

Hi!

Again I can not stop praising the potential of internet. I think, it is the **best all-round library** one can have; recently I was down with viral fever (you guessed it, chikungunya!) for 3 days, and like most of us, getting ill makes me **nostalgic** about good old days. This time lying there in the bed recuperating, I **went back** in late 1989- 90 when we use to prepare for **IIT-JEE** (got nowhere, near it), and I thought let us see what is there on the net regarding



math, physics etc. And not surprisingly I found a really good resource in the form of **www.wikipedia.org**. Its mathematics section is good starting point for everything related to math. So if some one, like our children have some doubt regarding trigonometry etc. wikipedia is a **great place** to start looking at.

Ok, got to get back to newsletter; this time let us discuss - A) Testifying in court of law B) Chikungunya – NIV Pune. findings C) Issues regarding home pregnancy test kits D) Action based taxonomy of human error.

I hope never to go to court of law, but if I am made to, how should I testify?

The first article that we are discussing today is an useful advice regarding how a physician **should conduct** himself **during testifying** and how we



should **interact with the lawyers**. It is called the **‘The Art of Attorney Interaction and Courtroom Testimony’** (page 2)

What has NIV, Pune found about the chikungunya epidemic?

This article from “Emerging Infectious diseases” discusses the findings of NIV, regarding the current **chikungunya**



Epidemic. It confirmed that the disease is indeed chikungunya **and it is caused by African genotype of the virus.** (page 3)

Home pregnancy test (HPT) kits are universally used by women, this study – a meta-analysis; analyses the available literature on HPT and finds that **sensitivity** is



quite **good** when done by experienced techs; but somewhat variable when the test is done **consumers**. So women may be **misguided** by these kits. Check out the details on **page 4**.

The last article is dealing with **action based taxonomy of human error**. This should help us understand the complicated & multifactor nature of human error. And I think, this

HUMAN ERROR



by **mark(s)el liott**

understanding should **help us reduce the human fallibility** in our clinics, I could not include enough material for lack of space, but if you want, I can send the complete article. Check out some illustrations and discussion on **Page 5**.

Well, *boleto* another thing that I would **definitely recommend** (that’s if you have not already seen it) is the film ‘Lage raho Munnabhai’. Great movie to



make you laugh, forget any day to day *locha* bugging you & feel good about life in general. (Check out this Gandhi quote on page 5) Regards,

~Sachin

Dr. Sachin Kale, MD (Pathology), Kale Path Lab, A’bad.



Phone: 2340558, 9823244033.



Issues since Jan, 2005 available online – <http://sachinkale1.tripod.com>

(1, Cont.)

Closer look at health – through the Internet

The Art of Attorney Interaction and Courtroom Testimony

Gregory G. Davis, MD

All physicians receive training in the practice of medicine in medical school, but exposure to the legal realm is generally limited to a single hour's lecture from risk management on how to avoid being sued.

Like people, courts of law sometimes need the services of a physician to render a carefully considered diagnosis. In court, diagnoses are rendered in the process of testifying.

Expert testimony on medical matters is an essential part of many legal trials; in fact, the most frequent type

Training in giving testimony is not a subject taught in medical school, but testifying is an art within the grasp of any physician skilled at the art of interacting with colleagues and patients.

Skillful testifying is nothing more than the transmission of medical information in court in a professional, polite, and compelling manner.

PLAYERS IN COURT

The first step in being an effective witness is to understand **who the players** are in the drama of a court trial.

For the purpose of this article, there are 4 players in a trial—the **jury, the judge, the attorneys, and the witnesses**.

The witnesses are admitted to the courtroom one at a time. Witnesses may be of 2 types in court—fact witnesses or expert witnesses.² Fact witnesses testify to something that they saw, heard, or otherwise directly experienced that is pertinent to the case. Expert witnesses are individuals with training beyond ordinary human experience that can

Once accepted as an expert, that witness is permitted not only to make factual statements concerning the case but also to offer his or her opinions on the case based on the facts.

The authority to offer an opinion in court is critical for medical testimony, because a **diagnosis is a medical opinion not a fact**. Signs and symptoms are facts.

SERVING AS AN EXPERT WITNESS

Talking With Attorneys

Rules are as follows:

1. Always be polite.
2. Always tell the truth.
3. Never speak idly.
4. Remember the strength of your position but play on that strength carefully.
5. Maintain equanimity.

In dealing with attorneys about medical matters, your **professional reputation is at stake**, just as it is any other time you are practicing medicine. Consider the answers that you give to an attorney's questions as carefully as you consider the diagnoses you make at the microscope or in the laboratory.

You should be confident that you know your specialty and humble because no one masters medicine, one only practices medicine.

Good attorneys live by a professional maxim that they should not ask a question in court for which they do not already know your answer.

Questions concerning your opinion asked of you in court have the same 3 possible answers as any question

asked of you by a clinician, namely:

1. Yes, your supposition or logic is correct.
2. No, that is wrong or the incorrect way to think of this matter.
3. I don't know.

The proper way to give a compelling performance while testifying in court is to have conviction in the importance of what you have to say. In other words, care about your subject.

Potential Traps

The attempt to discredit you as an individual used often by attorneys is so common that it has its name—the *ad hominem* attack. *Ad hominem* is Latin for the "man" and describes the practice of attacking you personally rather than attacking your conclusions.

No one enjoys a bully, but everyone enjoys seeing a bully frustrated.

Deposition

Depositions are legal proceedings held outside a courtroom that can nevertheless be admitted as evidence into a trial.

A deposition is preferable to signing an affidavit, which is a written statement signed by a witness that the witness swears to be true. Affidavits help a given attorney but frustrate the legal principle of equal access to a witness by all sides in a dispute.

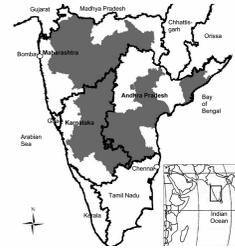
Most physicians hope never to go to court in any capacity, but if it becomes necessary for you to go to court, then do not fear. Careful diagnostic acumen coupled with polite manners will see you safely through rough water.



Volume 12, Number 10—October 2006 **Chikungunya Outbreaks Caused by African Genotype, India**
(National Institute of Virology, Pune, India)

Chikungunya virus (CHIKV) outbreaks have been documented in Africa and Southeast Asia. In India, the first CHIKV outbreak was recorded in 1963 in Calcutta and was followed by epidemics in Chennai, Pondicherry, and Vellore in 1964; Visakhapatnam, Rajmundry, and Kakinada in 1965; Nagpur in 1965; and Barsi in 1973 (1). Recently, CHIKV has emerged in Southeast Asia and the Pacific region

- Blood samples were collected from **1,938** suspected case-patients from the 3 states; serum was separated and transported to the laboratory on wet ice.
- Acute onset of moderate-to-high fever in association with body ache, backache, and headache was recorded.
- Joint pain of varying severity occurred within 2 days of onset of fever and, in decreasing order of affliction, involved knees, ankles, wrists, hands, and feet.
- Transient macular rash on earlobes, neck, trunk, and upper extremities were reported for a few patients. Hemorrhage did not occur.



- The cases were reported predominantly from **rural areas**; distribution was focal. Multiple cases were recorded in families.
- All ages and both sexes were affected; significantly more cases occurred in persons aged ≥ 15 years (299 [89.8%] of 333, $p < 0.001$).
- The population of ***Ae. aegypti*** was reasonably high in most of the localities; adult household indexes and Breteau indexes, respectively, were 10–60 and 13–75 in Andhra Pradesh, 20–70 and 40–200 in Karnataka, and 10–30 and 30–50 in Maharashtra. High density of *Ae. aegypti* populations in affected areas and 23 isolations or detections of CHIKV from adult mosquitoes indicate that **this species is the main vector in India.**

	State		
	Karnataka	Maharashtra	Andhra Pradesh
No. blood samples	900	473	565
Anti-CHIKV IgM, n/N (%)	303/900 (33.7)	169/473 (35.7)	251/565 (44.4)
Anti-dengue IgM, n/N (%)	19/191 (9.9)	23/473 (4.9)	3/325 (0.9)
Anti-CHIKV and anti-dengue IgM, n/N (%)	1/191 (0.5)	2/473 (0.4)	14/325 (4.3)
CHIKV, human serum, n	83	9	20
CHIKV, <i>Aedes aegypti</i> , n	4	11	8

Results of serologic testing and virus isolation, India, October 2005–March 2006 (CHIKV: chikungunya virus; IgM: immunoglobulin M.)

- Anti-CHIKV IgM was detected in 33.5% to 41.9% of patients tested. The finding of antibodies to dengue virus in 0.9% to 9.9% of patients and to CHIKV and dengue virus in 0.4% to 4.3% of patients indicates that these viruses cocirculate in the area.

Conclusions:

- This report **confirms CHIKV as the causative agent** for large outbreaks of **fever with arthralgia and arthritis** in 3 Indian states. Thus, chikungunya fever has emerged in outbreak form after 32 years.
- The current epidemic is caused by **central/East African genotype** of CHIKV. That the Yawat isolate is grouped with central/East African genotype suggests that **this genotype had been introduced ≥ 5 years before the current outbreaks.**

(3, Cont.)



Objective To assess the *diagnostic efficiency* of home pregnancy test (HPT) kits.

Data

Sources A literature search of English-language studies was performed with MEDLINE and a review of bibliographies.

Study

Selection Studies were included if HPT kits were compared with a criterion standard (laboratory testing), if they used appropriate controls, and if data were available to determine sensitivity and specificity.

Data Synthesis Five studies evaluating 16 HPT kits met the inclusion criteria. The range of sensitivities for HPT kits was 0.52 to 1.0. In studies where urine samples obtained by the investigators were tested by volunteers, sensitivity was 0.91 (95% confidence interval [CI], 0.84-0.96). However, the sensitivity was less in studies where subjects were actual patients who performed the test on their own urine samples (sensitivity, 0.75 [95% CI, 0.64-0.85]). The test effectiveness score was 2.75 (95% CI, 2.3-3.2) for studies where subjects were volunteers but deteriorated to 0.82 (95% CI, 0.4-1.2) for studies with actual patients.

Conclusions The *diagnostic efficiency of HPT kits is greatly affected by characteristics of the users.* Despite the popularity of these kits, the relatively low effectiveness scores of these kits when used by actual patients are of concern. We suggest that manufacturers of HPT kits publish results of trials in actual patients before marketing them to the general public.

Source, y	Type of Kit*	Sensitivity, %	Specificity, %	Effectiveness Test Score (95% CI)†
Baker et al, ²² 1976	Ova II	52.6	51.9	0.09 (-0.5 to 0.7)
Aranda and Uldall, ²³ 1977	Predictor	97	96	3.4 (2.6 to 4.2)
Doshi, ²⁴ 1986	Answer	78	64	1.0 (0.4 to 1.6)
	Daisy 2	82	64	1.1 (0.3 to 1.9)
	e.p.t.	82	75	1.1 (0.5 to 1.7)
Hicks and Isaacsohn, ²⁴ 1988	e.p.t. plus	90	92	2.5 (1.9 to 3.1)
	Advance	86	91	2.2 (1.6 to 2.8)
Lalman and Broot, ²⁵ 1989	Fact	100	93.5	3.7 (2.1 to 5.3)
	e.p.t. plus	94.6	100	3.6 (2.1 to 5.2)
	Answer 2	100	93.5	3.6 (2.0 to 5.2)
	First Response	92.9	100	3.3 (1.8 to 4.9)
	Advance	91.2	100	3.3 (1.8 to 4.8)
	e.p.t.	88.2	100	3.2 (1.7 to 4.7)
	Predictor	100	76.7	2.9 (1.4 to 4.4)
	Daisy 2	97.5	60.5	2.0 (1.1 to 3.0)
	Acto test	61.7	88.9	1.3 (0.5 to 2.1)

Diagnostic Characteristics of Kits by Study

Discussion:

With one third of pregnant women using HPT kits, the low sensitivity (high rate of false-negative results) is a public health concern.

Two major reasons exist for the high false-negative rate when testing is performed by women on their own samples. First, women may be **obtaining their samples before the recommended number of days** after their first missed menstrual period (usually 9 days), when HCG levels become reliably detectable by the kits.

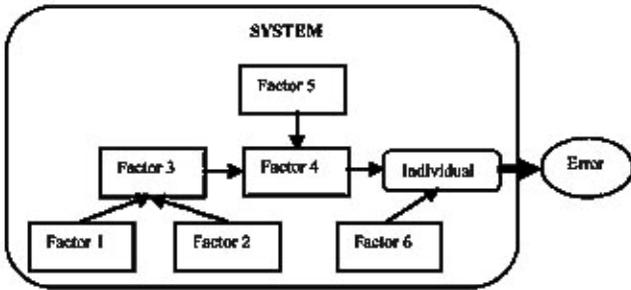
Another reason for false-negative results is **operator error**.

The **fewer false-positive results** with current monoclonal-based kits have been attributed to **ectopic sources of HCG** or elevated levels of circulating **luteinizing hormone**.

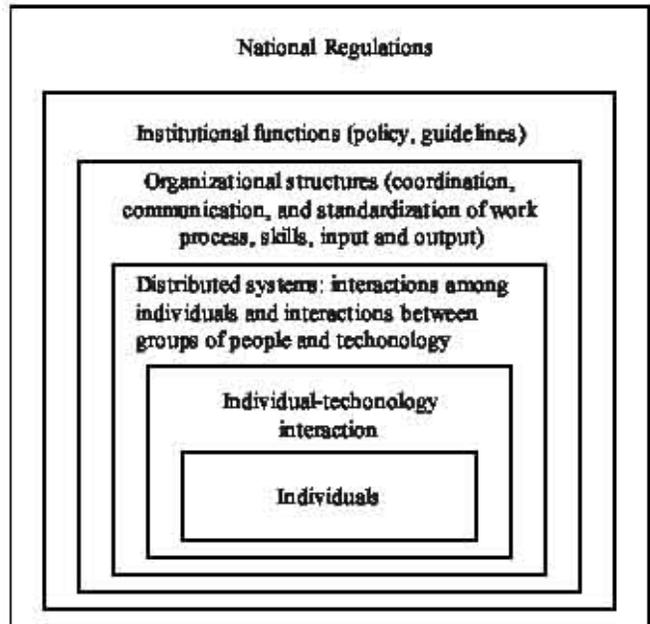
(4, Cont.)

Toward An Action Based Taxonomy of Human Errors in Medicine

Jiajie Zhang, Vimla L. Patel, Todd R. Johnson, & Edward H. Shortliffe

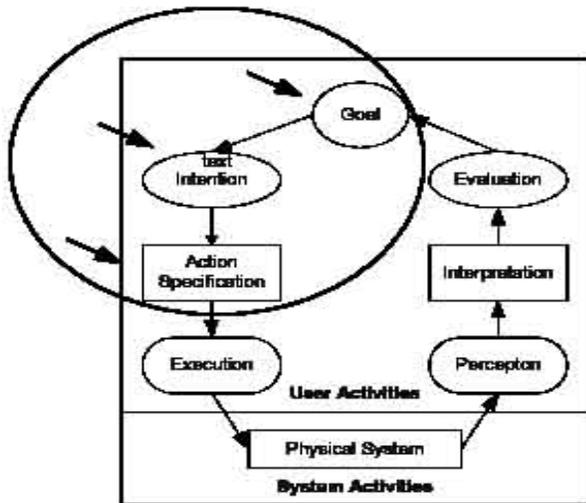


The chain of events leading to an error



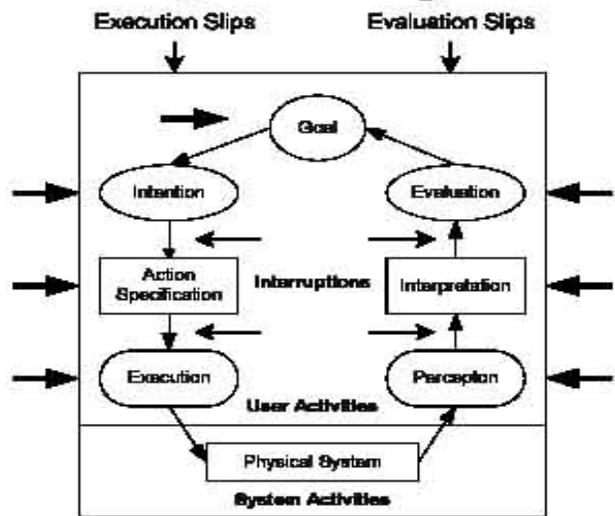
The system hierarchy of human errors in medicine

Mistakes



Slips can occur at all stages, whereas mistakes can only occur at the first three stages.

Slips



One **critical step towards reducing medical errors** in particular and human errors in general is a cognitive taxonomy of errors that can (1) *categorize all types of medical errors along cognitive dimensions*, (2) *associate each type of medical errors to a specific underlying cognitive mechanism*, (3) *explain why and even predict when and where a specific error will occur*, and (4) *generate intervention strategies for each type of error*.

- This taxonomy can categorize all types of errors (slips and mistakes) **according to the stages of the action cycle**.
- Authors have **identified a set of cognitive mechanisms** (though not exhaustive) that underlie each type of slip or mistake.
- This taxonomy can **also explain why** a specific error occurs, although we have not developed the taxonomy in

Parting Thought...



Fear has its use, but cowardice has none. I may not put my hand into the jaws of a snake, but the very sight of the snake need not strike terror into me. The trouble is that we often die many times before death overtakes us.

~ Mahatma Gandhi
(Inclusion of this quote, of course inspired by 'Lage raho Munnabhai'!)

(End, 5)