contributes to one's healthcare spend

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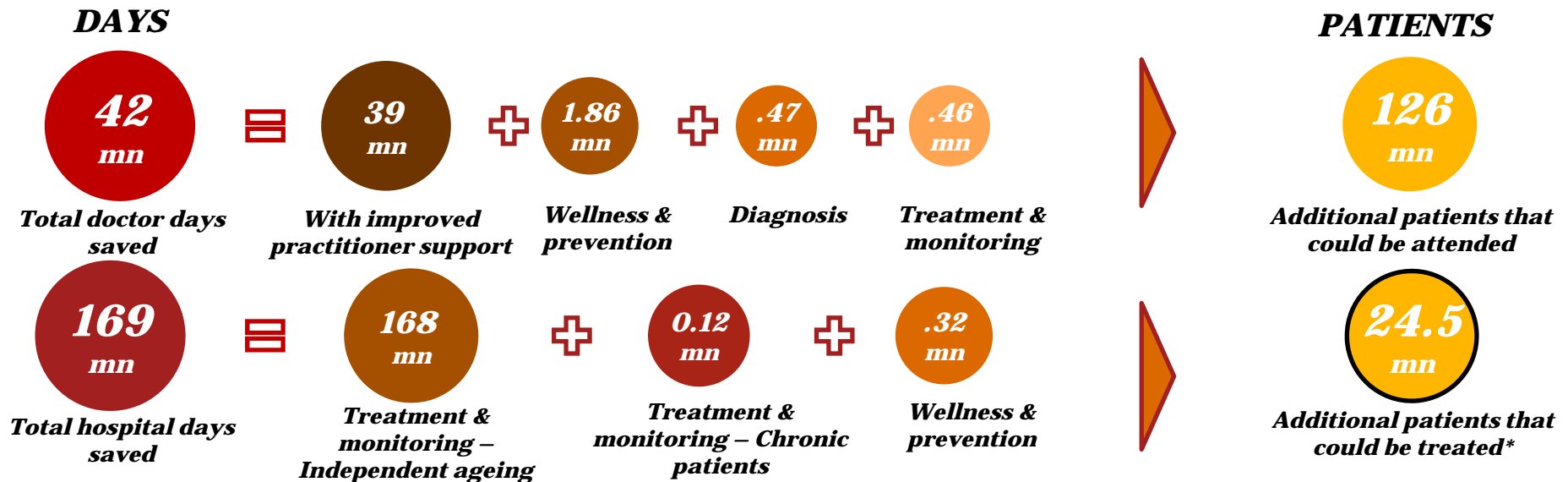
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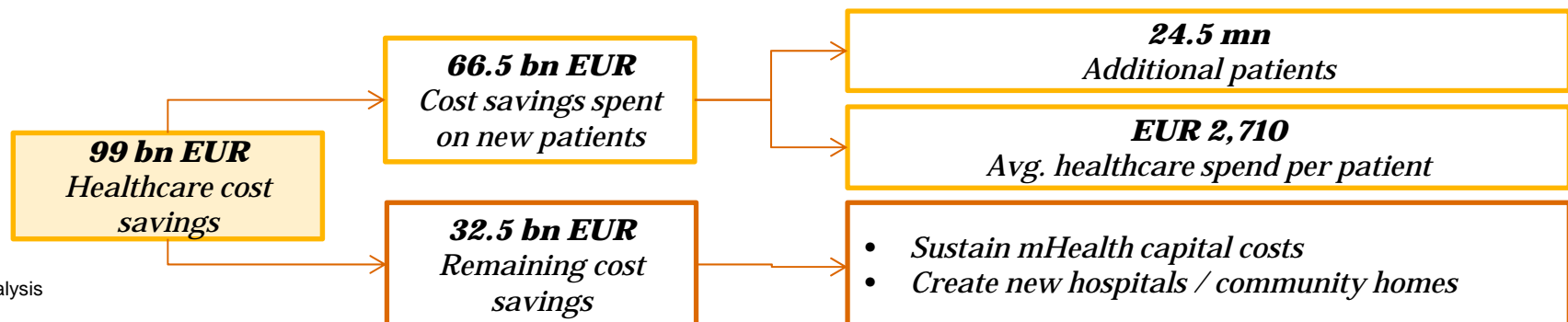
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A further 24.5 mn patients could be treated due to the savings across healthcare costs, days in hospital and doctors' work days

Additional patients could be treated using the time saved for doctors and hospital beds freed up

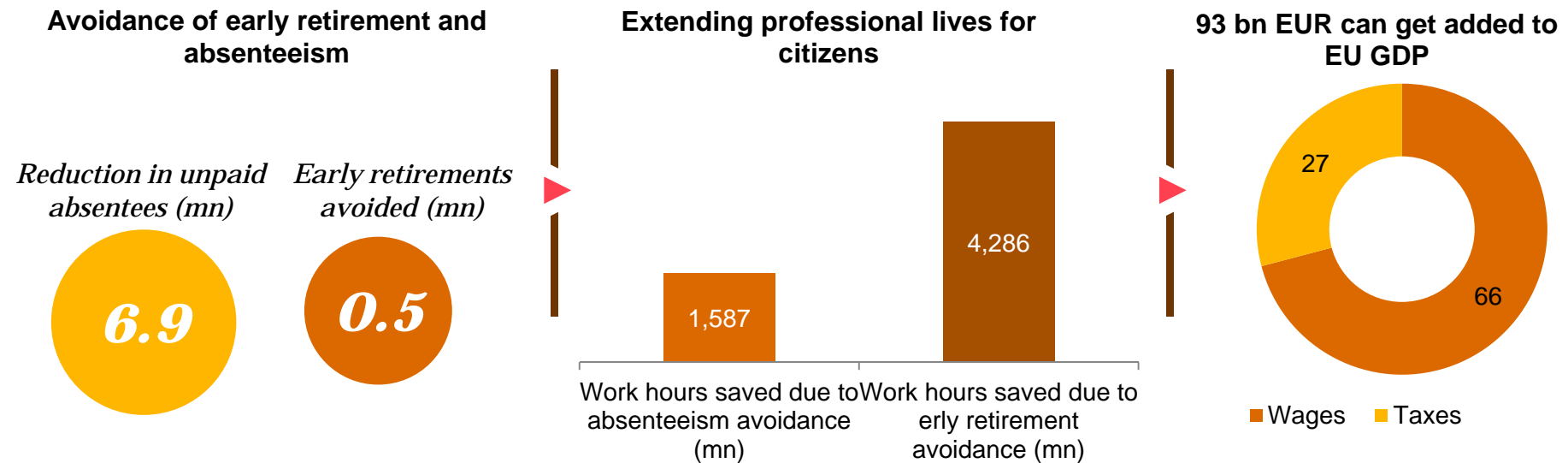


The healthcare costs saved can easily accommodate the treatment of 24.5 mn patients



Source: PwC analysis



Whilst saving 99 bn EUR in care costs, mHealth can also add 93 bn EUR to EU GDP in 2017 through greater employee productivity



- 0.5 million chronic patients would be able to avoid retirement by staying healthier with the support of mHealth solutions in 2017
- All such patients who would avoid retirement till 2017 would work for an additional 4.3 billion hours in 2017
- 6.9 million patients at high risk of chronic diseases would be able to avoid 1.6 billion hours of unpaid absenteeism* by managing their health and lifestyles better
- As a result, a further 93 billion EUR would be added to EU GDP in 2017, of which governments across the EU could gain 27 billion EUR in additional taxes and social security contributions

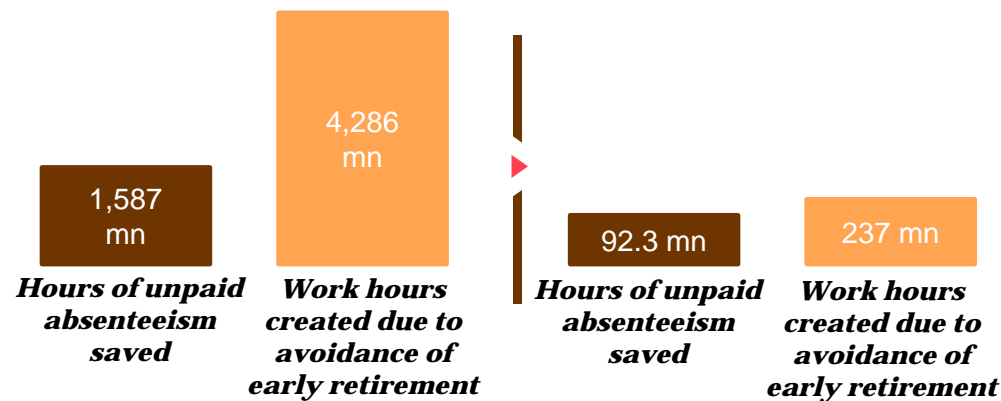
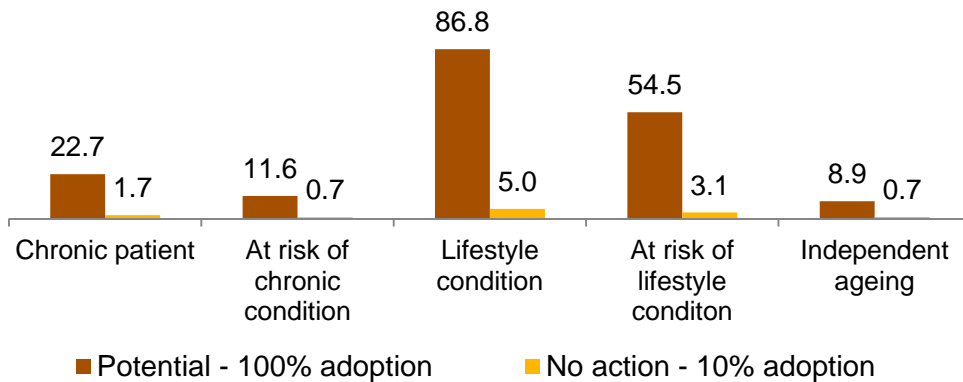
Source: PwC analysis, * Absenteeism days beyond entitled leaves

However, four key adoption barriers – regulatory, economic, structural and technological – could limit the benefits of mHealth

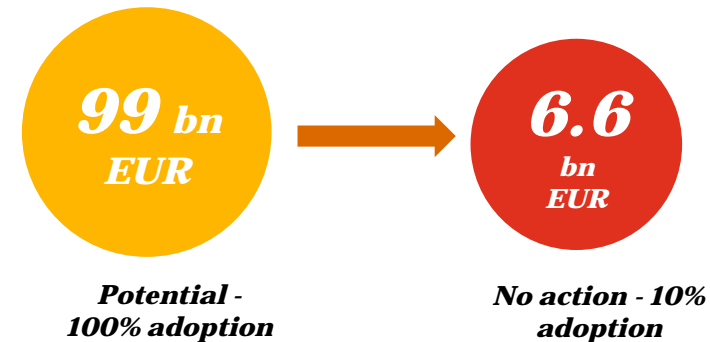
Flow of information	Regulatory	Economic	Structural	Technological
Healthcare provider	 Lack of clarity on mHealth certification	Need for further evidence Conflicting incentives	Low cohesion across levels and regions Low competition Change Management	
Solution vendor				Interoperability
Mobile service provider	Lack of interoperability standards Lack of clarity on data protection legislation 	Lack of reimbursement mechanisms		Standardisation Interoperability
Medical device vendor				Standardisation Interoperability
Doctors / Patients		Lack of awareness of mHealth benefits Lack of reimbursement mechanisms	Change Management	Lack of awareness of mHealth technologies

mHealth's potential in the EU could be limited to less than 10% in 2017 unless regulators and payers take initiatives to drive adoption

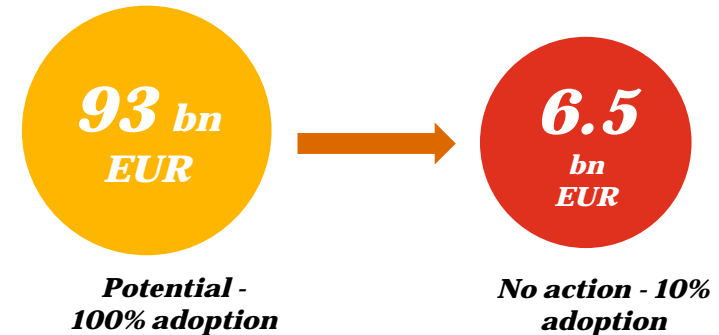
Regular mHealth users subjected to benefit by 2017 (million)



Total healthcare cost savings in 2017



Total additional GDP in 2017



Source: PwC analysis

Regulators, policy makers and payers can take immediate actions to drive adoption and better harness the potential of mHealth

Collaboration across ecosystem

- Integrate mHealth within national healthcare strategies and policy initiatives
- Align the development of mHealth solutions with the immediate healthcare priorities of each Member State
- Continue building the evidence base of mHealth benefits with relevant industry associations and solution providers

Bridge regulatory gaps

- Raise clarity on EU medical device regulation based on a proportionate risk-based approach that ensures safety and quality while stimulating innovation and patient access
- Clarify data protection legislation as it applies to mHealth, to ensure end-user trust and ease of use
- Promote technology and data standards to ensure development of interoperable and standardised solutions

Create economic incentives

- Devise innovative and sustainable reimbursement mechanisms to cover the cost of mHealth solutions
- Create incentives that reward healthcare providers on gains from healthcare efficiencies

Support the use of mHealth

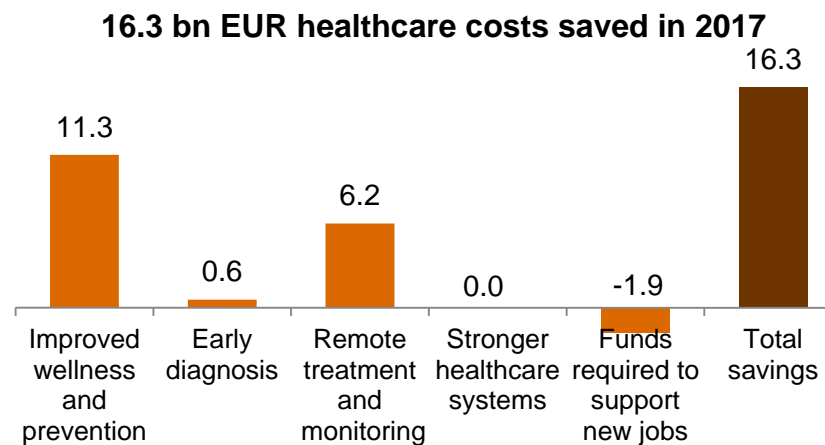
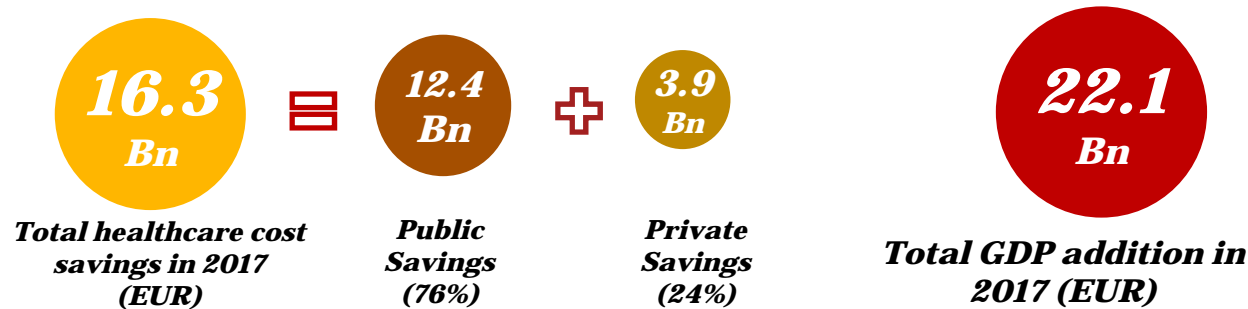
- Drive patient and healthcare professional engagement defining *needs* for mHealth solutions
- Education and training of healthcare professionals and patients on mHealth technologies and their benefits

Source: PwC analysis

Appendix 1

Overview for Germany and Spain

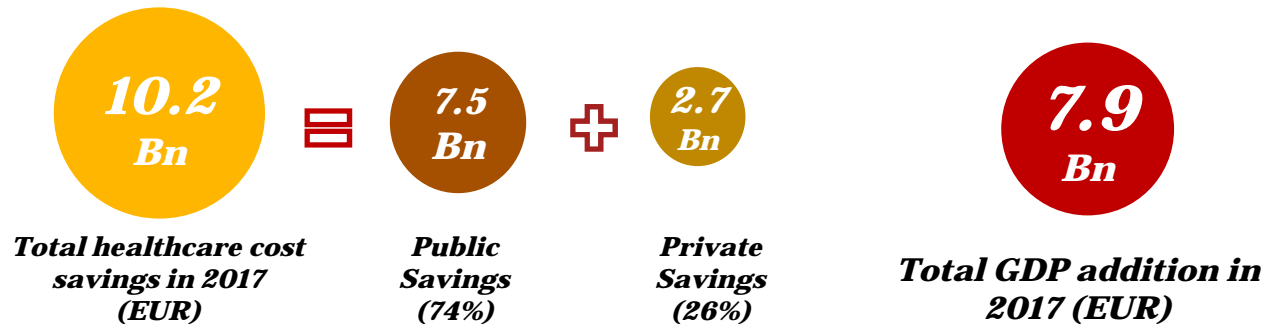
By 2017, in Germany, mHealth could benefit 30 mn patients, save 16.3 bn EUR in healthcare costs and add 22.1 bn EUR to the GDP



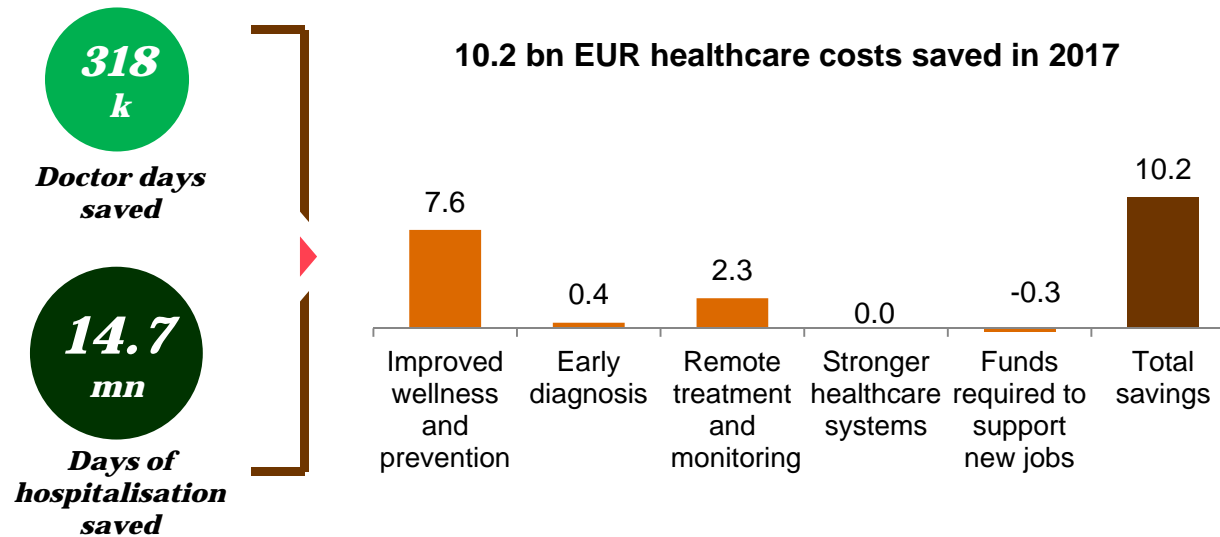
- mHealth solutions could positively impact 30 mn patients in Germany in 2017
- 31 mn days of hospitalisation could be prevented due to better clinical outcomes in 2017
- For the ageing population, 680,000 emergency room admissions can be avoided
- Healthier patients can save 250 mn work hours in unpaid absenteeism in 2017
- 760 mn work hours could be added in 2017 by patients who successfully avoid premature retirements till 2017
- mHealth can help create 50,000 jobs in Germany alone by 2017

Source: PwC analysis

By using mHealth, Spain could save 10.2 bn EUR in healthcare costs across 19 mn patients and add 7.9 bn EUR to the GDP in 2017



- mHealth solutions have the potential to positively impact 18.9 mn patients in Spain in 2017
- 14.7 mn days of hospitalisation can be prevented due to better clinical outcomes in 2017
- 325,000 emergency room admissions can be avoided for the ageing population in 2017
- mHealth would create additional capacity to attend to an additional 2.8 mn patients
- In 2017, mHealth can save 180 mn work hours in unpaid absenteeism and 440 mn hours due to avoidance of premature retirement
- mHealth can help create 12,000 jobs in Spain alone by 2017



Source: PwC analysis