



# CONSUMER HEALTH INFORMATICS (CHI)


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## What is Consumer Health Informatics?

- A branch of health informatics that:
  - **Analyzes** information **needs** of consumers
  - Studies and **implements** methods of making health information and services accessible to consumers
  - Integrates consumer preferences into health care information systems

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- In this view, informatics **analyzes consumers'** needs for information; studies and **implements methods** for making **information and services accessible** to consumers; and models and integrates consumers' **preferences** into health information systems.
  - Consumer informatics stands at the crossroads of other disciplines, such as **nursing informatics, public health, health promotion, health education, library science, and communication science.**



## Consumer Health Informatics

- Integration of consumer health information and information technology in an environment of **shared** healthcare **decision-making** that supports effective **self-health** action.

Lewis, D. & Friedman, C. (2002). Consumer health informatics. In M.J. Ball, K.J. Hannah, S.K. Newbold, & J.V. Douglas (Eds.). *Nursing informatics: Where caring and technology meet (3<sup>rd</sup> ed.)*. New York; Springer-Verlag.

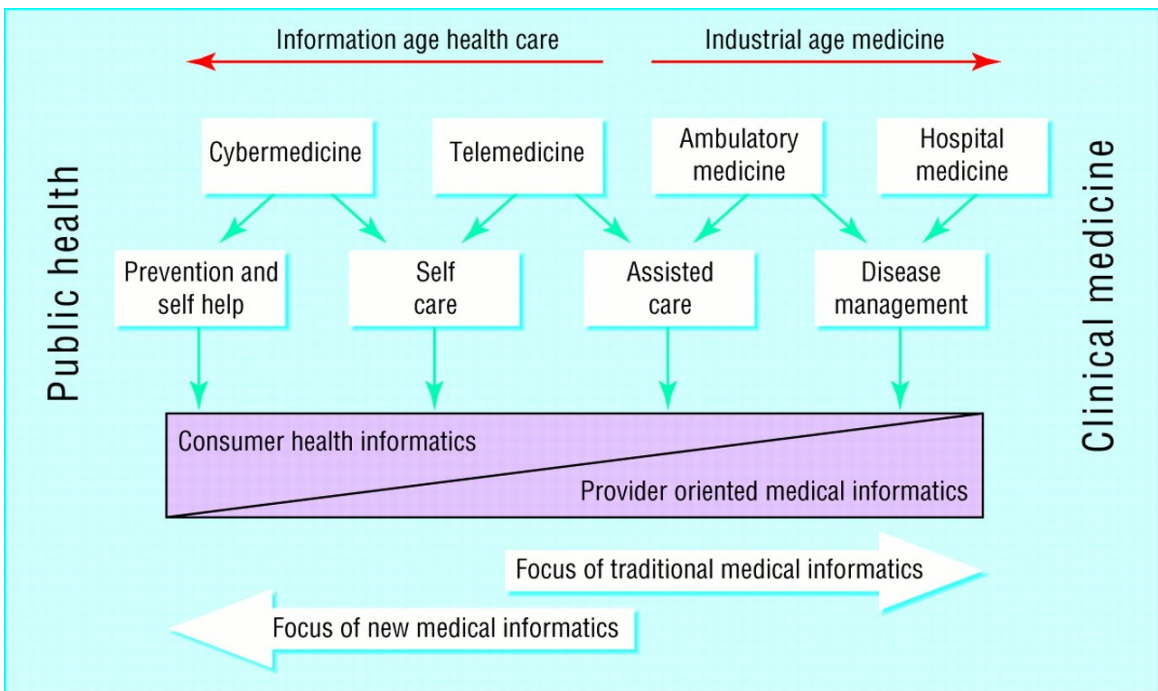


## Consumers?

- More broader than “patient “ it may include the well and caregivers
- It is a very diverse group

Brennan&Safran.Chapter 2 Empowered consumers.  
In: Lewis, Eysenbach, Kukafka, Stavri, Jimison. Consumer Health Informatics  
Springer, 2005

The focus of traditional health care and medical informatics is shifting from health professionals to consumers



## Empowered Consumers

- Empowerment: Granting of power to a dependent group or enhancing an individual's **ability** for **self** determination
- “a **social** process of recognizing, promoting and enhancing people’ abilities to meet their own **needs**, to **solve** their own problems, and **mobilize** the necessary resources in order to feel in control of their lives” (Gibson, 1991)

Brennan&Safran.Chapter 2 Empowered consumers.  
In: Lewis, Eysenbach, Kukafka, Stavri, Jimison. Consumer Health Informatics  
Springer, 2005



## Empowering Consumers

- Consumers Health Informatics applications support the empowered consumers concept (a power balance in the patient-health professional relationship) by e.g.:
  - ✓ Providing Informing about health concerns
  - ✓ Assisting in finding others with similar concerns
  - ✓ Assisting in navigating the health care system and services
  - ✓ Access to clinical records and personal care management tools.



https://www.humanhealthproject.org/?gclid=Cj0KEQjwosK4BRCYhsngx4\_SybcBEiQAowaCJZM8s34oKBaX010Sse0Pqc9hLTRVF4Bhv6WTxs4iVi



More People. More Information. Better Health.

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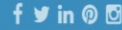
SIGN UP FOR PEER TO PEER HEALTH SUPPORT



### Sign Up To Get Notified of Our Interactive Community Site Launch

You have questions. The world has answers. The Human Health Project has made a space to bring together the experiences from people using many different forms of health care. We will

FOLLOW:



To search type and hit enter

CHECK OUT OUR NEWEST ARTICLES



AWARENESS / EVERYDAY HEALTH / NEUROLOGICAL HEALTH  
Understanding Chiari Malformation  
29 MAR, 2016



AWARENESS / EATING DISORDERS / EMOTIONAL HEALTH / EVERYDAY HEALTH / MENTAL HEALTH  
National Eating Disorders Awareness Week  
24 FEB, 2016



DISEASE / EVERYDAY HEALTH  
Zika Virus: A WHO Emergency  
18 FEB, 2016

shiba-PogoplugPC...exe

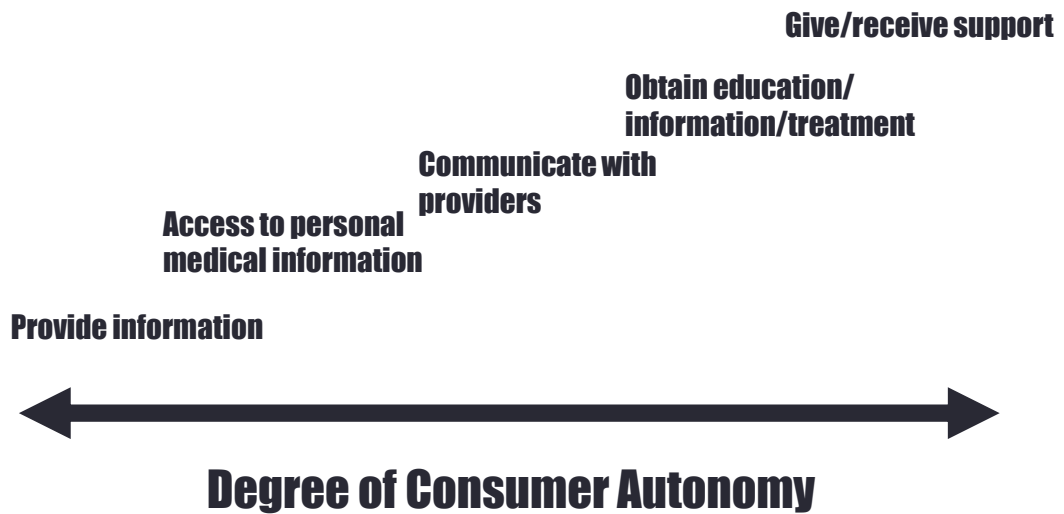


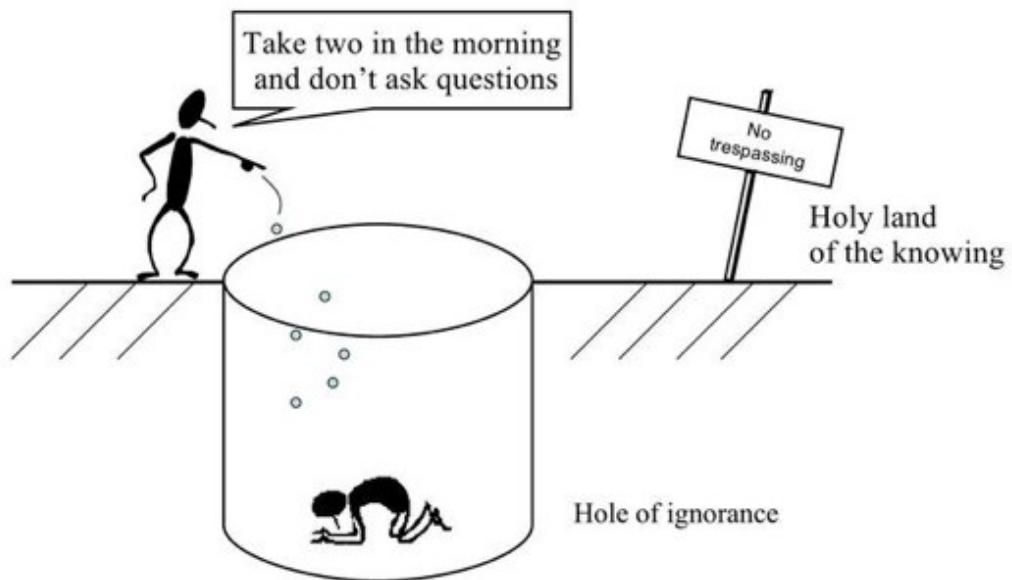
## History of CHI

- Consumer movement of 1970s
  - **Increased demand for information**
  - Greater **participation** in “medical” **decision making**
- Prominence of “**self-help**” phenomenon of 1980s
  - Huge increase in health information for lay audience
- Widespread use of the **Internet**
  - Increased dramatically throughout 1990s

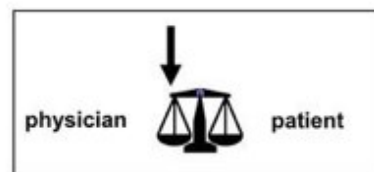
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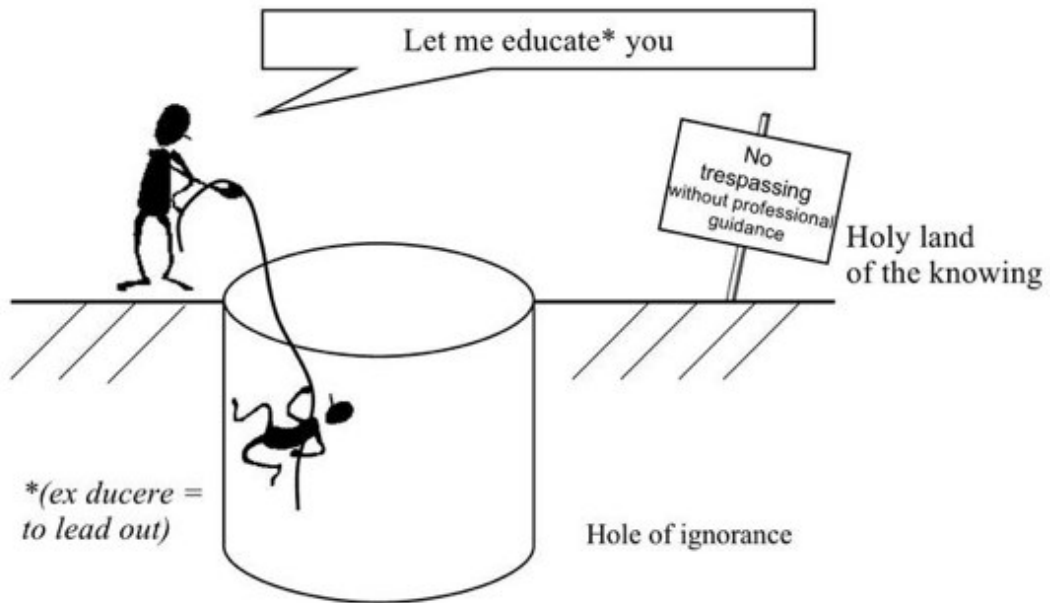
## CHI Continuum



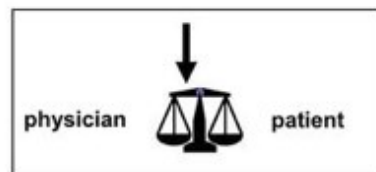


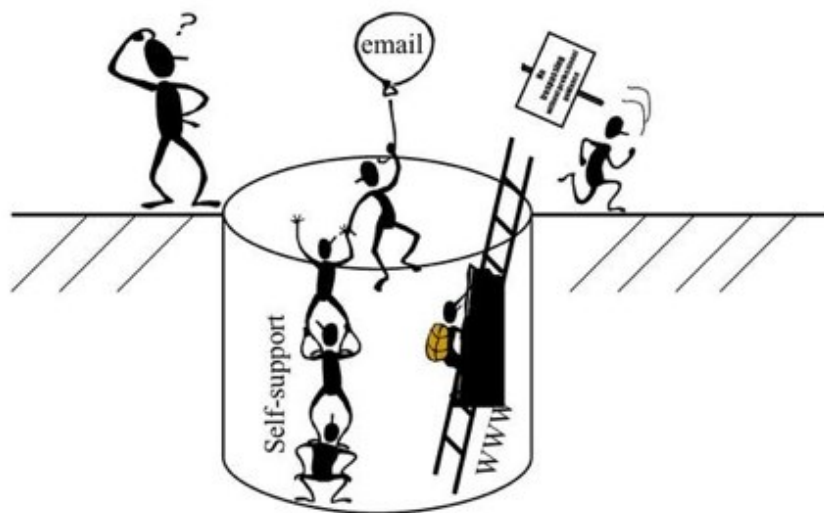
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Consumer health informatics in the internet age.  
<URL: <http://www.jmir.org/2001/2/e19/>>



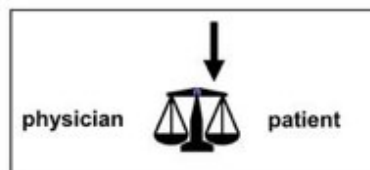


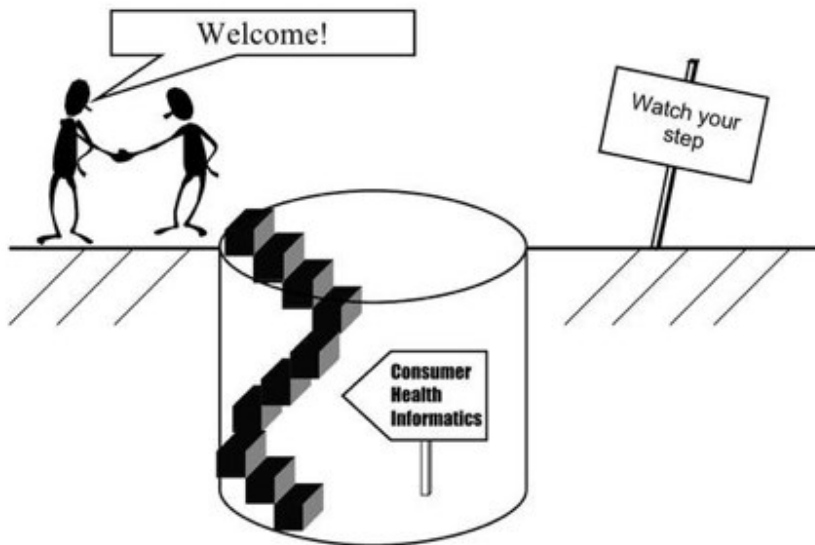
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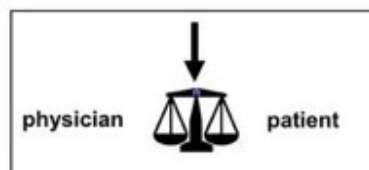


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<https://youtu.be/8BKN7RFhdq4>

[patient centered care](#)

<http://www.internetworldstats.com/me/sa.htm>



## Saudi Arabia: Internet Growth and Population Statistics

YEAR	Users	Population	% Pop.	Usage Source
2000	200,000	21,624,422	0.9 %	ITU
2002	1,500,000	21,771,600	6.9 %	ITU
2003	2,500,000	21,828,800	11.5 %	C+I+A
2004	3,500,000	21,886,000	15.9 %	ITU
2005	4,500,000	21,943,200	20.5 %	ITU
2006	5,500,000	22,000,400	25.0 %	ITU
2007	6,500,000	22,057,600	29.5 %	ITU
2008	7,500,000	22,114,800	33.9 %	ITU
2009	8,500,000	22,172,000	38.4 %	ITU
2010	9,800,000	25,731,776	38.1 %	ITU

**2015 USERS -> 21,500,000**

<http://www.internetworldstats.com/me/sa.htm>

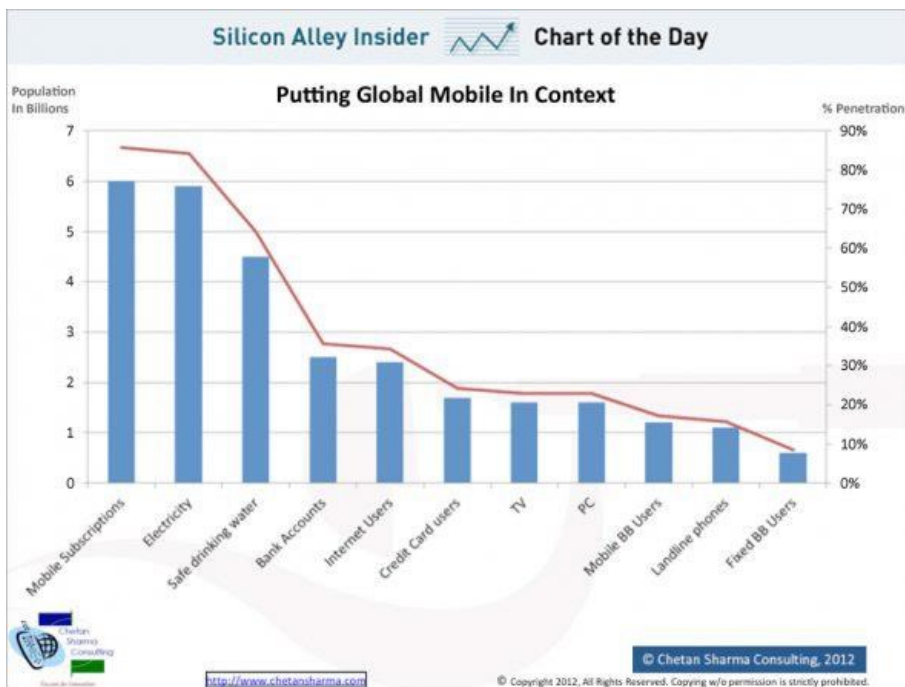


## Mobile health

- M-health or Mobile health is a term used for the practice of medicine and public health, supported by mobile devices. The term is mainly used in reference to using mobile communication devices, such as [mobile phones](#), tablets and [PDAs](#), for [health services](#) and information. The mobile Health is a sub-segment of [eHealth](#),
- The mHealth market earned revenues of \$230 million in 2010 and is estimated to reach **\$392** million in 2015 in USA, according to a new report from research firm Frost & Sullivan.

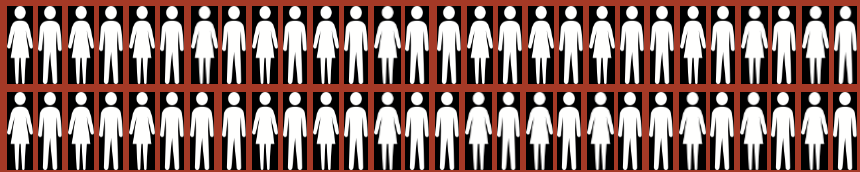
# mHealth

Mobile is the most Pervasive technology ever invented

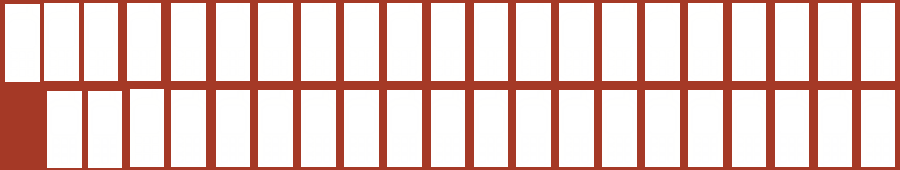


# The mHealth Opportunity

7 Billion  
People



By 2014  
More mobile  
phones than  
people



Expanding the coverage and reach of  
critical health information and services  
and moving towards citizen-centered  
health and well-being



## Consumer Health Informatics

- **Consumer Health Informatics**
- consumer or patient views.
- patient-focused informatics,
- health literacy and consumer education.
- health information literacy,
- consumer-friendly language,
- personal health records, and Internet-based strategies and resources.

## Where clinical IS and Consumer health informatics meet

- Patient Portals: Patient interface to clinical information systems
- Personal Health Record: Internet based- set of tools that allows people to access and coordinate their life-long health information and make appropriate parts of it available to those who need it

<http://www.webcitation.org>

### Important Notes

Please phone the office 303-679-2288 for urgent medical problems or dial 911 for medical emergencies.

Your physician will respond to your message Monday through Friday during office hours. If you do not receive a timely response, please phone the office. During evenings and weekends, please

### Contact My Doctor/Provider

Please complete the following information:

To:

Subject:

Message:

Dr Jones, the sample medication you gave me at my last visit does not seem to be working. Should I continue to use this or should we change to something else?

Thanks,

Steve

### Important Notes

Please phone the office for urgent medical problems or dial 911 for medical emergencies.

## Request an Appointment

Our appointment scheduling staff will handle your request, and will reply with date and time options for you to confirm.

### Please complete the following information:

Type of Appointment	Complete Physical Exam
Reason for Appointment (Optional)	I need my yearly physical exam
Special Requests, Comments, etc.	

Calendar

Date Requested:

Time  Morning  Afternoon  No Preference

Send Appointment Request



### Important Notes

Please report any medication side effects or allergies.

All patients must be seen at regular intervals to evaluate your medical problems and medications.

Some insurance plans will only permit enough medication for one month at a time.

We will forward your

### Refill/Renew My Medications

Please complete the following information regarding your medication refills. (Check only those medications you need refilled or renewed at this time. You must select at least one checkbox. If you do not see your medication listed below, please [Click here](#) to update your medication list. Once you have updated your medication list, you can return to this page and request a refill.)

Add/Edit Meds

Check to Refill	Medication Name	Dosage (mg, ml)	Dosage Frequency	Quantity
<input type="checkbox"/>	Lantus	14 units	Once Daily	1 Days
<input type="checkbox"/>	Regular insulin	as needed	Three Times	1 Days
<input checked="" type="checkbox"/>	Lasix	20 mg	Once Daily	1 Days
<input type="checkbox"/>	Lovastatin	20 mg	Once Daily	1 Days
<input type="checkbox"/>	Trinorinil	20 mg	Once Daily	1 Days

### Important Notes

This form will be reviewed by your doctor for approval. You will be notified about approval, the need to visit your primary care doctor, etc.

## Request a Referral

**To receive a referral to a specialist, please complete the following:**

Specialist Type	Allergist
Specific Doctor	Dr Green
Medical or Surgical Problem (Describe)	Allergies
Have you seen this specialist before?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Have you consulted your primary care physician for this problem?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Comments	


### Important Notes

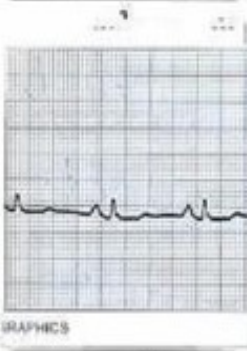
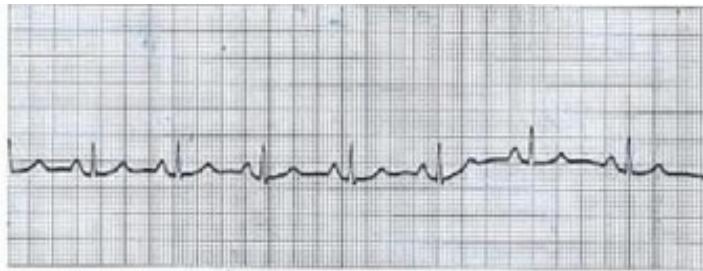
Please phone the  
office 303-871-2205 for  
urgent medical  
problems or dial 911 for  
medical emergencies.

### View EKG

Click on the title to view a document.

Results for **Steve Johnson:**

Title	Description	Print
<a href="#">3-30-2003</a>	Normal	





## Consumer Health Informatics Systems

- Consumer health informatics can be organized into three general systems that:
  - *provide* health information to the user (one-way communication)
  - *tailor* specific information to the user's unique situation (customized communication)
  - allow the user to *communicate* and *interact* with health care providers or other users (two-way communication)



## Consumer Health Informatics Systems

- **One-way communication:** CD-ROMs, on-line health articles
- **Tailor:** automated systems that obtain information from the consumer about his or her general health or other health-related factors (such as family disease histories and smoking habits) and, on the basis of this information, suggest a need for preventive health procedures (such as mammograms), or identify actions to curb high-risk behaviors.
- **Two-way communication:** electronic mail, electronic bulletin boards, on-line discussion groups.



## Roles of Health Professionals in CHI

- Professionals serve as sources of content
- Professionals provide important guidance in moderating public electronic discussion groups and responding to patients' electronic messages
- Clinicians become information brokers and interpreters for patients.



## Quality control of health information on the internet

- The quality control of health information on the internet rests on **four pillars**:
  - educating the consumer
  - encouraging the self regulation of providers of health information
  - having third parties evaluate the information
  - enforcing consents in cases of dissemination of fraudulent or harmful information.



## Credibility Criteria

- The FA4CT Algorithm: A New Model and Tool for Consumers to Assess and Filter Health Information on the Internet
- **CREDIBLE Criterion**
- **C**urrent and frequently updated
- **R**eference cited
- **E**xplicit purpose
- **D**isclosure of sponsors
- **I**nterest disclosed and no conflicts found (e.g financial)
- **B**alanced
- **L**evel of **E**vidence
  - Eysenbach G, Thomson M. The FA4CT Algorithm: A New Model and Tool for Consumers to Assess and Filter Health Information on the Internet. In: Kuhn K (ed.) Medinfo 2007 Proceedings (in press)



## Patient Centric Healthcare

***“care that is respectful of, and responsive to, individual patient preferences, needs, and values” and that ensures “that patient values guide all clinical decisions.”***

This definition highlights the importance of clinicians and patients working together to produce the best outcomes possible.

**Crossing the Quality Chasm, IOM**



# Patient / People Engagement

WHO defines People Centered Care as:

*“Care that is focused & organized around the health **needs & expectations** of people & communities rather than on disease”*

## Characteristics of Patient Centered Care

- **Respect** for patients values, preferences & needs
- **Coordinated** and **integrated** care
- **Information, Communication & Education**
- **Physical Comfort**
- **Emotional Support**
- **Involvement** of family & friends
- **Continuity** of care
- **Access** to care

Picker Institute-Multiyear Research Project

*“Through the Patient’s Eyes: Understanding and Promoting Patient-Centered Care”*



## It's a Different Ball game

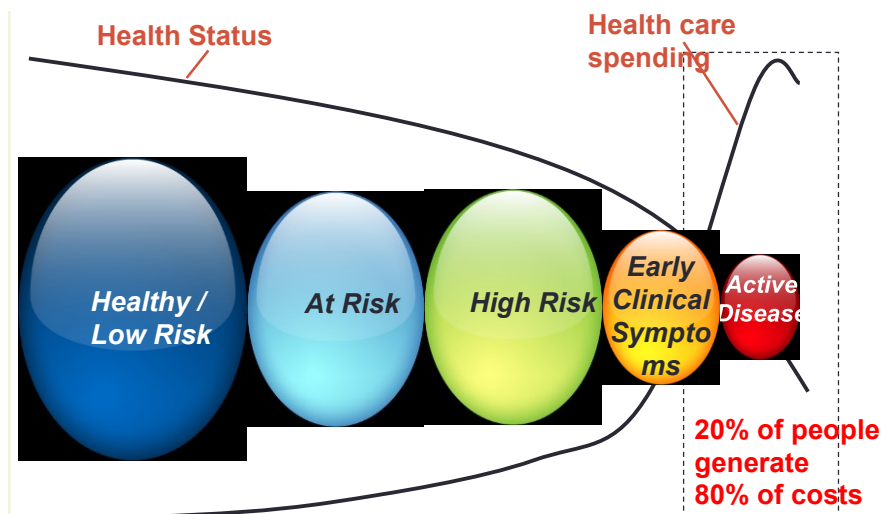
In an eHealth environment, **Information Moves**  
rather than the Physician or the Patient

eHealth

**ePhysician - eConsumer**

!

## Is “At the Point of Care” Too Late?



- Early detection of at-risk patients
- Provide **personalized** evidence to enable proactive decisions



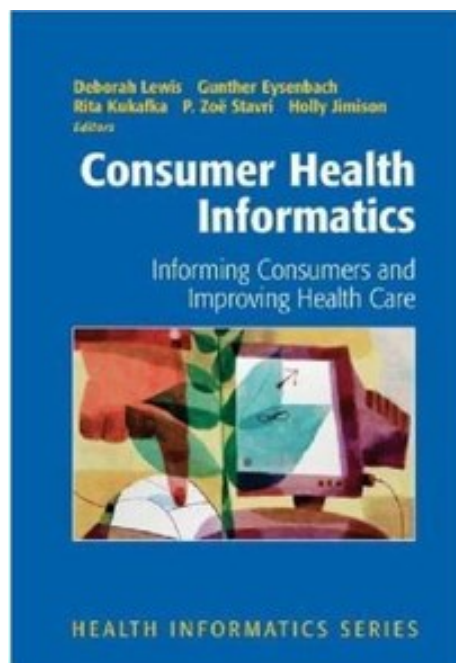
## Actions

- Technology victories and chronic disease,
- e-Health takes a prominent role in the management of healthcare
- To aggregate rather than segregate healthcare system
- Consumer health education and empowerment
- Preventive medicine takes precedence over treating the sick
- Focus on vulnerable members of society

The European study for future of health

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## Further Reading









<https://youtu.be/kp-5Jo1qHw8>

## The Future: Trends

- Is for Consumer Health Informatics

Thank you

Prof Ahmed Albarrak

