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Healthcare – Use of Portals

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Abstract: Healthcare is a global phenomenon and it is the prime responsibility of the government to provide medical facilities at reasonable and affordable prices. The medical challenges revolve around chronic diseases and behavioral health and the adoption of a healthcare system through Technology will ensure accurate recording of patient outcomes and health status. Strong Public health communication systems derive the basic objectives of healthcare, which include prevention of diseases and promotion of a healthy life. Technology implementation brought Significant changes in the healthcare as government increased budget for infrastructure development, large number of PPP (Public Private Partnerships) projects have realized, doctor patient relationship and supplier customer coordination have enhanced, providing real time access to the systems and better share of recorded information. Pharmaceutical industry plays a pivotal role in healthcare sector in overall reduction of the healthcare costs and delivery of quality medicines.

Keywords : Public Private partnership, Healthcare System

Introduction

Applications of computers in **Medicine and Healthcare** have increased rapidly with the advances in **Information and Communication Technology**. Internet, with its powerful penetration and scalability has become an increasingly popular medical information resource. Computer based technology have helped doctors, researchers and other healthcare providers for creating a new vision of work and organization in areas such as patient care, medical and health education and research. Modern information technology not only facilitates the delivery of healthcare, but also significantly develops the **doctor patient relationship**. In future, Medical technology enables a medical consultant to examine patients away at home few hundred miles from consulting clinic. Interactions in the **cyberspace** will also help the doctors in India, especially those practicing in smaller cities, towns and rural areas and who often feel isolated, will have access to new developments.

The pharmaceutical industry is undergoing huge transformation. Rising **healthcare costs** keep pressure on the industry and generates more competition among healthcare providers. Inefficient and complex processes between competitors and demographic environment are responsible for the tremendous rise in social healthcare costs. **Healthcare portals** offer new value added services to improve the current business to business relationships [1]. Healthcare portals provide value for both **suppliers and customers** of healthcare products and services [2]. These portals connect all participants over an Internet platform and simplify the exchange of information.

Healthcare

Healthcare is the maintenance or improvement of health through the diagnosis of illness, injury, treatment and prevention of disease and other physical and mental impairments in people. Healthcare is delivered by **health practitioners** and includes the work done in

providing of service primary, secondary and tertiary medical care and management of public health. Access to healthcare varies across countries, groups, and individuals, largely influenced by social and economic conditions as well as the **health policies** in place. Each Country has different policies and plans in relation to the personal and population based healthcare goals. Healthcare systems are organizations established to meet the health needs of select populations. Their exact configuration varies between national and state entities. According to the WHO, a well functioning healthcare system requires a robust financing mechanism, a well trained and adequately paid workforce, reliable information on which to base decisions and policies and well maintained health facilities and logistics to deliver **quality medicines and technologies** [3]. Healthcare is conventionally regarded as an important determinant in promoting the general physical and mental health and well being of people around the world. Healthcare contributes to a significant part of a country's economy.

Web Portals

In general terms a portal is just a **gateway,** and a Web portal can be seen as a gateway to the information and services on the Web and give convenient access to other sites. A portal aggregates information from multiple sources and makes that information available to various users. It is a gateway to all network accessible resources, whether involving intranets, extranets or the Internet. In other words a portal offers centralized access to all relevant content and applications. Portals are everywhere and are likely to grow to even greater importance in the future.

[4] Outlines how global companies use portal technology to create **online virtual communities**. In order to improve productivity, enhance communication, and gain competitive advantage by providing **real time access** to critical business information. Portal focus on aggregating information relevant to specific interest group as **"online vertical trade communities**", it is like a front page of a newspaper or magazine, offering directions to the location of relevant information [5]. [6] Stress the importance of rapid access as "**most users will abandon the search if their desired location is not in the first or second screens of information.**" [7], on the other hand, thinks that the portal itself is nothing special: "**It may be nothing more than a Web user interface, with built in access to data or applications."** It further emphasis the benefits of a portal framework that brings with it "**the notion of context and technologies that support the delivery of information and services in context.**"

Healthcare Portals

Portals are web based systems, personalized and integrated systems which connect to applications, content and services [8]. If entire customer processes are supported then they are referred to as **process portals** [9]. Healthcare portals transfer the customer's healthcare process on the Web. **SAPmarketplace** integrates the mutually exchanged services and ignore the customer process orientation.

Process portals are characterized by the integration of services for one specific customer process is based on the concept of the **Customer Resource Life Cycle** (CRLC) which aims at supporting all customer needs at all stages [10]. A customer is supported during the possessing of a product starting from information through buying and till the disposal. Process portals integrate their own services as well as services from cooperation partners and seem to be potentially stronger marketplaces.

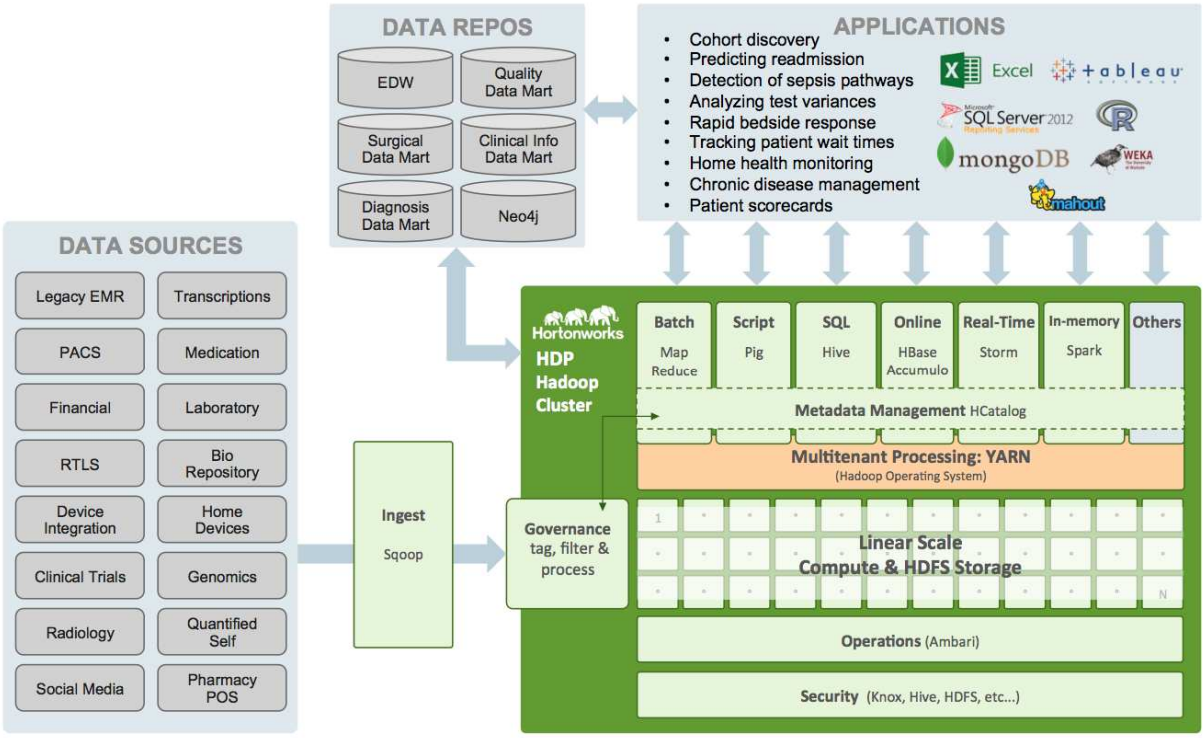
Healthcare portals differ in the customer segment as they support business to business, business to consumer and the type of services they provide. Portals align their services to the **customer segments** as every customer segment

in the pharmaceutical industry has its own specific process. The customer process of a patient primarily contains information, treatment and therapy, in contrast the process and the services required by a doctor will focus on medical information, sales services for pharmaceuticals and medical devices and training possibilities. Hospital basic interest in integration of services in order to **streamline** administrative and clinical processes between insurance provider and medical specialists and within departments

Classification of healthcare portals according to the type of services being offered

Information portals: Information portals offer information about diseases, symptoms, medicines, etc. for professional users and patients. It provides customers with information about diseases, medical products and services.

The major critical success factor for information portals is the **quality, reliability and authenticity** of the information provided as this is important where wrong or distorted information can have serious consequences. An additional requirement for information transmitted across networks is **privacy protection and security**.



Information portals have a big influence on the **doctor patient relationship**. All health related websites provide information on diseases and methods of treatment where everything is accessible. Traditionally, the dominant players in healthcare no doubt were the hospitals and doctors. Information portals benefitted the consumers in medical services.

Sales portals: are also called online pharmacies which transfer prescription drugs and medical devices on the Internet. SP **differentiate** between business to business portals for hospitals and doctors, and business to consumer portals for patients because of the different products and services needed for each customer segment.

In order to buy prescription drugs through website, customers first have to enter their insurance number and either the doctor or the patients **propagate** the prescription. In the latter case the company has to verify the validity of the prescription by contacting either the doctor or the appropriate pharmacy before fulfilling the order. For the payment process, on the basis of the **insurance coverage**, bill is made by the insurance company and sends an excess invoice with the percentage excess to the patient. The selling of prescription drugs in particular offers new possibilities for pharmaceutical manufacturers. Pharmaceutical companies now have a tool for collecting customer data and proactively offering individualized medicines.

Integration Portals: connect the participants of the pharmaceutical network, such as insurance companies, doctors, hospitals and patients.

The pharmaceutical supply chain involves a variety of participants which involves interactions basically paper based. In USA more than 30 percent of the costs in healthcare are wasted due to **system inefficiencies** such as redundancies, unnecessary treatments, paper based administrative processes, handwritten medical reports and diagnoses, etc [11]. The cost reduction can be lowered if all processes between the participants are replaced with an integrated, electronic process. These companies primarily offer integration services in three areas.

Clinical integration: Doctors interact with other doctors, laboratories, pharmacies and insurance companies for exchanging of medical information as medical reports or letters of referral.

Administrative integration: Hospitals and doctors interact with manufacturers of medical devices, pharmaceutical companies, etc., for exchanging administrative information as orders or invoices.

Financial integration: Insurance companies communicate with doctors, hospitals and pharmacies for accounting purposes.

A personal medical record allows patients to ensure that every doctor's visit has access to the information and doctors thus **avoid redundancies** in treatments. Doctors have access to a broad variety of news, a medical library, a career center, medical education and administrative services for the procurement of medical devices and drug samples. Furthermore, doctors and hospitals have access to **online laboratory test results**.

Healthcare Portals pitfalls

Online patient portals have been built to provide the ultimate self service experience while engaging patients more fully in their care. Integrated into multiple internal systems, portals offer convenient access to **personal information** like Social Security number (SSN), date of birth (DOB), address, insurance information, prescription information and extensive medical records. This one stop shop for medical identities and health records is exactly what makes healthcare portals particularly attractive to **cybercriminals**. While lucrative for criminals, a portal compromise can be extremely costly to healthcare organizations, affecting finances and their reputation. Given risk, healthcare portals are to be highly protected as most are secured by little more than a password.

Global Healthcare Scenario at glance

1. Percent reduction in under Mortality rate is denoted by letter A
2. Measles immunization coverage among 1-year-olds % is denoted by letter B
3. Percentage reduction in maternal mortality ratio is denoted by letter C
4. Births attended by skilled health Personnel is denoted by letter D

5. Antenatal care at least one visit is denoted by letter E

The above information is presented for developed and developing countries in the following Table and Graphs

Developing Countries

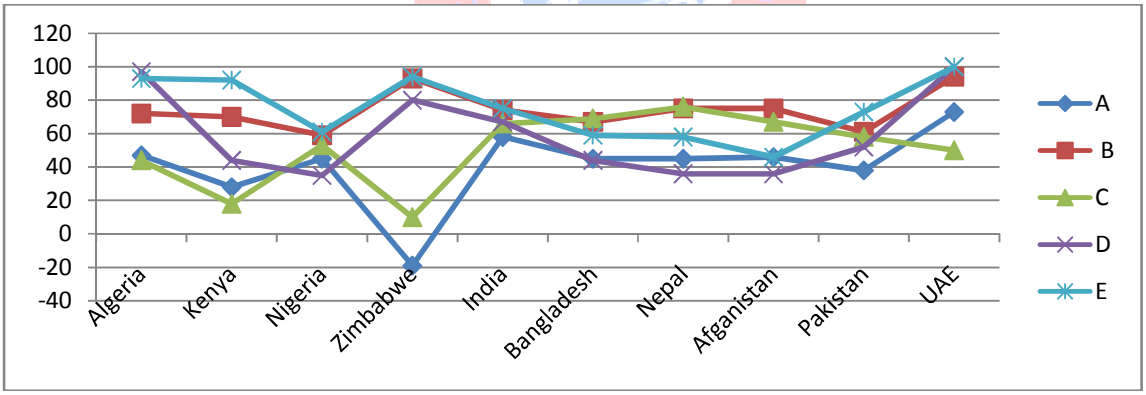
Country	A	B	C	D	E
Algeria	47	72	44	97	93
Kenya	28	70	18	44	92
Nigeria	45	59	53	35	61
Zimbabwe	19	93	10	80	94
India	58	74	66	67	75
Bangladesh	45	67	69	44	59
Nepal	45	75	76	36	58
Afganistan	46	75	67	36	46
Pakistan	38	61	58	52	73
UAE	73	94	50	100	100

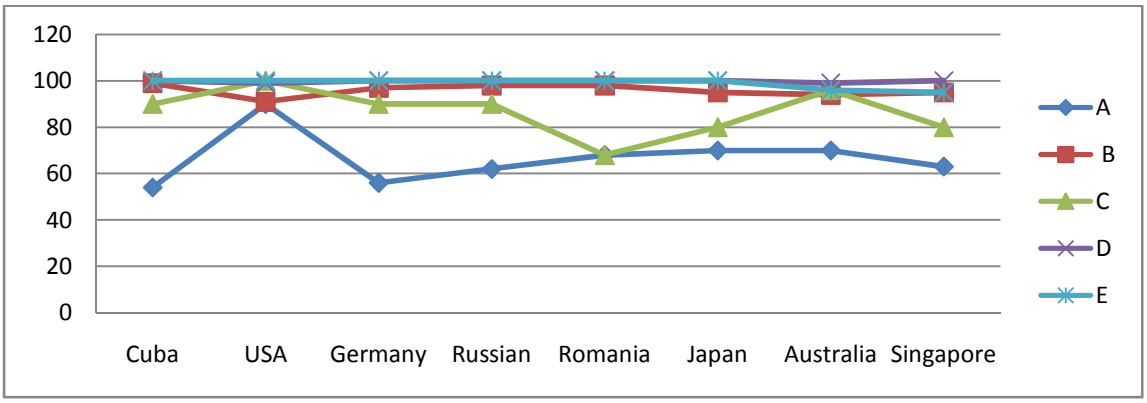
Developed Countries

Country	A	B	C	D	E
Cuba	54	99	90	100	100
USA	90	91	##	99	100
Germany	56	97	90	100	100
Russian	62	98	90	100	100
Romania	68	98	68	100	100
Japan	70	95	80	100	100
Australia	70	94	96	99	96
Singapore	63	95	80	100	95

WHO as arrived the following averages as parameters for 5 factors as given underneath

Parameter	A	B	C	D	E
Average	67	90	75	90	100





Observations: In all 5 factors the Developed Countries are providing better healthcare.

Global Healthcare Workforce per 10 000 population at a glance

1. Physicians is denoted by letter F
2. Nursing and Midwifery is denoted by letter G
3. Dentistry is denoted by letter H
4. Psychiatrists is denoted by letter I

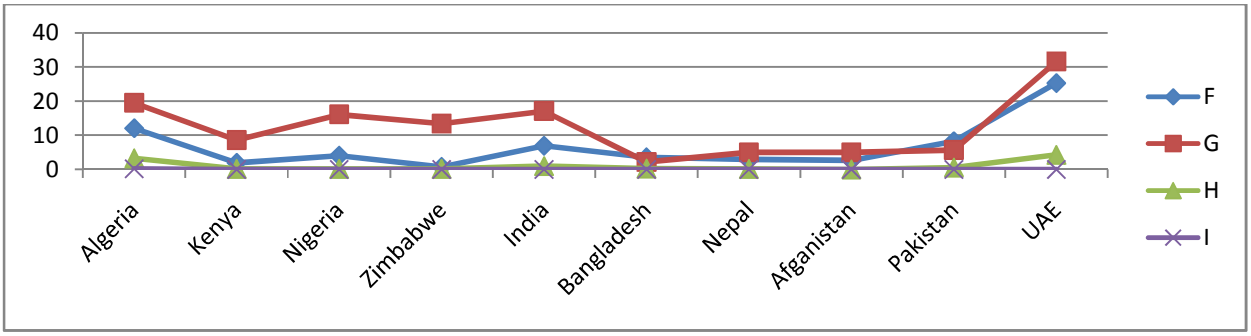
The above information is presented for developed and developing countries in the following Table and Graphs

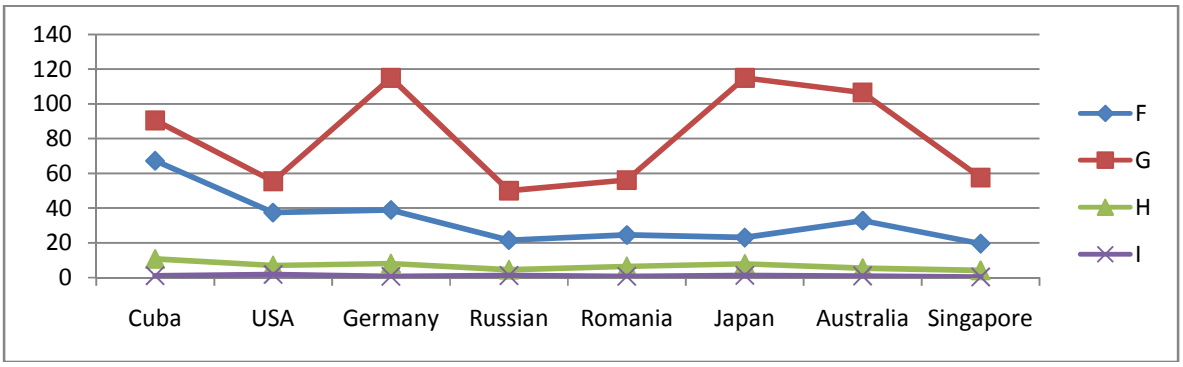
Developing Countries

Country	F	G	H	I
Algeria	12	20	3	0.2
Kenya	2	8.6	0	0.1
Nigeria	4.1	16	0	0.1
Zimbabwe	0.8	13	0	0.1
India	7	17	1	0.1
Bangladesh	3.6	2.2	0	0.1
Nepal	3	5	0	0.1
Afganistan	2.7	5	0	0.1
Pakistan	8.3	5.7	1	0.1
UAE	25	32	4	0.1

Developed Countries

Country	F	G	H	I
Cuba	67	91	11	1
USA	37	56	7	1.7
Germany	39	115	8.1	0.7
Russian	21	50	4.5	1.1
Romania	25	56	6.4	0.6
Japan	23	115	7.9	1.2
Australia	33	107	5.4	0.9
Singapore	20	58	4.1	0.3





Density of Health workforce per 10 000 in developed countries is more than satisfactory

Global Healthcare institutional facility per 1 00 000 population at a glance

1. Hospitals is denoted by letter J
2. Psychiatric Beds is denoted by letter K
3. Pharmaceutical is denoted by letter L

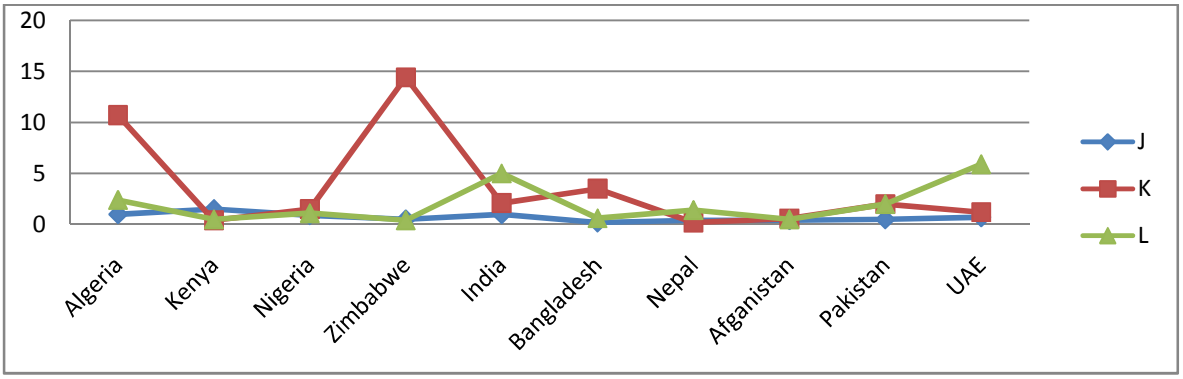
The above information is presented for developed and developing countries in the following Table and Graphs

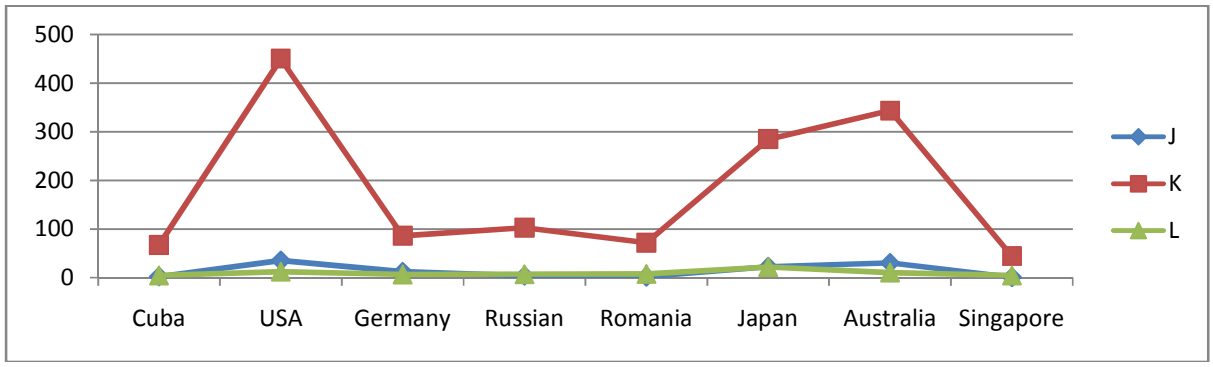
Developing Countries

Country	J	K	L
Algeria	1	10.7	2.4
Kenya	1.5	0.4	0.5
Nigeria	0.9	1.5	1.1
Zimbabwe	0.5	14.4	0.4
India	1	2.1	5
Bangladesh	0.2	3.5	0.6
Nepal	0.4	0.2	1.4
Afganistan	0.4	0.6	0.5
Pakistan	0.5	2	2
UAE	0.7	1.2	5.9

Developed Countries

Country	J	K	L
Cuba	2	66.8	4.1
USA	35	450	12
Germany	12	86.1	6.2
Russian	3.4	102.8	6.7
Romania	1.7	71.8	7.2
Japan	22	284.7	21.5
Australia	30	343.3	10.2
Singapore	**0.5**	44.3	4.1





In terms of density in population of one lakh the healthcare institutional facility provided by developed countries is satisfactory

The impact of Healthcare on life expectancy of global population at a glance

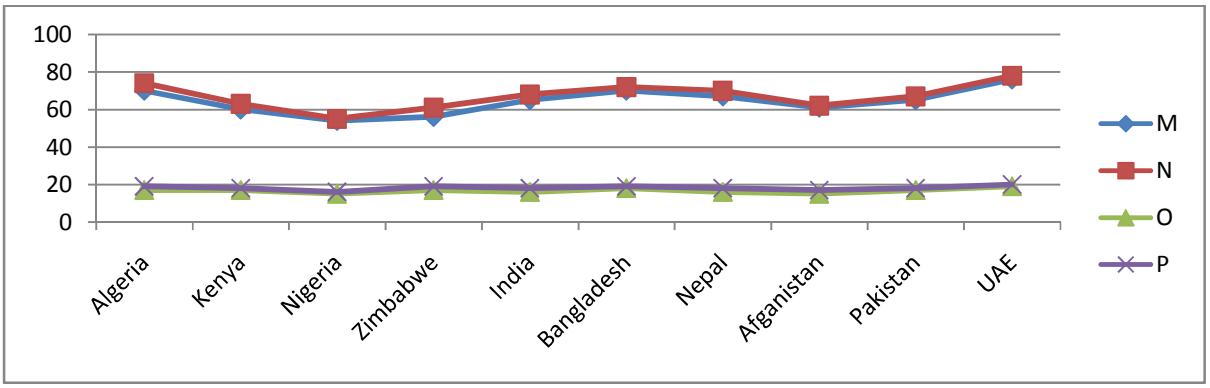
1. Life Expectancy at Birth Male is denoted by letter M
2. Life Expectancy at Birth Female is denoted by letter N
3. Life Expectancy at 60 Male is denoted by letter O
4. Life Expectancy at 60 Female is denoted by letter P

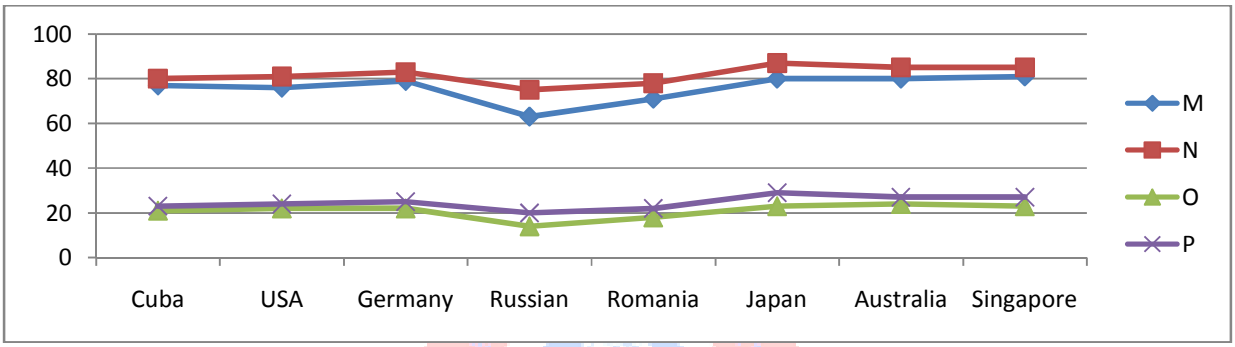
The above information is presented for developed and developing countries in the following Table and Graphs

Country	M	N	O	P
Algeria	70	74	17	19
Kenya	60	63	17	18
Nigeria	54	55	15	16
Zimbabwe	56	61	17	19
India	65	68	16	18
Bangladesh	70	72	18	19
Nepal	67	70	16	18
Afganistan	61	62	15	17
Pakistan	65	67	17	18
UAE	76	78	19	20

Country	M	N	O	P
Cuba	77	80	21	23
USA	76	81	22	24
Germany	79	83	22	25
Russian	63	75	14	20
Romania	71	78	18	22
Japan	80	87	23	29
Australia	80	85	24	27
Singapore	81	85	23	27

Age in Years





Life expectancy of both Male and female in General and up to the age of 60 years is better in Developed Countries

India Health IT

Health and Hospital Information System is a grey zone in India. Most of the hospitals in the country especially public hospitals and health facilities use **manual process**. Timely availability of the patient's record can affect the quality of health delivery. Currently, the major software application areas for information systems in the modern healthcare organizations are Patient Admission and Registration, Patient/Payer Accounting, Medical Records Management, General Financial Management, Patient Care Management, Department Clinical Management, Outpatient Management, Decision Support Systems, Management Reporting, Office Automation and Specialty Systems.

Healthcare outlook in India

The Indian Government prioritized health care sector in 2014-2015 budget.

Key recommendations that will have a direct impact on enhancing health care access include a

1. Rise in foreign direct investment (FDI) limit in the medical insurance business to 49 percent.
2. Four medical institutions of the status of All India Institute of Medical Sciences (AIIMS).
3. Twelve medical colleges in the public sector.
4. Broadband connections in rural areas to expand the reach of telemedicine.
5. $1.7 billion fresh fund allocation to encourage startups.
6. Establishing biotech clusters which help to develop innovative healthcare technologies.
7. Fifteen model rural health research centers to bridge the rural urban divide.

In 2011, **Planning Commission** constituted a National Health Regulatory and Development Authority to monitor both government and

private sector healthcare providers. It has also proposed to establish a National Health and Medical Facilities Accreditation Authority for defining health care facility standards. However, India still doesn't have a **central regulatory authority** for its health care sector.

The vision for the plan period of 2012-2017 is to achieve acceptable standards of healthcare for the entire Indian population. India's healthcare sector is **capital intensive**, with long gestation and payback periods for new projects. Land and infrastructure costs account for 70-80 percent of the capital expenditure for hospitals. Industry also requires capital for upgrade / maintenance / replacement of medical equipment and expansion.

Conclusion

India's healthcare funding allocation to be increased exorbitantly, one way is through **innovative public private partnerships**, companies at the same time should leverage **information technology** (IT) to create patient centric healthcare systems which can improve response times, reduce human error, save costs and impact the quality of life. The government should also focus on establishing more medical colleges and training institutes to **pool** the requisite doctors, dentists, nurses and paramedics. The government should **regulate policies**, **address stakeholders** and **allocate budgets** for public investments in prevention of the prevalent unknown diseases through **promotion** of healthcare portals and creation of a **social medical infrastructure** for better improvement of the **living health conditions** which intern enhances the **life expectancy rate**.

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