

Medical Care in Gujarat: Current Scenario & Future

Technology Driven Medical Practices

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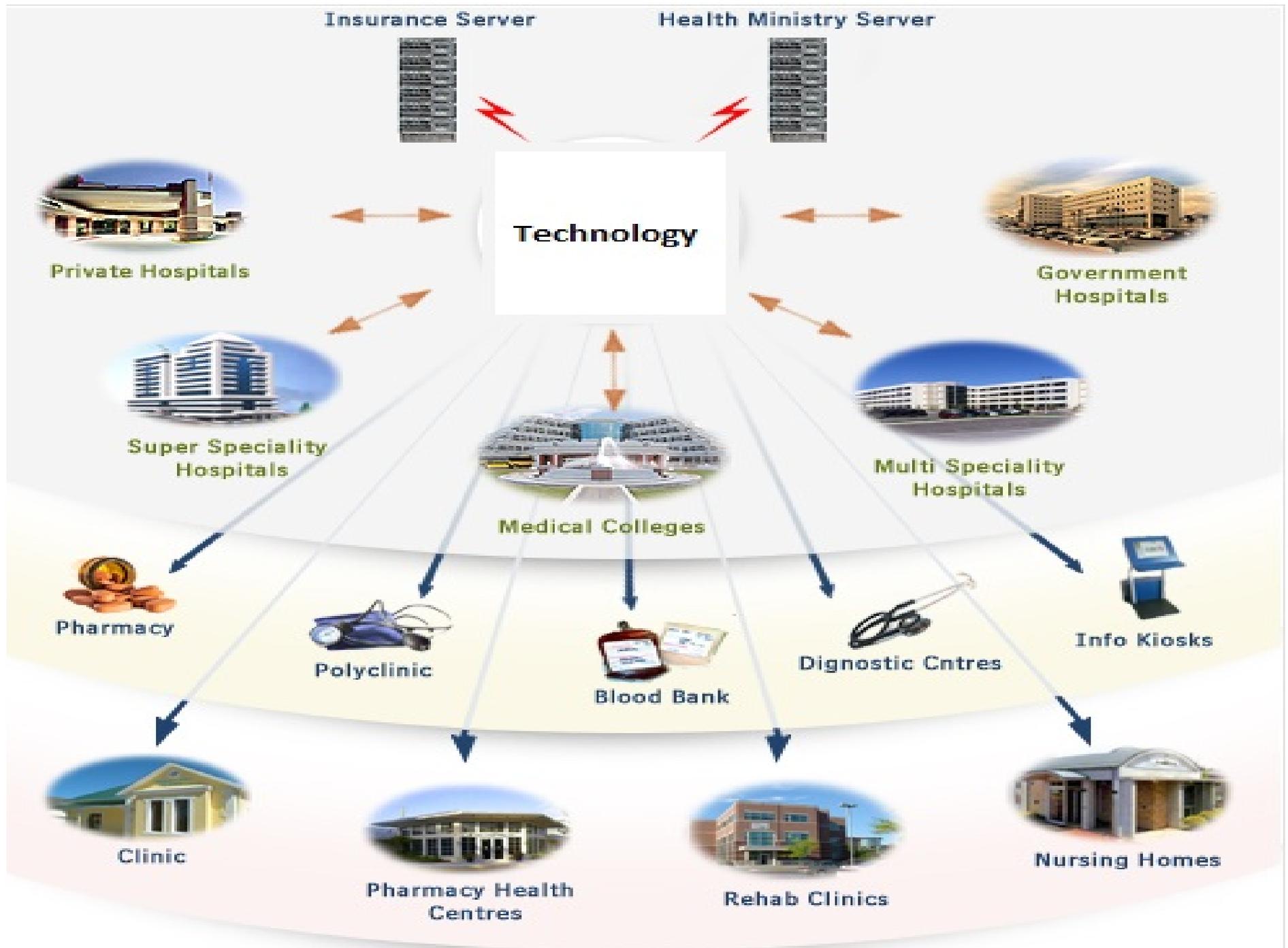
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Technology Base Medicine vs. Judgment Based Medicine...

- A pair of Doctors were on the road when a man walked towards them. The man was bent at the waist, his feet were pointing inward, and his arms were held close to his chest.
- “So,” one of the doctors said, “You still think you can diagnose patients by **just watching them?**”
- “Sure, I do. You want me to tell you what that man has? It’s obvious he’s suffering from **rheumatoid arthritis.**”
- “I disagree,” the other doctor said. “Look at his gait. It’s obvious that **he recently had a stroke.**”
- Suddenly, the man stopped in front of them and said, “Excuse me, could you please tell me **where the bathrooms are around here?**”





The Social Burden

"A single episode of major illness is enough to eat away the life-savings of most individuals in India."

The World Bank reported in 2002 that:

"irrespective of income class, one episode of hospitalization is estimated to account for 58% of per capita annual expenditure, pushing 2.2% of the population below the poverty line. Even more disconcerting is the fact that 40% of those hospitalized had to borrow money or sell off assets."



- Over a lifetime, an average Indian spends 5 years waiting in lines,
- 2 Years sitting in traffic
- 2 years answering spam/wrong phone calls
- 1 year searching for misplaced objects,
- 1 year opening junk post and e-mail,
- 6 months in government offices to get approvals
- A total of more than 12 years wasted..
- So what's another 30 minutes waiting to see the doctor?
- And What's another 15 years to wait for Modern Medical Technology..



Technology and Medicine

- Technology in the medical field has had many positive impacts on society today.
- Medical technology has been around since the cave man began using rocks as tools
- From painless needles to robots used for surgeries technology is around to stay.
- People are
 - living longer,
 - developing new ways of doing things,
 - curing diseases that were once thought to be impossible to cure and
 - improving daily life.



4 levels of Technology

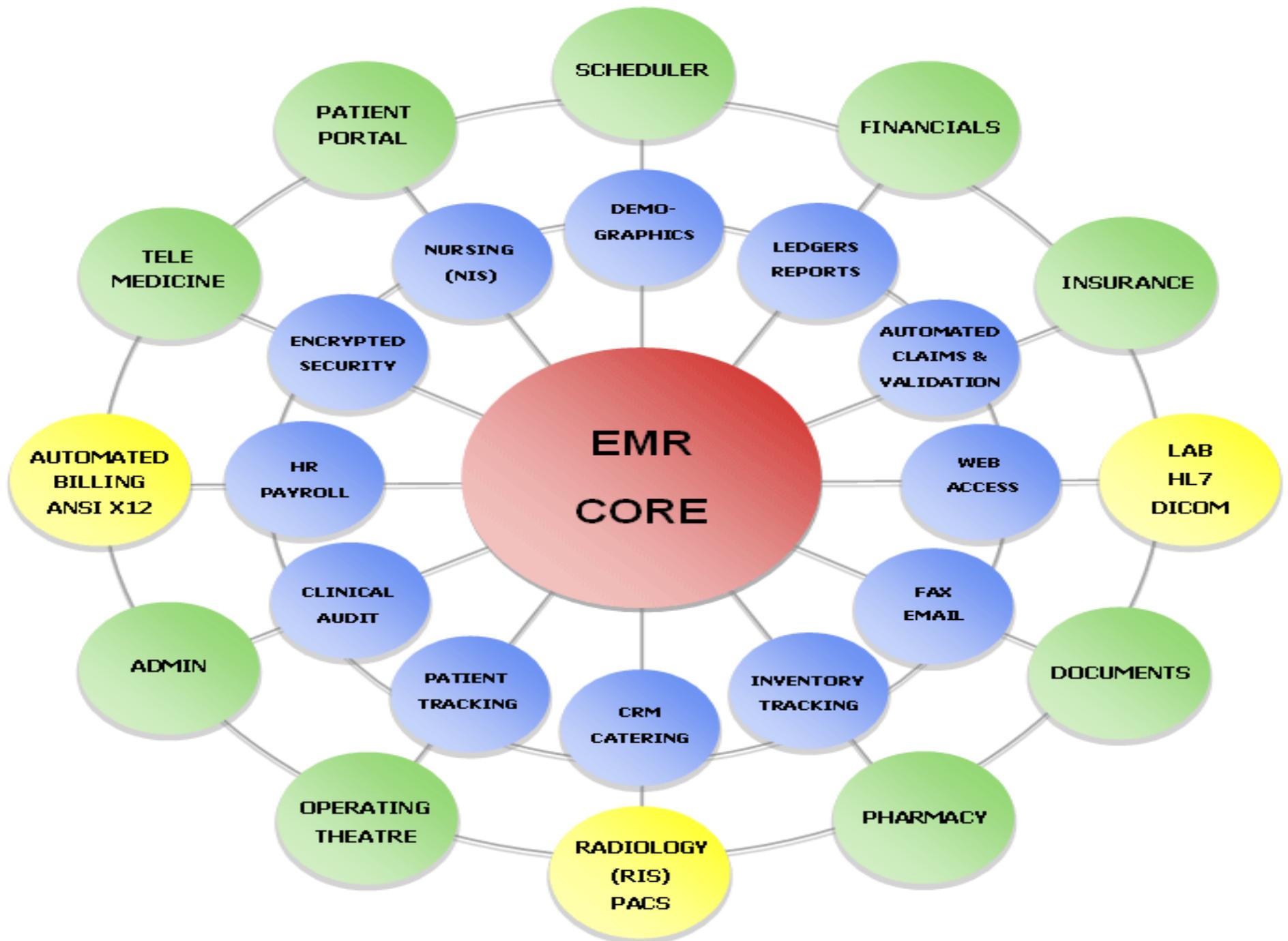
1. Information Technology
2. Medical Innovative Technology
3. Human Technology
4. Infrastructure (Green) Technology



Role of IT in Healthcare

1. To make it easier for patients not to keep track of paper reports that may get lost or torn or old.
2. To make it easier for doctors to have important information ready which can be analyzed through modern computing procedures.
3. To use a HIMS (Hospital Information Management System) to streamline the health care into a organized and process oriented system - there by decreasing risks of errors.
4. To create or develop Databases, intended to track health care trends that might help policymakers, health care providers and consumers make more informed decisions about health care.
5. To create a transparency between doctors, patients and the government.
6. To install wireless networks at its health facilities so patients can use the Internet for communication and therapeutic activities.





VICTORY™ Software

Vibgyor Cardiology Total Organizational Registry

- **VICTORY includes Data Elements from Cath-PCI Registry of ACC-NCDR**
- **VICTORY = 200 data elements of ACC + 600 of Patient Quality Care**
- **Supports ACC - Cath PCI Registry Guidelines**
- **We have over 40,000 patients database**



A man who was having trouble with his sink called a plumber to his house. After the plumber checked the pipes, he leaned back and said, " I can fix the problem, but I want you to know that my fee is Rs.1000 per hour."

"What!" Said the startled man." Why, I'm a Cardiologist, and I only get Rs.500 for a full hour."

"Hey, don't feel bad," the plumber said sympathetically. "When I was Cardiologist, I only made Rs.500 an hour myself."



Medical Innovative Technology



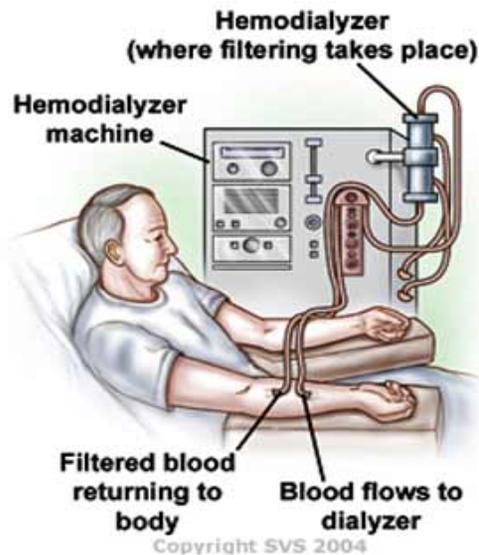
Medical Imaging and Interventional Technology

- Medical imaging has never been so important.
- By providing a direct insight into the human body, medical specialists can now gain a more immediate and accurate understanding of a patient's condition than ever before.
- Picture archiving and communications systems (PACS) and radiology information systems (RIS) have matured and represent a robust mechanism for the storage and distribution of imaging examinations and reports.
- Using various innumerable technologies we are at the pinnacle of Technological guided Intervention
- **Perhaps no field has been affected so much by technology as surgery.** The various scanning technologies have guided the surgeon into the depths of the body, allowing radical invasive surgeries.
- On the other hand, flexible endoscopes, based on fiber-optic technology, came along in the 1970s. These have permitted what is called keyhole surgery, in which the scope, fitted with a laser that can cut like a knife, is inserted through a tiny incision. Such surgery became common for hernias, gall bladders and kidneys, and knees.



Artificial organs are another major 20th century development. Although transplantation is the ideal, there are not enough organs for people who need them. Artificial organs can keep patients alive as they await surgery. The kidney dialysis machine is one of the earliest examples of this.

Great strides have been made in developing prosthetics to replace missing limbs. Not too long ago, artificial limbs were made from metal and wood; the oldest surviving example dates to about 300 BCE. Plastic came into use in the mid-20th century. But now, advanced materials, such as carbon fiber, high-tech plastics and metals, have enabled researchers to create devices that operate by electronic attachment to the muscles. **The latest artificial limbs are controlled by microchips.**

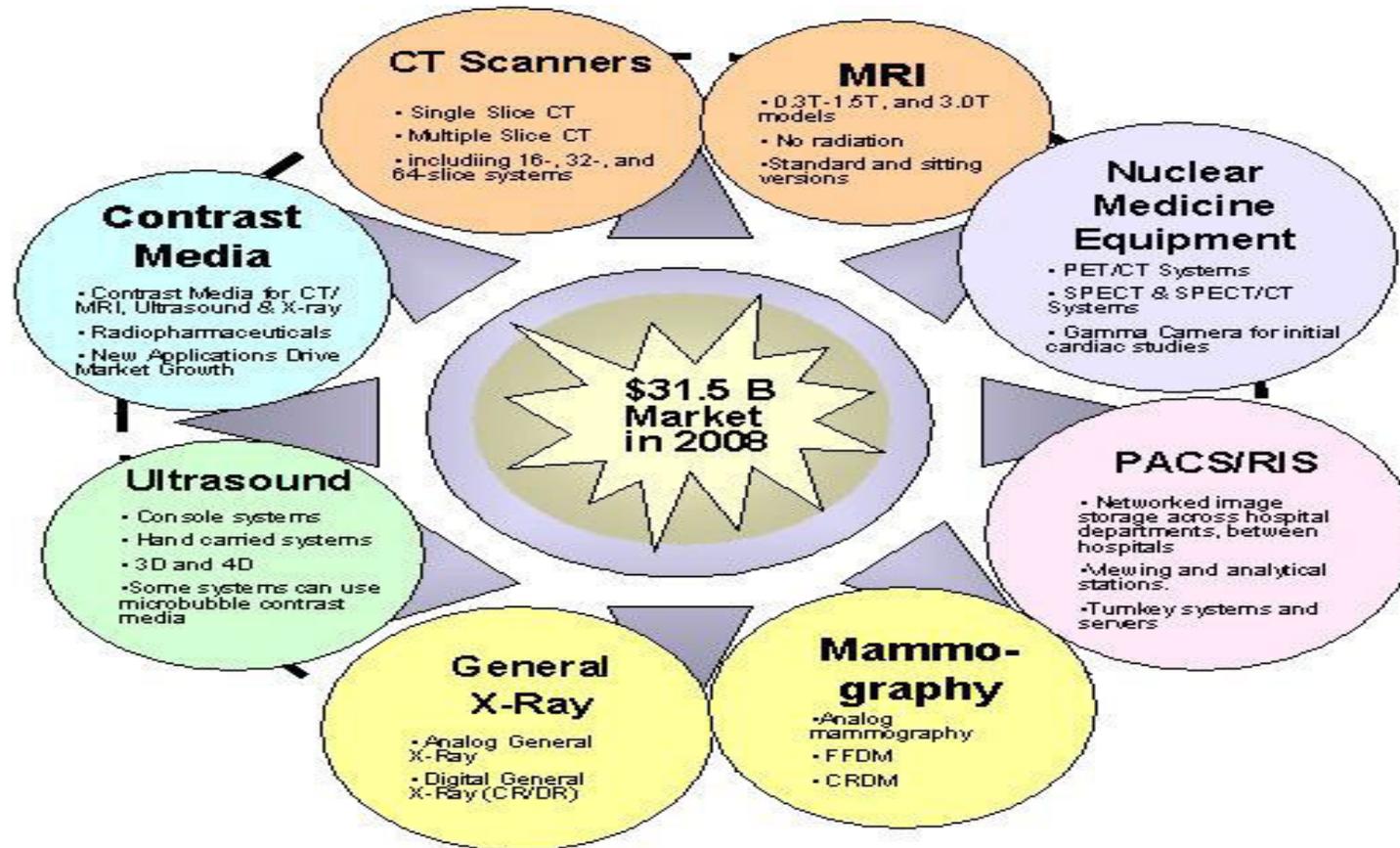


- A deaf elderly gentleman finally decided to see Dr. Shah, who had him **fitted for a set of latest hearing aids.**
- He returned in a month to the doctor. Dr. Shah checked his hearing and after the exam was complete said:
- “your hearing is perfect. Your family must be so pleased that you can hear again.”
- “Oh, I haven’t told my family yet,” the gentleman replied. “I just sit around and listen to conversation. **I changed my will three times last month.**”

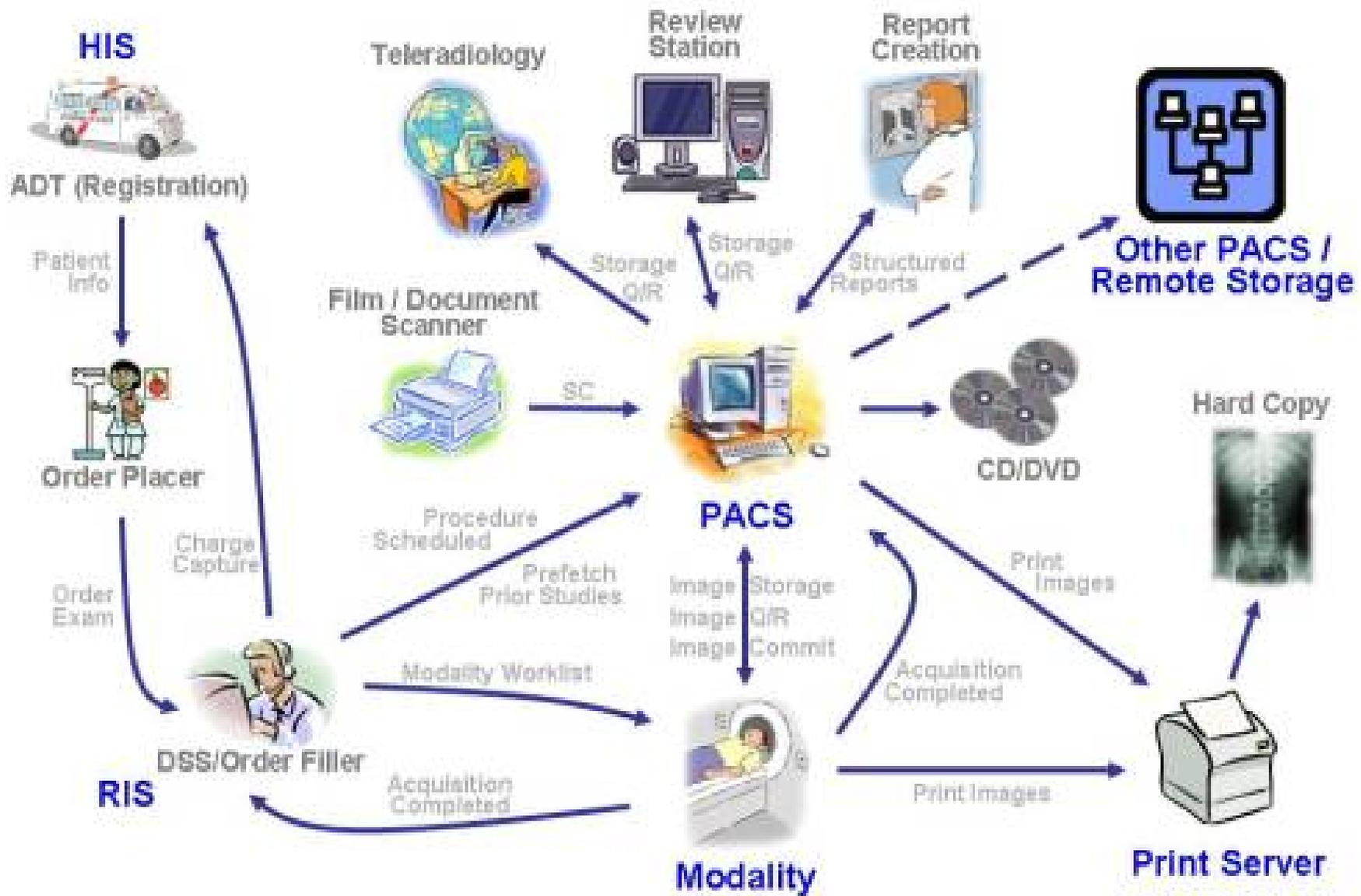


But , **today's hi-tech medicine is incredibly expensive.**

It is so costly that the issue of how to pay for it dominates public policy discussions in the Western world leave aside India .



Healthcare Enterprise Data Management



“Hello,” the caller said to the nurse. “You have a patient named Dineshbhai on your floor. Can you tell me how he’s doing?”

“He’s doing fine,” the nurse said. “The doctor removed his stitches this morning , followed by Ultrasound of his bladder and five other blood tests and expects he’ll be discharged in a day or two.”

“Thanks,” said the caller.

“Would you like to tell Dineshbhai that you called?” Asked the Nurse

“This is Mr. Dineshbhai,” the caller said. “My doctor doesn’t stay in the room long enough to tell me anything.”



A woman and her husband interrupted their vacation to see me. They came to the Cath Lab area.

The woman said, “I want this angiography right away, and I don’t want an anesthetic because I’m in a big hurry.”

I was quite impressed. “You certainly are a brave woman,” I said. “Lie down on the table?”

The woman turned to her husband and said, “Come on to the table , dear.”

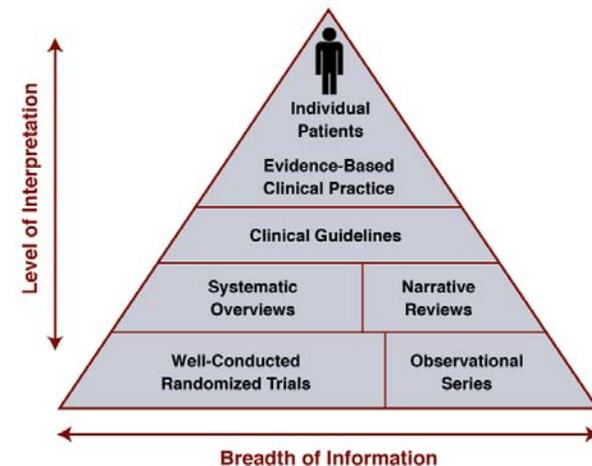


What have we learned in last 500 years

1. These achievements were **built on many decades of research**, usually by **basic scientists and engineers**, the **unsung heroes** of progress in cardiology.
2. These advances came from **interdisciplinary collaborations**,

As a result of these enormous achievements medicine is now a vibrant, robust specialty of which we can be justifiably proud.

The "Mountain of Evidence"



The Ten major challenges for the current era are :

1. Focus on primary prevention/risk assessment
2. Updating and implementation of evidence-based guidelines
3. Genetic screening/pharmacogenomics/development biobanks
4. Gene therapy/stem cell therapy/novel drugs
5. Integration of imaging techniques/receptor imaging/plaque imaging
6. Development of new intervention techniques/ biodegradable products / tissue modification
7. Invasive treatment of heart attacks and heart failure
8. Invasive treatment of heart arrhythmias
9. Percutaneous valve replacement/new percutaneous surgical techniques
10. Organization of home monitoring and home based outreach treatments



The Future

The near term (2010 to 2020)

1. In the near term, until approximately **2020**, it is likely that there will be **continuing subspecialization in the pursuit of technical virtuosity and clinical excellence**
2. **New risk markers**, will be helpful in this regard
3. The **prevalence of diseases** will continue to grow
4. There will be increasing application of **pharmacogenomics**



The Future

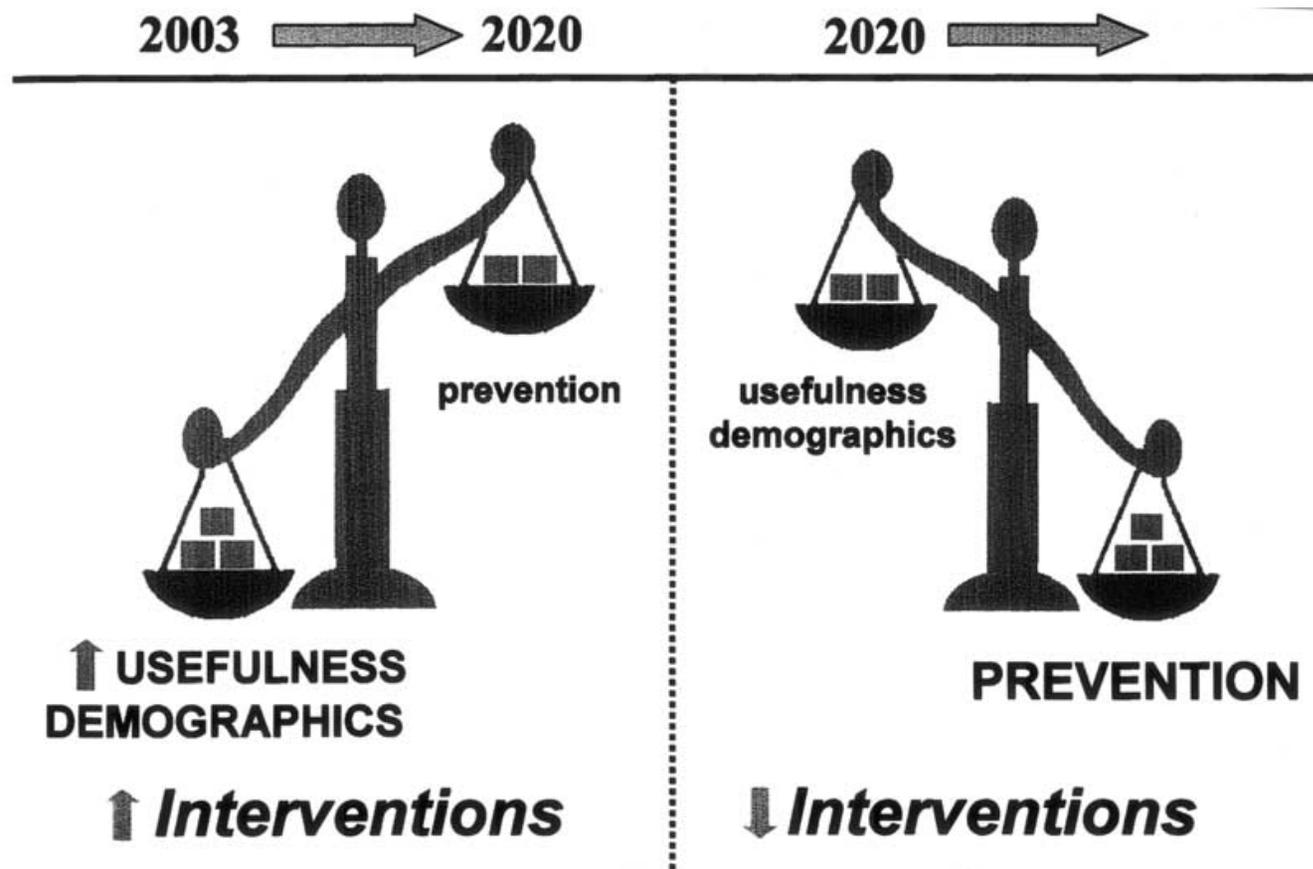
- **Intervention versus prevention.** In the short-term future, **until 2020**, many more useful interventions of all types
 - drug-eluting stents,
 - more effective electrical and mechanical devices,
 - cell therapy
 - xenotransplants
- This will be accompanied by a **great expansion of the population** that can benefit from these interventions:
 - a large increase in the elderly
 - diabetics
 - obese
 - previous intervention.
- **Beyond 2020**, interventions are certain to continue to become more useful, and they will continue to become simpler, more effective, and less expensive.



The Future-The Grand Goal

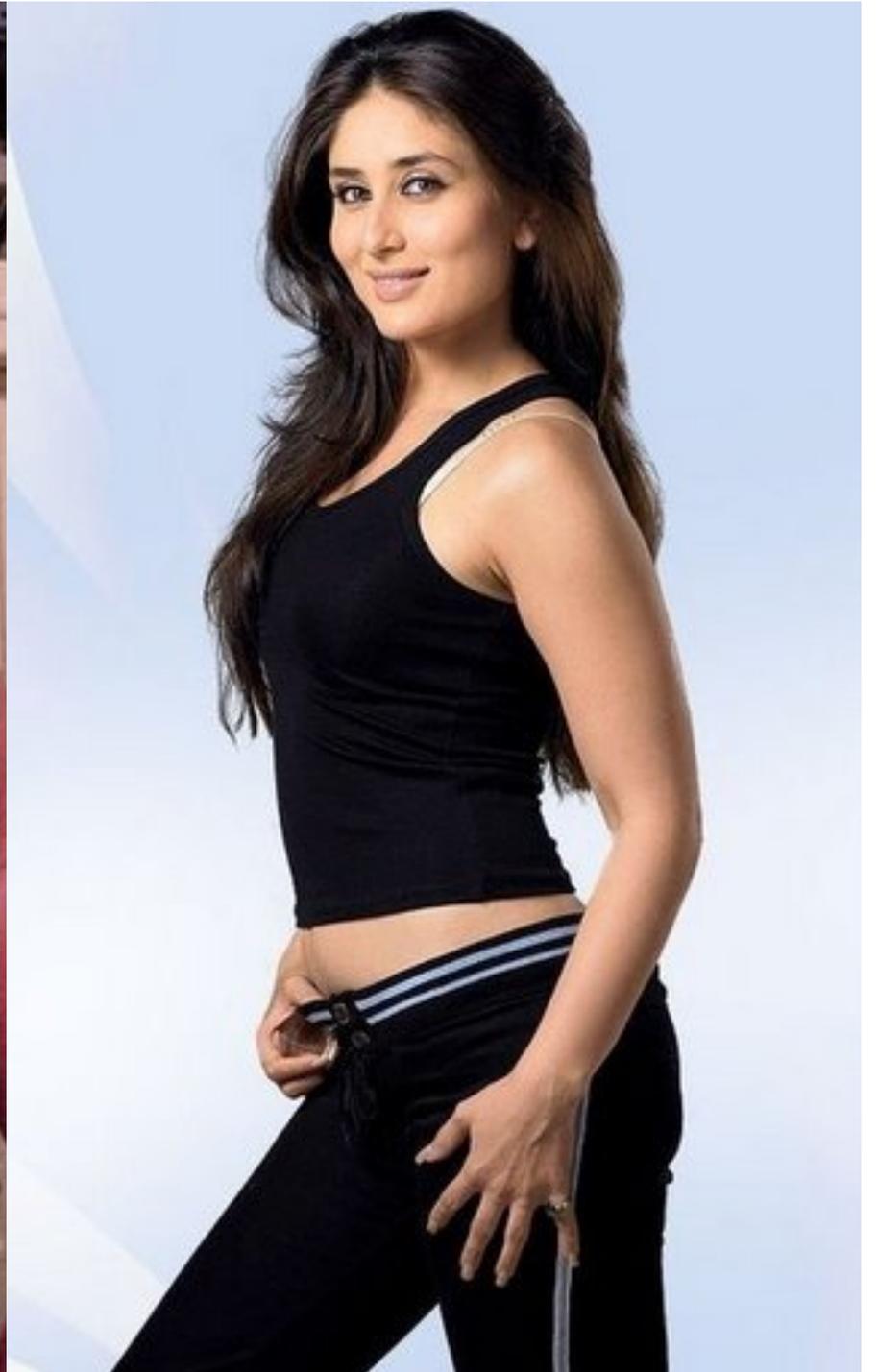
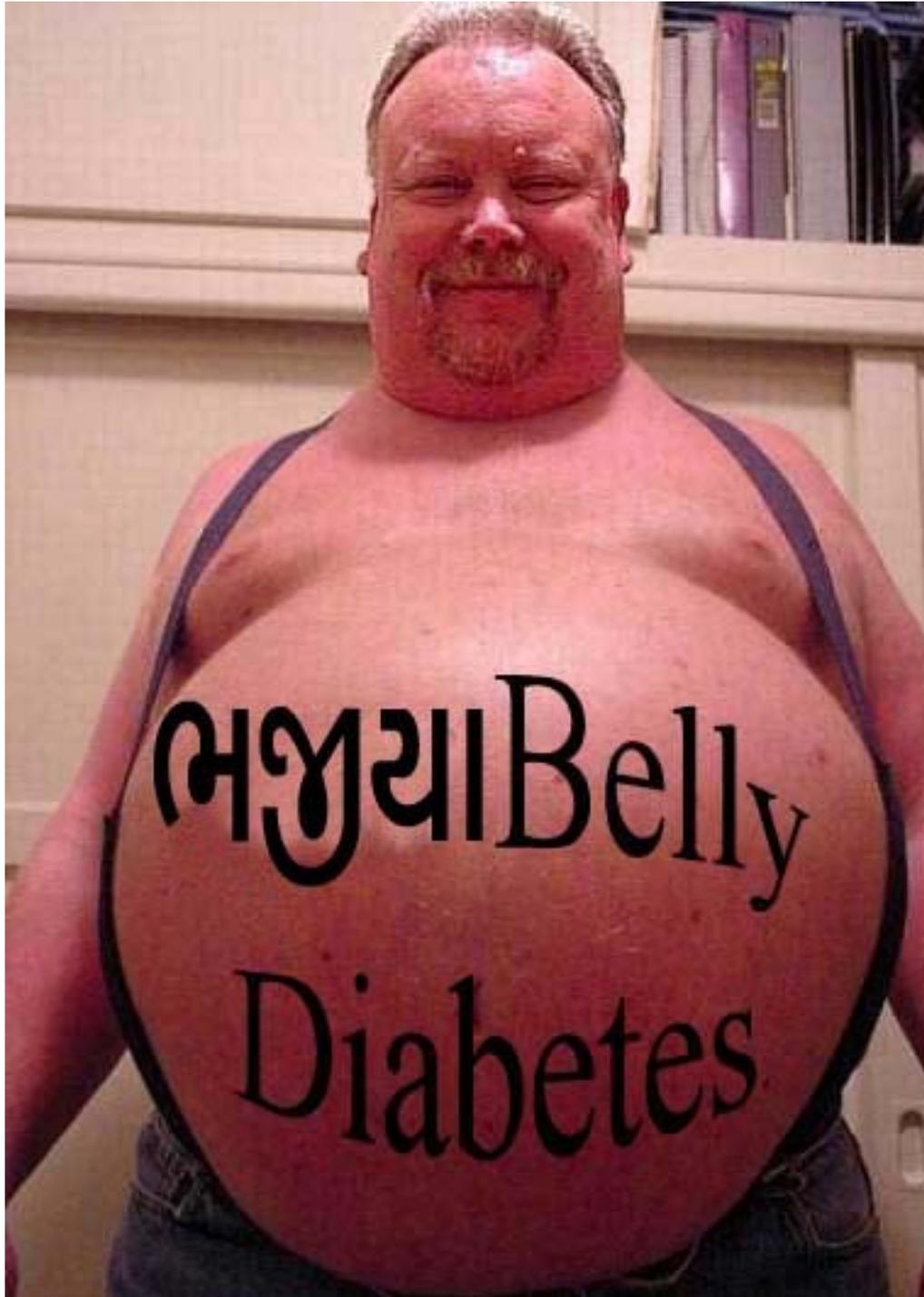
- The long-term future (2020 and beyond). Prediction beyond 2020 is more problematic.
- It is very likely that advances in genetics and genomics will allow the subclassification of disease, which will lead to gene-informed therapy, that is, “smart” therapy.
- Genetic identification of the future development of risk factors will lead to gene-informed personalized prevention: “smart” prevention.
- The grand goal, of course, is to eliminate diseases as a major threat to long, productive life.
- The principal role of the doctors and hospitals will change from recognizing and managing established disease, as is the case today, to interpreting and applying genetic information in prevention and treatment in 2020 and beyond.
- It is hoped this will be well underway by 2020-2050

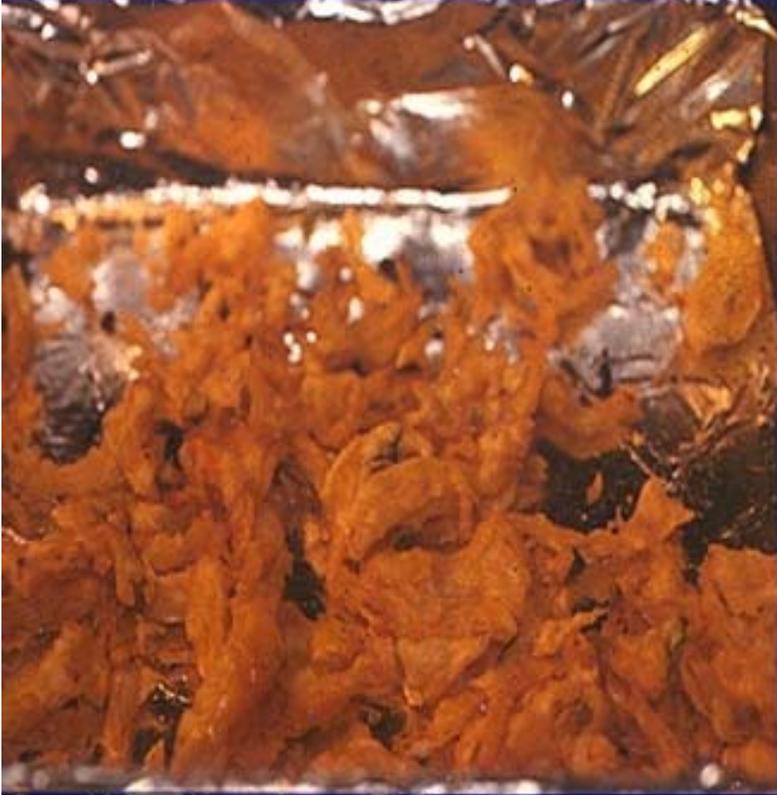




However, the application of genetics and genomics to cardiovascular disease will tip the balance and the need for intervention will decline, at first gradually, then rapidly.







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Indian Healthcare in a snapshot:

1. India has 16% of world's population,
2. 20% of worldwide mortality and
3. 20% of worldwide morbidity.
4. Yet health expenditure in the country is only 1% of global expenditure.
5. Allocation on healthcare in the 5-year plans has declined from 3.35% in the first plan to 1.4% in the tenth plan.
6. WHO recommends 3-4% allocation.
7. This is 0.9% of the nation's much talked about GDP compared to 1.8% of GDP in Pakistan and Sri Lanka and 2.1% in China.

Only 35% of population has access to modern medicine compared to 85% in China and 75% in South-East Asia.

Life expectancy has increased from 37 to 65 years from 1951 to 2003 and in fact Mortality has dropped to 57 per 1000 live births. However, it is still far behind 8 per 1000 live births for developed countries and 23 for China.



Take Home Message

Technology Driven Medical Practices

But do not forget Clinical Care Delivery

Who Is the patient / customer?

- Government and hospitals, are being challenged to move from **a culture of blame to one of accountability and improvement**
- It has become clear that there are gaps in service, omissions in relationships and attitudes, and lower levels of patient satisfaction than are desirable

- The patient/customer is King
- The patient/customer is always right
- The patient/customer is our partner
- Whoever is the beneficiary of your talent and effort is your patient/customer



Take Home Message

Readjustments in the system

- **Shift the focus of attention from deficiencies in personal performance to defects in the system that may have permitted these deficiencies to occur**
- **Consequently, we are less likely to accuse individuals and more likely to create an environment more conducive to good care**



Take Home Message

Information technology in medicine: Defining its role and limitations.

- IT has transformed the ways modern healthcare systems acquire, store, access and communicate medical information.
- **The traditional and humanistic concept of doctor-patient relationship is also under threat as IT is used to bypass the need for personal consultations.**
- **Ultimately, the role and limitations of IT as a tool to pursue the goals of medicine has to be carefully deliberated, clearly defined and judiciously delineated to ensure its effectiveness and safety.**



Take Home Message for Gujarat Government

DIRECT SUPPORT

1. Technology is very Power-Electricity Intensive -Hospitals (investing in Technology) should **get electricity subsidy 5-10 years by the state government.**
 - *At present many private hospitals under the guise of Charitable Hospitals get power subsidy whereas pure private technology driven hospitals bear the brunt of heavy power cost.*
2. Technology can be very SPACE consuming-Hospitals with >100 beds especially with CT Scans, Cardiac Cath Labs etc. and hospitals allocating open space and green buildings should get **municipal / state Tax waiver for 5-10 years**
 - *Let us be clear ALL OVER the WORLD Health Care has to be supported/subsidized by Government even for private players as it is the RIGHT of the patient to get Health Care in a civilized nation(same as food and shelter) and it is the DUTY of the Government to provide the same*



Take Home Message for Gujarat Government

INDIRECT SUPPORT

1. Govt. should have a **SINGLE stop coordinating center** which facilitates the entire process of setting up Health Care Delivery
2. Develop educational institutions in Healthcare Manpower such as Nursing, Technicians ,IT etc or create public-private certified courses
3. Encourage ,Introduce and even enforce **educational collaboration between Medical Colleges and Private Hospitals** as uniformly done in USA .Our Medical colleges ARE not preparing the students for the real world anymore



We not only think 'green'
we act 'green'

**CIMS : One of the first
green hospitals of Asia**



Sunlit Courtyards



Open to the Sky Green ICUs & OTs



Low energy - embodied material leading to reduction of carbon emission

- Each block independent & earthquake resistant
 - Fly ash (waste of thermal electric plants) bricks used for load bearing walls
 - Brick wall construction-thus less use of steel & concrete
 - Materials used specific to the region
 - Smooth lime plaster to reduce use of volatile organic compounds (paints)
- Open-to-sky areas minimize dependence on artificial light - thus energy is saved
 - Green plantations within the building contribute to the cause of 'save the trees'
 - Landscaping with local plant species
- Rain water harvesting pits installed
 - Sewage plants to recycle water
 - NComputing to save electrical energy





Keyur Parikh





I was in Los Angeles at USC...in 1982....When doctors in Los Angeles went on strike

the local death rate fell by eighteen per cent.

