



**Rajendra Pratap Gupta**  
President & Member  
Board of Directors

September 22, 2012.

Dr. Manmohan Singh  
Prime Minister,  
Government of India  
7, Race Course road, New Delhi -110001.

Email/ speed-post

Reference: National Digital Health Plan (NDHP)

Dear Dr. Singh,

I am sending this note on behalf of DMAI – The Population Health Improvement Alliance.

About Disease Management Association of India (DMAI) Disease Management Association of India (DMAI - The Population Health Improvement Alliance), was formed by Executives from the Global Healthcare industry to bring all the stake holders of healthcare on one platform. DMAI has been successful in establishing an intellectual pool of top healthcare executives to become an enabler in building a robust healthcare system in India. India is on the verge of building its healthcare system, and it has a long way to go. DMAI is building the knowledge pool to contribute & convert 'Ideas' into 'Reality', for healthcare in India. DMAI is the only not-for-profit organization focused on population health improvement in India

Let me start by quoting Kathleen Sebelius, Health Secretary of the United States, "Mobile Healthcare is the biggest technology break-through of our time to address our greatest national challenge". Ms. Sebelius said this last year at the mHealth summit in Washington DC. This statement is more relevant to our country as, though for the developed world, mHealth is another option for healthcare delivery but for a developing country like India, mHealth is the only option!

We urge upon your good selves to initiate the National Digital Health plan - NDHP (Digital Health means Telemedicine, mHealth & technology backed healthcare delivery) for India, and may be, consider to form an inter-ministerial group to give this a definite shape. According to WHO review in 2010, only a quarter of countries worldwide had drawn up a national telemedicine policy or strategy. Let us take the lead in setting up the National Digital Health Plan (NDHP).

With 6 billion mobile phones globally at the end of 2011 and about 960 million cell phones in India, mobile phones provide a matchless platform for delivering change at the grass roots and are a tool

.....2

**Disease Management Association of India**

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in



-2-

To deliver programs aimed at economic & social inclusion & more importantly, inclusive healthcare.

We must think seriously & act now about incorporating Telemedicine & mHealth (mobile healthcare) in our healthcare system and building a road map of Digital Health for India. With over 800 million people living in rural India and about 640,000 villages as per the latest data of planning commission's approach paper for the 12<sup>th</sup> five year plan, it is imperative that we build a national roadmap for telemedicine in India to address the issue of accessibility & affordability with sustainability on one side, and on the other side, for leveraging a global business opportunity for Indian entrepreneurs, like what IT (Information Technology) did to India's growth story. It is time to replicate the IT success story this time using mHealth and help the industry build a few multi-billion dollar global corporations

Telemedicine is needed for delivering 'Inclusive healthcare' to India & also to serve across various sectors like in defence, help in job creation, veterans' health and disaster management.

**Defence services:** We need Telemedicine through dedicated satellites for armed forces posted on Naval Ships and remote areas at the border and at Siachen. Also, the ECHS for ex-servicemen could have a healthcare facility through Telemedicine at various polyclinics. This must be initiated and the ECHS clinics must be connected with Army referral centers. US Veterans administration, for e.g., found that overall the practice of telemedicine / mHealth cuts hospitalization by 30 % & admissions for heart failure by 40 %

**Disaster Management:** During national disasters, Telemedicine & mHealth can be the only healthcare delivery channel for the affected areas and this calls for a Telemedicine road map under National Disaster Management Authority (NDMA), at the Prime Minister's office. During Tsunami in Japan, Continua Health Alliance members came together and gave a solution in a record time. It would have been a double catastrophe, if such a Tsunami ever destroyed paper medical records and the patients had to be moved to a remote place for treatment. Nothing could have been worked without medical devices which were interoperable and an EMR hosted over a cloud. This calls for immediate planning to avoid healthcare disaster along with a natural disaster!

**Chronic Diseases:** In the USA, FDA (Food & Drugs Administration) has started approving mHealth applications and two of the insurance companies recently agreed to pay for mHealth applications for diabetic patients. mHealth holds the promise to address the biggest challenge facing our nation i.e. chronic diseases & the implementation of secondary prevention program

.....3  
Page 2

### **Disease Management Association of India**

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in



-3-

With approximately 960+ million cell phone users; healthcare in India will converge to mHealth, and ultimately, this is where all practitioners, payers and users will converge too! It is time to look at mHealth as a tool for 'Inclusive Healthcare'. With mHealth, 'Universal Healthcare' will move faster from a dream to reality!

Earlier, it was said that, 'An apple a day keeps a doctor away', and now it is being said rightly that, 'An app ( mobile application ) a day keeps a doctor away'.

According to the PWC & Economist Intelligence Unit (EIU) recent study – 2012, conducted in 10 countries including India, Patients believe that convenience, cost and quality of health in the next three years will change due to mhealth

According to this study;

59 % of the doctors and payers believe that the wide spread adoption of mhealth in their countries is inevitable

In the next 3 years,

57 % of the patients in emerging markets believe that mHealth apps / services will make healthcare more convenient

54 % of the patients in emerging markets believe that mHealth apps / services will improve the quality of care

53 % of the patients believe that mHealth apps / services will substantially reduce the overall cost of care

59 % of the emerging-market patients use at least one mHealth application or service.

The Department of Health, U.K. had set up a WSD (Whole System Denominator) program to help provide an evidence base for setting further policy in this field. This was claimed to be the largest randomized control trial of Telehealth & telecare in the world. The program was launched in May 2008 involving around 6200 patients and 238 GP practices. Early indications from WSD show that, if used correctly, Telehealth can deliver a 15 % reduction in accident & emergency visits, a 20 % reduction in emergency admissions, a 14 % reduction in elective admissions, a 14 % reduction in bed days and an 8 % reduction in tariff costs. They also demonstrate a 45 % reduction in mortality rates

.....4

Page 3

### **Disease Management Association of India**

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in



-4-

According to Lord Nigel Crisp, Former CEO of NHS, U.K. (National Health Service) and Member, House of Lords, *'In UK, NHS direct started free health advice service over phone. It has over 6 million subscribers, over 10% of the country's population'*.

For chronic disease patients, Home care based 'Nuvola It Home Doctor system' was developed by Telecom Italia in the Piedmont region. As a part of the policy to bring health services closer to the community, patients suffering from chronic diseases monitor certain biological parameters using traditional electro-medical devices and send them to the Telecom Italia data center, using a dedicated mobile phone provided by the hospital. Home-based care is estimated to cost 180 euros compared to 700-1000 euros in hospital. mHealth based home care can provide tremendous relief to geriatric patients in India, in addition to psychiatric patients with the existing ratio of psychiatrists: population nearing 1: 10, 00000

**OPD workload in Government district hospitals:** In India, the biggest problem in district hospitals is the patient overload in OPD (Outdoor patients department).

By using mHealth / telemedicine, we can provide right timely interventions at the point of care and cut this OPD overload anywhere by 30-60 %.

**mHealth as a tool for diplomacy:** A few years ago, ISRO had taken up some key initiatives along with the Ministry of External affairs for setting up the 'PAN network'. It is time to revive that actively, and provide remote consultations, not just in India but in developing countries of Asia & Africa. Telemedicine can be a good tool for diplomacy. I had made a keynote presentation at Lahore, Pakistan under Aman-ki-Asha in May 2012, and telemedicine and mhealth was a key point of discussion to increase collaboration between the two countries. Healthcare is the most impactful tool for political diplomacy with our neighbours who have similar challenges when it comes to healthcare.

**Rural Health:** With over 640,000 villages where doctors are not willing to work, technology seems to be the best solution and mHealth appears to be the best technology

In Turkey, Acibadem Mobile runs a mHealth nutrition service with 450,000 members. Also, in less than two years, an emergency healthcare service offered in conjunction with Turkish Telecom has grown to 100,000 members. . In Mexico, Medicall Home has five million subscribers who pay US \$5 a month on their phone bills in order to access medical advice

Across the border, in Bangladesh, Grameenphone has set up Healthlink to allow its customers to talk to the doctors 24 X 7. This service has fielded 3.5 million calls in the last six years

.....5  
Page 4

### **Disease Management Association of India**

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in



---5---

**Strengthening India's healthcare system:** Also, India is presently building on its healthcare system, and the 12<sup>th</sup> Five Year Plan has been referred to as the 'Plan for Health'! Now is the right time for the policy makers to ensure that technology is embedded in all programs that the Government is planning to rollout for healthcare delivery. In specific, mHealth has tremendous potential to reduce costs, improve the reach and access to Health Care, make the healthcare system more outcomes driven, and more importantly, help in establishing an 'empowered patient'.

According to the EIU PWC report 2012, USA has been at the forefront of mobile health deployments in the world. Almost 40 % of the solutions deployed work towards strengthening the healthcare systems. mHealth is not just promising but truly transformative to healthcare. From pill reminder, training of health workers, reducing IM / MMR, T.B. - DOTS, HIV treatment compliance to quitting smoking to managing diabetes, obesity & emergency surgeries, mHealth is becoming an integral part of healthcare delivery. It is time for the best brains to work on mHealth with all stake holders in healthcare delivery

In my view, mHealth is the only option in India, where people pay 2/3<sup>rd</sup> of the healthcare costs and only 1/3<sup>rd</sup> get healthcare in the real sense.

Seeing the potential of telemedicine, & mHealth in particular, India needs a roadmap for mHealth / Telemedicine encompassing areas of rural health, tribal health, chronic disease management, disaster management, defense services, coastal healthcare services etc.

Following might be helpful in building the digital health road map for India

<u>Focus areas that need to be considered in the NDHP</u>	<u>Ministry / Deptt / Org. involved</u>
1. Incorporating Digital Health in Medical education / training	MCI, NIFW, MOHFW
2. ESIC clinics connected via Telemedicine & home care facilities provided through mHealth for ex-servicemen	MOD / ISRO
3. Sub-centers in rural areas to be replaced gradually with mobile health Units (MHU's & this could also double as medical ambulances at the time of emergency in rural areas)	Consider under MNAREGA, NRHM - MOHFW
4. mHealth national grid	MOHFW/ML&E/ MOD/MIT
5. National / Regional IVR Health helplines on the lines of 108	MOHFW / State Govts
6. mHealth for Chronic disease management	MOHFW
7. Skills Development for Digital Health	NSDC / MHRD
8. Telemedicine / mHealth under Disaster Management – NDMA	PMO

.....6

Page 5

### **Disease Management Association of India**

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in



-6-

- |   |                             |
|---|-----------------------------|
| 9. Regulation of tariffs ( special tariffs for mHealth services)                            | TRAI                        |
| 10. Mental health Telemedicine Network  | MOHFW                       |
| 11. Checking counterfeit & Spurious medicines using mHealth                                 | Deptt. of Pharmaceuticals   |
| 12. Healthcare facilities in Jails  | Min. of Home Affairs        |
| 13. National IT policy 2011 & health as a mission mode project                              | Min. of Comm. & IT          |
| 14. National Institute of telemedicine & mHealth  | MOHFW                       |
| 15. DST- TDB could set up 'mHealth innovation village'<br>like the Startup village in Kochi | DST, TDB / CHA              |
| 16. Electronic Health Record – RSBY   | MOL & E / HIMSS / CHA       |
| 17. ECHS / Naval Telemedicine / Siachen / borders   | MOD / MHA / ISRO            |
| 18. mHealth for Tribal health & North Eastern states  | MDONER / MTA                |
| 19. Civil Aviation / airports   | MOCA / ISRO                 |
| 20. Social media strategy for health  | Min. of Comm & IT / HIMSS   |
| 21. Medical Devices standards & Interoperability  | Min. of Comm. & IT /CHA     |
| 22. Electronic Health records for all new born's  | MOCWD / CHA /HIMSS          |
| 23. Treatment protocols for various diseases  | ICMR / PHFI / AIIMS         |
| 24. Enactment National Telemedicine / Digital Health Act                                    | MOHFW/Min. of Legal Affairs |
| 25. Applications Venture fund for telemedicine  | TDB / DST                   |
| 26. Digital adoption lifecycle benchmarking of different states                             | Planning Commission /HIMSS  |
| 27. National Cloud computing policy for healthcare  | MIT / MOHFW / HIMSS         |
| 28. Privacy / data security issues of patients  | MOHFW / BIS / CHA           |
| 29. e-Prescription policy ( Electronic / digital prescription)                              | MOHFW / MIT /HIMSS          |

On the acceptability & adoption front for telemedicine & mHealth, let me quote examples; a rural telemedicine service provider in Indi has done about 200,000 consultations with 30-40 % repeat visits, across states of U.P. , Bihar, Karnataka & Maharashtra . A leading eye care hospital does over 2.5 lac telemedicine consultations every year and another eye care hospital does over 1.5 lac telemedicine consultations in a year in India.

EMRI – 108 services in Andhra Pradesh is on a PPP model, and this service receives 58000+ calls per day with 4800+ emergencies a day and has saved 20165 lives. A true example of successful mHealth / telemedicine in our own country!

HMRI -104 (Health Management Research Institute, A.P.), is about providing information on health, counseling and healthcare services via health helpline. Till May, 2008, it received 51000 calls per day. Medical advice given to 40860, counseling attended- 7493, information of health facilities provided- 6331 & complaint calls received on healthcare facilities- 253. Top 10 ailments attended were recurrent abdominal pain, back pain, knee pain, cough, hair loss, chest pain, and eye

.....7

Page 6

### Disease Management Association of India

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in



-7-

pain or problems with eyelids, rash, pain in ankles or feet, belching, growing stomach or gas.

I had a chance to visit these facilities personally and observe the calls from patients / public, and I must say that this is something every Indian must have access to, rich or poor ! With an average cost per call of Rs.9, this is definitely a successful telemedicine & mhealth model for implementation in India. [http://nrhm-mis.nic.in/UI/MEActivities/goa\\_web/PDFs/02-05-08\\_pdf/Pre%20Lunch/Goa%20presentation\\_AP.pdf](http://nrhm-mis.nic.in/UI/MEActivities/goa_web/PDFs/02-05-08_pdf/Pre%20Lunch/Goa%20presentation_AP.pdf)

Also, I have visited remote places in Wardha district of Maharashtra, where mHealth has been used by rural health workers and has helped reduce maternal mortality from 91 per lac to 51 per lac in a period of about 1 ½ years with an approximate investment of Rs.4000 per village . There was a 43.95 % reduction in MMR using simple phones, through text messaging and covering high risk expectant mothers with the existing network of anganwadi workers

According to the GSMA deployment tracker, currently there are around 300 commercial deployments globally. (<http://apps.wirelessintelligence.com/tracker/>, extracted in Dec 2011).

So clearly, mHealth & telemedicine is fast pervading and showing its impact on the healthcare system in India

**Digital Health & Medical tourism:** India is fast losing to other South East Asian nations as a centre of excellence for medical tourism due to lack of IT usage in its hospitals and dismal usage of mhealth / telemedicine. International patients follow the international electronic data / medical records standards , and also would like to connect with their care givers using telemedicine , and if we do not promote EMR & telemedicine through hospitals , India is likely to lose billions of dollars in revenue which otherwise could accrue through foreign patients seeking treatment in Indian facilities

**Healthcare program reporting, review & timely interventions:** Currently, the healthcare data is reaching after months and in some cases well over two years. This could become live and actionable for timely interventions by using GPS enabled devices & e-reporting. Solutions are already available and are scalable. It is the right time to adopt the same in NRHM, and create a national household medical record (NHMR) for the families in rural / urban India. This will help us study the epidemiology & family health risk assessment. May be, we must make it compulsory to ensure that all the 18 million new born's must have the electronic health record and then move upwards to put an electronic health record for all Indians, post the national screening program. At least, the next generation must be having a digital health record right from birth so we do not have to change the system backwards for them in future.

.....8

Page 7

### Disease Management Association of India

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in



-8-

So, for sure, mHealth & Telemedicine is a proven model for care delivery, and we need to support it in a more structured and institutional manner for the next 5 years .

It is beyond doubt that , mhealth will add efficiency to affordability , acceptability , accessibility & efficiency on one hand , and create about 2 million jobs and also add about 0.5 % of growth in the GDP at a minimum in the next 5 years .

Inclusive innovation & inclusive growth have now added a new dimension, i.e. 'inclusive healthcare', with digital health being the starting point. mHealth is the fastest solution to the oldest problem of reaching the unreachable! We must seriously consider deploying at least 3 % of our total healthcare budget on ICT, and this will certainly make the data live and lead to timely interventions and thus saving lives, establishing accountability of the service provider through periodic reviews and bring transparency in functioning of the various programs

US FDA has approved mobile health applications for diabetes management besides others, and two insurance companies have agreed to reimburse mobile health applications for treatment of diabetes. This development indicates that the big multi-billion untapped market of the developed world is waiting to be tapped and the government needs to step in, like it did to develop multi-billion dollar corporations in the field of Information Technology. According to the Economist Intelligence Unit (EIU) & Pricewaterhouse Coopers (PwC )report 2012, mHealth market is likely to be USD 23 Billion by 2017, and Asia Pacific market will be 30 % at USD 6.8 Billion .If we work towards setting the right enabling policies for mHealth, Indian companies would grab a major portion of this market, like we did for IT industry a few decades ago. Besides, given the technical & competent manpower in India, mHealth & telemedicine can do for country what IT revolution has done for India! This calls for a dedicated action group on Digital Health (mHealth & telemedicine) .

mHealth & Telemedicine is becoming the focus area for all the major healthcare systems across the world, and given India's expertise in this area, India can become a global provider of products and services in the field of Telemedicine & mHealth. We believe mHealth can add at least 0.5 % to country's GDP in the next 3 - 5 years, create at least 5 billion dollar companies in mHealth, and lead to creation of over 20,00,000 (2 million) jobs directly by becoming a Global leader in this space. If two persons are deployed in every village for Telemedicine, and considering that India has over 6,40,000 villages, we will create over 1.2 million jobs directly just in rural India and this could be a worthwhile project to be considered for funding under MNAREGA scheme that will not only create jobs, but also lead to better health for rural India and lead to tremendous savings under NRHM expense head!



-9-

The good point is that, we have a least complex healthcare system in India, and we are building it up. Also, we have quite receptive and friendly policy makers who are willing to try initiatives.

Hopefully, we will lead and show the world an outcome driven & a self-sustainable healthcare delivery model built on strong foundations.

Over the past few years, I had a good experience working with policy makers across geographies and it has been a wonderful experience, especially in India, working with different stake holders to discuss new ideas and policies aimed at better healthcare options for the common man.

This is not a complete or a reference document but just to initiate a few discussion points. Should your office or any concerned organization, department or ministry need more inputs or support, my colleagues at the World Economic Forum, The Telemedicine Society of India, HIMSS & Continua Health Alliance, would be more than glad to volunteer and assist. I am sure that this submission will also be considered positively by the various stake holders in the Government and acted upon, so that we can see large scale deployment of mHealth & telemedicine projects in all major departments and programs of the Government making healthcare accessible and affordable to provide timely advice & right interventions for the common man 24 X 7.

Yours in good health

**Rajendra Pratap Gupta**

*Member, World Economic Forum's Global Agenda Council – Digital Health*

*Board Member, Care Continuum Alliance, Washington DC. USA*

*Executive Council member, Telemedicine Society of India*

*President & Member of the Board, Disease Management Association of India (DMAI).*

CC:

Mrs.Sonia Gandhi, Chairperson , NAC.

Dr.M.M.Joshi, Chairman, Parliamentary Accounts Committee .

Dr.Sam Pitroda, Chairman, National Innovation Council, GOI.

Shri A.K. Antony, Hon'ble Minister of Defence , GOI.

Shri Ghulam Nabi Azad, Hon'ble Minister for Health & Family Welfare, GOI

Shri Kapil Sibal, Union Minister for HRD/ Comm & IT, GOI

...10

Page 9

**Disease Management Association of India**

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in



-10-

Shri Jairam Ramesh, Union Minister for Rural Development, GOI.  
Shri Ajit Singh, Union Minister for Civil Aviation, GOI  
Shri Salman Khurshid, Union Minister for Law, GOI  
Smt. Krishna Tirath, Union Minister of state (I/C) for Women & Child Development, GOI  
Shri Jitendra Singh, Union Minister of state for home affairs, GOI.  
Shri Sachin Pilot, Union Minister of State for Comm. & IT, GOI  
Dr.Syeda Hameed, Member, Planning Commission, GOI  
Dr.K.Srinath Reddy, President, PHFI.  
Shri. P.K.Pradhan, Secretary – HFW, GOI  
Shri. Keshav Desiraju, Addl Secy – HFW, GOI  
Shri. Anil Swarup, Joint – Secretary, Ministry of Labour & Employment, GOI  
Mrs. Anu Garg, Joint Secretary – HFW, GOI  
Shri Harkesh Mittal, Secretary, Technology Development Board, GOI  
Shri Rajeev Aggarwal, Secretary, TRAI, GOI  
Shri Shankar Aggarwal, Addl Secy, MOD, GOI  
Dr.Jagdish Prasad, DGHS, GOI  
Dr.V.M.Katoch, Secretary DHR & DG, ICMR. GOI  
Director, NIFW, MOHFW, GOI  
Governors, MCI.  
Chairman, ISRO.  
Dilip Chenoy, Managing Director, NSCDCL,  
Board of HIMSS Asia Pacific India chapter  
President, Continua Health Alliance  
Board, Telemedicine Society of India  
Board members, Disease Management Association of India.

**Abbreviations used:**

NDHP: National Digital Health Plan  
MOHFW: Ministry of Health & Family Welfare  
MHA: Ministry of Home Affairs  
PHFI: Public Health Foundation of India  
HFW: Health & Family Welfare  
DGHS: Director General of Health Services  
MCI: Medical council of India  
TDB: Technology Development Board  
DST: Department of Science & Technology  
NIFW: National Institute of Family Welfare  
TRAI: Telecom Regulatory Authority of India

.....11

Page 10

**Disease Management Association of India**

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in



-11-

MOD: Ministry of defence  
MNAREGA: Mahatma Gandhi National Rural Employment Guarantee Act  
NRHM: National Rural Health mission  
MOL & E: Ministry of Labour & Employment  
MCWD: Ministry of Child & Women Development  
MIT: Ministry of Information Technology  
MHRD: Ministry of Human Resource Development  
MDONER: Ministry of Development for North East Region  
MTA: Minister of Tribal Affairs  
PMO: Prime Minister's office  
MOCA: Ministry of Civil Aviation  
ICMR: Indian Council of Medical Research  
BIS: Bureau of Indian Standards  
CHA: Continua Health Alliance  
HIMSS: Healthcare Information Management & Systems Society  
NSDC: National Skills Development Corporation  
Min: Ministry  
Deptt: Department  
Org: Organization  
EMR: Electronic Medical Records  
ISRO: Indian Space Research Organization

Reports referred in this note:

Touching lives through mobile health by PWC  
A Better insight to mHealth adoption  
Telehealth Report 2011 by Telemedicine Society of India ( [www.telemedicinecongress.com](http://www.telemedicinecongress.com) )  
Emerging mHealth: paths for growth by PWC

**Disease Management Association of India**

102, Siddhivinayak, Plot no.3, Sector 14, Khanda Colony, New Panvel – West,  
Navi Mumbai -410206. Maharashtra. India. | C: +91 922 33 44 303 | F: +91 11 4582 33 55 |  
E: President@dmai.org.in | W: www.dmai.org.in