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**GSMA**

# Socio-economic impact of mHealth

*Executive Summary – Brazil and Mexico*

*Strictly Private  
and Confidential*  
**Draft**

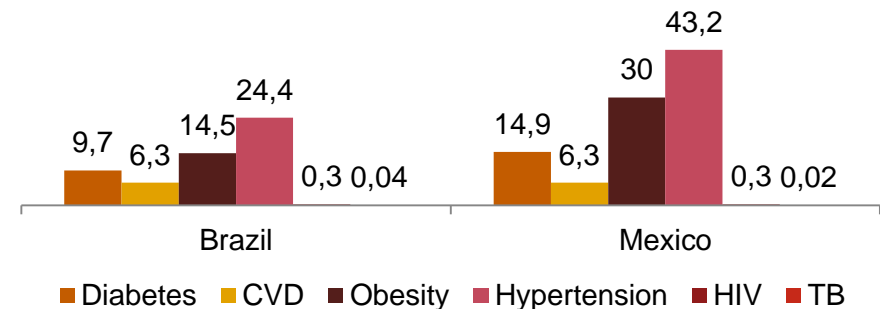
*20 May 2013*

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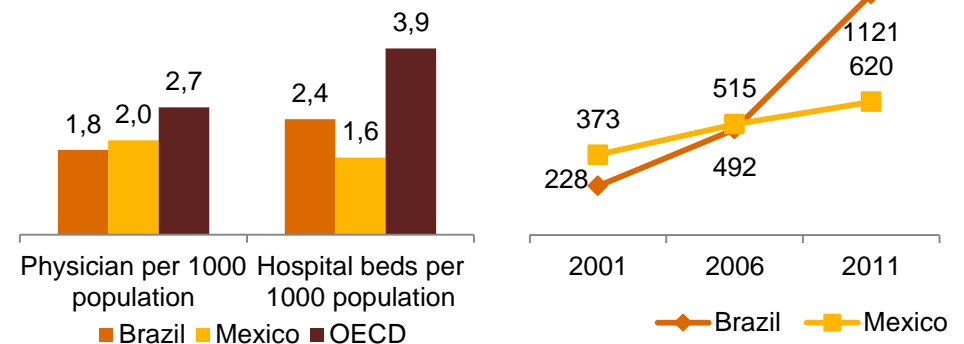
## ***Healthcare systems in Brazil and Mexico need to transition to delivering continuous care while addressing resource constraints***

- Brazil and Mexico are ***close to attaining*** the ***MDG related to infectious diseases***
- A growing prevalence of lifestyle disorders is ***increasing the burden of chronic diseases***
- ***Healthcare systems*** in Brazil and Mexico are ***equipped more for acute care***
- The ***need for continuous care will rise*** as focus on chronic diseases is increased
- As a result, ***healthcare spend will further increase***, since continuous care is costlier
- Brazil and Mexico have ***high private spend*** though they are moving to universal healthcare
- At present, every patient annually pays about 350 USD in Brazil and 291 USD in Mexico
- Brazil and Mexico need to ***efficiently use*** their ***limited resources*** and ***provide continuous care*** to sustain universal healthcare

***Prevalence rate (%) of chronic conditions is much higher than infectious diseases\****



***Healthcare infrastructure lags behind OECD countries***      ***Per capita healthcare costs (USD) are rising***



Note: MDG - Millennium Development Goal ([http://www.who.int/topics/millennium\\_development\\_goals/en/](http://www.who.int/topics/millennium_development_goals/en/))

\*Figures reported are of 2011 or the latest data available, for TB incidence has been reported, data for COPD only available for Brazil. Assumed same rate for Mexico

Source: The World Bank, IDF, WHO, OECD, Atsjournals, Scielo, PubMed, Ripsa (Brazil government), Sbpt, PwC Analysis

# *mHealth can enable healthcare systems to deliver continuous care, overcome resource constraints and improve quality of life*

## **Enable shift to continuous care**

### **Move chronic care outside hospitals**

- Enable remote care and allow patients to stay at home
- Reduce need for hospitalisation by 30%

### **Increase patient centrality**

- Educate and enable patients to self manage care
- Improve compliance to care by 50% and lower complications

### **Enhance prevention**

- Encourage and involve citizens to improve lifestyles
- Reduce risk of developing chronic diseases by 30% to 60%

## **Overcome resource constraints**

### **Improve resource efficiency**

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

### **Extend access to healthcare**

- Treat more patients without adding doctors or hospital beds
- Facilitate reach of care in rural areas

### **Limit private spending**

- Improve clinical outcomes to lower care costs for chronic diseases by 30% to 35%
- Limit out-of-pocket expenses and premiums

## **Improve quality of life**

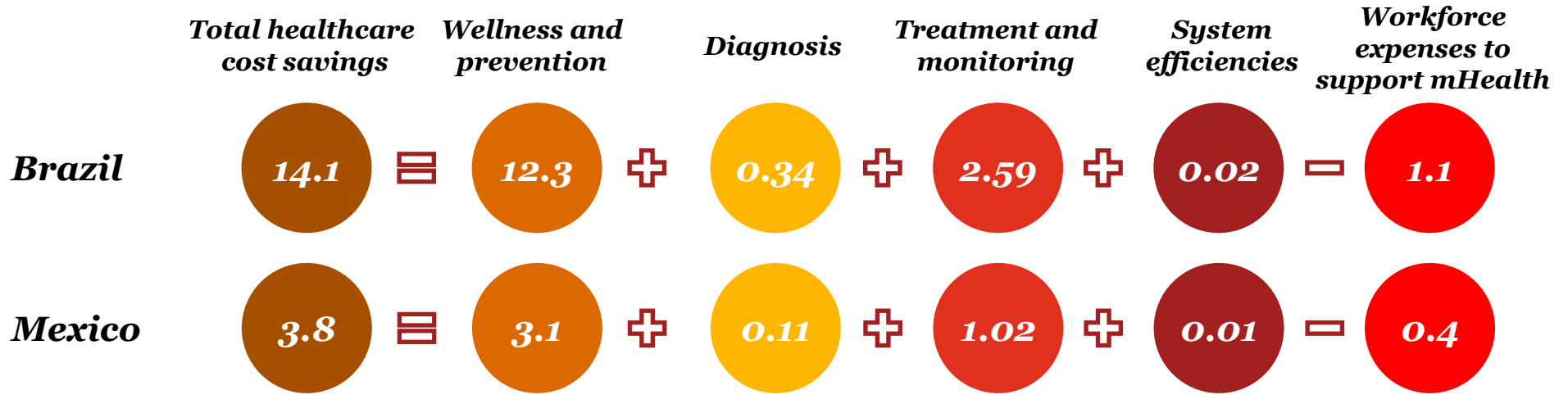
### **Potential regular mHealth users (2017)**

	<b>Brazil</b>	<b>Mexico</b>
Unique mobile users (mn)	192	69
<i>Regular mHealth users that could benefit</i>		
Wellness & prevention(mn)	78	30
Diagnosis (mn)	4.8	1.6
Treatment & monitoring (mn)	5.4	2.8

- **Improved effectiveness** of care can lower hospitalisations
- **Increased efficiency** of healthcare resources can lower care costs
- Healthier patients can provide **increased productivity**

Note: The clinical improvement numbers stated for chronic patients apply to regular mHealth users only  
 Source: PwC analysis

# In 2017, mHealth could save USD 17.9 bn in care costs and free up 14.6 mn working days for doctors, creating additional capacity



- mHealth enabled cost efficiencies can help Brazil and Mexico to **sustain universal healthcare**
- Public **healthcare spending can be reduced** by 6.9 bn USD in Brazil and 1.9 bn USD in Mexico
- **Per capita healthcare spend can be cut** by 20% in Brazil and 25% in Mexico for each patient benefitting from mHealth
- Every such patient could save 96 USD in Brazil and 95 USD in Mexico in out of pocket healthcare expenses in 2017
- These savings justify the 133,000 jobs needed in Brazil and 74,000 jobs needed in Mexico for mHealth deployments

Address shortage of doctors	Brazil	Mexico
Number of days saved for doctors (mn)	9.4	5.2
Additional patient visits feasible (mn)	85.3	46.7
Additional patients that can be treated (mn)	28.4	15.5
Shortfall of doctors addressed ('000)	37.6	20.1

## ***By using mHealth, care can be made more effective for 64 mn patients in Brazil and Mexico, saving an additional 16,000 lives***

	<b>Unit</b>	<b>Brazil</b>	<b>Mexico</b>
<b><i>Total patients benefitted with mHealth</i></b>	mn	<b>45.7</b>	<b>18.7</b>
<b><i>Patients at risk of developing or having lifestyle disorders benefitted</i></b>	mn	<b>25.1</b>	<b>11.0</b>
<b><i>Patients that can reduce risk or severity of chronic diseases by improving their lifestyle</i></b>	mn	<b>15.6</b>	<b>5.5</b>
<b><i>Population diagnosed for chronic diseases earlier</i></b>	mn	<b>1.5</b>	<b>0.5</b>
<b><i>Chronic patients benefitted from remote treatment and monitoring</i></b>	mn	<b>3.2</b>	<b>1.6</b>
<b><i>Days of hospitalisation avoided or saved</i></b>	mn	<b>1.2</b>	<b>0.4</b>
<b><i>Life years added</i></b>	'000	<b>12.8</b>	<b>10.4</b>
<b><i>Lives saved due to improved emergency response and disease avoidance</i></b>	'000	<b>5.9</b>	<b>9.6</b>

- Healthcare systems in Brazil and Mexico can help 64 mn ***patients take better control of their lifestyle and diseases*** with mHealth
- Enhanced wellness and prevention can ***reduce risk and severity of chronic diseases*** through improved lifestyles
- Remote monitoring can help ***improve clinical outcomes and emergency response***
- As a result, healthcare systems can ***deliver continuous care better*** by reducing the severity and risk of diseases
- Enhanced quality of care can help ***reduce mortality and increase life expectancy***

Benefitted population has been calculated across wellness, prevention, diagnosis, treatment compliance and remote monitoring categories and overall population has been aggregated  
 Total population suffering with just lifestyle condition and not chronic diseases has been calculated by adding obese, smokers and hypertensive population together  
 For patients suffering from chronic conditions or at risk of developing them, the overlap for various lifestyle disorders has been accounted for  
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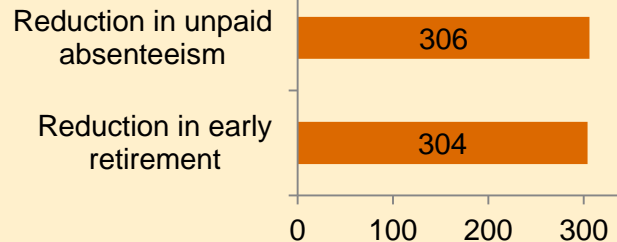
# Enhanced quality of life can improve productivity, raising the GDPs of Mexico and Brazil by USD 8.4Bn and USD 4.5Bn in 2017

## Brazil

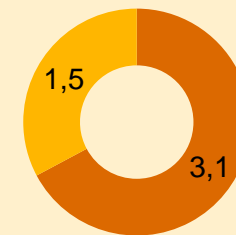
Early retirements avoided (000)      Reduction in unpaid absentees (000)



Extending professional lives for citizens by adding work hours (millions)

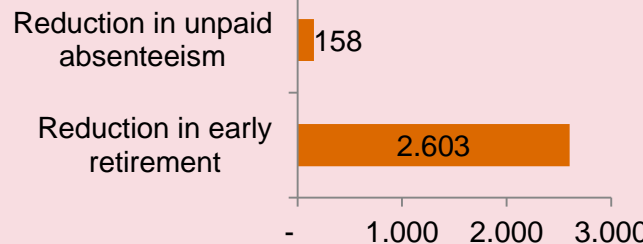


Further USD 4.5Bn added to GDP

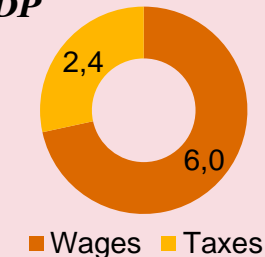


## Mexico

Early retirements avoided (000)      Reduction in unpaid absentees (000)



Further USD 8.4Bn added to GDP



- 0.24 mn chronic patients in Brazil and Mexico could successfully reduce severity of their chronic diseases by using mHealth solutions to manage them. As a result, they could avoid early retirement and earn more
- 2 mn people at high risk of developing chronic diseases could stay healthier by using mHealth solutions and, hence, earn more by avoiding unpaid absenteeism
- Governments in Brazil and Mexico can collect a further 1.5 bn USD and 2.4 bn USD in taxes on additional earnings

Source: PwC Analysis

***There is a broad potential impact of mHealth but four barriers need to be lowered – regulatory, economic, structural and technological***

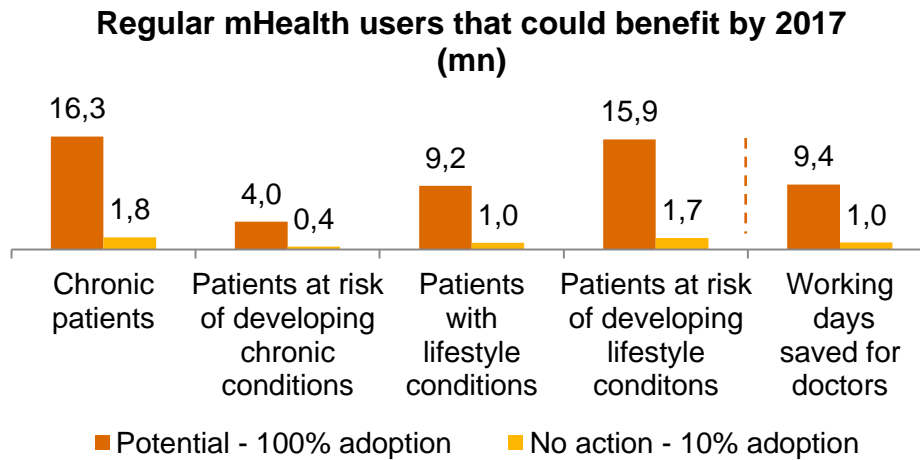
<b>Flow of information</b>	<b>Regulatory</b>	<b>Economic</b>	<b>Structural</b>	<b>Technological</b>
<b>Healthcare provider</b>		<i>Need for further evidence</i> <i>Conflicting incentives</i> <i>Change mgmt</i>	<i>Low cohesion across levels and regions</i> <i>Low competition</i>	<i>Mismatch between current workflows and mHealth solutions</i>
<b>Solution vendor</b>		<i>Inadequate funding</i> <i>Hindrances to scalability</i>	<i>Hindrances to scalability</i>	<i>Interoperability</i>
<b>Mobile service provider</b>		<i>Lack of reimbursement mechanisms</i>		<i>Standardisation</i> <i>Interoperability</i>
<b>Medical device vendor</b>		<i>Ensure affordability for low income groups</i>		<i>Standardisation</i> <i>Interoperability</i>
<b>Doctors / Patients</b>		<i>Lack of awareness of mHealth benefits</i> <i>Lack of affordability for low income groups</i>		<i>Significant training needs</i>

**Call for action**

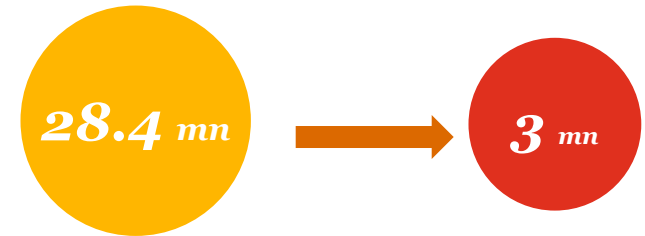
- *Many mHealth benefits are system centric*
- *Not all benefits will be evident in the short term*
- *Multiple pilots are close to releasing results of evidence-based research to establish mHealth benefits*
- *Steps need to be taken to now encourage adoption now to help systems attain these benefits efficiently once proven*

# By 2017, only 10% of the potential benefits of mHealth would be realised in Brazil ....

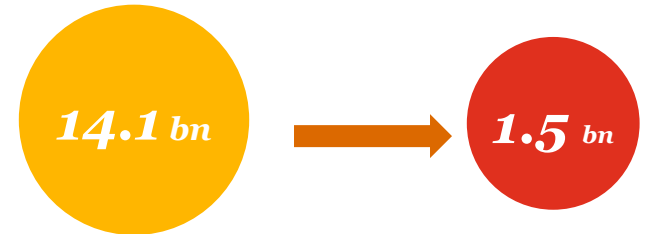
## Impact of limited adoption in Brazil



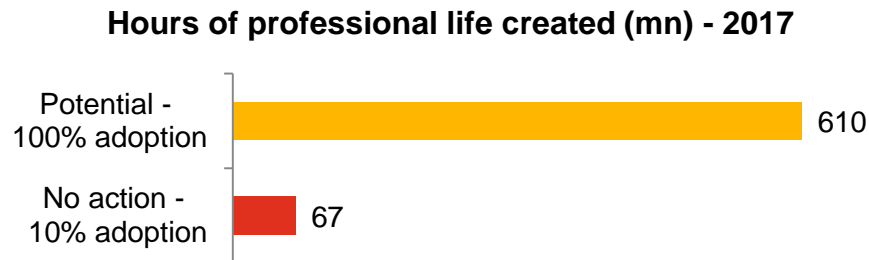
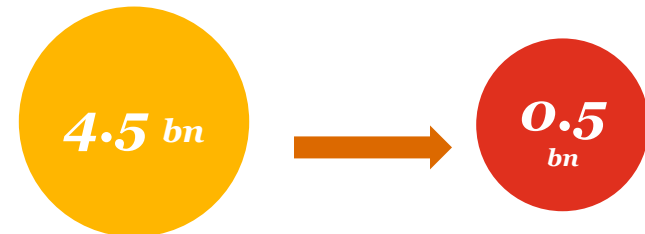
### Additional patients treated in 2017



### Total healthcare cost savings in 2017



### Total GDP addition in 2017



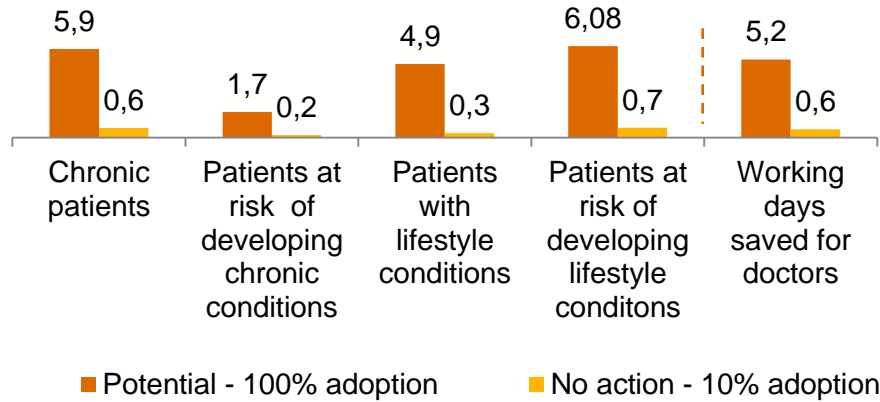
Source: PwC Analysis



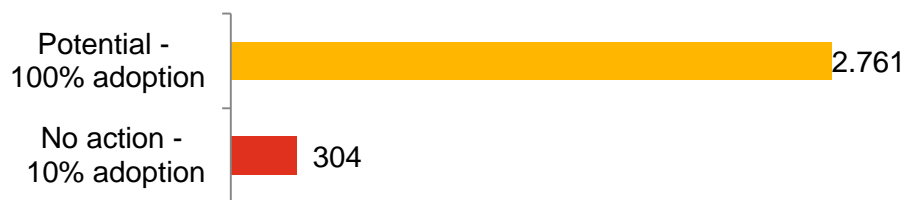
**... and in Mexico unless regulators and payers take immediate measures to drive the adoption of mHealth**

**Impact of limited adoption in Mexico**

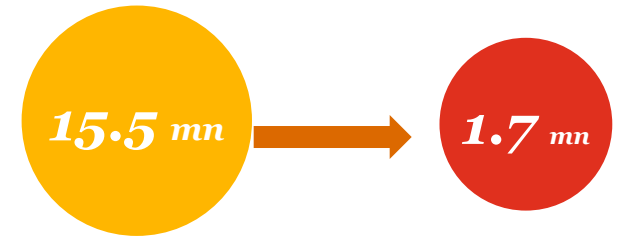
**Regular mHealth users that could benefit by 2017 (mn)**



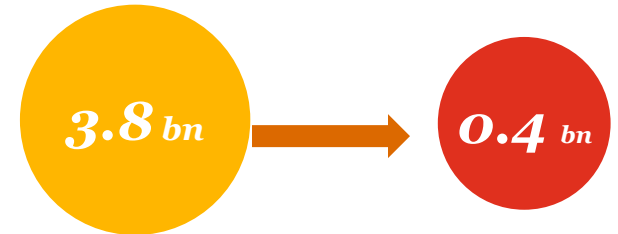
**Hours of professional life created (mn) - 2017**



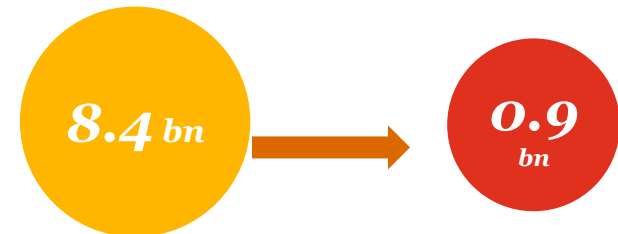
**Additional patients treated in 2017**



**Total healthcare cost savings in 2017**



**Total GDP addition in 2017**



Source: PwC Analysis

## ***Regulators and payers can drive adoption by creating policies that establish accountability and incentives that fairly spread benefits***

### ***Create a facilitative regulatory environment***

- Create policies that ***integrate mHealth*** with the nationwide healthcare strategy
- Establish clear medical device certification for mHealth to ensure ***accountability*** of stakeholders
- ***Reward*** healthcare providers for attaining ***positive health outcomes and efficiency improvements*** by using mHealth solutions
- Establish ***technology and data standards*** to ensure development of interoperable solutions

### ***Establish re-imbursment and funding mechanisms***

- Create ***re-imbursment mechanisms to cover the cost of mHealth solutions***
- Create ***favourable pricing models*** for mHealth solutions
- ***Collaborate with NGOs*** and global health organisations to fund the development of mHealth solutions
- Enter into ***public private partnerships*** to make the development of mHealth solutions more efficient

### ***Enable the adoption and use of mHealth***

- ***Continue building evidence base*** of mHealth solutions
- Encourage clinical engagements to facilitate ***refinement of exact needs*** for mHealth solutions
- Drive ***clinical leadership*** to establish pioneers of mHealth implementation
- Incentivise healthcare providers to ***promote awareness of mHealth benefits***
- Establish education systems across all healthcare professionals to ***train*** them ***on how to use mHealth solutions***

Source: PwC Analysis

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# *Thank You*

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