

Health Outcomes—A Précis of: Supramedicine

From Health Outcomes to Outcome Medicine (1997) by Dr. Eddie Price. Murray David Publishing Pty Ltd, Beacon Hill, NSW, Australia.

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The article consists of an introduction, which is a review of Dr. Price's book as published in *New Doctor: Journal of the Doctors Reform Society of Australia*, and Dr. Price's detailed synopsis. *Supramedicine* will be available for purchase through the MOT and will also be available at the Fifth Annual State-of-the-Art Health Outcomes Conference in Baltimore, Maryland.

Introduction

This is a challenging book in which you meet concepts like HCS (Health Care Status), CMT (Computerized Medical Treatment), CMA (Computerized Medical Assessment), SF-36 (Medical Outcomes Studies Short Form). Depending on your SOLH (State of Liver Health) you may or may not agree with every single point made. As early as the sixth page, I bristled at the assertion that diagnosis and assessment are interchangeable words.

Putting aside that carping criticism, it may be said loud and clear that the book is well worth the reading. Dr. Eddie Price, with an overflowing mind and heart, has a lot to tell us, perhaps too much for one book. Yet, all that he says is certainly interesting, often convincing, well studied and well referenced, though the absence of an index is regrettable. Price has read widely and is well informed. He is prepared to explore his suggestions and provide logical, detailed, practical examples. There can be no doubt of his commitment to and desire for a medical model, which would provide a better service. He goes on to describe imaginative concepts which are not yet commonplace, yet deserving our consideration, not least the idea of "Supramedicine." He wants to take advantage of modern technology, information systems and systems analysis and details of how to do it.

What Price seems to me to be saying is that rather than study the process of medical care we should look at the patient outcome which optimally should be a return to good health and well-being. But Price is a maximalist and even offers us the concept of Health Care Status (HCS) the confident and comfortable knowledge that all our health needs will be met competently and speedily and equitably. On page 92 he wants more than just good health: he wants us to be able to experience that "extra-ordinary feeling of well being." Big asks, for sure, but why not? He emphasizes the value also of a medical service, not necessarily curative but which can simply allay our concerns and tell us what we do not have when we are particularly concerned. Basically, he is asking in general for the practice of good, patient-friendly medicine and he is pioneering better ways of finding that holy grail. He realizes the importance of a caring relationship with the patient, a role till recently assumed primarily by the nursing profession.

One would wish him the best of British

luck. He defines clearly some of the obstacles, not least the medical profession. I described Price as a maximalist. The medical profession might be called immobilist. We have been moved indeed against our will in recent years but to the tune and agenda of other forces, even less worthy than ourselves. But Price is also a realist. For instance, his preferred model can even accommodate private practice!

Eddie Price earns our congratulations.

I said it was an interesting book!

It deserves to be read widely. It could be the beginning of something big.

—Ben Haneman (sic)

A Précis of Supramedicine

This book utilizes the advances in health outcomes assessments to formulate a new form of medical practice, which is called Supramedicine. It points out that those advocating health outcomes measurement have seriously underestimated its enormous potential impact on the health care system and on the practice of medicine itself. This article discusses the potential uses of health outcomes and highlights six points, which are summarized initially and then each is explained in more detail. A full reading of *Supramedicine* provides a more comprehensive study of the issues.

Health outcomes instruments are diagnostic tests.

Health outcomes assessment instruments are really new forms of diagnostic tests to be used by medical practitioners in day-to-day clinical practice.

Health is broader than functional health status.

The definition of health status as used in functional health status is too narrow. Health status is defined to include four dimensions of health:

- Functional health status (quality of life)
 - ~ = 40 percent per author's value system of health
- Life expectancy (quantity of life)
 - ~ = 10 percent per author's value system of health
- Health care status
 - ~ = 30 percent per author's value system of health
- Positive health
 - ~ = 20 percent per author's value system of health

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All of these can be measured using standardized measurement instruments (patient perception questionnaires modeled on the SF-36). Each of these instruments is a new generic diagnostic test known as a computerized medical assessment.

Systems model of health to replace biomedical model.

If we take a full "systems" theory view of human health (modern science now looks at nature as a hierarchy of interdependent systems), we see that "current medicine" practices medicine almost exclusively below the human body (subsystem medicine). The SF-36 looks at the human body as a functioning whole unit (it includes physical and mental scales—but not social). It looks at the functioning human body as complete whole system. A full systems view or systems model shows that there are systems above the individual and her/his functioning including dietary and exercise habits, environments, family and community. These systems can now be accurately assessed (measured) in each individual and altered. This is supraorganic system diagnosis and treatment and this is known as "Supramedicine."

Prevention and promotion now possible by primary care physicians.

As 70 percent of modern Western diseases (heart disease, stroke, cancers and accidents) are preventable, the future practice by mainstream doctors and hospitals of preventive and health promotive services e.g. educative interventions, lifestyle, dietary and environmental change, following their accurate assessment, will have an exponential effect in reducing these diseases and improving the health of nations.

Health outcomes are the catalyst.

The advances in health outcomes, psychometrics, computer technology and information technology only now offer these potential new services. It is only now that doctors can measure accurately not only the SF-36, or functional health status of the individual, and present it in graphic form, but also individuals' behavioral health indices, skills and attitudes health indices, environmental health indices and health care status.

Re-engineering health services—via health outcomes and information technology.

Overall, the practice of Supramedicine through the use of health outcomes measurement and information technology will allow for a re-engineering of health care. Michael Hammer, author of *Re-engineering the Corporation* stated, "Don't automate, obliterate." Supramedicine will allow the health care system to radically reduce hospital treatments (obliterate them) and replace them with new diagnostic and treatment processes that are health promotive and preventive. Health outcomes are the catalyst not only for increased accountability and new diagnostic tests but also to move to a new health care system based on prevention, caring and non-invasive treatments, with accountability for health gain and the promise of continual improvement into the future.

Health outcomes instrument as diagnostic tests.

The SF-36 as a Diagnostic Test

The SF-36 is a valid and reliable measurement instrument. I, as a physician, look after the health of corporations' employees. In 1994, I decided to have all 100 employees of one company complete the SF-36 prior to consultation. Two employees scored low in physical functioning. One had arthritis and this was a known diagnosis. The other, a female employee, was not aware that she had a physical ailment. At consultation I asked further questions, and it became apparent that she was suffering from irritable bowel syndrome, which was significantly interfering with her physical functioning and physical roles. I realized that what I had done was use the SF-36 as a diagnostic test. It had led me to further diagnostic questions or tests. I saw the SF-36 instrument as very similar to a thermometer, which tells me the patient has a fever, which is a very general abnormality. To make a diagnosis of pneumonia, and which germ, I would require further diagnostic tests, for instance a chest x-ray and sputum culture.

A diagnostic test is an instrument that assists in reaching a diagnosis. It does not necessarily immediately give the physician the exact diagnosis. Precision in diagnosis is usually achieved by doing a number of different diagnostic tests, and the information gathered from each test is cumulative, leading the physician to a definitive diagnosis.

Therefore, just as we have many x-rays, blood tests, ultrasound tests and scans, we will eventually have hundreds of more specific questionnaires or health status assessment instruments that will be routinely administered to patients by their physicians.

At the individual level, total precision is not necessarily expected from one questionnaire. However, from a suite of questionnaires, with each new one selected, based on the earlier responses, a greater level of precision or a definitive diagnosis can be achieved.

John Ware, Jr., as reported in *The Monitor* of July 1999, Volume 4, Issue 1, achieves this precision via the Dynamic Health Assessment. This is, in effect, an interactive method of achieving this precision and leads more rapidly to an accurate diagnosis for individual patients. However, it does require on-line computing. Until this is routinely available in physicians' offices, we can use a sequential series of standard diagnostic questionnaires with the second selected, depending on the response on the first.

The presentation of the individual patient's results compared to the norm can be seen as very similar to the presentation of an individual's blood results compared to the normal range. Once these instruments are seen to be diagnostic tests, they should be more readily accepted and utilized by the medical profession.

Such acceptance will be assisted by findings such as those of the Dialysis Clinic Incorporated (DCI), when monitoring end-stage renal disease (ESRD) with the SF-36, as reported in the interview with Dr. Meyer in the *Monitor's*, Summer 1999 edition. It was noted that "changes in health status reported by ESRD patients are frequently so large that they exceed the confidence intervals around previous responses." This led to the observa-

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tion that, at least regarding this group of patients, the SF-36 “can be informative...at the individual level.” Dr. Meyer pointed out that although some of the changes in health status correlated with clinical events of which the dialysis team was aware, there were times when “aspects of patient experience that had been overlooked or underestimated” were brought to clinical attention.

Dr. Meyer also commented on the value at the individual level, if serial measurements are taken. This provides an extension of the formal patient history, generally improving the conversation between clinician and patient regarding the “patient’s functioning and well-being.”

There is little doubt in my mind that a person’s functional health status graph (SF-36) will become a more important medical test than their cholesterol measurement.

Health is broader than functional health status.

The SF-36 is a very good measure of health related quality of life but it only accounts for approximately 40 percent of an individual’s health status. Health and health status are much broader. In Supramedicine I define health as:

A complete (positive) sense of physical, psychological and social well-being, an ability to function in the community without pain and anxiety with confidence that care and comfort will be available in times of illness for a natural life span.” Health is seen to have four dimensions:

- i. Quantity of Life
- ii. Quality of Life—Functional Health Status
- iii. Personal Health Care Status—a person’s confidence that in times of illness, care and comfort will be available.
- iv. Positive health—self-fulfillment—fulfilling one’s physical potential and potential to enjoy life, participating in activities to avoid illness and disease.

In most definitions of health the last two dimensions are omitted. Both can be assessed via patient perception questionnaires and can be presented in graphic format modeled on the SF-36.

Positive health would consist of three major subparameters:

- the person’s behavioral habits—e.g. diet, exercise, smoking, drinking,
- skills and attitudes—e.g. health literacy, health culture, first aid skills
- environment—e.g. housing, neighborhood environment, transport.

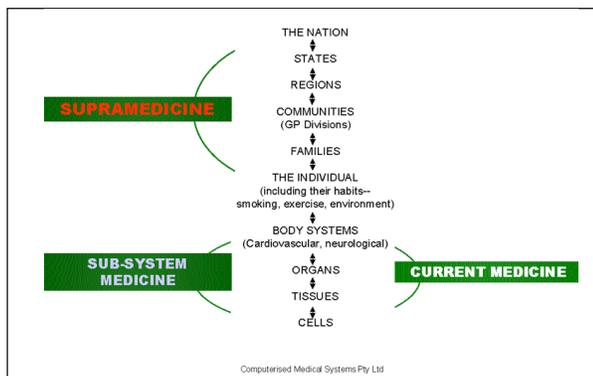
Health care status consists of measures of:

- social support
- patient satisfaction,

provided these can be made attributes of the consumer.

This appears to be readily achievable, simply by converting these to measures of a person’s confidence that in times of illness he or she will have support and be satisfied by care received.

These measures or instruments, like the SF-36, can then also be shown to be diagnostic tests, and I will return to this later.



Systems model of health to replace biomedical model

Modern science looks at nature as a hierarchy of inter-dependent systems and human health is the result of the interactions of all these systems and can be represented as follows:

When each system level is in equilibrium there is health. Illness is the result of the inability of one system level to remain in balance.

The individual human body is one such system, but there are systems both above and below to which it relates. The systems that are above I call “suprasystems.” These would include items such as environment and lifestyle.

Current practice by doctors and hospitals (the mainstays of the health care system) is concerned almost exclusively with subsystem medicine, as evidenced by medical disciplines such as cardiology and neurology.

Supramedicine is a health care system, which recognizes the effects of both subsystems and suprasystems on the individual. The suprasystems can now, for the first time (thanks to computers, SF-36 and psychometrics), be assessed, or diagnosed, on each patient as accurately as blood tests and other clinical tests. This then allows the physician to prescribe appropriate treatments for functional improvement and prevention.

Not only will these new diagnostic tests (essentially health outcomes instruments) be more effective because they will be preventive, they will be cheaper and they will allow for more accountability. Functional health status measures themselves, improve accountability for health gain achieved at the individual level by subsystem medicine.

Prevention and promotion now possible by primary care physicians.

Since most of modern western diseases such as heart disease, stroke, accidents, cancers are preventable, it becomes important for primary care physicians to diagnose reductions in a patient’s positive health functioning. They then should render treatments, which will not be drugs or surgery, but rather prescriptions for educational interventions to improve health knowledge, attitudes and skills, for dietary and physical exercise activity or for change in environment and habits. It is now possible to diagnose or assess an individual’s positive health using

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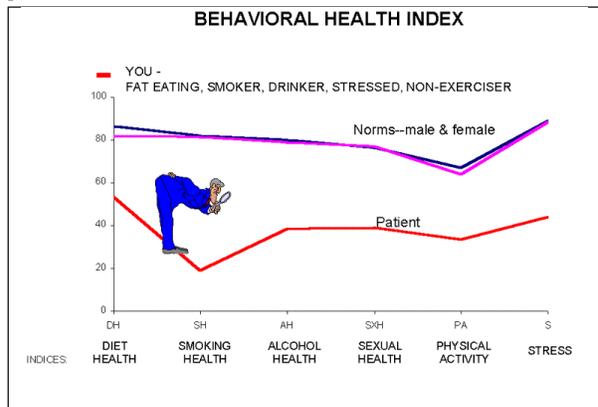
health outcomes measures and computers. Functional health status health outcome instruments (for example, generic: SF-36, Sickness Impact Profile; and specific: Diabetes, Asthma Adult Questionnaire, BASIS-32) will improve accountability for current medicine. However, additional real leverage will come from the use of preventive and health care status health outcome tools, which will enable doctors to practice preventive (social and environmental change) medicine for each individual patient for the first time.

Health outcomes technology—the catalyst.

The health outcomes technology provides the basis for developing and utilizing new diagnostic and treatment tools. Let us look at examples of the Positive Health Indices:

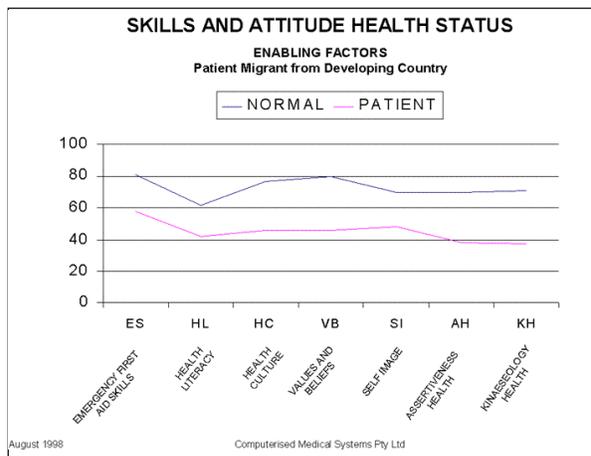
Behavioral Health Index (BHI)

Just as the SF-36 has eight parameters scored out of 100 each, the BHI has six parameters: Physical activity habits, dietary habits, smoking, alcohol consumption, stress and sexual health habits. An example of the resultant graph is presented.

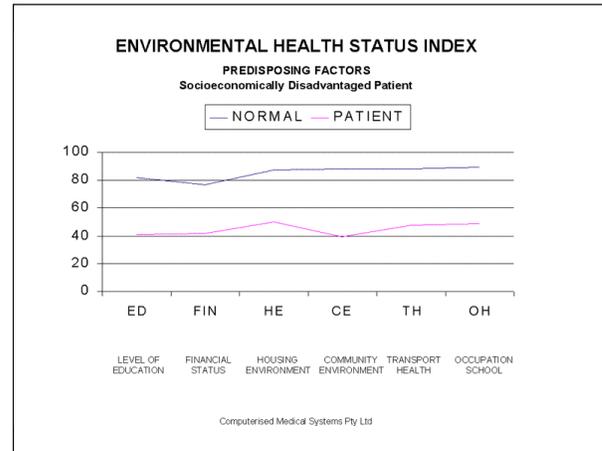


Skills And Attitudes Health Index (Enabling Factors)

This has seven parameters. An example of the resultant graph is presented.



Environmental Health Status Index (Predisposing Factors)



This has six parameters—proposed questionnaires are available in Appendix 3 of Supramedicine:

Health Care Status (Reinforcing Factors)

This has nine parameters. The questionnaire is explained in Supramedicine but is based on patient satisfaction and social support questionnaires.

All of these health status assessments are also diagnostic tests. They generally will be abnormal prior to the individual developing subsystem disease. The primary care physician continues to prescribe and monitor treatments until the patient's results return to normal. These treatments will be for instance, a three-month programmed schedule of educational programs, video cassettes or booklets with hours of weekly learning prescribed, daily physical exercise activity, dietary, relaxation and environmental change. When this occurs, subsystem heart disease, cancers and strokes will be reduced.

All these new preventive diagnostic tests (health outcomes assessment instruments) can now be available on computer scannable forms that the patient can complete in the physician's waiting room, when waiting for the physician.

Similarly, a three-month long daily diary of adherence to the active prescriptions mentioned above is also available on computer scannable form, so the patient can record actual daily adherence to the prescribed timed activities and the physician can monitor adherence to the prescriptions over a three-month period.

Population Health

The parameters from the behavioral health index and other indices (e.g. smoking, alcohol consumption, etc.) are entered automatically into a database according to primary care physician or region. The database technology immediately provides information, such as percentage of smokers in physician X's cohort, enabling this physician to practice population health and to reduce, for example, the number of smokers from 30 percent to 20 percent over a three-year period. This form of population health practice is an example of supra-individual system medicine, now made possible by the advances in information technology.

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High-risk groups

Identifying patients at high risk for poor QOL after transplantation and developing appropriate, sensitive interventions to improve this profile and outcome. Those at high risk include transplant patients who are, or become, pregnant or father a child; children of parents who have received transplants; and individuals with limited access to care.

Effects of QOL interventions and cost on long-term outcomes

Assessing QOL outcomes beyond three to five years for the different transplant groups, identifying variables that enhance long-term survival and determining the effects of financial costs on patients and society.

Relationship between care delivery and QOL

Defining and comparing the effects of types of care received in clinical centers and at home including computer-based home programs on patients' QOL.

Educational interventions

Developing and testing interventions for patients and/or health care professionals to impart information about QOL issues, to modify behaviors to improve QOL and to enhance the partnership between patients, their family and significant others and health care providers.

Telemedicine

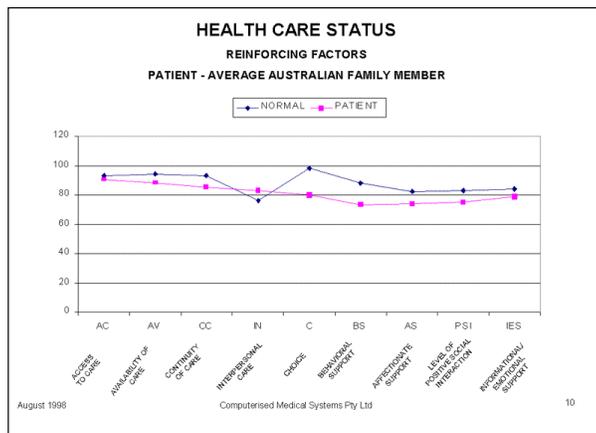
Topics include exploring innovative communication and information technologies for educating patients and their families and health care professionals about QOL issues, adopting strategies used in other fields, and implementing

telemedicine for both education and health care delivery.

Regarding research training, resource opportunities, and collaborative strategies, the workgroup encouraged several considerations. These included

- Recruiting multidisciplinary researchers, including nurse researchers, who can bridge the biological and behavioral sciences and participate effectively on research teams.
- Supporting a variety of creative ways, including short-term courses, for research training in transplantation and QOL issues to bridge the gap between basic science and clinical practice.
- Encouraging multicenter studies to obtain comparative data on QOL issues within and across transplant groups.
- Fostering partnerships and outreach with patient support groups, nonprofit organizations, and industry.

Panel members included Hilary D Sigmon, PhD, RN (Chair); Patricia A Grady, PhD, RN, FAAN (Chair); Vincent Armenti, MD, PhD; John Bucuvalas, MD; Stanley M Finkelstein, PhD; Kathleen L Grady, PhD, RN, FAAN; Donna Hathaway, PhD, RN; Dorothy M Lanuza PhD, RN; Sharon L Lewis, RN, MS, PhD; Linda M Moore, RD; Patricia L Painter, BA, MS, PhD; Stephen Joseph Rossi, PharmD; Keith Sullivan, MD; Connie White-Williams, RN, MSN. A member of the public was present, Sandra A Cupples, RN, DNSc, CCRN, National Advisory Council for Nursing Research (NACNR) representative. Federal employees present were James Everhart, MD, MPH (NIDDK); Robin Gruber (NINR); Thomas J Kresina, PhD (NIDDK); Judith G Massicot-Fisher, PhD (NHLBI); Mary Wendehack (NINR) ■



In this way health outcomes measurements plus computer database technology will have integrated clinical medicine and population health.

Re-engineering the health care system—via health outcomes and information technology.

Re-engineering theory suggests that companies should, in the light of technological advances, in particular computer technology (known as the essential enabler), look at

their current processes to determine if they are still the best methods to achieve their objectives. "Best methods" implies the most efficient and effective processes. If they are not, they should be replaced by better processes.

The same applies to health care, where the methods are diagnostic and treatment processes. The objective is maximum health gain. These new supra-individual processes, based on health outcomes measurements and prevention, can now be shown to be more effective and efficient than the subsystem processes (hospitalization, pharmaceuticals, invasive tests) in achieving health gain. These will be known as Computerized Medical Assessments (CMAs) and Computerized Medical Treatments (CMTs).

Their implementation by the many thousands of primary care physicians will cause these physicians to perform less of their current outmoded curative treatment processes and substitute them with the above mentioned Supramedicine diagnostic and treatment processes. Only if the physicians themselves are the ones rendering these new treatments will the substitution take place. When this occurs, health outcomes measurement instruments will be the catalyst that leads to the re-engineering of the health care system. ■