1. LITERATURE REVIEW

Review of Literature for social cause

Agewell Research & Advocacy Center New Delhi., “Human Rights of Senior Citizens”

The Center has carried out a survey to assess the status of human rights of 50000 Older Persons (29000 rural & 21000 urban) spread across 300 districts of 25 states of India. The major findings of the study shows that the lack of awareness about Human Rights of older persons is one of the major reasons of ever-increasing cases of violation of human rights of older persons -85.9% older persons (including 72% in urban areas) had never heard about Human Rights of Older Persons. Creating awareness of Human Rights of Older Persons in the society, particularly among older persons and protection of their human rights is the need of the hour. Rights of an individual in old age are considered as more of a moral responsibility of the family members. No one seems to be concerned about the fact that an individual who is old has certain basic human rights. Today we need to inculcate a sense of responsibility towards needs & rights of older persons through curriculum of School students & re-look at all the policy formulations and its implementation with a practical approach towards needs & rights of old people. A platform to give them access to information about their rights and Government policies is essential.


This was a nationwide survey to study changing trends of Old Age and changing needs of Older Persons. Agewell volunteers’ network spread across the country worked as interviewers for the survey. The interviews were conducted during the 2nd & 3rd week of September, 2010. Under the survey a representative sample of 15000 older persons approx. 7500 each from rural and urban areas) was interviewed spread across 135 districts of 25 states & Union Territories of India. The major findings of the study is that earlier older persons tried to adapt themselves according to environment, but the senior citizens have realized the changing trends and are beginning to awaken so that they do not have to compromise with circumstances and struggle for change in their lives. 15.87% senior citizens opined that the current medical set up should change for the better so that their life could be more comfortable. Approximately ¼ of seniors expressed their desire to get training and skill development in modern technologies especially computer & internet application and other modern technologies. Majority of older persons feel that they have desired energy, strength, resources and capabilities to change circumstances according to their changed needs and requirements. It is time the Society in general and opinion leaders and policy makers in particular understand the fast changing needs of senior citizens along with the fast changing socio-economic & demographic scenario of the country, in such that they can be given ample opportunities to keep themselves active and to play an important role in society. This will ensure that the senior citizens have a respectful and compassionate position in the country.
The Agewell Research & Advocacy Center has conducted a study in Delhi & the neighbourhood and has found that it has a population of almost 2.5 million older persons (60+). In several surveys done across the area it has been found time and again that almost 4% of them are bed-ridden because of one reason or the other and require round the clock care. In addition at any given point of time almost 5 to 6% of older population lives with the threat of ailments, this may render them bed-ridden at any time. It was found that bedridden patients were facing different types of practical problems. Their major problems include non-availability of caregivers, depression/nervousness, cleanliness & hygiene, bedsores, high blood pressures, etc. There were almost 30.6% bedridden patients, who have reported that they need caregivers urgently or who were found without any proper caregiver, in spite of the fact that they need care giving facility urgently. Since older persons constitute major part of bedridden patients, there is an urgent need to develop and strengthen volunteers’ network or essential service providers to take care of older persons.

Agewell Research & Advocacy Centre. New Delhi. (January 2010),“Agewell Study On Isolation In Old Age”

This report reveals that “Older persons in urban areas have limited access to social interactions, due to various reasons; consequently they face lower self-esteem and decline in interpersonal skills. They are also found to be self-conscious.” This problem can be addressed by providing a platform for the seniors to interact with their peers. Social networking on a forum which only has members from their age group will make them feel at ease and they will not be so conscious about themselves.


From this report it is evident that many of the senior citizens need more financial stability, especially during times of Economic slowdown. The Government surely should support them in this regard they opined. Some of them are also willing work to support themselves so were keen to get access to employment opportunities for senior citizens.

HelpAge India,”Economic and Health Survey on India’s oldest old(80+)-Needs, Care and Access” Research Report by Team of Sigma Research and Consulting 2009.

This report contains the details of the quantitative study done by HelpAge India across 8 cities with a sample size of 833. The findings of this report indicate that the main concern of the oldest
of the old is regarding health facilities/services. The senior citizens could benefit greatly by the outreach services. Houses with elderly population should be identified and registered to address their health concerns. The seniors are not financially independent; so treatment should be provided free of cost or at very nominal charges. Efforts should be taken to sensitize the people towards the needs and concerns of the senior citizens.


This study was aimed at accessing the needs and desires of the elderly people towards their emotional, care giving, social and cultural issues. This study was carried out in four metros, Delhi, Chennai, Kolkata and Mumbai and other cities Lucknow, Vijaywada, Bhubaneshwar and Ahmedabad. The findings of the study says that, 42% of the senior citizens were suffering from NCDs, and only 13% of them had insurance coverage. They felt insecure living alone and needed assistance in day to day activities. Most of them on being asked about whether they would prefer senior citizens home, club or associations, said that they do not wish to move to senior home, but would be happy to be a part of a club with activities that they enjoyed. They also opined that public transport to health centers especially for senior citizens, free health check up should be introduced. They expected dignity, love and respect from the youngsters.

“National Policy for Senior Citizens” Government of India, March 2011.

The National Policy for Senior Citizens was announced by the Government of India in the year 1990. The policy and plans were put in place by central and state Government for the welfare of the older persons. Many incentives were introduced, pensions, travel concessions, income tax relief, medical benefit and many more schemes are covered in the document. The senior citizens should be made aware of these policies and schemes, introduced by the Government.

“Senior Citizens Guide” Revised Edition 2005, Compiled and Published by Research and Strategic Development Division Helpage India.

This report also provides a consolidation of all the privileges and benefits that senior citizens are entitled to in the Country. This wider dissemination of information is the first step towards empowering people. Senior citizens should have access to this kind of information so that they are aware of their rights. This report contains the listing of the 101 health centers specially in the Delhi area, Regional Cancer centers.


In this report a unique “Senior Citizens Services and Information Center”, which at present does not exist anywhere in the country. It is to be considered as a adjunct to the provisions of services planned at the district level by the “Maintenance and welfare of parents and Senior citizens Bill
The center if establised would go a long way in providing all information and services pertaining to senior citizens all in one place in the district under one umbrella. The services provided by this center would be respite services for care providers in familes, physical assistance services for senior citizens living alone, liasion services through agencies who can be hired to provide essential services for senior citizens like bedside nursing, payment of bills, banking etc, liasion to arrange for transportation, ambulance, suppliers of meals on wheels as per the diet requirements of the senior citizens, out patient treatment, mobile clinic, pharmaceutical supplies at door step at concessional rates, shopping exclusively for senior citizens for items like wheelchair, walking stick, etc., physitherapy, exercise, conselling session and part time employment. This could be started in a small way and then taken to the level of an enterprise to spread its wings in all directions.


This report examines the effectiveness of the health system response to the challenge of diabetes across different settings and explore the inequalities in diabetes care that are attributable to socioeconomic factors. The survey was conducted for seven countries some developing and some developed countries. From the findings it is evident most of the people remain undiagonised and untreated for diabetes both in developed and developing countries. The study suggests that there are many missed opportunities to reduce the burden of diabetes through improved control of blood glucose levels and improved diagnsis and treatment of arterial hypertension and hyper cloesterolaemia.

“Global Status Report on Non Communicable Diseases” 2010- Chapter 1- Burden, mortality morbidity and risk factors. Pg 1-23.

This report reviews the current burden and trends of NCDs and the risk factors. It also provides the latest estimates related risk factors. The cause of NCDs was attributed to insufficient physical activity, unhealthy diet, obesity and overweight. NCDs are predominantly found low-income countries. NCDs are the biggest killers today, this is expected to increase substantially in the future.


This report covers the details of the initiatives taken by the Government to deal with NCDs. The year 2005 saw 53% of deaths due to NCDs in India. India accounts for the maximum number of NCDs cases in the world. Indians succumb to High BP, and heart attacks even in their productive years, this leads to loss of productive years to the country. To prevent this the Ministry of Health and Family Welfare, Government of India has launched the National Programme on Prevention
and Control of Diabetes, Cardiovascular diseases and Stroke. The objectives of this programme is to prevent and control NCD, to spread awareness on lifestyle changes, early detection of NCD, building health system to tackle NCD. This report is a complete manual for guidance on how to prevent each and every NCD.

**Summary of Review for the Social Cause**

The analysis of secondary data from the proprietary reports revealed that the senior citizens in India are facing problems related to Social environment, Health care facilities, Legal issues, Financial status, Psychological condition, Interpersonal relations. It is also evident that the major areas which they need care is more related to health. Most of the senior citizens are suffering from NCDs. The study of the reports also indicate that India has the highest number of cases of NCDs in the world. The initiatives taken by the Government of India to prevent the NCDs is also evident from the reports. This movement has to supported by spreading awareness about changes in lifestyle to be adapted so that, the incidence of NCDs can be prevented. The senior citizens have opined that they are willing to adapt to the changes in social environment and medical aid also. They are also open to adapt to the use of the internet technology, for social interaction with their peers. The system that needs to be designed should be such that the senior citizens will be provided with affordable health care and essential services for their overall wellness by the innovative use of information technology.

**Review of Literature for Analysis of Technology options**


The primary requirement for the welfare of the senior citizens pertains to health. When we explore the various technological applications available in health care we come across Electronic health record EHR[1][4][3], Electronic Medical Record EMR[2], Computerized provider order entry CPOE, Clinical Decision support system CDSS, Picture archiving and communications systems PACS, Bar coding, Radio frequency identification RFID and Hospital Information System HIS. These reports reveal the standards to be followed in health care technology. In India
some of the health care organizations have implemented EHR technology, but its adoption has not been widespread. The Healthcare organizations are looking for innovative ways to increase operating performance, reduce costs, and improve quality and safety, while increasing access to care. The barriers to adoption of Information technology in health care in India include the cost of purchasing, implementation and ongoing maintenance of the software. Studies show that a major investment is in training the people to use the technology. Clinicians seem to feel that it is an added workload on them to enter the data into the computer. It involves changes in work processes and culture. Federal regulations also impose privacy and security requirements that require higher investments for the choice of Information technology for health care. Many health care centers also face lack of financial support for the same. Requirements from the Health Practitioners were to have an integrated, centralized and cost effective system, secure, and compliant with federal regulations to store medical records.

Limitations of the Existing options

The purpose to explore the details in the existing options in health care technology was to understand if the senior citizens could use existing technology to store their entire medical records online. The systems that can provide health care and other essential services to senior citizens are not scalable, secure, seamless and flexible with high availability and reliability. To build systems satisfying these requirements, would need a huge capital investment upfront for implementation and management of the infrastructure and operations. The health records should be patient centric and once the data is entered it should be available for all health professionals in the form they need. Web applications when deployed need a good load balancing, efficient caching and processing power. This is vital when the number of online concurrent transactions peak when the application is functional. The existing technology options are unable to completely satisfy these requirements. The existing systems do not cater to the functional requirements pertaining to the essential services and other support services required by the senior citizens.
Review of Literature on Cloud Computing technology

The Cloud Computing paradigm will overcome the limitations mentioned above. The power of the cloud enables us to keep up with the trend of “Serve more for less cost”. Cloud computing enables the delivery of cost effective services that is critical for the health care professionals, NGOs and the other Government agencies to serve mankind in a better way. It also enables them to collaborate, collect and share information via the cloud.


Technology can be an amazing tool for social and economic development. It also enables organizations to meet community needs by broadening access to health care, education, micro-banking and other essential services. The innovative use of cloud technology can be used to make a greater impact and serve a broader community base by social organizations. Apart from this the Researchers from Microsoft say that deploying data center operations to the cloud can cut carbon emissions and energy use by 30 percent for large organizations, and by much more for smaller operations, according to a lifecycle analysis sponsored by Microsoft. The study noted that a large consumer goods company reduced carbon emissions by 32 percent by moving 50,000 email users to the cloud. The main reasons areas of reduction from the cloud were server provisioning and utilization, multi-tenancy, and, with the biggest impact, overall data center efficiency. Health care systems always are posed with the challenge of dealing with data and the data center efficiency so the cloud can definitely transform the Health care systems.


Cloud computing has clearly shown merits of on-demand processing, ease of deployment and cost effectiveness in supporting demanding apps. Given the sheer volume of storage and processing involved in healthcare data researchers are exploring ways to use the Cloud for supporting the next generation of healthcare apps. “The foundations for cloud computing were firmly laid in 2010, paving the way for what will likely be a landmark year for the technology” a Forrester analyst James Staten says.


Rural population being the majority population of the Indian Population has the potential of making India an economic superpower and a developed country. But in the present scenario this majority is completely oblivious of the power and capability of Information technology in improvement of business opportunities and employment because of the huge costs incurred on
infrastructure, software etc. The paper discusses the details of how cloud computing services can be leveraged for improving business opportunities, education and medical facilities in rural India. Cloud computing can be used for catering initiatives like health care and e-Governance. Every citizen can have its health record on the cloud which would facilitate to improve the quality of health care. The lack of infrastructure, manpower and services in health sector in India is mainly due to the gap in overall development between rural and urban areas. e-Health offers a good option where in patients in remote areas can be successfully managed locally with advice from specialists in metro cities, without going there personally. This way patients in rural areas are connected to urban services, there by offering easy, cost effective consultation and prescription. Apart from this from the National Doctor’s Registration Database, the location of doctors can be identified. Storage of Images on the cloud will lessen the interoperability costs. Using hundreds of high speed servers in the cloud will help in pharmaceutical analysis. Easy to launch health programs in specific areas will help in Bio-surveillance. This way Cloud computing is a hope for improving medical facilities in Rural India.


There is a tremendous promise for cloud computing infrastructure in the health care industry and is an ideal tool to leverage cloud computing power for low cost. Cloud computing would help hospitals to achieve more efficient use of their hardware and software investments and to increase profitability by improving the utilization of resources to the maximum. By pooling the various health care IT resources into large clouds, hospitals can reduce the cost and increase utilization as the resources are delivered only when they are required. The use of cloud computing helps in eliminating the time and efforts needed to roll a healthcare IT application in a hospital.

Conclusions on Cloud Computing Technology Literature Review

The cloud computing paradigm is based on Utility Computing. The optimal Computing resources required can be purchased on-demand from a virtually unlimited supply. The investment needed upfront is less and this paradigm changes the expenses to operational expenses, hence it entails shifting of capital investment risk for under or overprovisioning to the cloud computing vendor. It is priced with a pay-as-you-go pricing model where capacity can be scaled up and down on a short term basis. Cloud computing has the merits of on-demand processing, ease of deployment and cost effectiveness for delivery of services and also security by implementing the fine grained data access control in multi owner settings in the cloud as proposed in the papers. Apart from this it can help save power too. NGOs where this system can be implemented need not invest in a lot of space to house data storage if it is hosted on the cloud. Hence it can be concluded that the senior citizens community could be given better health care services along with other essential services by the hosting a web based application on the cloud to serve them better.