



eHealth INDIA 2009 Award for the Civil Society/Development Agency of the Year

Implementer	Others
Name	Name : Health Management and Research Institute
Address:	Address: HMRI, # 1-1-60/7, Beacon Towers Musheerabad, Near RTC Cross Roads
City	City : Hyderabad
State	State : Andhra Pradesh
Country	Country: India

Please Answer the following questions:

1. List of various initiatives which you handled or handling. Give the project details, your success story(s), project management. [The listed projects should be functional and not be more than three years old] (max. 500 words)

The Health Management and Research Institute is a registered not-for-profit working with the Government of Andhra Pradesh, India, in a public-private partnership to transform the existing health care system through the innovative use of information technology. Through both physical and virtual interactions with its users, HMRI delivers a wide range of critical services: medical advice/counseling, detection/diagnosis, monitoring, health/hygiene education, and drug prescription/dispersal.

To supplement the existing traditional health care platforms, HMRI provides these unique means of reaching at-risk rural populations:

104 Advice: This 24/7 health contact centre offers free non-emergency medical advice on the '104' number. Assisted by pre-formatted algorithms and disease summaries, callers are matched with qualified health workers (including medical specialty experts) who provide advice/counseling or make preliminary diagnoses and referrals for further treatment. 104 Advice also provides directory information – information about health service providers, diagnostic services, hospitals; and a service improvement facility – citizens can register complaints against any public health system/provider.

104 Advice has had a profound effect on many lives in Andhra Pradesh—such as Sailappa:

"I called 104 Advice for my uncle Sailappa, who is 60 years old. His leg was amputated due to his diabetes problem and for a long time he was unable to walk. I heard about the 104 services and called to take information about prosthetic legs. 104 advised me correctly and I was able to bring my uncle to a doctor in Hyderabad and arrange a prosthetic leg for him. Now he can walk again."

– Yadav, Ananthapur district

104 Mobile: Remote rural populations are regularly visited by a networked fleet of 475 mobile health units (MHUs), which serve as one-day-a-month local health clinics. Each MHU is equipped with the latest healthcare facilities and trained paramedical staff to conduct preliminary medical investigations, distribute medicines, offer health advice and guide patients to referral hospitals. It also provides health education to specifically address the needs of rural communities.

The service is available in all districts of the state, covering more than 2,800 habitations per month.

104 Mobile has brought health care to the door step of nearly 40 million people—like 65 year old Venkat Rao:

"I was lucky that the 104 van visited my village when I fell unconscious from a snake bite. Due to the timely help of the 104 paramedics, my life was saved. I hope these services continue to serve poor and remote villagers like me." – Venkat Rao, Adilabad district

In addition to the radical improvement in the quality and access to health care for the rural poor, HMRI's integrated digital system also permits better monitoring and response to disease trends and epidemics.

HMRI's efforts to address the last mile problem in healthcare delivery are being widely recognized. Recently, HMRI won the prestigious *Manthan South Asia 2008 Award* for 'best e-content for development' for its health services in Andhra Pradesh.

2. Brief description of nominated project/initiative, including purpose of the project/initiative (max. 500 words)

104 Advice, the flagship initiative of HMRI, is a state-of-the-art health helpline that provides the 80 million people of Andhra Pradesh with round-the-clock, qualified and standardized medical information, advice and counseling in three languages — Telugu, Hindi and English.

The governing thought behind the creation of the service is that every Indian citizen has the right to information that helps them make informed health choices.

With technology and committed domain experts who are ready to push the envelope and challenge existing paradigms, 104 Advice is available to anyone in Andhra Pradesh with access to a telephone.

Key offerings of 104 Advice:

- Medical Advice using triage (classifying the caller's condition into 'critical', 'serious' or 'stable' states) and providing appropriate advice.
- Counseling Services (counseling on the HIV/AIDS condition, matrimonial discord, depression and chronic diseases, psychological distress, and suicide prevention).
- Directory Information (information about health service providers, diagnostic services, hospitals etc.).
- Complaint Registry (citizens can register complaints against any public health system/provider).

Unique features:

- Caller Registration : each caller is provided with a unique id, so that beneficiary records of repeat callers can be retrieved
- All calls are voice recorded
- Decision Support System: used to automate the diagnosis of the caller's medical condition. 83 algorithms are mapped to more than 550 disease summaries, enabling diagnosis of minor ailments by trained paramedics, allowing doctors to focus on complex cases only. Trained paramedics diagnose 80% of the calls using valid algorithms, while doctors diagnose only the complex cases. Effective capacity of the system is thus enhanced by 5 times.
- Direct transfer to emergency response system (ambulance service) for emergency cases
- SMS Prescription : Doctors prescribe over-the-counter drugs through an SMS sent to the caller's mobile number. In case the caller does not have a mobile, the prescription is sent to the mobile number of the pharmacist the patient visits.
- Voice recognition of nuisance callers: Nuisance callers are identified through a voice recognition software. Special call takers handle these calls and issue oral warnings to repeat offenders.

3. Brief description of the key persons who are involved in this project/initiative. (max. 350 words)

104 Advice has specially trained counselors, doctors, paramedics, and PhDs on board guiding the system.

At the front end there are paramedics and doctors who undergo extensive training in soft skills with refresher courses in domain areas; while at the back end, qualified doctors and medical specialists guide the development of the content and make constant improvements based on analysis of the calls received.

Dr. Balaji Utla, Ph.D [CEO - HMRI]

Mr. Utlar has over twenty-four years of experience, spanning industry and academia in the areas of learning, organization development and strategy and corporate social responsibility. In the three years of his leadership, the Satyam Foundation received the Corporate Citizen Award from FICCI in 2006 and the TERI Award in 2007.

Dr. A.P. Ranga Rao [Special Advisor]

Dr. Rao has forty years of experience with the Government of Andhra Pradesh in health care. Dr. Rao has also worked as a consultant with prestigious institutions such as the World Bank and Naandi Foundation. He brings to the organization enormous domain and management expertise, which is integral to its success, as well as direct knowledge of the needs and available resources in the state. Dr. Rao received his medical education in the UK.

Mr. Dharmaraju Kakani [Director, 104 Advice]

Mr. Kakani has worked in the development sector for sixteen years, during which he was Director (Social Research) at the Centre for Media Studies. He also worked for nearly a decade for the internationally renowned Oxfam GB and Samatha, a local not-for-profit organization. Mr. Kakani has an MBA from IIM Ahmedabad and an MS in Economics from the Iowa State University.

Dr. (Lt. Col.) Dayakar Thota, psc. [Mentor, 104 Advice]

Dr. (Lt. Col.) Thota has more than 40 years experience in the health care sector, having brought his expertise to organizations as varied as the Institute of Health Sciences, the Nizam's Institute of Medical Sciences, Kasturba Medical College (Manipal), EMRI, and the Department of Hospital Administration, Armed Forces Medical Corps. With his domain and management expertise, he guides 104 Advice to success. Dr. Thota holds an MBBS degree from Osmania University and an MD in hospital administration.

4. Achievements of the project/Outcome of the project (max. 500 words)

104 Advice began in February 2007 as a free health contact center. Soon after its inception, the initiative drew the attention of the Government of Andhra Pradesh, which signed a public-private partnership agreement with HMRI to scale up the service across the state under the Rajiv Aarogyasri scheme.

104 Advice has since witnessed strong growth, from 4 seats attending 200 calls a day in February 2007 to a new facility of 400 seats working round-the-clock, attending 50,000 calls in June 2008.

104 Advice is currently the world's largest health contact center, attending to an average 15,00,000 calls per month.

A few important milestones:

- 13 May, 2009 – 104 Advice registers 25,000 new callers in a single day.
- 24 March, 2009 – 104 Advice receives its 20 millionth call since inception.

- 18 October, 2008 – HMRI is awarded the prestigious *Manthan South Asia 2008 Award* for best e-content for health services.

The [Manthan South Asia 2008 Award](#) is a first-of-its-kind initiative in India to recognize the best practices in e-content for development. It has been launched by New Delhi-based Digital Empowerment Foundation in partnership with World Summit Award and American India Foundation. The award serves as a platform to bring together e-content stakeholders across South Asia and recognize pioneering work in development, creation and dissemination of e-content for grassroots empowerment and development.

The award recognizes HMRI's work in addressing the last mile problem in healthcare services delivery by supplementing, supporting, and complementing the existing public health delivery systems through technology.

Impact and Achievements

104 Advice has been able to identify certain epidemics in real time and escalate them to the concerned authorities—for instance, on 22nd May, 2009, a villager from Mallapur in the Adilabad district informed 104 Advice that about thirty people in his village were suffering from diarrhoea and vomiting. Efforts by the local Registered Medical Practitioners to arrest the infection were futile.

HMRI swiftly informed the Epidemic Cell Directorate about the outbreak. A medical team rushed to the spot and treated all the victims. Two patients who were severely affected were shifted to the area hospital for advanced care.

In another case, 104 Advice received a call from Nalgonda district on 18th May, 2009. The caller, Edukondalu, was upset by the blatant corruption prevailing at the Kamala Nehru Project hospital in Nagarjuna Sagar, where the staff were demanding Rs. 10/- for an outpatient 'ticket'.

HMRI registered the complaint and immediately contacted the medical officer of the urban health centre in that area. The culprits were disciplined and on a follow-up call, Edukondalu expressed immense satisfaction for HMRI's prompt intervention.

These are just a few of the lives 104 Advice has touched; the service has registered more than 9.5 million users since inception.

5. Give details of the challenges that were faced while implementing the project and how were they overcome? (max. 350)

One of the main challenges was to provide standardized medical advice that would be similar to the advice provided by a doctor. The limitation here was that each medical condition had to be diagnosed remotely only through a question-answer session, there is no clinical examination of patients.

This was overcome by the following process of developing a Decision Support System to aid diagnosis:

- Study of all existing algorithm based diagnostic tools
- In house specialists and medical experts develop algorithms and disease summaries
- Each algorithm and disease summary is the focus of a group discussion of doctors and medical experts. Modifications and alterations are suggested so that a consensus is reached
- Testing in a clinical setting – actual doctors and patients are observed to compare the algorithm based diagnosis with the diagnosis process followed by a doctor
- Final validation by a group of experts from the government before deployment

Nuisance calls were also an issue that had to be overcome - about 8% of the total calls received by 104 Advice were from callers who wanted to abuse the call taker or otherwise waste their time.

Consequently, genuine callers were not able to connect to the 104 number. The people who handled these nuisance calls were also very distressed and disturbed by their experiences.

The repeat offenders had their telephone number blocked from the servers, but this was ineffective since only 100 numbers could be blocked at a time, which led to only a marginal reduction in the nuisance calls.

To overcome this limitation, voice recognition software is used to track all calls received by 104 Advice. People who make nuisance calls are identified and recorded, and calls from these people are routed to call takers specially trained to handle them.

Repeat offenders are issued oral warnings by the call handlers and told that they would henceforth be placed in a longer queue so that genuine callers would not have to wait as long to be connected to the service.

This led to a reduction of nuisance calls from 8% of total calls to only 2-3% of total calls.

- 6. Please furnish any other related useful information about the nominated initiative that you have not been able to provide in your earlier responses.**

Wide reach: 104 Advice has received calls from every mandal in Andhra Pradesh, and by 22nd July, 2009, it is estimated that we will have recorded 1 crore (10 million) virtual service provisions since inception.

Periodic surveys on user satisfaction: A customer delight survey is conducted every month to measure the satisfaction of the users of 104 Advice.

A sample of 400 people who have used 104 Advice's services are selected from all callers, using a systematic random sampling method.

The respondents are asked questions that measure their satisfaction with the service provided across different metrics, both qualitative and quantitative – questions being, for example, 'How long did you have to wait before the call taker could connect you to service provider?' or 'Did you find the questions asked by call taker / service provider relevant?' etc.

The Customer Delight Index is calculated based on the following dimensions:

- Awareness of HMRI services
- Service Metrics Quantitative
- Service Metrics Qualitative
- Utility
- Rating

Ignoring the dimension of awareness, the average CDI score has been at 4.5 (on a scale of 1-5) from January 2009 to May 2009.

Continuous service improvement: 104 Advice retrains its health officers every 15 days to maintain service efficiency.

In house doctors and specialists in various fields of medicine continuously improve and update the information provided by 104 Advice. For example, a disease summary on the H1N1 virus (swine flu) was added in less than 48 hours after its first appearance in India.