Risk Prediction & Risk Management

Obviously NOT a priority for senior clinical managers in high security psychiatric hospitals .

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March 14th , 2000

✪ This is a paper about Goal-Directed Management (GDM) in the domain of patient violence risk assessment - and how one would recognise GDM in a strategic organisational area.

✪ It is not the aim to attribute blame to any individual for the lack of strategic management, but rather to show what GDM would look like in practice - in a specific area of interest.

✪ Every hospital has mission statements, committees, and other kinds of organisational public "wallpaper". But no hospital actually **ACHIEVES** anything more than professional "positions" and heated debate in this area. **WHY?**

✪ Some good things on risk are done by individuals in hospitals who seem to have to virtually fight their organisation in order to achieve.

The Proposition

The failure evidenced within the four UK High Security Psychiatric hospitals to implement a form of planned, evolving, coherent, and organisational-wide consistent approach to patient violence risk prediction and risk management suggests that these two issues are not considered a strategic priority by senior clinical managers.

Definitions: the domain is "risk of violence to others"

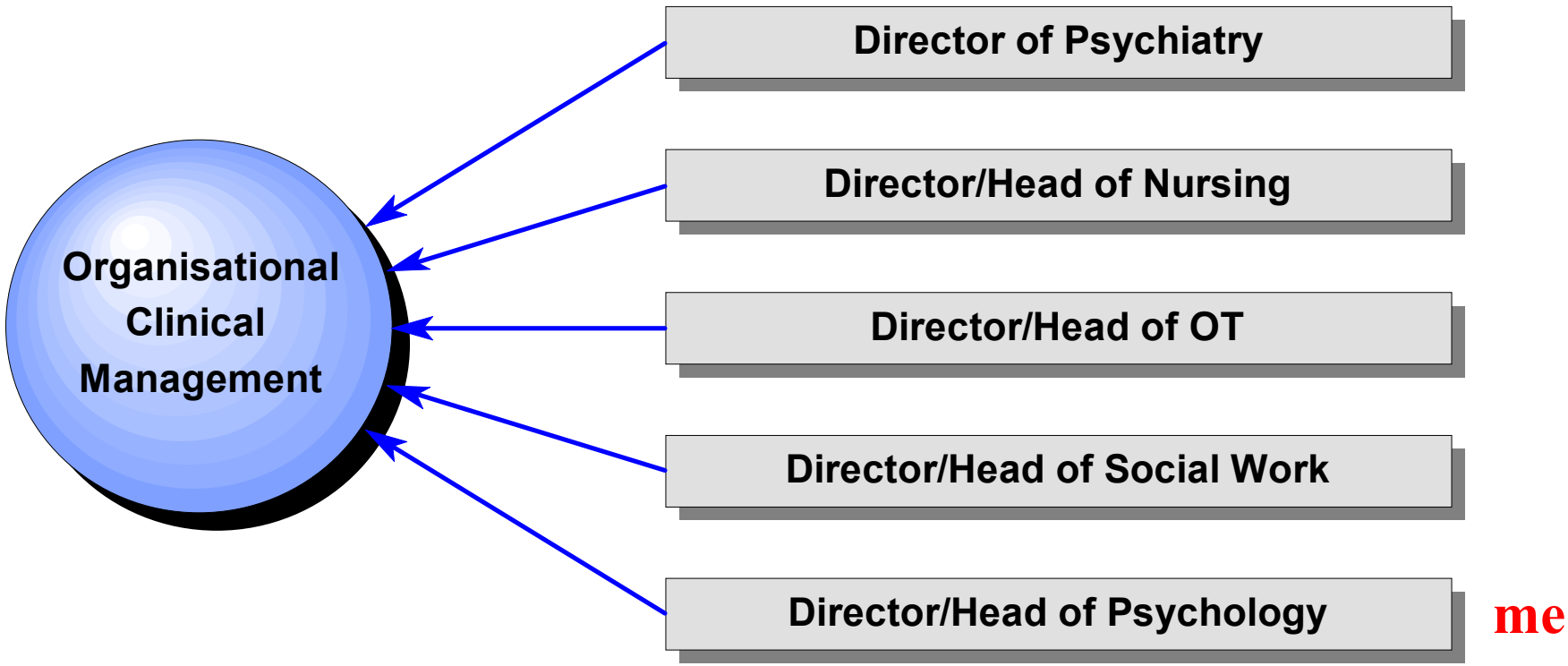
Prediction: the assigning of a probability to a patient, indexing the likelihood of that patient to commit a violent offence (criminal or otherwise), within and without the hospital (if and when discharged).

Management: the implementation of a set of operational procedures surrounding a patient that enable a dynamic sensitivity to a patient needs and evolving behaviours. The purpose of these procedures is to minimise risk to others.

Failure: the inability to provide an **organisational** (not departmental) solution for a combined research and operational solution to the prediction and management of risk.

Let's make this personal ...

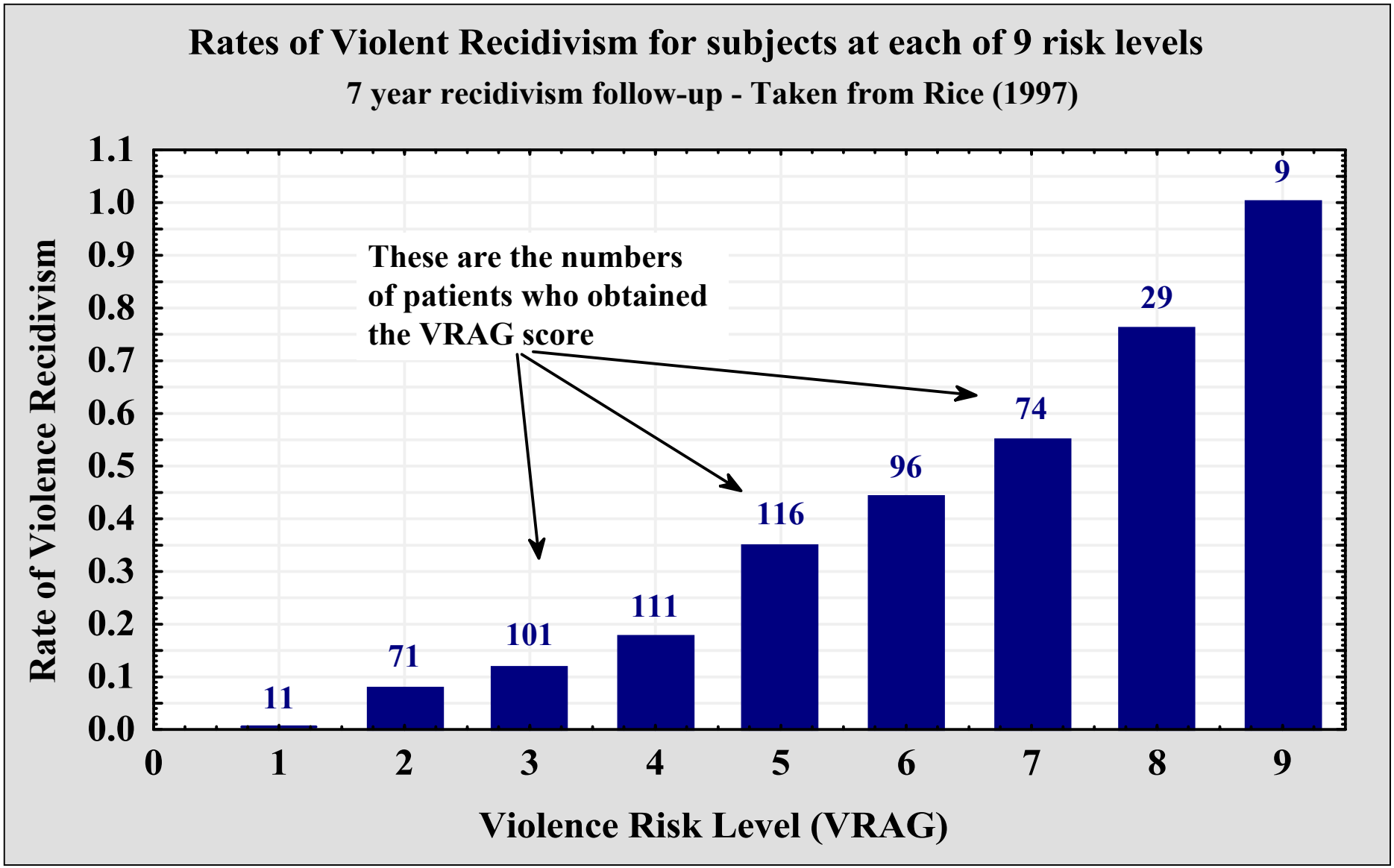
OK - let's put me in the role of a senior clinical manager ...



In **1994**, one of my psychologists shows me this ...

Current actuarial prediction classification accuracy with data from the VRAG (violence risk appraisal guide) to make actuarial assessment of violence probability on a 9-point scale (55% PPP using a binary cutoff for high/low risk), 72% classification accuracy, a *Relative Improvement Over Chance* prediction of 0.88, with a base rate of 31% - categorising high scorers as those scoring above the 80th percentile raw VRAG score, which ranges between -22 and + 28).

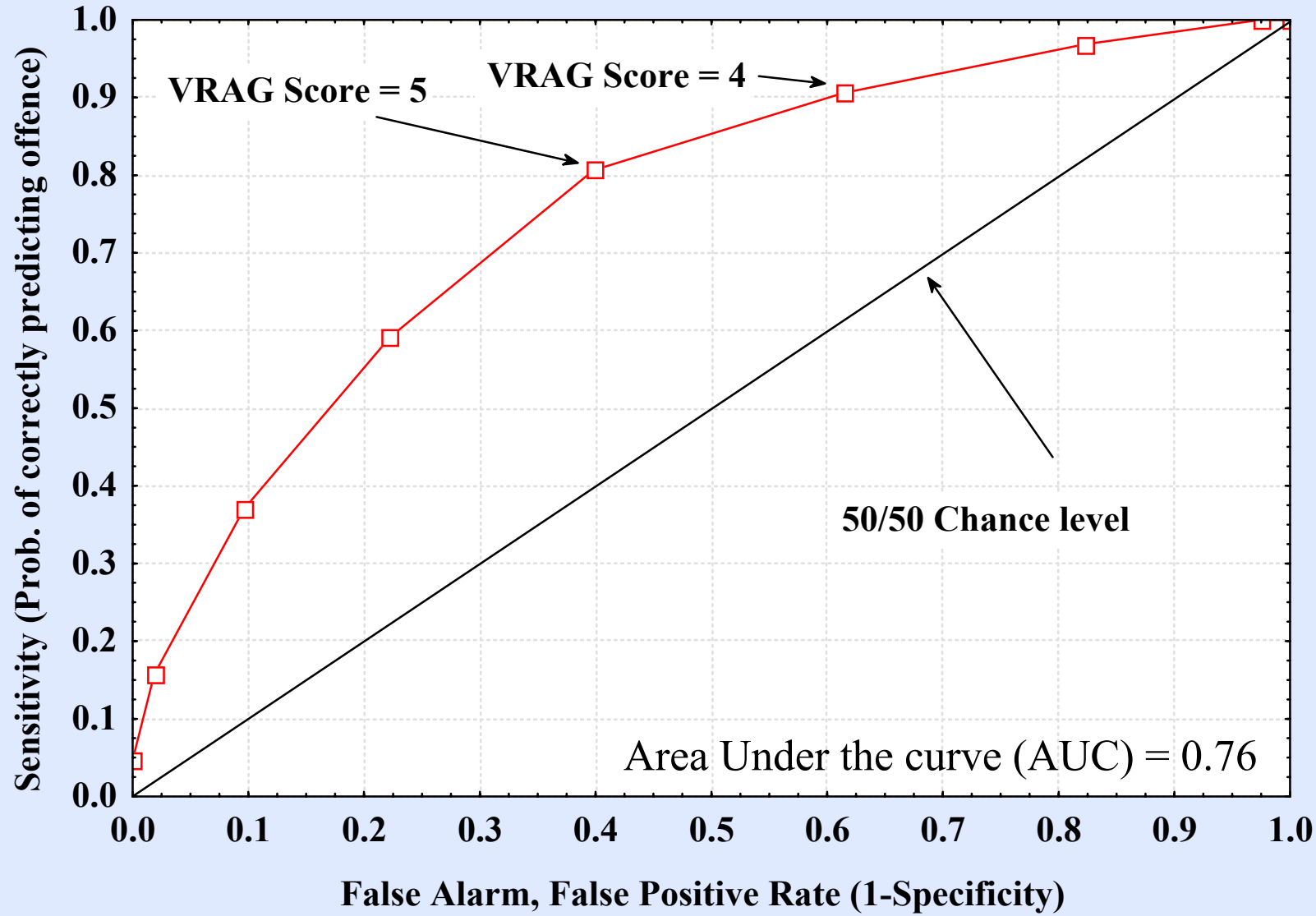
And...


Rates of Violent Recidivism for subjects at each of 9 risk levels
7 year recidivism follow-up - Taken from Rice (1997)
Rate of Violence Recidivism
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
These are the numbers of patients who obtained the VRAG score
11
71
101
111
116
96
74
29
9
0
1
2
3
4
5
6
7
8
9
Violence Risk Level (VRAG)

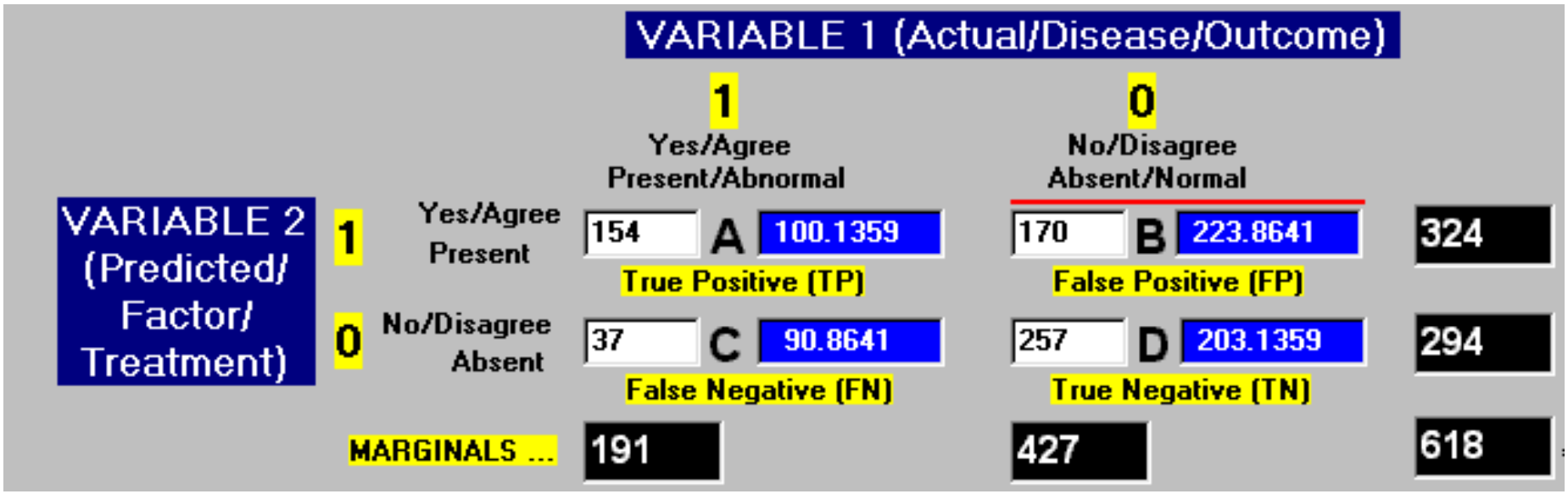
And...

ä The VRAG predicts violent recidivism in Canadian patients (over 7 and 10 years) with **r = 0.45** *(source .. Webster, Harris, Rice, Cormier, Quinsey (1994), p.37, the Violence Prediction Scheme Manual)*

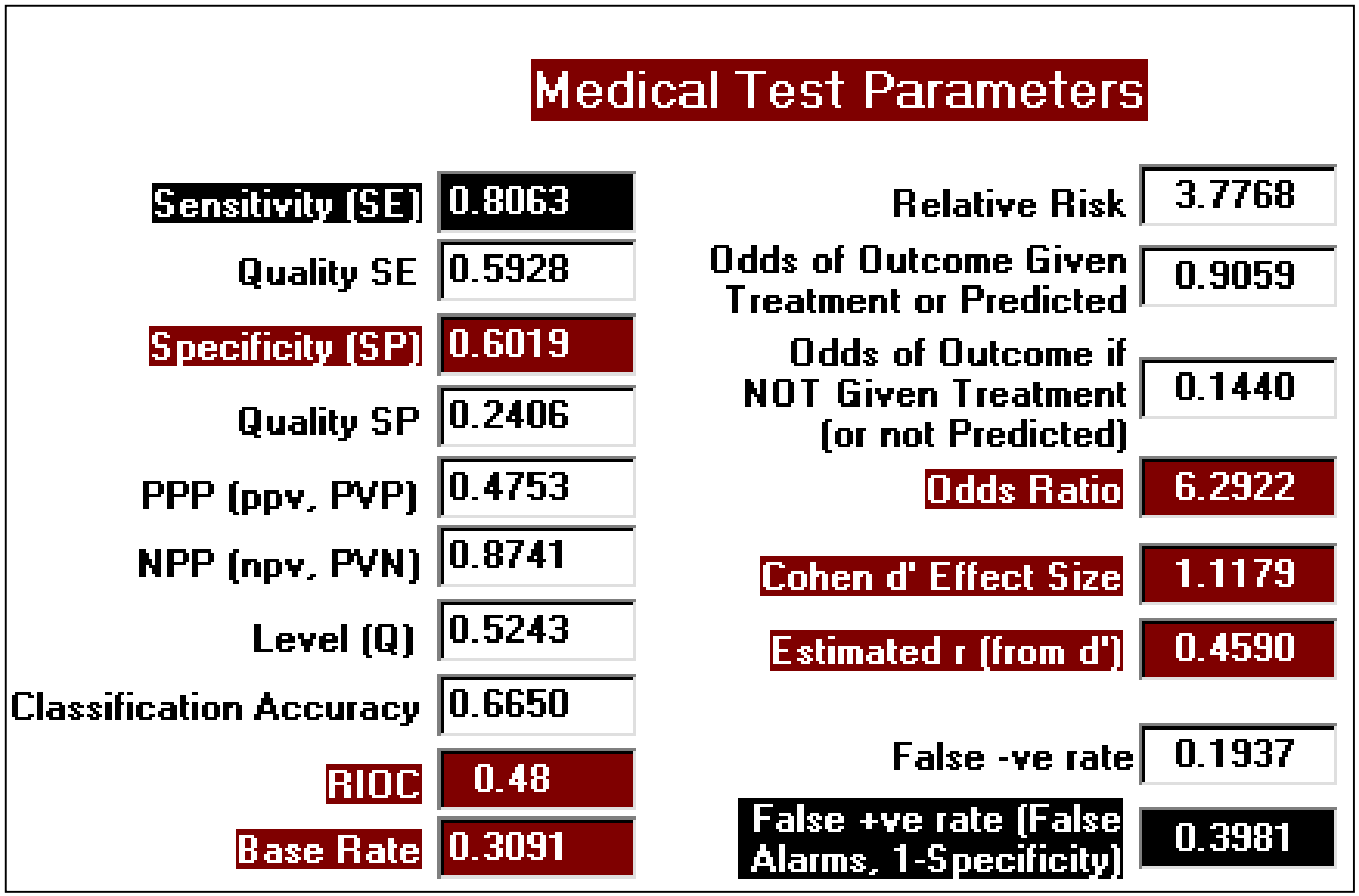
And...


ROC Curve for Quinsey et al (1994) VRAG instrument
Using 7 yr recidivism probabilities
Sensitivity (Prob. of correctly predicting offence)
False Alarm, False Positive Rate (1-Specificity)
VRAG Score = 5
VRAG Score = 4
50/50 Chance level
Area Under the curve (AUC) = 0.76
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

For a VRAG score of 5



The stats for a VRAG score of 5



I have also been concerned when reading:

- Faust, D., & Ziskin, J. (**1988**) The expert witness in psychology and psychiatry. *Science*. Vol 241(4861), Jul 1988, 31-35
- Ziskin, J. & Faust, D. (**1988**) *Coping with Psychiatric & Psychological Testimony, Set, Vol. I-III, 4th Edition*. Law and Psychology Press
- Dawes, R.M., Faust, D., & Meehl, P. (**1993**) Statistical prediction versus clinical prediction: Improving what works. In Keren, Gideon (Ed); Lewis, Charles (Ed); et al. *A handbook for data analysis in the behavioral sciences: Methodological issues*. Hillsdale, NJ, USA: Lawrence Erlbaum Associates, Inc
- Dawes, R. (**1994**) *House of Cards: Psychology and Psychotherapy built on myth*. The Free Press. ISBN: 0-02-907205-0
- J. Monahan & H. J. Steadman(Eds.). (**1994**) *Violence and mental disorder: Developments in risk assessment*. The University of Chicago Press. ISBN: 0-226-53405-7

And this is some of what is going through my mind:

- From the **Tarasoff** "duty of care" legal precedence, I see my role consisting of therapeutic as well as "protector of the public" requirements.
- I am now looking at a tool that potentially gives me **72%** classification accuracy for the prediction of violent recidivism.
- I am not fully conversant with all the stats and graphics.
- I know from the **published evidence** that clinical judgement in this area is **poor to non-existent**.
- What's worse, I have no idea what the judgement accuracy or recidivism rate is for my hospital patients - on a rolling year-by year-basis. We have no routine **recidivism tracking** in the hospital.
- The public and government (Reed report) are developing a position that says that clinicians need to do something about evaluating patient risk.

So, what do I do?

❶ Get hold of my research director/head of research to explain the decision stats with me, their implications, and the feasibility of replicating the VRAG results - fast - **this is now a priority**.
❷ Call a meeting of all senior management, including chief executive, and explain the political, organisational, and clinical significance of these results (with the technical assistance of the research director).
❸ Make the implementation of the **VRAG** to **ALL** patients in the hospital a priority. This means that a strategy has to be evolved regarding the research component, logistics, costs, legal ramifications, and records systems upgrade within the hospital. The **GOAL** is to develop an organisational-wide approach to consistent risk prediction for patients within the hospital (with perhaps the possibility of a new augmented admissions criterion).

First Priority: Replicate the VRAG results. **Nothing** can happen until the recidivism probabilities are computed for a UK sample. Contact/work with Marnie Rice and colleagues in Canada - and ensure proper compliance with **all VRAG study definitions**. Speed is of the essence. If necessary, extra government funding will need to be sought. A maximum of 6 months is the target for replication duration. **This is a priority**.

Committees required: None - but **leadership role** of replication team required - suggest Research Director. This is all about highly technical and competent research - nothing else at this stage.

Staff Required: trained clerical/psychology background staff to browse records - criminal record tracking, and record integrity corrections - probably 3 or 4 required to ensure coordinated team approach, rater reliability estimation, and speed of results acquisition.

Second Priority: Clinical Directors (as defined above) meet on a regular basis to work through clinical, legal, moral, ethical, and operational implications. Those who take a "moral" stance are reminded of their duty under Tarasoff. There is no excuse for failure to come up with a potential solution - **the VRAG potentially gives clinicians an "edge" - the problem is how to make this work for both the hospital and for the patient's/public's benefit**. Egos, professional politics, disciplinary squabbles are left at the door of the meeting room. The GOAL to be achieved is all.

An aside: *Look, it's not going to be easy as there are real interpretation and legal/moral problems with using unchanging actuarial estimates of violence risk. But, when you have diddly squat other evidence of your clinicians' success-rate of predicting violence risk - 72% classification accuracy looks like an edge to me. So, you go for it and determine just how to crack the problem.*

1995

The Risk Assessment Management and Audit System **RAMAS** (O'Rourke and Hammond) appears …

What is its Significance?

❶ This tool permits a multidisciplinary **risk management** protocol to be evolved.

❷ It possesses four cumulative scales of risk, for the domains Dangerousness, Mental Instability, Vulnerability, and Self-Harm.

❸ **The UK's foremost clinical psychometrician (Sean Hammond) has developed the psychometrics**.

❹ The tool has been developed and tested by **Margaret O'Rourke** in a forensic practice.

❺ This enables us to evolve **dynamic risk assessment and risk management** for our patients - with some possibility of perhaps altering actuarial risk indices as a function of RAMAS trends.

Instant New Priority: Implement RAMAS - hospital-wide. Costs, logistics, monitoring procedures, and evaluation strategies to be evolved. Get O'Rourke and Hammond in as consultants immediately. The research director now has to develop a plan for integrating VRAG and RAMAS data into a coordinated conjoint evaluation of outcome success. A protocol for risk assessment (admissions and discharge) is now possible (using either or both actuarial and dynamic RAMAS measures). **Now you need to form a multidisciplinary management team - NOT a COMMITTEE.**

The final straw!

Ziskin, J. & Faust, D. (**1995**) *Coping with Psychiatric & Psychological Testimony, Set, Vol. I-III, 5th Edition*. Law and Psychology Press

Grove, W.M., & Meehl, P. (**1996**) Comparative efficiency of informal (subjective, impressionistic) and formal (mechanical, algorithmic) prediction procedures. *Psychology, Public Policy, and Law*, 2, 2, 293-323

So, during 1994-1996 - following the Barrett approach - what would we have achieved?

- **VRAG Replication** - the results (for better or worse - but at least we would know)
- The possibility of an augmented VRAG or actuarial system
- A Recidivism Tracking System
- Massive political and public respect for our attempts to protect the public whilst being careful to help our patients.
- **RAMAS instantiation** - we would now have met the problems of the STATIC nature of the VRAG head-on, with a brilliant solution from O'Rourke and Hammond.
- The possibility of developing an augmented or adjusted VRAG/actuarial measure
- Potentially an increase in safety for nursing and clinical staff, as well as more consistent assessment and management of patient risk behaviours.

So, during 1994-1996 - what was actually achieved?

- ✪ Neurotic cognitive hand-wringing on the scale of an epidemic.
- ✪ Endless debates about fairness, ethics, and morality of actuarial assessment
- ✪ Squabbles about which profession should be seen to "lead" risk strategy
- ✪ Refusal by psychiatry to acknowledge the evidence concerning their poor accuracy of clinical judgement in this domain
- ✪ Lack of organisationally strategic leadership from chief executives and what was the HSPCB in the UK
- ✪ Exposure of Research Directors/Heads as largely ineffective figureheads **in this area**.

Those professionals who did try to get the process started have failed.

Why?… Because:

❶ The goal was never considered an **ABSOLUTE PRIORITY** for clinicians working with mentally disordered offenders who require **high security classification preventative detention.**

❷ **Internal political sensitivities and organisational alliances** were (and continue to be) valued as more important than seeking maximally high professional standards in this domain.

Lessons to be learned

❶ **Hire the best possible technical** (both quantitative and computational solutions) **and most experienced actuarial and dynamic risk forensic consultants you can find in this area in the UK:**

Sean Hammond
Margaret O'Rourke
Julian Fuller
Caroline Logan

❷ **You THINK - You form STRATEGY - and ….**

you do not accept implementation failure

❸ **You make DECISIONS and ACHIEVE your GOAL/s. You assume RESPONSIBILITY. If you get it wrong, you risk dismissal.**

OK - what's strategically hot ?

- Steve Hart: **HCR-20** and
Cued Information Expert-System Mediated Risk Assessment

- The **VRAG** and a cluster of Sexual Offence Actuarial Recidivism tools (**STATIC 99, MnOST-R, SVRAG**)

- **RAMAS** - (why this and not the BSI or some other set of risk management procedures? Well, because of the psychometrics of the cumulative scaling approach adopted by Sean Hammond, and because of the clinical experience of Margaret O'Rourke. These two are leaders in their respective fields - no matter how much they are ignored by their colleagues. FACE, HONOS, CORE, and the rest of the whizz-bang or ad-hoc solutions proposed are mere copycats of RAMAS - fun, interesting, and worth a second look perhaps.

- **The UK Baxter Fellow in Risk: Caroline Logan**.

The Six Million Dollar Questions:

❶ Is risk assessment, prediction, and management a major priority in our high security hospitals?
❷ Is there anyone in **senior clinical management** in our high security hospitals who is capable of implementing and driving through an organisational-wide combined research and managerial strategy for risk assessment and management?

My Answers:

❶ YES - and this is the UK government answer also.
❷ NOT YET.