UNIVERSAL

IMMUNIZATION

Medical Miracle
or
Masterful Mirage

By Dr. Raymond Obomsawin

BIOGRAPHICAL SKETCH OF:

RAYMOND OBOMSAWIN

Raymond Obomsawin was born in the United States on August 16, 1950 and holds dual US and Canadian citizenship. He married Marie-Louise in August of 1976, and they have three, vibrant children: Sunrise, Sunbeam and Sundown. These children--two are still in their teens, and one is twenty-one--have never received the prescribed regimen of childhood vaccines, and due to a healthful lifestyle have exhibited total immunity to the diseases that are common to the childhood years. (Time and again they've been physically exposed to those ill from some of these very diseases.)

Dr. Obomsawin holds over two decades of cross-cultural experience--both in North America and internationally--in the primary disciplines which impact on human bio-social development. He holds a Baccalaureate Degree in Health Education and Communications, Masters Degree in Development Education, and PhD with concentrations in Health Science and Human Ecology.

He is currently serving as President of the *Circle of Nations Institute of Life Sciences &Sustainable Development* an international R&D institution legally established in Hawaii, and has previously served as: Manager of Overseas Operations for *CUSO* (Canada's largest International Development NGO); Evaluation Analyst in the *Canadian International Development Agency;* Evaluation Manager with the *Department of Indian Affairs & Northern Development;* Executive Director in the *California Rural Indian Health Board* system; Director of the Office for National Health Development NIB *(Now Assembly of First Nations);* Founding Chairman of *the National Commission Inquiry on Indian Health;* and Supervisor of Native Curriculum for the *Government of the Yukon Territory.*

Some key highlights of Dr. Obomsawin's professional experiences and achievementsfollow:

- Chaired and served on regional, national, and international committees holding development related policy, management, and research mandates.

- Advised senior decision-makers--in both public and NGO sectors--providing critical analyses and recommendations on international development policies, project, and programming initiatives in health, education, agriculture, nutrition, agro-forestry, environmental sustainability, and multi-year country planning.

- Spearheaded the first world-wide inter-sectoral review funded by a Western government on Indigenous Culture Based Knowledge Systems in Development. The study elicited the involvement of public and NGO sector bio-social development, technical and research institutions in all world regions; and entailed exploratory field missions to the Andean and Upper Amazon regions of South America, as well as East Africa, South and Southeast Asia.

- Organized, administered, and executed socio-politically sensitive evaluation studies on complex bio-social service interventions, as well as educational and development initiatives internationally, eg, as a team member evaluated: UNICEF's Integrated Services Project which served over 900 villages in Northeast Thailand; and other development projects at the Asian Pacific Development Centre, Malaysia; Asian Institute of Management, and The Woman for Woman Foundation, Philippines; and Institute of Social and Administrative Studies, University of the South Pacific, Fiji.

- Coordinated (in Canada and Norway) the initial development of Terms of Reference for a comprehensive evaluation of the United Nations World Food Program--operant in 90 countries under the trilateral sponsorship of Canada, Norway, and the Netherlands.

- Spearheaded the establishment and chaired Canada's National Commission Inquiry on Indian Health which served as a national--grass-roots mandated--indigenous health policy development body.

- Presented--in plenary session--the paper *"From Selective to Indigenous Medicine: Repossessing the Ancient Wisdom,'* at the International Development Research Centre and National Institutes of Health sponsored International Workshop on Traditional Health Systems and Public Policy.

- Presented the keynote address *"Re-Discovering Our Roots: The Ancient Wisdom of Sustainable Societies"* at the Community Sustainability Resource Institute's 3rd Annual Conference, USA.

- Experienced multi-cultural exposure including private, voluntary, and or public sector interchange in over 25 countries on five continents, as well as Australasia and select Pacific island nations, and
- Produced academically and professionally over 75 articles, reports, proposals and publication documents.

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PREFAC

TO THE THIRD EDITION

(MAY 1998)

Dr. Raymond Obomsawin, PhD

This extensive report focuses on the current massive international effort to administer artificial immunization to the children of the world. The actual launching of the World Health Organizations' Universal or "Expanded Program on Immunization"(EPI) occurred in the year 1983. Its overriding purpose was to achieve maximum immunization coverage of the world's children. Under the influence of the WHO--which is a United Nations created and sustained multilateral agency--all national political leaders(then representing 158 nation states) made a commitment to achieve 80% immunization coverage in their respective countries by the year 1990. In that year the WHO seta new standard for the governments of the world, ie, a more intensified goal of achieving90% immunization coverage by the year 2000. As a review document, this report poses an open challenge to the scientific, developmental, and humanitarian basis of this global public policy, in turn urging national governments to establish a far more rational, effective and harmless inter-sectoral approach in seeking to ensure that the children and families of our world community enjoy lifelong natural immunity to infectious diseases.

The research covered in this document tackles the issue of universal immunization from a very broad perspective, thereby going well beyond the more obvious realities of its being a "medical racket" hatched by a pharmaceutical industry beholden to its investors, and religiously dispensed and defended by allopathic medicine men. Through employing trans-disciplinary and integrative analyses it draws upon wide-ranging disciplines and fields of thought as it considers the purposes, policies and practices surrounding mass immunization. The effort to research and pull together this report occurred while I was serving as an Evaluation Analyst in the Evaluation Division at the Canadian International Development Agency. My initial research began early in 1991, contextual to conducting a field evaluation of the EPI component of a major UNICEF project then affecting several hundred communities in Northeast Thailand. The report is being distributed and or sold in its present form under the auspices of a non-profit

public health advocacy organization, the Health Action Network Society, Burnaby, British Columbia, Canada. (As author, I will receive no royalties from either its sale or distribution.)

Since the first edition came out in the early 1990s, the many serious issues and concerns which are raised in this study have not by any means been properly addressed or resolved. The medico-industrial complex has neither wavered nor modified its posture of providing a white washed endorsement and promotion of what is largely an unproven technological fix of dubious origin, which carries its own seeds of disease and death. For the most part, the same can be said for the public sector policies whereby government such as that of the United States place themselves in an untenable conflict of interest position by playing a direct role in the development of new vaccines, the active promotion and enforcement of mandatory artificial immunization, and the monitoring of vaccines for adverse side effects thereby setting its own criteria and degree of liability in the compensation of victims. (Only one in four vaccine injury victims, who apply for compensation under US law, are compensated for their often catastrophic vaccine injuries. Government qualifying rules require that the onset of adverse symptoms must have occurred within four hours of the administration of the vaccine. Despite these severe limitations in legal liability, since passage of the National Childhood Vaccine Injury Act of 1986, up to February 28, 1998, compensatory payments have totalled$871 million 800 thousand.)

Sad to say, the public sector's world-wide reliable monitoring for adverse side effects(not excluding that of the US Government) does not appear to have noticeably improved from its abysmal state since the initial issuance of this report. As well, multilateral development agencies such as UNICEF continue to push this unproven and essentially spurious technology on a largely uninformed and intimidated public throughout the Developing World nations. On a positive note, within First World nations public awareness of the problems and dangers associated with mass immunization programs appear to have broadened and intensified. Vehicles of the information revolution, such as the Internet have helped considerably. Even physicians themselves are at long last waking up to and advocating the truth, e.g., in France, 200 doctors have called on their government to immediately halt the hepatitis B vaccine program because of the many cases of neurological disorders and multiple sclerosis being caused by this vaccine, and in Switzerland, 500 doctors continue to oppose their government's MMR vaccine campaign.

Lawsuits for vaccine damages have as well become increasingly common. In the summer of 1997, various news reports in the Commonwealth

countries reported that Dawbams law firm in Norfolk, England is carrying forward a major class action lawsuit for widespread damages arising from Britain's 1994 MMR campaign. In a public statement issued by this law firm it is affirmed that:

> *We know of hundreds of children who were fit and well before being vaccinated, but who are now chronically ill or seriously mentally or physically disabled. Of some 600 cases: the most common are autism (202); serious digestive problems (110); epilepsy (97); hearing and vision problems (40); arthritis (42); behaviour and learning problems (41); ME (24); diabetes (9); paralysis (9); blood disorders (5); brain damage (3); and death (14).*

Bolstering the firm's case is the fact that the affected children's pediatricians and neurologists continue to state in British radio and TV documentaries that the children's varied injuries were in fact caused by administration of the MMR vaccine.

Additionally, growing numbers of affected parents and professionals have been instrumental in the emergence of multiple research and activist organizations such as the *Immunization Awareness Society (IAS), New Zealand; Vaccine Awareness Network (VAN),* Australia; *Association for Vaccine Damaged Children (AVDC),* Canada; *Global Vaccine Awareness League (GVAL),* California; *and the National Vaccine Information Center (AWIC)* in the Greater Washington DC area. This phenomena tells us that there are still some heroic and honest hearted people left in our world who are willing to stand together for the right, and make personal sacrifices of their time, resources, and reputations in the face of the combined efforts of government and industry to both slander and silence them. In fact, in recent weeks a prominent member of the IAS has been in touch with me, and shared information which included the fact that a 1992 survey by their organization found an almost 500% greater incidence of asthma among New Zealand children who've received routine childhood vaccines, than among those who haven't.

It is also of interest that on September 13-15, 1997, more than 500 parents, physicians, university scientists, health officials, legal experts, ethicists, journalists and activists from 34 states and five countries convened for the First International Public Conference on Vaccination. This historic session was organized under the auspices of the National Vaccine Information Center (NVIC). According to information provided by the NVIC, the Conference inter alia examined issues such as vaccines and infant death; biological mechanisms of vaccine injury; vaccines and learning disorders; hepatitis B vaccine injuries; viral vaccines and chromosome damage; polio

vaccine contamination; and vaccine regulation. A number of the more important observations made by the presenters at the conference further corroborate and complement the alarming findings that are raised in my report. Some key observations follow:

- The "P" in the old DPT vaccine is so highly toxic to the human brain that the whole cell pertussis vaccine should be immediately withdrawn from the market.

- Vaccines which cause brain inflammation and severe brain damage, such as DPT, are also biologically capable of causing milder forms of brain damage, such as learning disabilities and Attention Deficit Disorder.
- Live viral vaccines are implicated in brain injuries, such as the MMR vaccine which is now linked to autism, while the same vaccine has never been fully investigated for its long term effects on human immune and neurological systems.

- Live viral vaccines may also be implicated as a cause of genetic damage in humans.

- There are many reports of adults in Canada, who have suffered central nervous system and immune dysfunction or death following hepatitis B vaccination.

- Polio vaccines contaminated with monkey viruses may have caused the development of HIV- I and rare forms of bone, brain and lung cancers in humans.

- Children injured by vaccines and other toxic insults, have disturbances in biochemistry such as imbalances in fatty acid metabolism and neurologic dysfunction such as autistic spectrum disorders and seizure disorders.

- Data from New Zealand and several European countries suggests that early childhood vaccination has caused an increase in juvenile diabetes.

- A combination of multiple vaccinations and multiple exposures to environmental and chemical toxins may cause immune and neurological dysfunction in the general population like that being suffered by Gulf War veterans.

- Government health officials in federal health agencies have withheld information about vaccine risks from the public.

The general consensus among research scientists in attendance was that current immunization programs are causing injuries and deaths because of inadequate vaccine safety research, testing, manufacturing and monitoring for long term effects. What's new? (Conference proceedings are available to the public from the National Vaccine Information Center: #206-512 W. Maple Avenue, Vienna, VA, USA, 22180, Telephone:1-800-909-SHOT.)

It also bears mentioning that I recently came across a June, 1995 interview with an old acquaintance, the veteran physician to the Aboriginal People of Australia, Dr. Archie Kalokerinos. The interview was published in the *International Vaccination Newsletter* (Krekenstraat 4, 3600 Genk, Belgium). Archie is in many ways a man deserving of great recognition for his brave struggle with the establishment forces in his country, who attempted to block his efforts to expose and reverse the massive death rates (as high as 50%) being caused by mass immunization in a population at great risk to its dangers. In this interview he states that it was this "extreme hostility" that:

> *. . . forced me to look into the question of vaccination further, and the further I looked the more shocked I became. I found that the whole vaccine business was indeed a gigantic hoax. Most doctors are convinced that they are useful, but if you look at the proper statistics and study the instances of these diseases you will realize that this is not so . . .*
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> *My final conclusion after forty years or more in this business [medicine] is that the unofficial policy of the World Health Organization and the unofficial policy of the 'Save the Children's Fund' and ... [other vaccine promoting] organizations is one of murder and genocide. . . . I cannot see any other possible explanation. . . . You cannot immunize sick children, malnourished children, and expect to get away with it. You'll kill far more children than would have died from natural infection.*

Although the public sector in Canada hired a biomedical protagonist of artificial immunization to attack and undermine the original findings and observations contained in this document, nothing was effectively challenged or disproven in this determined effort, nor has there been any challenge from any other quarter since. Furthermore, I've received some very good news from a reliable source in Montreal, Canada, that a number of practicing physicians in that city have ceased using vaccines in their practice after having read this report. I fully trust that it will prove of lasting value in informing and influencing other professionals, parents and interested lay persons who may be honestly seeking to explore both sides of the

controversy for the first time.

Finally, it is my sincere hope that the re-issuance of this document will provide a considerable source of valuable documentation and commentary for those who are at the forefront in the battle for biomedical truth and right in a world largely beholden to the bottom line of capitalists who value their profits above seemingly everything else. In the end, the truth with prevail.

"Discovery Consists In Seeing
What Every body Else Has Seen
And Thinking What Nobody
Else Has Thought . . . "

Albert Szent-Gyorgi

ABSTRACT

Introduction

Despite the widely accepted view that millions of children now enjoy freedom from various life threatening infectious diseases, and thus improved health, because of highly effective and safe vaccine programs, at the outset of the 90's an *Evaluation of Canada's International Immunization Program Phase I (CIIP--I),* concluded that in fact there are "many pressing questions which remain to be investigated within EPI (Expanded Programs of Immunization) and Primary Health Care." A range of critical issues relative to Universal Childhood Immunization (UCI) and EPI programs have been examined and responded to in the main report. These follow:

The Unresolved Issue of UCI/EPI Effectiveness and Impact

The verifiable measurement of UCI/EPI effectiveness and impacts, has been pervasively deficient in the major immunization programming investments made by The Canadian International Development Agency (CIDA)--approaching $150 million--in the 1986-1991time period. The afore noted CIIP--I evaluation study further noted that the actual impact of UCI/EPI on mortality levels remain essentially undetermined and unsubstantiated. To quote: "at present it appears that there is no conclusive evidence on the impact of immunization on child mortality from all causes. . . . It may be that EPI's effect is merely to bring about replacement mortality, whereby children . . . succumb to other diseases instead. The uncertainty over the impacts of EPI remain a major question in PHC [primary health care] programming." In light of the compelling need for the proper and periodic evaluation of the impacts of publicly financed programs, this deficiency remains a very serious one.

Unexpected and unexplainable outbreaks among "immunized" persons, have led immunologists to now seriously question whether their current understanding of what constitutes reliable immunity is in fact trustworthy. For example, the admission is being made that immunity (or its absence) cannot be determined reliable on the basis of history of the disease, history of immunization, or even history of prior serologic determination. There is as well an emerging body of mathematically based epidemiological research which suggests significant problems with UCI/EPI targeted efforts for the

control and eradication of measles in the Developing World, wherein spite of high measles immunization coverages, measles epidemics are being reported with surprising frequency.

Vaccine failures in the Oman polio epidemic could not be explained by failures in the cold chain, nor on suboptimum vaccine potency. It was further observed that the efficacy of OPV in inducing humoral immunity has been lower than expected, and that primary reliance on routine immunization may be inadequate to achieve the goal of eradicating polio by the year 2000. (Similar polio outbreaks have been occurring in other highly vaccinated populations, e.g., the Gambia, Brazil, and Taiwan.)

The Unresolved Question of Potential Adverse Effects

Another basic issue that has never been addressed in UCI/EPI programming is the need for the effective monitoring and evaluation of potential vaccinal adverse effects. Past estimates on the degree of adverse reactions are both unreliable and optimistic since actual monitoring efforts have generally been negligible. Furthermore, many physicians and nurses are not cognizant of the importance of reporting untoward reactions, and or remain unaware of their clinical features. Overall, the evidence strongly suggests that the chronic underreporting of vaccine-induced morbidity, disability, and mortality is in fact the norm, whether in the Developing or Developed Worlds. The first definitive policy statement on this issue by the World Health Organization(issued on April 1991) indicates the WHO's recognition of the significance of this problem. It should be considered as a priority issue in future UCI/EPI research, monitoring and evaluation.

The Unresolved Issue of Long-Term Adverse Effects

A minority of qualified scientists are now postulating that the full vaccine schedule as routinely employed in early childhood vaccination inevitably weakens the immunologic system of the child, leaving this system crippled in its ability to protect the child throughout life, and in turn opening the way for other infectious diseases due to such immunologic dysfunction. It is also being postulated by such scientists that mass immunization is directly contributing to the now widespread escalation of various auto-immune, degenerative disease and allergic conditions.

The Unresolved Issue of Safer and More Effective Alternatives

Sufficient evidence now suggests that an increasing awareness of the potential dangers that are being increasingly associated with mass vaccination programs, will serve to precipitate public demand for greater research investments in the further exploration and testing of promising and danger-free alternative prophylactic methods. A considerable body of literature on lifestyle (especially nutrition) based prophylaxis and treatment for both bacterial and viral infectious diseases suggest that this is the optimum alternative to the artificial immunization dilemma.

The Unresolved Question of Ethics

UCI/EPI--as presently conceived and executed--represents two major departures from the time honoured ethics and traditions of medicine:

- that all forms of treatment should be individualized, particularly when prescribing or injecting substances which carry the potential for disease, disablement, and death; and
- the objectively informed patient (or parent) should always have absolute freedom to accept or reject any given measure or therapy, and have reasonable opportunity to consider alternatives.

Conclusion

The foregoing observations indicate that there is a genuine need for world governments to reconsider their policies with respect to universal childhood immunization, ensuring particular focus on clarifying the vital issues of the short and longer term impacts of UCI/EPI, and the pressing need to establish far safer and more effective alternatives.

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INTRODUCTION

Universal Childhood Immunization (UCI)--in its more localized context referred to as Expanded Program of Immunization (EPI)--stands worldwide as a top health programming priority among various multilateral, bilateral, and nongovernmental (NGO) international development agencies. This appears to be the case because immunization programs are widely accepted and actively promoted as offering recipient beneficiaries more substantive disease prevention benefits than any other modality in the arsenal of modern medicine, coupled to its unique capacity to offer the surest and "quickest" results. When compared to the more basic intersectoral and developmental requisites for public health sustenance and disease prevention, UCI/EPI is generally considered to be the easiest to implement programmatically, promote publicly, and defend politically. The World Health Organization (WHO) has gone on record to affirm that, "Immunization is one of the most powerful and cost-effective weapons of modern medicine. Immunization services, however, remain tragically under-utilized in the world today."[1]

Despite the Canadian government's confirmed support of the comprehensive primary health care approach--as defined in the Alma Ata Declaration--the majority of increases in the Canadian International Development Agency (CIDA) Health Sector disbursements, in the last half of the 1980s, have been for the selective and vertical modality of UCI/EPI. In fact, according to observations made in the 1989, Evaluation Assessment of CIDA Investments in the Health Sector, immunization has become the dominant health activity supported by CIDA. "Annual disbursements over the past three years have risen from $3 to $22, to $49 million."[2] The lion's share of this increase stemmed from the launching of Canada's International Immunization Programme (CIIP), covering the period of 1986-1991. (An October 10, 1991 *Fact Sheet on Canada's Role in Immunization,* states that of the $43 million expended by CIIP in the period 1985-1990, involved the execution--by more than 30 nongovernmental organizations--of over 100 projects in more than 50 countries. When we include the government-to-government [bilateral] program, total CIDA funds committed to UCI/EPI in the 1986/1987-1990/1991 fiscal year periods equal some $143 million. At the end of 1991/1992 it was the intention of the government to expend roughly another $50 million on UCI/EPI over the next five years, with about $30 million for CIIP II.) According to a Mid-Term CIIP Operational Review completed November 20, 1989, UNICEF took almost $27 million from the Program for 37 EPI projects, amounting to 67% of CIIP funds. Additional CIIP funding passed indirectly to UMCEF, via Rotary for vaccine purchases, and via Canadian partners who purchased project equipment from UNICEF stockpiles.[3]

Speaking of this major shift in priorities, wherein by the end of the 1980s immunization support accounted for one half of all health sector disbursements, the CIDA *Health Sector Evaluation Assessment* recommended that "this situation merits examination on the grounds of both the heavy focus by CIDA on this one type of health program and the nature of immunization efforts . . . Primary Health Care is more complex and multifaceted then the provision of this one . . . technology."[4] This need to re-examine immunization support was further affirmed when the Assessment identified certain "important am that merit further review," including: case studies of the health impact of projects involving or crossing varied sectors; the level of sustainability achieved in completed CIDA health projects; and areas of large spending or of controversy, i.e., immunization."[5]

Although the Assessment did not go on to define the nature of the controversies surrounding immunization, mass immunization programs have been seriously questioned on both developmental and scientific grounds. It will be the purpose of this report to proceed with a detailed examination of the issues of controversy, draw some conclusions, and make appropriate recommendations. The critique of these issues stems from a careful review and evaluation of wide ranging biomedical literature sources of relevance to the subject. This work has been carried out in the spirit of honest inquiry, thus affording a fresh and critical analyses of the fundamental issues.

Although the conclusions as reached visibly sustain "one side" of what is largely a hidden and professionalist dominated debate on immunization, the reader should note that this is done in order to provide a long neglected and constructive counterbalance to the predominating supportive declarations of the establishment, and in turn the parroted promotion of the same view by the popular media.

It must further be appreciated that past and ongoing investments in the drive for universal immunization extend well beyond the mere allocation of substantial government and publicly donated funds (which translates into biennial expenditures of a billion US dollars, 63 percent of which comes from Developing World countries themselves) [6] to include:

- extensive public and private sector commitment to meeting the infrastructural, service, product and marketing requirements of the world-wide medico-industrial complex which employs tens of thousands of people in drug companies, private laboratories, universities, governmental health departments, hospitals etc. (furthermore it is estimated that there are 25,000 professional national and international staff who directly oversee hundreds of thousands of field workers involved in the annual vaccination of 60 million children);[7]
- related domestic and international legislation and politics; and
- massive public educational indoctrination initiatives that are largely predicated on promoting the unquestioned effectiveness and relative safety of immunization, and which by design engender an impelling fear in those "unprotected."

UNICEF's Executive Director has gone on record in many for a to herald the substantive value and potency of immunization. In advance of the inception of Canada's current and greatly expanded International Immunization program he gave a

full and unqualified assurance that "Expanded immunization--using newly improved vaccines" will "prevent the six main immunizable diseases from killing an estimated 5 million children a year and disabling 5 million more."[8]

The front page of the January/February, 1988, issue of *Development Forum,* published by the U.N. Department of Public Information, unequivocally affirms that "immunization is the success story of the decade. In the Developing World immunization has reached 50 percent for DPT vaccine and 40 percent for measles, and is now saving over 1.3 million lives annually." Everyone is encouraged--bordering on religious fervor--to get on the bandwagon.

> *UNICEF.. calls for a 'Grand Alliance' of all possible resources teachers, and religious leaders, mass media and government agencies, voluntary organizations and people's movements, business leaders and labour unions, women's groups and health services to create an informed public demand for. . . the methods which could now bring about 'a revolution' in child survival and development. In Turkey, for example, 200,000 school teachers and 54,000 imams have helped to treble the nation's immunization coverage. In Syria and Egypt, television has succeeded in getting the immunization message into every home . . . UNICEF argues that 'there is no greater cause in which to march.'*[9]

Indeed, immunization has of late gained the distinction of being considered the "leading edge" in primary health care, and is extolled by its advocates as "the single most successful component of the child survival program." Its high acceptance and apparent success relate to a number of factors:

> *A technological package that is easily understood and readily available . . . the fact that vaccination does not require substantial behaviourial change; the relative ease of measuring coverage and its offer of an opportunity for political leadership at all levels to be visibly involved. Finally, it is the single component of PHC that provides the greatest opportunity for the private sector to participate through the supply or production of vaccine and cold chain equipment.*[10]

It is accepted wisdom among medical professionals and in turn the public, that millions of children now enjoy improved health and freedom from various life-threatening diseases because of safe and effective vaccines. In the words of Fulginiti, "morbidity and deaths secondary to the contagious diseases have either been eradicated, measles greatly reduced in occurrence, and rubella, mumps, pertussis, and other diseases significantly lessened in terms of their impact."[11]

EPI--FIELD EVALUATION EXPERIENCE

This general examination of Immunization as a central modality in the prevention of common infectious diseases in the Developing World will begin with some salient extracts taken from the writer's findings in a field evaluation he carried out on a UNICEF--Expanded Program of Immunization and Primary Health Care initiative in Northeast Thailand, in March of 1990. The data derived from evaluating the EPI

component is being provided as basic background information because it provides some useful insights on comparable UNICEF-EPI initiatives that are now occurring throughout the Developing World, and points to some critical issues meriting further investigation. (EPI was one of eight components in the Integrated Services Project for Children, extending over a five year period, at a cost exceeding $8,500,000.(Cdn). This funding was primarily provided by the Canadian Government, and supplemented with public contributions. The Project was executed by UNICEF Thailand, in cooperation with the Royal Thai Government.)

The EPI in Northeast Thailand proved to be a considerable undertaking. It included: the execution of a cluster survey on immunization coverage in all 59 districts (in which there are over 900 villages); provision of EPI training for 600 Village Health Volunteers, Village Health Communicators, and religious leaders; similar training for 200 health care providers, and 40 multiple WHO staff, EPI information strengthening and finally social mobilization to vaccinate, viz. provide BCG/OPV/DPT and measles coverage for all 59 districts. It further involved the equipping of 373 Tambon (subdistrict) health centres with sufficient numbers of. refrigerators; vaccine carriers with four icepacks; BCG vaccine kits; thermometers; cold chain monitoring cards; and steam sterilizers.
The EPI initiative placed its strategic concentration on the following areas:

- EPI training of village and religious leaders
- emphasis on reaching progressively higher annual vaccination targets
- provision of cold chain equipment and support to targeted Tambons
- information campaigns in primary and elementary schools
- public education campaigns in targeted villages
- increased vaccine production; and
- strengthening the EPI information system at the district and provincial level.
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In reviewing figures for the project covering the first three years (1985-1987), the priority emphasis on immunization is evident. Project expenditures for this component reached 126 percent of the original target for immunization, compared to only 28 percent for primary health care. Food and nutrition fared somewhat better at 60 percent of the target, a little under the project average of 61 percent. A budget analysis conducted on the project for this period states that "Implementation of the community action component is . . . low. However, the savings obtained here will be passed on to the EPI and pre-school components . . ." The reason given for exceeding the original budget projections for EPI, was "because of the demands and opportunities for support presented."[12]

Recognizing the central importance of "health care outcomes," both the evaluation exercise and this broader examination of the issues have purposely focused on concerns surrounding the qualitative issue of EPI health care outcomes and effectiveness. However, it became readily apparent in the evaluation of the Program that--due to the absence of base line data on any sample of the recipients, let alone the additional need for a comparable control group, and the control or monitoring of intervening variables it was not really possible to proceed with any accurate or verifiable determination of health care outcomes (i.e., to establish a cause and effect relationship) for EPI.

This need to provide verifiable measurement of a program's health care outcomes appears to be pervasively deficient throughout most health programming directed to the Developing World. The implications of this general deficiency to the specific measurement or determination of EPI effectiveness, remains a serious one, and will be addressed more thoroughly at later points in this report.

UNICEF'S GENERAL EPI STRATEGY AND STATED ACHIEVEMENTS

In a UNICEF sponsored research study on immunization coverage conducted in Thailand in the mid 80's, the following general observation is made:

> *[The] immunization programme has been proven to be an efficient, and relatively inexpensive method of disease prevention in both developing and developed countries. In the last decade, we have seen an increase in immunization usage, public acceptance, improved delivery techniques and more stable vaccines. The more extensive use of vaccines has resulted in a dramatic decrease of many leading communicable diseases in all parts of the world. However, this condition is by no means true in developing countries where most of the vaccine preventable diseases like diphtheria, pertussis, neonatal tetanus, poliomyelitis and measles remain to be a serious health menace among infants and children in these countries."*[13]

The view as expressed here--during the early stages of this project--provides a fair representation of the rationale behind UNICEF'S resolve to proceed with its universal disease eradication drive, via vaccine induced immunization. (It is of no passing interest that WHO and UNICEF sponsored literature, such as above, now embody a new nomenclature, in which one does not refer to preventable diseases, but more precisely "vaccine preventable diseases" thus tending to convey the unsubstantiated conclusion that such diseases are only preventable through the use of vaccines.)

In UNICEF's Fourth Progress Report on this project issued in 1989, it was affirmed that, "Impressive progress has been made towards the achievement of Universal Child Immunization (UCI). Immunization coverage has been increased and the incidence of immunization diseases reported has reduced." This achievement was reported as taking place despite such persistent obstacles as: insufficient "awareness and knowledge among health officials and community leaders;" inadequate "availability of vaccines and cold chain in remote areas;" and the problem of "drop-out due to ignorance, distance, and fear of side effects."

FIELD OBSERVATIONS

On the basis of structured and semi-structured interviews in five provinces, five districts, and nine villages visited, the following facts came to light:

- The EPI component objectives were comprehensively and successfully implemented, exceeding the original numerical targets

- EPI was reported as the "only activity that is implemented and recorded entirely by government (health) officials"
- All parents had been informed that: immunization was an effective, and essential life-guarding measure, and although it could result in fever or a minor rash for their infants, this should be expected as normal (a small price to pay for the benefits received); and that otherwise the procedure was very safe and should pose no cause for fear or alarm.
- The most commonly reported side effect of infant vaccinations was fever, with village reports ranging from a low of 6% of infants immunized to "99%." (Rashes were the second most commonly reported side effect).
- Fever reducing drugs are either routinely administered to vaccinated infants, or administered on request of parents (however, one village did report the effective use of water instead of drugs to reduce fever), and
- Sisaket province reported that "rare" cases of post-vaccination shock have occurred, attributing this to vaccinal "overdose." Surin province reported that there were cases of post-vaccination shock in various other provinces, but not in Surin. Such cases were attributed to the vaccine vial not being "sufficiently shaken."

CONTRA-INDICATIONS SCREENING

Evidence indicated that the EPI program did not incorporate adequate measures for contraindications pre-screening and post-monitoring.

- All infants received the vaccines regardless of their weight or nutritional status (only one village indicated that vaccines were not given to infants severely underweight, and only one province reported post-vaccination monitoring of infants under 3 kg).
- Actual nutritional status assessment does not appear to be conducted on infants (excepting the body weight factor) before administering vaccination.
- There did not appear to be any procedural requirements for checking family histories to determine whether there existed any history of neurological disorders before administering vaccination.

The official view historically held and still articulated by the World Health Organization (WHO) is that both the provision of screening for contraindications, and post operation monitoring for adverse reactions are uncalled for in the context of Developing World EPI campaigns. The underlying rationale has been that the life saving benefits of EPI so far outweigh any risks, that attention to potential risk factors and the potential for vaccine induced damage in vaccinates remains impracticable, and thus a non-issue.[14]

Despite this unqualified optimism, according to information provided by CIDA's Health and Population Directorate sector, the WHO effective October, 1990, instituted a policy for "adverse event monitoring" in Developing World Immunization activities. A definitive policy statement on this issue titled *Monitoring of Adverse Events Following Immunization,* has been available since April 1991. (The implications of WHO's recognition of the significance of this issue in setting UCI/EPI research, monitoring and evaluation priorities should be apparent.)

It is thus important to point out that there is by no means a consensus on this issue within the Bio-science community (including the inconsistencies exhibited in the public pronouncements, and policies of the WHO). In one of the most recent scholastic manuals available on immunization practice, noted authority, George Dick--Professor Emeritus of Pathology, London University--provides the following cautions relative to the traditional assumptions of the WHO:

- Before considering immunization it must be determined that the disease in question is of sufficient severity, frequency or other importance to justify immunization against it. Furthermore, "if the infection is readily treatable, there is seldom justification for immunization."
- "immunization is indicated only when the classic methods of control are [demonstrably] impracticable or unsuccessful."
- Before any vaccine is introduced "there must be good evidence that the vaccine is effective and relatively safe . . . Sufficient time has not yet elapsed to predict with any certainty the durability of immunity with the live virus vaccines, which are now in common use, such as poliomyelitis, measles . . . [etc.]"
- "The best type of active immunization follows a clinical or subclinical natural infection. With many diseases this often gives lifelong protection at little or no cost to the individual or to the community."
- The pre-immunization era declines in infectious diseases "should make one careful in attributing changes in the epidemiology of some diseases to the result of a specific treatment or immunization."15

He further confirms that in the following conditions, the EPI vaccine as noted should not be administered. (Obviously pre-vaccine screening measures must be in place in order to ensure that these guidelines are met.) Dick's recommendations follow on Table A.

TABLE A—GUIDELINES FOR CONTRAINDICATIONS SCREENING

Diphtheria	acute febrile illness (fever)
Whooping Cough (pertussis)	acute febrile illness a history of seizures, convulsions or cerebral irritation in the neonatal period any neurological defects any severe local or general reaction to a previous dose of pertussis "Children whose parents or siblings have a history of idiopathic epilepsy or neurological defects require careful assessment as to the advisability of imunization."
Polio	acute illness including diarrhoea, or other (OPV) acute intestinal dysfunction sever hypogammaglobulinaemia anyone on corticosteroids or immunosuppressive therapy

Measles	acute febrile illness immune mechanism deficiencies anyone on corticosteroids or immunosuppressive therapy Hodgkin's disease and leukaemia, or other diseases of the lymphoid, or mononuclear phagocytic (reticuloendothelial) system

Preliminary PHC and EPI research conducted for CIDA's Evaluation Division indicates as well that vaccines should not be administered to children who are suffering from malnutrition due to associated immunodeficiency problems (of which--inter alia--chronic infections are symptomatic). However, the official WHO position on this point is that "Fever, respiratory tract infections, diarrhea, and malnutrition should not be considered as contraindications to immunization." This is based on the relationship between immunodeficiency status and increased risk of natural infection.[16, 17, 18] (For a cross-sampling of other reference sources which support a counter-view to the WHO stance on immunodeficiency and contraindications to vaccines, please see ref.[18])

The Project's failure to address this issue--in a responsible manner--has undoubtedly caused some very real harm, when only good was meant, as the following shows.

A CASE HISTORY

Upon completing the briefing session with a large contingent of Surin provincial and Northeast regional health officials--at which the chief provincial spokesperson confirmed that although post-vaccination shock was a problem in other provinces, there were no known cases being reported in his province evaluation team members departed for their respective village destinations. Upon entering the village of Kanjarong, in the Chom Phra district (only 35 miles distant from the provincial capital) in company with the UNICEF Integrated Services Project Monitor, we encountered and met with the village Head Man and the Deputy Head Man.

In the course of the interview, the Deputy Head Man, with some intensity explained that his own son had experienced what he considered as very serious damage as a result of immunization. The Project Monitor and I returned the following day, at which time we both interviewed the mother and observed the affected child during the interview. As a result of this more careful and thorough interview, the following facts of the case were ascertained:

- Up to the age of 3 months the infant had been breastfed. Breastfeeding was terminated by the mother due to a diagnosed thyroid deficiency, per the "doctor's" request. She subsequently began feeding him powdered milk, supplemented by egg, meat, and white rice. The use of fresh fruit and vegetables in the infants diet remained very marginal.
- At the age of 8 months the infant was taken in for his final DPT (triple antigen) vaccine. He almost immediately went into what was diagnosed and described as a state of "shock," for which he was duly treated by a physician. As well, a whole series of serious problems began:

- chronic sleeplessness
    - high fever
    - unbroken colds and runny nose continuing over several months
    - unbroken crying (except when held) for a period exceeding 2 months
    - in the eleven months following the vaccine (the child at time of interview was I year 7 months) there appeared to be severely impaired weight and growth developments.

      Although cognizant that this case history could be construed (and in turn dismissed) as a rare anecdotal occurrence that was only coincidental to the administration of the triple antigen vaccine, after careful thought I've decided to included it in some detail for three basic reasons:

      I. evidence suggest that for multiple reasons--as noted throughout this document--such adverse reactions are likely to be taking place at a significantly greater level than is popularly believed;
      II. a calm, intelligent and caring mother's direct experiential observations and hindsight about her child represent a fully valid and trustworthy source of information; and
      III. overall, the clarity and force of the evidence was such that the child's reaction was clearly more than a mere coincidence, and thus not attributable to other direct causes. (As well there is clear evidence suggesting that the occurrence and severity of adverse reactions to vaccines--among infants--correlate proportionally to both lack of breast feeding, and Vitamin C deficiency (e.g., see refs. 17 & 18).

The following comments should be made with respect to points (a)-(e) above:

- The evidence of unabated infections suggests general impairment of the child's immune system, i.e., vaccine induced immune malfunction.
- The unbroken crying (its unfortunate that children under the age of one can't verbally explain the nature and extent of their distress) suggest the possibility of permanent nervous system damage. (In observing the child walk about, it was visibly evident that his general motor functions and coordination were impaired.)

The reported growth stunting effect was also visibly obvious, as the child appeared to be at most the size of a one year old. (In that impaired growth is generally not identified in the literature as a vaccine related or induced hazard, this condition may well have been principally related to other factors bearing on the child's nutritional intake and or assimilative capacities.) The mother reported that his weight at birth was 4 kilos (a very heavy baby by Thai standards) and at 5 months, 9 kilos. At the time we visited--though now I year and 2 months older--his weight was unchanged, still at 9 kilos.

It is also worth noting that the mothers three month old grandson, who was present during the interview, had been experiencing high fever, and continuous colds since having received recent inoculations. Given that I visited only 9 out of over 900

participating villages, and then only raised this issue with a fraction of respondents, poses serious concern as to just how widespread and serious the problem of adverse side effects is.

It is known for instance that when mass immunization programs were enforced in Australia's Northern Territory among what was a generally malnourished Aboriginal population (the most notable concern being Vitamin C deficiency) death rates doubled, in some areas approaching 50 percent i.e., "Every Second Child." According to the author of a book by that title and veteran physician to the Aboriginals A. Kalokerinos:

> *A health team would sweep into an area, line up all the Aboriginal babies and infants and immunize them. There would be no examination no taking of case histories, no checking on dietary deficiencies. Most infants would have colds. No wonder they died Some would die within hours . . . Others would suffer immunological insults and die later from pneumonia, 'gastroenteritis' or 'malnutrition'.*[19]

In Northeastern Thailand, in the villages visited practically all mothers were breastfeeding, and were to some extent including fresh garden vegetables and fruit in their diets. This in turn provided a fair degree of protection from the kind of severe reactions and mortality just noted among Australian Aboriginals. Nonetheless, it is apparent that there still remains a sizable number of malnourished. To quote C. Guthrie:

> *Malnutrition seems to be declining in the Northeast... Still, malnutrition is widely prevalent. One does not need to go looking for it. In one school . . . in Don Luang, 50 percent of the children were suffering from one level of malnutrition or another. I found it somewhat disturbing to find that the objective expressed by most officials was restricted to the eradication of 3rd degree malnutrition, in spite of the wide prevalence of 1st and 2nd degree malnutrition.*[20]

It appears that the mass coverage obsession common to UCI and EPI, have run roughshod over the repeated qualifications, and warnings that have been issued against administering vaccines to inimunodeficient infants and children, of which malnutrition is a prime indicator. The fact that a March 1988 Annual Report on this Project (p. 5) indicated that a WHO/UNICEF review team found that EPI "drop out rates were high, because of the fear of side effects as expressed by mothers," suggests that the prevalence of vaccine induced complications and morbidity in Northeast Thailand, may well be more significant than heretofore thought. (The broader question and implications of vaccine induced morbidity and mortality will be examined in more detail, later in the report.)

VACCINE SCHEDULING

The rationale behind administering multiple vaccines and toxoids throughout the first 14 week period of an infant's life (excepting measles) is that in the first year of life--when the immune system is still relatively immature--a child is considered more

susceptible to most infectious diseases. However, this view fails to admit the corollary that the immune and nervous systems of infants, are immature thus making them potentially more vulnerable to the toxic effects of vaccines and toxoids.

Nonetheless, the argument is commonly raised that vaccines must be administered in accord with the recommended schedule," (particularly in the Developing World), as the risk of dangers is so marginal, and the dangers of widespread and unchecked infectious diseases so great that the infant must have the vaccines--or else. Of course this view is acceptable only insofar as the multiple beliefs surrounding UCI/EPI are valid, i.e., that there are no better disease preventative measures; that the presence of such infections cannot be safely handled or treated; and that vaccines are both highly effective and very safe.

The current WHO recommended schedule vaccination follows:

At birth	BCG (Tuberculosis) and OPV-0 (Polio--Live Oral, Trivalent)
6 weeks	DPT#L (Diphtheria Toxoid; Pertussis/Whooping Cough; and Tetanus Toxoid) and OPV#L
10 weeks	DPT#2 and OPV#2
14 weeks	DPT#3 and OPV#3
9 months	Measles

It is instructive to consider the experience of Japan in this regard. Delay of DPT immunization until 2 years of age in Japan has resulted in a dramatic decline in adverse side effects. In the period of 1970-1974, when DPT vaccination was begun at 3 to 5 months of age, the Japanese national compensation system paid out claims for 57 permanent severe damage vaccine cases, and 37 deaths. During the ensuing six year period 1975-1980, when DPT injections were delayed to 24 months of age, severe reactions from the vaccine were reduced to a total of eight with three deaths. This represents an 85 to 90 percent reduction in severe cases of damage and death. [21]

Although it is obvious that conditions in Japan remain distinctive from that of most Developing World countries, it must be noted that insofar as susceptibility to infectious disease remains greater in lesser developed countries, it clearly follows that susceptibility to vaccine damage will also be proportionally greater. Thus the lesson from Japan carries a valid message relative to the prevention of vaccine damage in Developing World EPI campaigns.

IMMUNIZATION'S IMPACT IN THE DECLENSION OF INFECTIOUS DISEASES

Statistics indicate that over the life of this project, Thailand (and presumably the Northeast region, for which direct figures were not available) has exhibited some degree of declension in childhood infectious diseases (excepting measles) for which immunization has--in recent years--been made generally available. However, it must be borne in mind that prima facie improvement in morbidity levels--in end of itself--falls far short of proving any actual interventional cause and effect relationship for EPI.

Direct discussions with the International Development Research Centre's Health Sciences Division confirms that in selective primary health care activities, such as EPI, there exists "no good base line data from which to measure health care outcomes. SPHC (Selective Primary Health Care) programs in the implementation of EPI appear to ignore this whole issue," Due to the strong and widely maintained assumption that interventions such as EPI serve inextricably and directly as the basis for health improvement outcomes, there has been a general failure since the inception of the first vaccine programs to establish genuinely verifiable evidence for their long term effectiveness, and safety. [22]

The general nature of this problem in Selective Primary Health Care activities is well expressed by prominent Medical Sociologist J. Williamson, when he says there has been a failure to "assess explicitly the degree of validity and sufficiency of the evidence linking care structures (facilities, personnel), and processes (what providers do, e.g., EPI) to outcomes of care in general and to health outcomes in particular."[23]

Epidemiological science is largely predicated on the reality that changes in morbidity and mortality in populations are necessarily linked to a whole series of contributive factors." (Noted authority George Dick states that: "Many infectious diseases can be prevented without immunization, because once the natural history of the disease is understood, the source may be eliminated or transmission prevented [e.g.,] . . . . When it was discovered that cholera and typhoid epidemics were regularly transmitted by faecal contamination of water, the provision of clean water supplies nearly eradicated these diseases from many countries without recourse to immunization.")[24] It is widely acknowledged that factors such as: nutrition, sanitation, potable water; the natural and social environments (e.g., agricultural practices, food supply, education and income), all play vital roles in determining the onset, severity, and eradication of both infectious and degenerative diseases. Diseases such as cholera and typhoid, have been strongly linked to water and sanitation, whereas evidence continues to accumulate that nutrition remains likely the most critical determinant factor in the full range of infectious and degenerative human diseases.25

The very fact that in this UNICEF project--as in many others--EPI is implemented over a period of years in the midst of a whole series of other natural and basal socioeconomic improvement measures, each having their own critical impact on any population's health status (including epidemicity levels) suggests that EPI could actually be playing a negligible or even a negative role, and no one would really know the difference.

According to the recently completed comprehensive *Program Evaluation of the Canadian International Immunization Program--Phase 1,* this poses a situation in which the relative impact of expanded immunization programs on mortality levels in the Developing World remain largely unsubstantiated. To quote: "at present it appears that there is no conclusive evidence on the impact of immunization on child mortality from all causes . . . It may be that EPI's effect is merely to bring about "replacement mortality," whereby children . . . succumb to other diseases instead. The uncertainty over the impacts of EPI remain a major question in PHC programming."[26]

In a similar vein, Debabar Banerji, Chairman of the Centre of Social Medicine and Community Health at Jawaharlal Nehru University raises serious concerns with the

UNICEF sponsored Universal Childhood Immunization program in his own nation. He suggests that:

> *If we turn to the epidemiological analysis of UCI-90 in India, we are astonished to learn that such a gigantic program has been launched without having even the most basic data on infectious diseases . . . Then how will it be possible to determine the cost-effectiveness of the program? Actually, there ought to have been much more detailed analysis. . . .*
>
> *For example, with regard to disease levels and factors, he urges that very basic questions should have been addressed before implementing UCI, such as: . . . how different are the rates in different parts of the country and what are the ecological, cultural, social and other factors which affect the rates--through influencing the balance between the host, the parasite [i.e., virus or microbe] and the environment. Information should have been provided on what are the trends in the epidemiological behaviour of the different diseases over a time period, what should be the epidemiological strategy for intervention in the natural histories of the diseases, and so on. Paying scant attention to such critical epidemiological considerations, the crusaders of UCI-90 have opted in favor of saturation spraying with "silver bullets " [vaccines]. Over and above this, there are also the important questions of efficacy of the vaccines. . .*
>
> *Administratively, the exponents of UCI-90 seem to indulge in collective amnesia to wish the bitter experiences of major vertical [top down] programs like the mass BCG Campaign, the National Malaria Eradication Program, and the three [national] efforts at eradication of smallpox . . . Also actively shunned are the many lessons from the failures of vertical programs for trachoma, leprosy, filariasis, cholera, and sexually transmitted diseases."* [27]

INCOMPLETE STATISTICAL REPORTING

Selectively slanted and incomplete reporting of the true statistical picture is not an infrequent problem in the promotive oriented reporting on EPI impact data. For example, the following Tables B and C, were based on data presented in Section 4.3 "Expanded Programme of Immunization," in UNICEF's *Fourth Progress Report CUC/CIDA Development of Basic Services for Children in Thailand,* covering the period January--December, 1988.

Table B—Immunization Coverage for Measles in Thailand

Year of Coverage	1982	1983	1984	1985	1986	1987	1988
Percentage Immunized		06	26	44	60	63	

Table C—Incidence of Measles in Thailand

Year	1982	1983	1984	1985	1986	1987	1988
Number	27,691	34,713	47,205	32,156	19,659	42,051	32,498
Case Rate Per 100,000	(57.1)	(70.2)	(93.7)	(62.2)	(37.1)	(78.1)	(59.1)

The following comment is made with respect to the expansion of the measles vaccination program, ". . . the immunization coverage for measles has increased from 6 percent in 1984 to 63 percent in 1988, leading to a reduction in measles prevalence from 93.7/100,000 in 1984 to 37.1/100,000 in 1986."

What the report fails to indicate though is that although the 1986 inununization coverage of 44% had increased by 1987 to 60%, the measles infection rate in the same period actually more than doubled, with an increase from 37.1 to 87.1 per 100,000. It is also noteworthy that the culminating maximum immunization coverage of 63% achieved in 1988, correlates with a 1988 infection report rate of 59.1 /100,000--which in fact poses higher level of measles infection than the 1982 reported infection rate of 57.1 /100,000, which was a time when measles immunization was not being provided in Thailand. (The higher per capita infection rate--after five years of expanding coverage--obviously reflects very negatively on the assumed efficacy of the vaccine, and may have been deliberately obfuscated in the reporting. No evidence was seen to suggest that the post-immunization increases in disease rates were attributable to case reporting improvements.)

THE DEVELOPMENTAL IMPLICATIONS OF UCI/EPI

Clearly, Universal Childhood Immunization stands in contradiction to the strategically development based primary health care principles as embodied in the Alma Ata Declaration. (The issue of intersectoral primary health care versus selective medicine remains an area of major controversy. It will be examined in considerable detail later in this paper). In fact, Developing World analysts such as D. Banerji, forcefully contend that short term, "top down" approaches to health care--such as EPI threaten to reverse Alma Ata's historic gains for more self-directed and sustainable health care. In his view the shifting emphasis toward selective medicine including UCI/EPI:

- Negates the principle of community participation and control as exemplified in "bottom up" development
- Accords resource allocations only to certain target groups, ignoring the needs of the total family and community
- Reinforces elitist authoritarian attitudes, thus increasing oppression.
- Has a fragile basis in science
- Displays questionable moral and ethical values, in which a questionable commodity of foreign and elite interests, is promoted to and imposed on the majority of the people.[28]

In his own words, the Universal Childhood Immunization initiative, constitutes the efforts of ruling interests in Donor nations:

> *. . . to hit out at the very core of the philosophy of primary health care by imposing technocentric vertical programs against a few diseases in the name of saving children . . .This movement not only tends to fragment a health care system and take it away from a wider ecological, intersectoral, and integrated approach, but it also actively hinders community self-reliance and seriously erodes the democratic rights of the people to participate in decisions which so*

vitally concern them. This is perhaps the most malignant facet of the present efforts to impose specialized . . . programs from outside, using social marketing techniques to sell them." [29]

Researchers like Rifkin and Walt maintain that interventions such as EPI, are essentially based on the (now fading) view that human health is dependent upon and arises from a force of elite professionals who hold privileged knowledge--coupled with corresponding power and control--to effect their disbursal of technocentrically contrived benefits, to relatively ignorant and passive recipients.30 It goes without saying that any programmed encouragement of this mind set--despite the very best of intentions--constitutes an inimical force to those principles and processes whereby intelligent self-development, and informed self-care can prevail.

In reference to the developmental implications of UCI/EPI, medical sociologist L.J. Chetelat notes that:

Health professionals, by taking and promoting easily executed interventions, such as immunization, create a demand for these programs and raise expectations which are seldom realized.. SPHC by identifying specific techniques (such as EPI) and strongly supporting them, diverts attention and resources from the process of development, to highlighting specific programs with exaggerated and often unpredictable outcomes. In reality, technocratic and "instant" successes, put into danger the long slow process that leads to sustained improvements. They are creating a climate of short-term expediency, rather than long term change.[31]

IS IMMUNIZATION EFFECTIVENESS A CERTAINTY?

It can well be said that real "ignorance is not knowing, but knowing what isn't so." The question of whether vaccines in fact protect recipients from the diseases for which they are given, might seem absurd on the face of it. As already noted, when we closer examine the question of statistical evidence for immunization's effectiveness, there remain significant epidemiological uncertainties. The literature further reveals some critical problems in data gathering, interpretation and reporting practices. These basic concerns are succinctly summarized by Professor Gordon Stewart, recent head of the Department of Community Medicine at Glasgow University:

What kind of immunization is this for which success is being claimed?... What kind of epidemiology is this which advocates immunization b excluding, consideration of factors other than immunization? . . . "at kind of editorial policy is this which publishes incomplete data and promotes far reaching claims about the efficacy of immunization, but refuses to publish collateral data questioning this efficacy? [32]

We are thus confronted with an unenviable situation where in the general absence of verifiable multifactored and controlled studies, EPI remains today--scientifically speaking--as a basically unproven program intervention. In fact, there is a substantive and growing body of data that call into serious question the soundness and effectiveness of mass immunization programs. This data not only calls into question

EPI effectiveness, but further details adverse side effects and potential long term dangers of this widely implemented medical intervention.

EARLY THEORETICAL FOUNDATIONS RE-EXAMINED

In order to better grasp the issue of vaccine effectiveness, it would prove helpful for us to go back to the early theoretical foundation upon which current vaccination and disease theories originated. In simplest terms, the theory of artificial immunization postulates that by giving a person a mild form of a disease, via the use of specific foreign proteins, attenuated viruses, etc., the body will react by producing a lasting protective response e.g., antibodies, to protect the body if or when the real disease comes along.

This primal theory of disease prevention originated by Paul Ehrlich--from the time of its inception--has been subject to increasing abandonment by scientists of no small stature. For example not long after the Ehrlich theory came into vogue, W.H. Manwaring, then Professor of Bacteriology and Experimental Pathology at Leland Stanford University observed:

> *I believe that there is hardly an element of truth in a single one of the basic hypothesis embodied in this theory. My conviction that there was something radically wrong with it arose from a consideration of the almost universal failure of therapeutic methods based on it . . . Twelve years of study with immuno-physical tests have yielded a mass of experimental evidence contrary to, and irreconcilable with the Ehrlich theory, and have convinced me that his conception of the origin, nature, and physiological role of the specific 'antibodies' is erroneous.*[33]

To afford us with a continuing historical perspective of events since Manwaring's time, we can next turn to the classic work on auto-immunity and disease by Sir MacFarlane Burnett, which indicates that since the middle of this century the place of antibodies at the centre stage of immunity to disease has undergone "a striking demotion." For example, it had become well known that children with agammaglobulinaemia--who consequently have no capacity to produce antibody--after contracting measles, (or other zymotic diseases) nonetheless recover with long-lasting immunity. In his view it was clear "that a variety of other immunological mechanisms are functioning effectively without benefit of actively produced antibody."[34]

The kind of research which led to this a broader perspective on the body's immunological mechanisms included a mid-century British investigation on the relationship of the incidence of diphtheria to the presence of antibodies. The study concluded that there was no observable correlation between the antibody count and the incidence of the disease." "The researchers found people who were highly resistant with extremely low antibody count, and people who developed the disease who had high antibody counts.[35] (According to Don de Savingy of IDRC, the significance of the role of multiple immunological factors and mechanisms has gained wide recognition in scientific thinking. [For example, it is now generally held that vaccines operate by stimulating non-humeral mechanisms, with antibody serving only

as an indicator that a vaccine was given, or that a person was exposed to a particular infectious agent.])

In the early 70's we find an article in the *Australian Journal of Medical Technology* by medical virologist B. Allen (of the Australian Laboratory of Microbiology and Pathology, Brisbane) which reported that although a group of recruits were immunized for Rubella, and uniformly demonstrated antibodies, 80 percent of the recruits contracted the disease when later exposed to it. Similar results were demonstrated in a consecutive study conducted at an institution for the mentally disabled. Allen--in commenting on her research at a University of Melbourne seminar--stated that "one must wonder whether the . . . decision to rely on herd immunity might not have to be rethought.[36]

As we proceed to the early 80s, we find that upon investigating unexpected and unexplainable outbreaks of acute infection among "immunized" persons, mainstream scientists have begun to seriously question whether their understanding of what constitutes reliable immunity is in fact valid. For example, a team of scientist writing in the *New England Journal of Medicine* provide evidence for the position that immunity to disease is a broader bio-ecological question then the factors of artificial immunization or serology. They summarily concluded: "It is important to stress that immunity (or its absence) cannot be determined reliable on the basis of history of the disease, history of immunization, or even history of prior serologic determination.37

Despite these significant shifts in scientific thinking, there has unfortunately been little actual progress made in terms of undertaking systematically broad research on the multiple factors which undergird human immunity to disease, and in turn building a system of prevention that is squarely based upon such findings. It seems ironic that as late as 1988 James must still raise the following basic questions. "Why doesn't medical research focus on what factors in our environment and in our lives weaken the immune system? Is this too simple? too ordinary? too undramatic? Or does it threaten too many vested interests . . ?" [38]

ARTIFICIALLY INDUCED IMMUNITY—REALITY OR DELUSION?

Physiologist, S.K. Claunch raises an reasonable postulate when he suggests that the body's capacity to initiate a "vigorous reaction" (i.e., the acute processes of elimination associated with viral and infectious diseases) hinges essentially on its level of vitality, and thus such reactions are most commonly found in children. In contrast, it is generally acknowledged that the very feeble and or chronically diseased--who have significantly lower vital energy levels--tend to remain relatively free from such acute reactions. This observation in turn lead him to express the concept that:

> *If any child has its vitality lowered and its health impaired to the degree that it is no longer strong enough to develop an acute disease, it is, for the time being, at least "immune." This is the exact clinical picture one observes when serums, vaccines and "biologicals" are shot into a child . . . its vitality is so lowered that it is no longer healthy enough to protest or react against them. So long as its vitality stays down, it will be "immune."* [39]

A number of detractors have legitimately raised the question of how the injection of foreign disease matter into the human system can constitute a legitimate approach to the sustenance of human health. After all, we don't seek warmth of icebergs, is there thus any more logic in seeking health from substances which are intimately associated with disease and death? The articulate view of physiologist H.M. Shelton is that:

> *To interfere with the all-important composition of the blood in the haphazard manner serologists do, results in incalculable disturbance of its physiological equilibrium . . . health depends, not upon killing bacteria [& viruses] but upon building up the soundness . . . integrity [and] functional vigor . . . of our own tissues and organs. . . . Normal resistance can be achieved only by use of the same means by which it was originally built and maintained.*
>
> *Nature makes no mistakes and violates no laws. She is uniformly governed by fixed principles and all her actions harmonize with ... [nature's governing] laws . . . The best, indeed the only method of promoting public health is to teach people the laws of nature and.. how to preserve health. Immunization programs are futile, and are based on the delusion that the law of cause and effect can be annulled Vaccines and serums are employed as substitutes for right living; they are intended to supplant obedience to the laws of life. Such programs are slaps in the face of law and order."* [40]

AN HISTORIC OVERVIEW OF THE BACTERIAL/VIRALTHEORY OF DISEASE CAUSATION

In order to provide some further background to the reader, this section will briefly recount some of the most significant observations of earlier scientists on the broader question of what is the actual role bacteria and viruses play in human infectious disease. The debate on this issue--although an old one remains highly relevant and timely in that the whole edifice of Western selective medicine, both preventive and therapeutic, hinges upon a correct perspective on and resolution of the question.

Indeed, it remains remarkable that whether we go to recent or more distant history, we find that fundamentally critical scientific discoveries and observations which serve to clarify these issues, and point in a more appropriate direction, continue--at least in practice--to be largely unknown and or ignored. (Some researchers would suggest that this failure arises because such discoveries--if genuinely applied--would significantly curb what amounts to annual income totaling multiple billions of dollars in the exploitation of human disease.) However, it is apparent that the factors underlying this failure are in reality much broader and more complex.

Due to the need for brevity, only two cases of historic significance will be considered. Earlier in this century, C.E. Rosenow of the Mayo Biological Laboratories began a series of experiments in which he took distinctive bacterial strains from a number of different disease sources and placed them in one culture of uniform media. In time the distinctive strains all became one class. By repeatedly changing cultures, he could individually modify bacterial strains making them some harmless or "pathogenic" and in turn reverse the process. He concluded that the critical factor allowing demonstration of the polymorphic nature of bacteria was their environment and the

food they lived upon. These discoveries were first published in the year 1914 in the Journal of Infectious Disease." [41]

Rosenow's work was corroborated and expanded upon about two decades later by R.R. Rife, developer of the Universal Microscope which was developed concurrent with RCA's initial marketing of the electron microscope. Rife's alternative was a 5,682 component, 150,000 power (60,000 diameters of magnification) instrument which made live bacteria visibly "clear as a cat on your lap." This microscope was a light transmitting instrument with a resolution of 31,000 diameters (traditionally electron microscopes had resolutions of up to 25,000 diameters) which overcame the chief weakness of the electron scope, i.e., the inability to view living cells structures and bacterial and viral organisms in their unaltered living state.(An alternative was required, as living matter when viewed under the electron scope, becomes altered and distorted due to bombardment by a virtual hailstorm of electrons, with such distortions increasing proportionally with the intensity of magnification. Consequently, the extremely high magnification levels found in the latest electron microscopes actually serve to exacerbate this major flaw.)

Modern microscopy texts suggest that with light microscopes it is impossible to obtain extremely high magnifications of objects and still retain visual clarity. For example Novikoff and Holtzman affirm that in such instruments a point is reached after which the image is "increasingly blurred and nothing is gained by further magnification. Thus, light microscopes are rarely used at magnifications greater than . . . 1500 X." [42]

However, Rife's invention with its 14 separate crystal quartz lenses and prisms, was able to bend and to polarize light in such a way that a specimen could be illuminated by extremely narrow portions of the spectra, and even by a single light frequency. This combined with the shortening of projection distance between prisms, and other innovative technical features permitted high resolutions without distortion at extremely high magnifications, never before or since attained in light microscopy.[43]

Rife showed that by altering the environment and food supply, ftiendly bacteria such as colon bacillus could be converted into varied "pathogenic" bacteria. For example, Rife also observed that bacillus coli could in time be modified into the viral agent associated with certain forms of cancer, and the process actually reversed. In Rife's words:

> *In reality, it is not the bacteria themselves that produce the disease, but we believe it is . . . the unbalanced cell metabolism of the human body that in actuality produce the of disease. We also believe if the metabolism of the human body is perfectly balanced . . . it is susceptible to no disease.*[44]

This observation closely parallels Alexis Carrel's earlier research at the Rockefeller Institute where he was able to control the rates and levels of infectious disease mortality among mice. Beginning with the standard diet he observed a corresponding death rate of 52 percent. By making specific dietary improvements he was able to reduce mortality rates downward to 32 percent, then 14 percent, and finally to a rate of 0. [45]

Not too long after Rife's and Carrel's reported observations, scientist Rene Dubos (also at the Rockefeller Institute) reaffirmed their open and direct challenge to the conventional thinking and practice of the scientific community at large. He suggested that the presumed relationship between microbes and the onset of human disease has been "so oversimplified that it rarely fits the facts of disease. Indeed it corresponds almost to a cult . . . undisturbed by inconsistencies and not too exacting about evidence." He expanded upon this view in suggesting that we need to objectively account for the fact that extremely virulent:

> *. . . pathogenic agents [i.e., bacterial and viral micro-organisms] sometimes can persist in the tissues without causing disease, and at other times can cause disease even in the presence of specific antibodies. We need also to explain why microbes supposed to be non-pathogenic often start proliferating in an unrestrained manner if the body's normal physiology is upset. . . .*
>
> *During the first phase of the germ theory the property was regarded as lying solely within the microbes themselves. Now virulence is coming to be thought of as ecological . . . This ecological concept is not merely an intellectual game; it is essential to a proper formulation of the problem of microbial diseases and even to their control "* [46]

Indeed, Dubos--in time--came to voice the conclusion that "Viruses and bacteria are not the cause of disease, there is something else." In his classic work Mirage of Health, he states "The world is obsessed by the fact that poliomyelitis can kill and maim . . . unfortunate victims every year. But more extraordinary is the fact that millions upon millions of young children become infected by polio virus, yet suffer no harm from the infection." [47] This view closely corresponds to the oft quoted conclusion arrived at in later life by R. Virchow (popularly reputed as father of the "germ theory") when he stated, "If I could live my life over again, I would devote it to proving that germs seek their natural habitat, diseased tissues, rather than being the cause of disease."

Since Dubos' time, researchers have estimated that the quantity of symptom free exposure to viruses out number clinical illnesses by at least one hundred-fold. [48] This conclusion is based on the "high proportion of adults who have virus-neutralizing substances in their serum and the number who, during an epidemic, excrete virus without becoming ill.[49]

Further corroborative conclusions have been recently reached by some prominent scientists in their critical examination of the popular view that Human Immuno-deficiency Virus (HIV) is the key, if not the singular cause of the Acquired Immuno-deficiency Syndrome (AIDS). Evidence is in that the popularized view that HIV causes AIDS is far more a political necessity, than a genuine scientific conclusion. (Although the observed action and effects of viruses, and retroviruses--such as HIV--do in fact significantly differ, what is being called into question is the validity of labeling microbes--of whatever form--as the key and or sole "cause" for disease, or as in this case of acquired immunodeficiency.)

Peter Duesberg (Professor of Molecular Biology at the University of Calif.- Berkeley; considered by many to be the world's leading expert on retroviruses; and Nobel Prize

candidate for his work in discovering oncogenes in viruses) provides compelling evidence that lifestyle based factors serve as the primal determinants in the evolution of the 20 plus neoplastic and degenerative diseases that are now associated with AIDS. Employing his own research--complemented by 196 cited references--an article entitled "HIV and AlDs: Correlation but not causation," was published in 1989 in the *Proceedings of the National Academy of Sciences USA.* This article indicates that "Free" HIV virus (Free meaning that the retrovirus is already part of the genome) is not detectable in most cases of AIDS;" "Pure HIV does not cause AIDS upon experimental infection of chimpanzees or accidental infection of healthy humans;" and "Epidemiological surveys indicate that the annual incidence of AIDS [to be understood as a condition symptomized by various secondary infections for which natural immunity has been lost] depends critically on non-viral [related] risk factors . . . defined by lifestyle, health, and country of residence."

In an interview published nearly five years later Dr. Duesberg is more convinced than ever that the HIV retrovirus is not the cause of AIDS, or of the mortality associated with AIDS. Some of the key points he makes in this important interview follow:

- There are roughly seven and a half million people world wide who are known carriers of HIV, and who continue to remain free of the immune deficiency symptoms associated with AIDS, and there's not one authenticated case "where you get infected today and get a disease. . . years later . . . infectious agents work immediately or never."
- HIV has been found to be totally absent in the system of over 4,600 persons diagnosed with AIDS, so to save political face the US Centers for Disease Control have been forced of late to give such cases a new name i.e., "idiopathic CD 4 Iymphocytopenia."
- There are a million Americans with HIV and their T cells are normal, indeed, "HIV is one of the most harmless viruses you could possibly have. It never claims more than one in 1,000 cells every other day" during which time your body replaces "at least 30 out of 1,000" cells.
- AIDS is not an infectious disease, but rather arises from "party swinger lifestyles" that includes: the widespread and abundant use of various immune-depleting drugs both legal and illegal such as cocaine, alcohol, marijuana, amphetamines, aphrodisiacs, amyl or butyl nitrites (poppers), combined with correlated conditions of malnutrition, inadequate sleep, and poor hygiene.
- Another key cause of AIDS and the mortality arising from it is medical treatment in itself, viz. AZT has become "AIDS by prescription" and design. In other words in the US alone 200,000 persons (most of whom have normal health) who've tested positive for HIV antibodies, are given 250 mg of AZT every six hours. This highly toxic drug destroys bone marrow, as well as red blood cells thus precipitating cellular oxygen starvation destroys white blood cells; causes anemia, weight loss, muscle loss, nausea, and worsening immune system deficiency coupled with the ensuing infectious diseases commonly associated with AIDS, and finally death. (The very same sequence of rapid physiological deterioration, immune deficiency and infections has been documented in healthy persons who were tested positive for HIV, and quickly submitted to medical treatment, but were later confirmed as false positives.)[50]

Bio medical scientist and AIDS researcher Joseph Sonnabend speaks of ". . . the failure of our scientific and medical institutions to have provided an even rudimentary understanding of the pathogenesis of this disease in the eight years since its first description, let alone to have developed interventions...that might significantly alter its course." His well researched conclusions include the view that "The association of HIV seropositivity with AIDS could . . . derive from the possibility that the expression of HIV (and consequent seroconversion) is an effect, rather than a cause of AIDS. . ."[51]

In summary, if we retum to Robert Koch's 19th century postulates of the "Germ Theory," viz. in order to cause disease particular "bacterium:" a) must be found in every case of the disease; b) must never be found apart from the disease; and c) must consistently produce the same disease as that manifested by the body from which the disease related germs were taken; we find that in reality each postulate has been disproved time and again by varied experience and experimental data.[52]

Nonetheless, it appears that to this day there remains only a marginal acknowledgment or practical recognition that it is the condition of the body-mind complex and its internal and external environments, which are the principal determinants of the nature, prevalence and role of bacteria, viruses, and even retroviruses.

THE BACTERIAL/VIRALVERSUS THE CELLULAR/ECOLOGICALTHEORY OF INFECTIOUS DISEASE

As a result of the rediscovery of many of these earlier scientific investigations, as well as more recent observations in molecular biology, there has arisen among more independent scientists and primary health practitioners a new concept that has been coined as the cellular theory of infectious disease. This seemingly more logical and updated view, poses a serious challenge to the present unquestioned emphasis on supporting mass selective medicine approaches (including artificial immunization) in the Developing World.

The traditional Bacterial--Viral and the emerging Cellular--Ecological theories of disease are contrasted in the table which follows. The practical acceptance of the cellular theory as delineated would entail a substantive shift away from both preventive and therapeutic interventions which are heavily predicated on Western selective medicine, i.e., vaccines and drugs, and toward fundamental health improvement measures such as sound nutrition, potable water, sanitation and overall enhancement of the human physical and social environments.[53]

Considerable experimental, historical and epidemiological evidence supports the cellular ecological theory, as outlined in *Table D.*

TABLE D --- INFECTIOUS DISEASE THEORIES CONTRASTED	
Bacterial/Viral Theory of Infectious Disease	**Cellular/Ecological Theory of Infectious Disease**
1. Disease arises from micro-organisms originating outside the body.	1. The evolution of and susceptibility to disease arises from conditions arising within the cells of the body.
2. As the primary cause of disease, micro-organisms are generally considered as vicious, needing to be destroyed.	2. These micro-organisms are primarily endogenous to more complex living organisms and normally function to assist the life sustaining and/or metabolic processes of such bodies.
3. The appearance and function of specific micro-organisms is constant.	3. The appearance and function of these micro-organisms undergo pathogenic changes when the host organism is weakened or injured, which injury may be mechanically, biochemically or emotionally induced.
4. Every disease is associated with a particular micro-organism.	Every disease is associated with particular factors and conditions.
5. Micro-organisms are primary causal agents.	5. Micro-organisms become pathogenic, i.e., associated with disease, only when the integral health of the body deteriorates. Hence, psycho-physical integrity is of first importance, as it constitutes the key factor in the prevention, or the remediation of human disease in all its forms.
6. Disease is inevitable and can "strike" anybody, anytime.	6. Disease arises from the persistent violation of natural laws, and correlated unhealthful conditions.
7. To prevent and cure disease, it is necessary to war upon pathogenic micro-organisms (using toxic and pathogenic weaponry) that as well, destroys the health of the body-mind complex.	7. To prevent or cure all forms of disease, one need only to ensure that the primal requisites of health ore met, which includes systematic compliance with natural physical, psychological, and spiritual law.

In that major declines in infectious disease took place before the advent of specific vaccines and antibiotics, scientists and or physicians such as Dubos, Dettman, Illich, McCormick, Taylor, Buttram, and Hoffman agree that the overall eradication of varied infectious diseases were due to basic improvements in nutrition, sanitation, housing, education and related socioeconomic conditions. For example, Canadian physician W.J. McConnick was able to make this telling observation at midpoint in the present century.

> *The usual explanation offered for this changed trend in infectious diseases has been the forward March of medicine in prophylaxis and therapy; but, from a*

study of the literature, it is evident that these changes in incidence and mortality have been neither synchronous with nor proportionate to such measures . . .

. . . . the decline in diphtheria, whooping cough and typhoid fever began fully fifty years prior to the inception of artificial immunization and followed an almost even grade before and after the adoption of these control measures. In the case of scarlet fever, mumps, measles and rheumatic fever there has been no specific innovation in control measures, yet these also have followed the same general pattern in incidence decline.[54]

INFECTIOUS DISEASE TABLES

Tables I--X

Span several decades--with some going back to the mid-nineteenth century--and reveal the evidence upon which McCormack's observation is based.

Tables XI & XII

Provide more recent data which suggest the apparent failure of Expanded Programs of Immunization in the reversal and prevention of whooping cough (pertussis) and diphtheria in Nigeria, with notable increases in these diseases occurring soon after implementation of widespread immunization (tables in the source article for measles, polio and tetanus, although not included, each suggest that the impact of EPI was negligible).

Tables XIII--XVIII

Represents the period of a decade in the Dominican Republic (a visually parallel micro-cosm to the longer decline periods exhibited in the Western world) where there occurred a general pattern of significant multiple infectious disease declines--prior to the advent of expanded immunization--with a general pattern of moderate increases in various disease levels occurring soon after full implementation of specific immunization interventions, followed by a return to the earlier decline pattern.

FURTHER BACKGROUND NOTES ON TABLES

It is a rarely excepted rule that when increases and or decreases in disease specific mortality occur, there will be corresponding changes in morbidity, (e.g., see parallel death, and case bar lines on tetanus and tuberculosis in *Canadian Immunization Guide,* 3rd Edition, 1989).

- The only tables which are not essentially visual reproductions of tables found in the documented "Source References," are Tables XIII- XVIII. The reason follows: In reviewing a series of 6 UNICEF evaluation studies (Evaluation

Pub. No's 1-6) on EPI efforts throughout the 1980's in Nigeria, Burkino Faso, Turkey, Cameroon, Senegal, and the Dominican Republic, only Pub. No. 6 on the Dominican Republic provided sufficient epidemiological data to permit the drawing of any definite conclusions on EPI impacts. Because EPI intervention data was not included in the evaluation report's morbidity tables, original tables were prepared.

- The designation "natural decline," simply indicates infectious disease declines free from adventitious immuno-prophylaxes. As in the West, significant and enduring non-artificial immunization factored declines have occurred in the Developing World. This has occurred despite what are considered to be normal cyclical down and up-swings in infectious disease levels.

Table 1: Deaths of Children Under 15 Years (England & Wales)

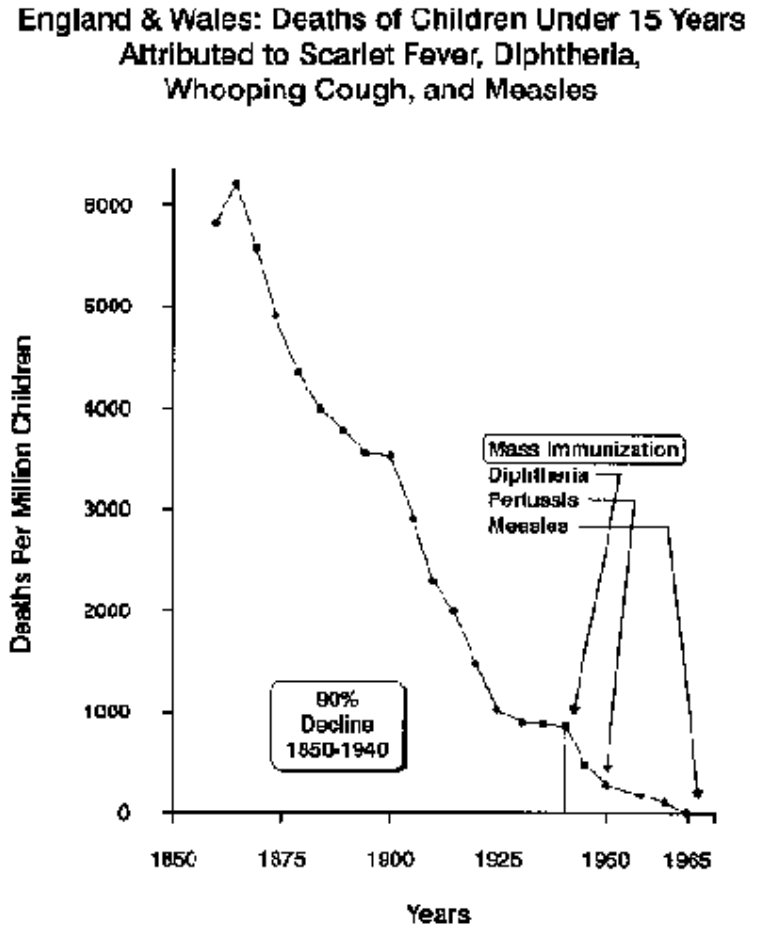

Table I--shows that in England and Wales there was a 90 percent decline in child mortality from the combined infectious diseases of scarlet fever, diptheria, whooping cough, and measles in the period of 1850 to 1940. The first vaccine made available was for diptheria in the early 40's, whereas the pertussis (whooping cough) vaccine became available in the early 50's and the measles vaccine in the late 60's (no vaccine was provided for scarlet fever).[55]

Table II: Whooping Cough (England & Wales)

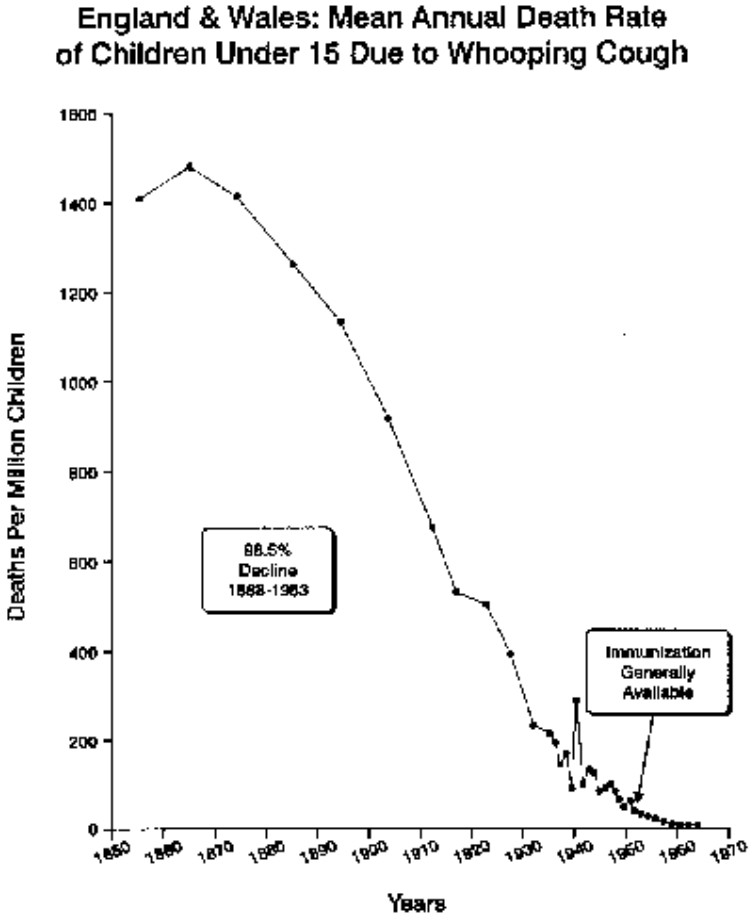

Table II--indicates that in England and Wales the annual death rate of children (under age 15) from whooping cough declined by roughly 98.5 percent in the period covering 1868 to 1953, after which the pertussis vaccine became generally available.[56]

Table III: Measles (England & Wales)

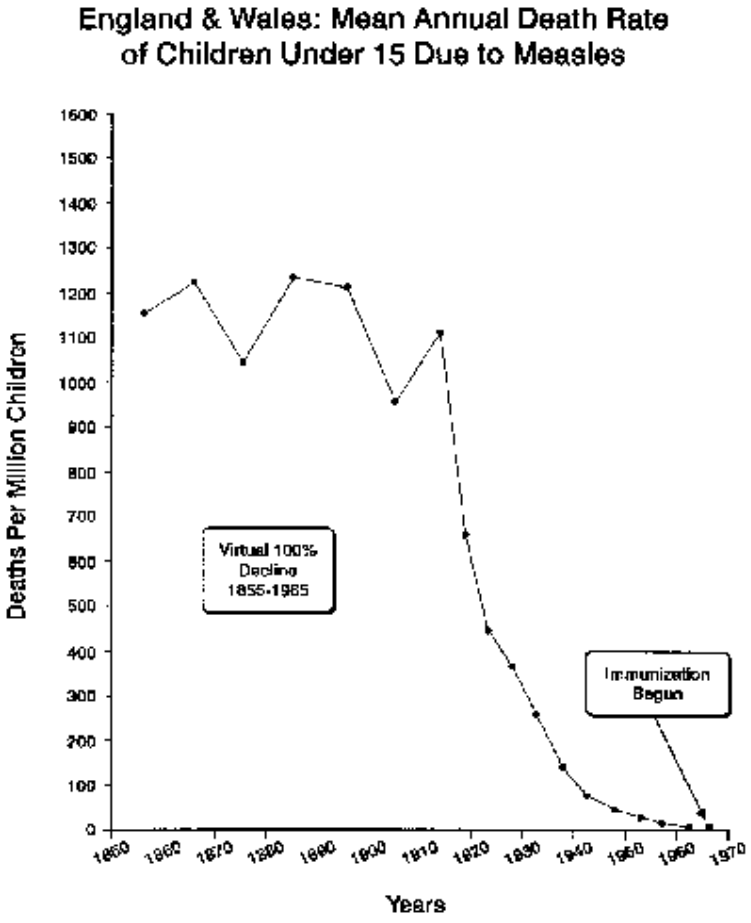

Table III--shows that in England and Wales the annual death rate of children (under age 15) from measles declined from over 1,100 per million in the mid-nineteenth century, to a level of virtually 0, by the mid 1960's.[57]

Table IV: Smallpox (England & Wales)

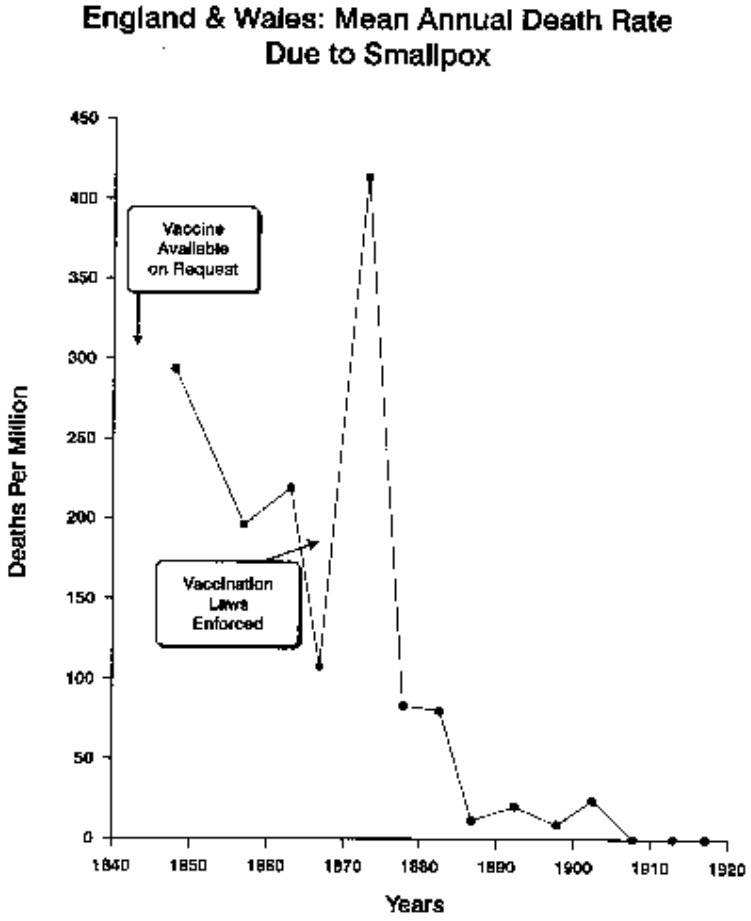

Table IV--reveals that in England and Wales there was a continuing decline in the annual death rate from smallpox, with a reduction in mortality of roughly 300 per million to virtually 0, taking place in the 60 year period following the middle of the last century. This table further illustrates that the progressive rate of decline was severely disrupted--with a roughly 275 percent increase in mortality from the disease--occurring immediately after smallpox vaccination laws were enforced.[58]

Table V: Infant Mortality Rate (Australia)

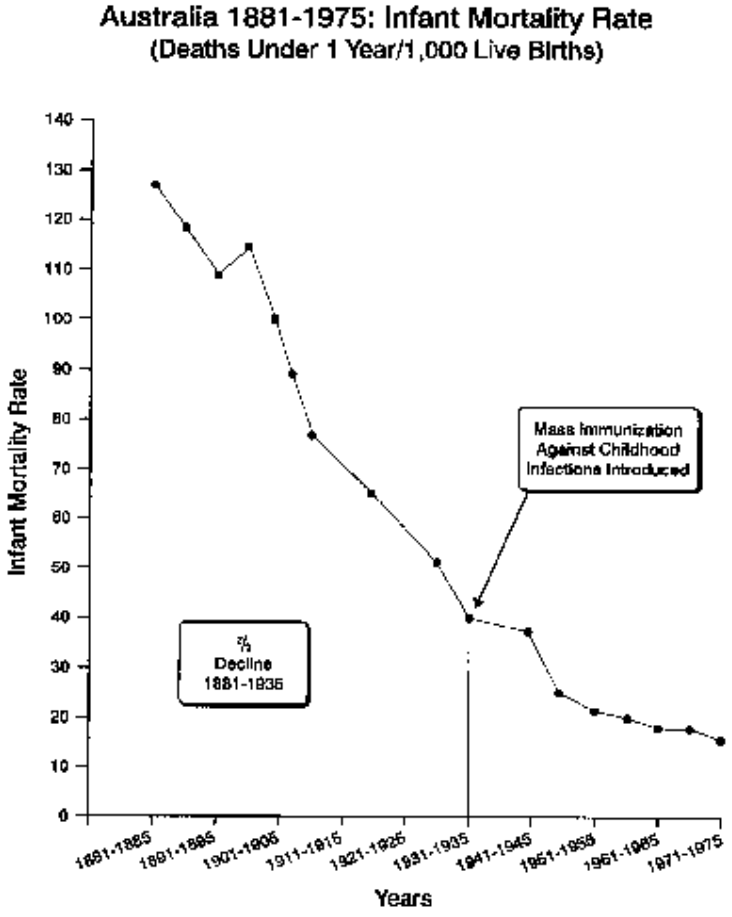

Table V--Indicates that in Australia, approximately two thirds of the total decline in infant deaths from all childhood infectious diseases, in the period covering 1881 to 1971, occurred before the introduction of mass immunization offorts.[59]

Table VI: Declining Death Rates (US)

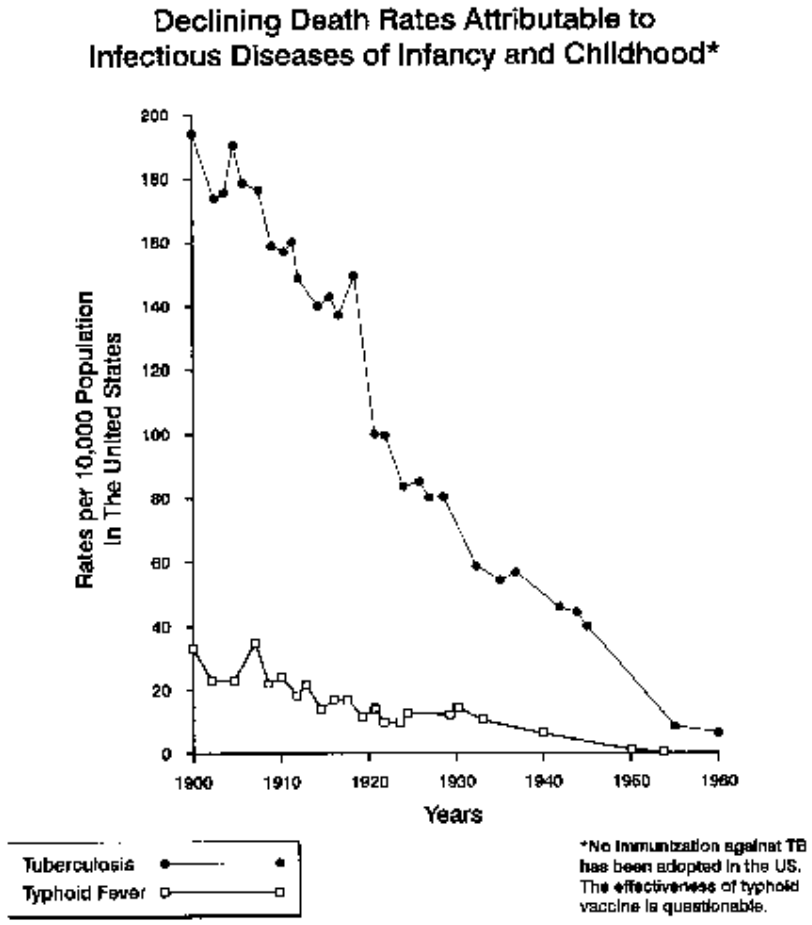

Table VI--reveals that in the United States--without benefit of any vaccine--the tuberculosis mortality rate underwent a drop of roughly 96 percent in the first 60 years of this century; and that in a little short of the same time span (although the effectiveness of the vaccine has been seriously questioned by reputed scientists) mortality from typhoid vanished.[60]

Table Vll: Declining Death Rates (England)

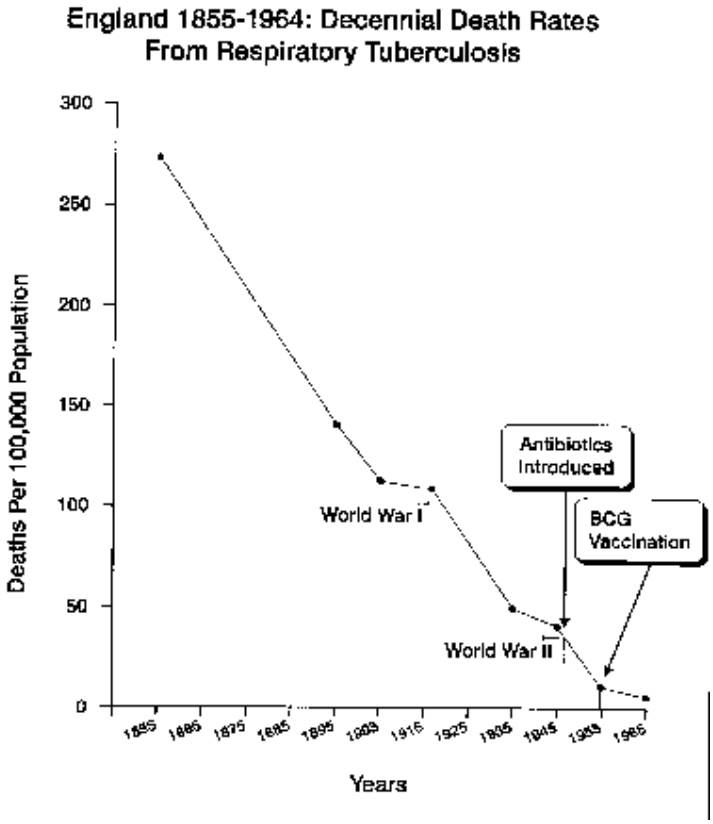

Table VII--shows that in England death rates from respiratory tuberculosis underwent a roughly 87 percent decline in the period beginning 1855 and ending in 1947, when antibiotics first came into wide use; and a further decline approximating 93 percent by 1953, preceedin the introduction of the BCG vaccine.[61]

Table VIII: Number of Countries Reporting Smallpox

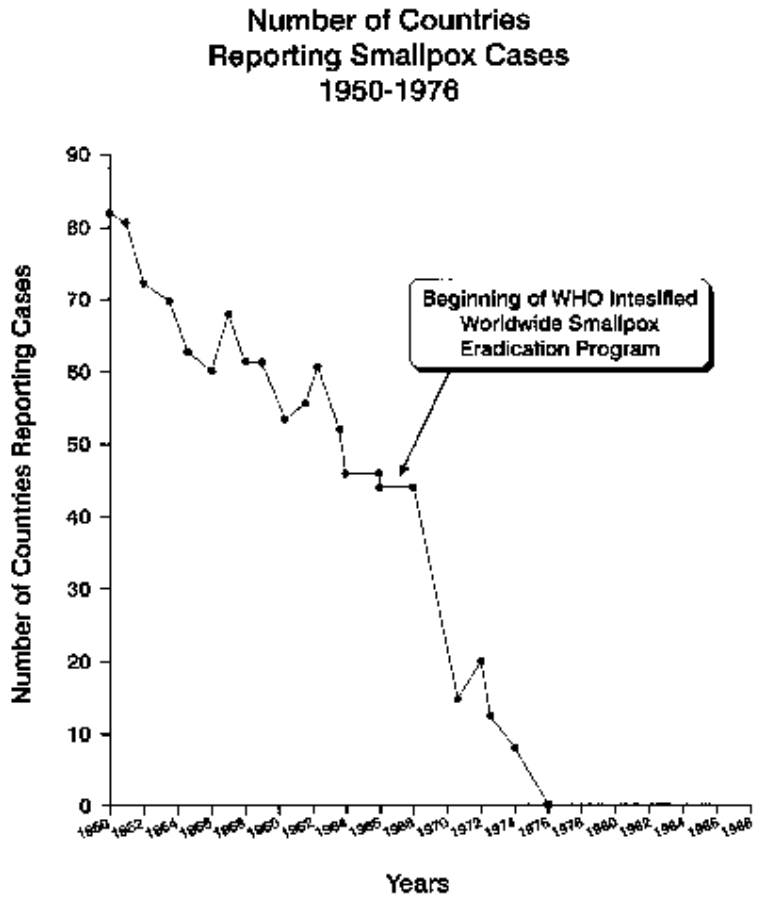

Table VIII--reveals, in the 17 year period preceding the WHO Smallpox Eradication Program, a progressive drop to nearly one half, in the number of countries reporting smallpox morbidity.[62]

Table IX: Acute Rheumatic Fever Death Rates (Britain)

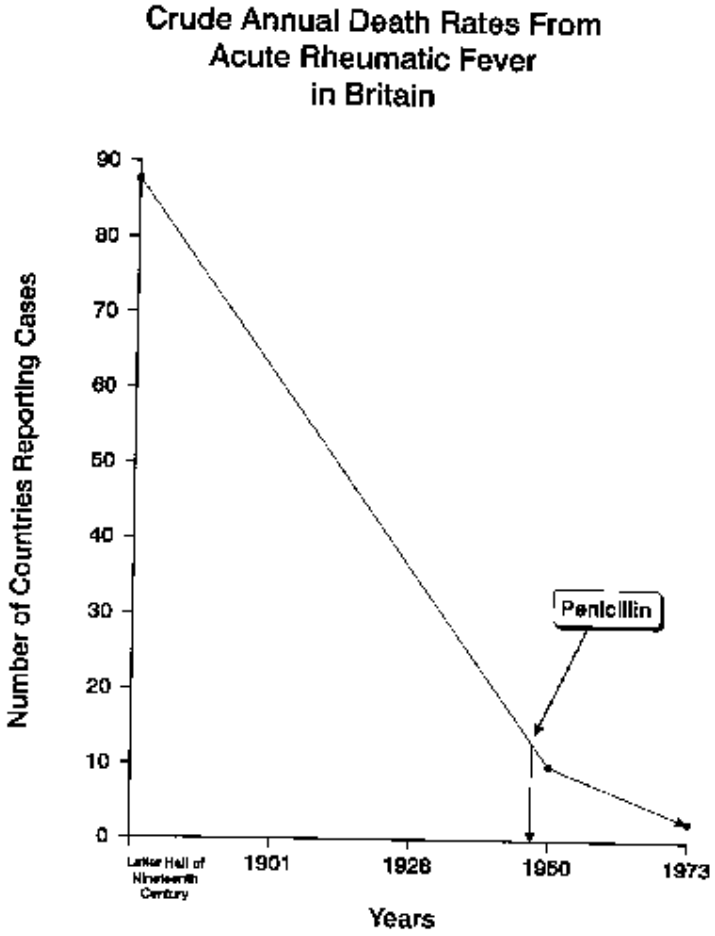

Table IX--indicates that in Britain, the annual death rate from rheumatic fever underwent a decline approximating 86 percent in the period covering 1850 to 1946, before penicillin had become available.[63]

Table X: Scarlet Fever Death Rate (England & Wales)

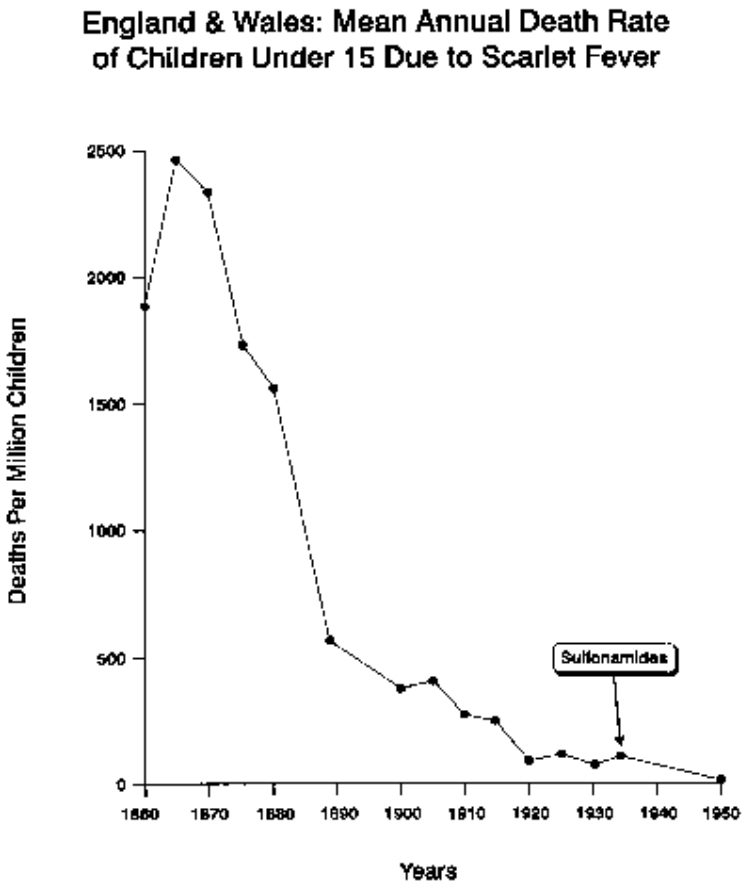

Table X--reveals that in the period of 1865 to 1935, before sulfonamides had become available in England and Wales, the annual death rate from scarlet fever declined by approximately 96 percent.[64]

Table XI: Diphtheria (Nigeria)

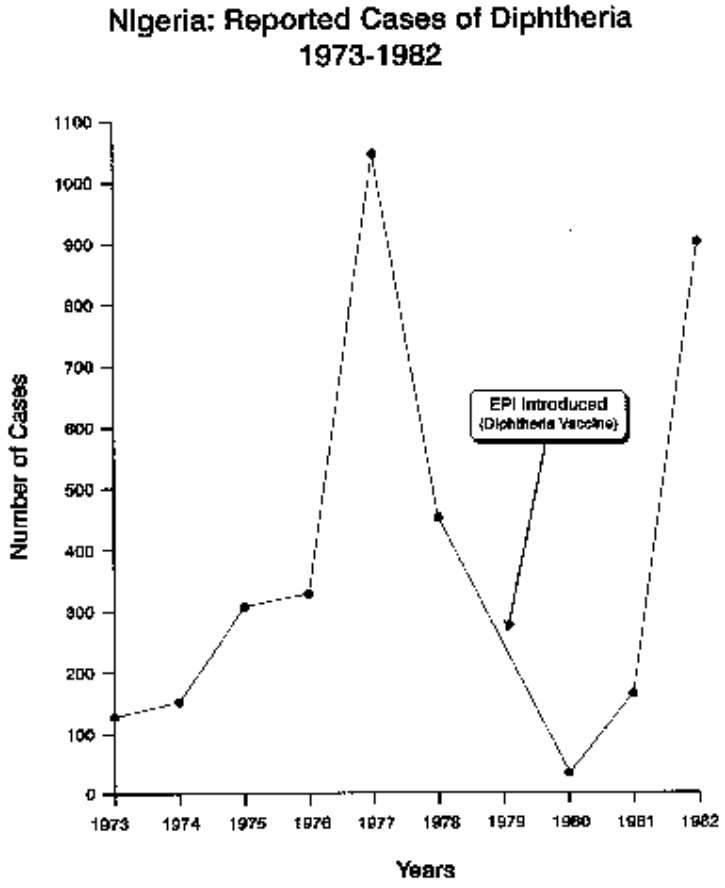

Table XI--shows that following a significant increase in the diptheria morbidity rate which Peaked in 1977, the disease underwent two years of rapid natural decline--equivalent to 73.5 percent--in the number of cases, with such decline occurring prior to the implementation of EPI in 1979. This decline pattern continued during implementation of EPI to 1980, after which--by 1982--the incidence of diptheria exhibited a major increase of nearly 30 fold. [65]

Table XII: Whooping Cough (Nigeria)

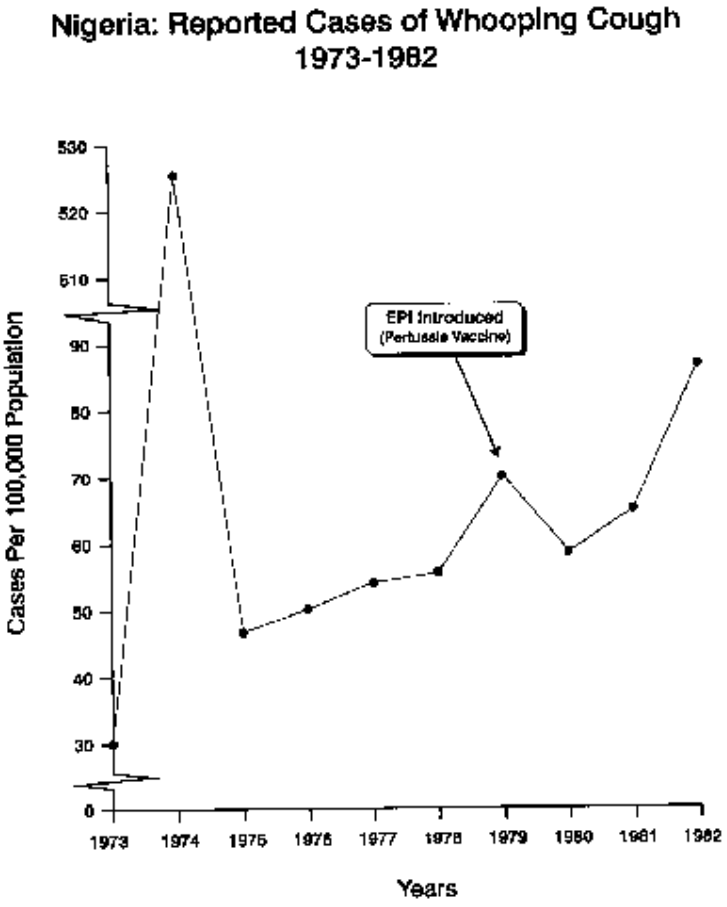

Table XII--shows that a significant increase in the whooping cough morbidity rate (1973 to 1974), was followed by a sharp natural decline from 1974 to 1975 equivalent to 91 percent. The very slight incline which followed up to 1979--when EPI was introduced--still posed an 86.5 percent lower morbidity level than in 1974. Post EPI data indicate a short lived slight decline, followed by an increase in morbidity of 34 percent over the ensuring two years.[66]

Table XIII: Poliomyelitis (Dominican Republic)

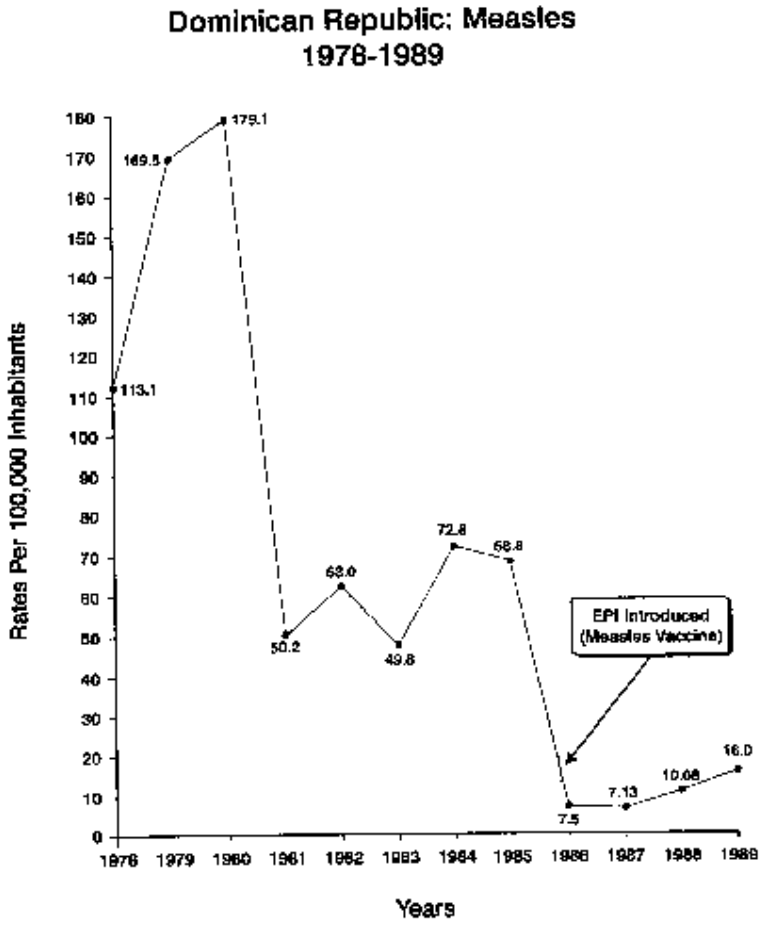

Table XIII--reveals that in the period of 1980 to mid 1983--before implementation of EPI the poliomyelitis morbidity rate underwent a natural decline equivalent to 98.5 percent to wheat is practically an eradication level of only 1 per million. EPI was followed by a continuing natural decline to zero, however the incidence of poliomyelitis then underwent a minor increase for two years, and gradually returned to a zero level in 1980.[67]

Table XIV: Measles (Dominican Republic)

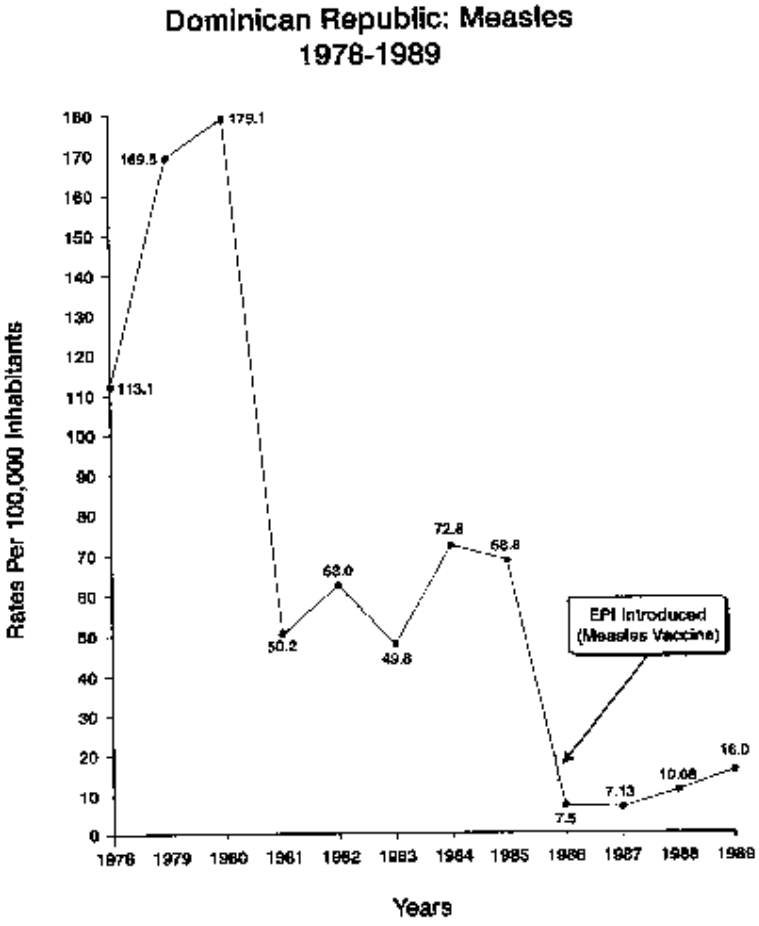

Table XIV--indicates that in the period of 1980 to late 1985--before implementation of EPI the measles morbidity rate underwent a natural decline equivalent to 88 percent. Upon introduction of EPI in late 1985, the natural decline continued for a brief period, halted and then measles more than doubled from its 1986 and 1987 levels.[68]

Table XV: Diphtheria (Dominican Republic)

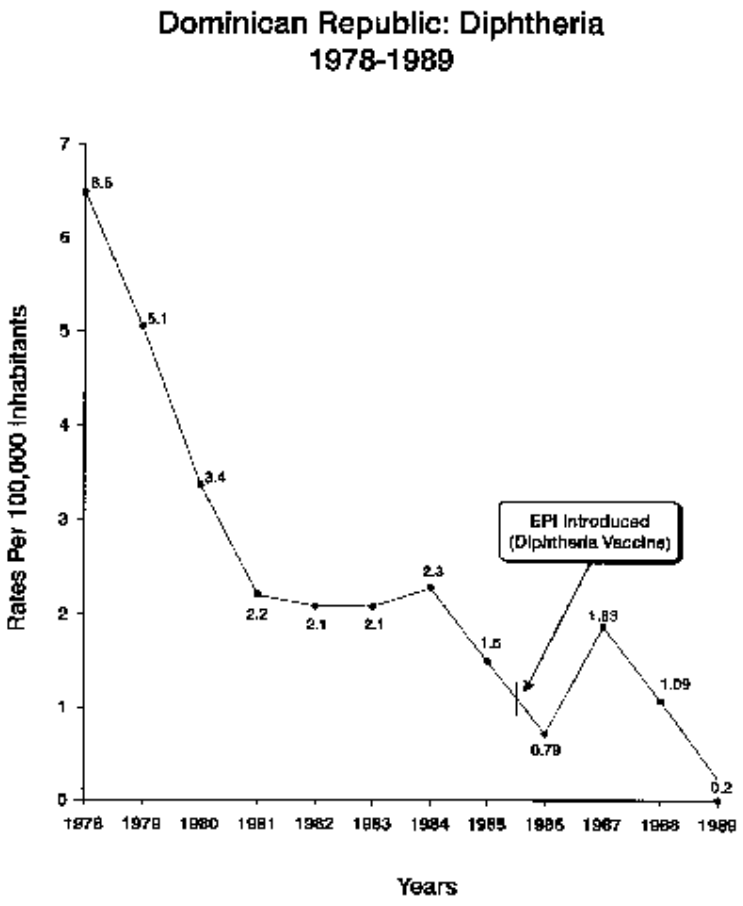

Table XV--shows that in the period of 1978 to mid 1985--before implementation of EPI--the diptheria morbidity rate underwent a natural decline equivalent to 81.5 percent. Upon introduction of EPI in mid 1985, the natural decline continued for a brief period, and then by 1987 the diptheria case rate more than doubled from its 1986 level. The disease than returned to its natural rate of decline, proceeding to a very low level in 1989.[69]

Table XVI: Pertussis (Dominican Republic)

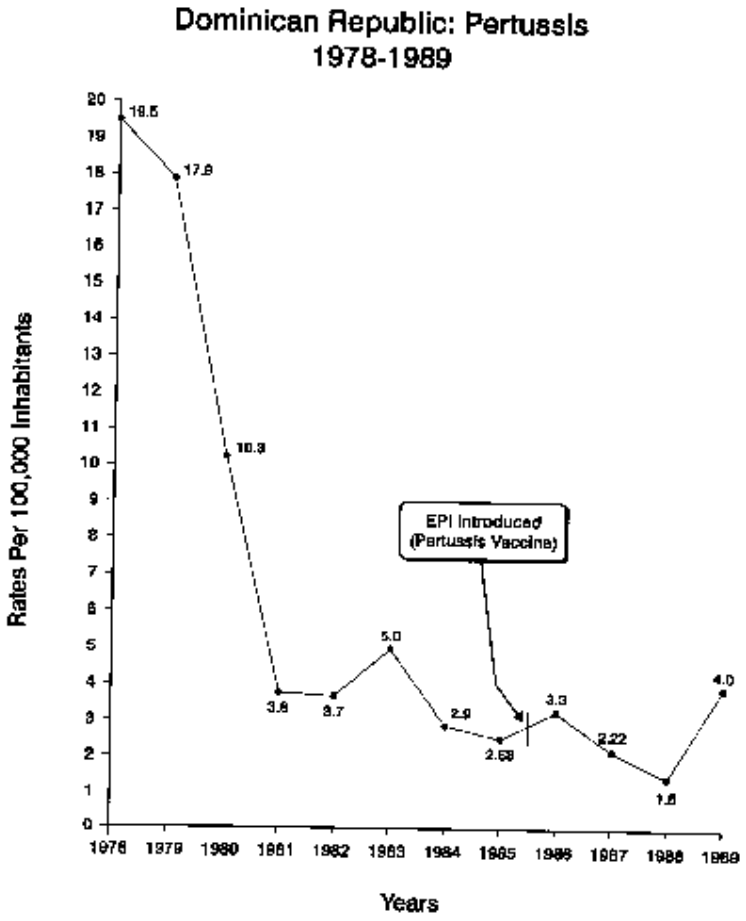

Table XVI--reveals that in the period of 1978 to mid 1985--before implementation of EPI the pertussis (whooping cough) morbidity rate underwent a natural decline equivalent to 84.5 percent. Upon introduction of EPI in mid 1985, there was a slight rise and then return to the earlier natural decline pattern reaching its lowest level by 1988. However, by 1989 the pertussis morbidity rate nearly tripled from its 1988 level.[70]

Table XVII: Tetanus (Dominican Republic)

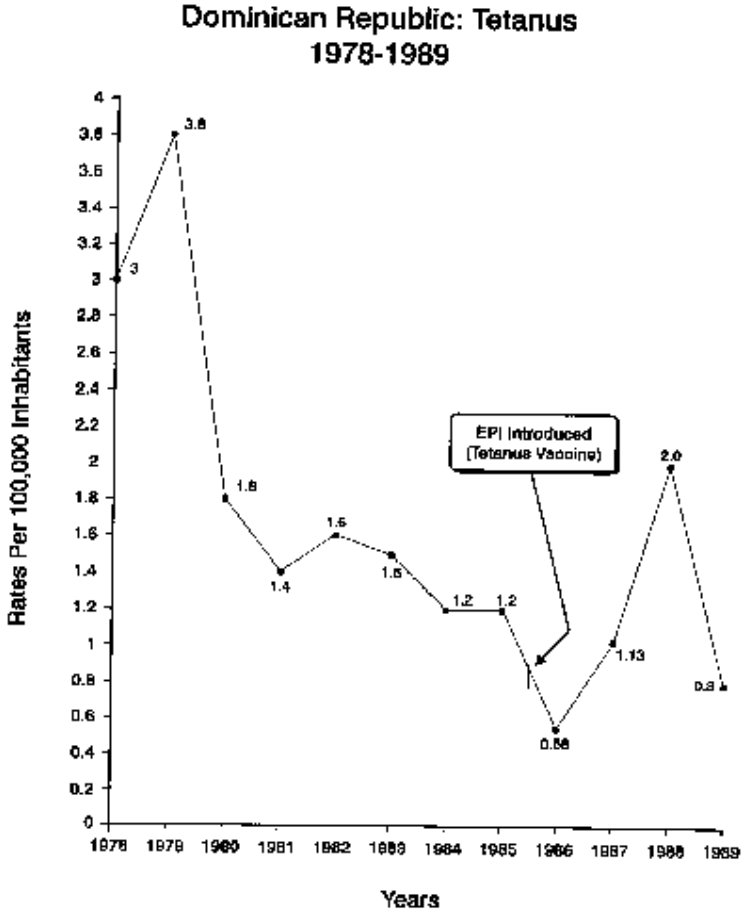

Table XVII--indicates that in the period of 1979 to mid 1985--before implementation of EPI the tetanus morbidity rate underwent a natural decline equivalent to 74 percent. Upon introduction of EPI in mid 1985, the natural rate of decline continued for a brief period to 1986. However, by 1988 the incidence of tetanus had more than tripled from its 1986 level, and then by 1988 returned to its earlier natural decline pattern, reaching a level in 1989 still higher than its 1986 level.[71]

Table XVIII: Neonatal Tetanus (Dominican Republic)

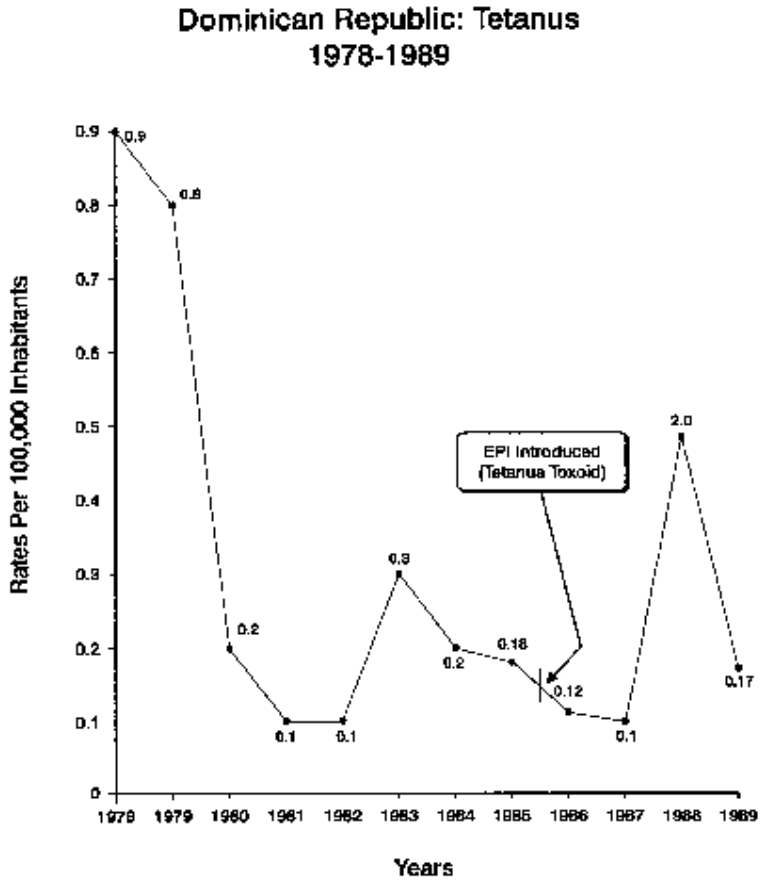

Table XVIII--shows that in the period of 1978 to the end of 1985--before the implementation of EPI (tetanus toxoid for expectant mothers)--the neonatal tetanus morbidity rate underwent a natural decline equivalent to 98.5 percent. Upon introduction of EPI in late 1985, the natural rate of decline continued for a brief period to 1987. However by 1988 the incidence of neonatal tetanus had increased by nearly five fold over its 1987 rate, and then by 1989 declined to a level still higher than it was in 1986.[72]

IMMUNIZATION EFFECTIVENESS DATA

Data on Diphtheria

Ekanem's earlier noted research (Table XI), reveals an increase of 215 percent in the number of diphtheria cases by the end of the three year period following implementation of UNICEF's Expanded Program of Immunization. Robert Mendelsohn (Assoc. Prof. of Preventive Medicine and Community Health, University of Illinois) reports "that children who have been immunized [for diphtheria] fare no better than those who have not." He went on to describe an outbreak of diphtheria in which "fourteen of twenty-three carriers had been fully immunized." This means that just over 60 percent of the carriers who were presumed to be protected by the toxoid, contracted the disease. In his words "Episodes such as these shatter the argument that immunization can be credited with eliminating diphtheria or any of the other . . . childhood diseases."[73]

The following conclusion is extracted from the *Minutes of the 15th Session* (November 20-21, 1975) of the *Panel of Review of Bacterial Vaccines and Toxoids with Standards and Potency* (data presented by the US Bureau of Biologics, and the Food and Drug Administration).

> *For several reasons, diphtheria toxoid, fluid or absorbed, is not as effective an immunizing agent as might be anticipated. Clinical (symptomatic) diphtheria may occur . . . in immunized individuals--even those whose immunization is reported as complete by recommended regimes . . . the permanence of immunity induced by the toxoid . . . is open to question.*[74]

Earlier historical data on protective toxoiding efforts in N. America clearly verify not only the FDA's conclusion, but the fact that the toxoid actually exacerbated the seriousness of the disease. North American data on various diphtheria outbreaks in the early 40's, reveal the following facts.

- In the Halifax Canada epidemic, of the cases admitted for hospital treatment, 66 had previously received one or more doses of diphtheria toxoid or antitoxin, or were found Shick negative. In fact, of this number five cases had been immunized within the preceding two month period.[75]
- In the Ottawa Canada epidemic, of 99 cases (all under the age of 15), 36 were found to have previously received all three doses of the toxoid.[76]
- In the Baltimore USA epidemic, 63 percent of all cases had a record or history of prior immunization with toxoid. Among the fatal and more serious "Bull-neck" cases, 77.8 percent had previously been toxoided.[77]
- During roughly the same historic period, we find in various European countries a gripping picture suggesting that the use of Diphtheria toxoid in fact precipitated epidemics of the disease.77
- Throughout 1941 to 1944 "The Ministry and Dept. of Health, Scotland, admitted almost 23,000 cases of diphtheria in immunized children," with 180 fatalities.[78]
- By the year 1941, the majority of children in France had been inoculated for diphtheria, the case rate standing at 13,795 by the end of that year. Mass

immunization efforts continued, and "by 1943, the diphtheria cases were more than tripled to 46,750."[7]

- Diphtheria increased by 55 percent in Hungary and tripled in Geneva, Switzerland after the introduction of compulsory immunization laws. In Germany, with compulsory mass immunization "introduced in 1940, the number of cases increased from 40,000 per year to 250,000 by 1945, virtually all among immunized children." Norway, during the same time frame--just noted--remained unvaccinated, and had only 50 recorded cases of diphtheria.[80]
- "In Sweden, diphtheria virtually disappeared without any immunization."[81]
- According to Coumoyer's research, official US Military records show that enlisted men and women who are thoroughly vaccinated--manifest a morbidity and mortality rate from diphtheria four times higher, than that of unvaccinated civilians.[82]

Data on Measles

As already noted earlier in this report, the national per capita case rate in Thailand for measles in 1982, 2 years before the advent of the Expanded Programme of Immunization, was lower than in the year 1988, i.e., 5 years after implementation of EPI. Per Ekanem's earlier cited research, the national per capita case rate in Nigeria for measles in 1973, 6 years before the advent of UNICEF's Expanded Programme of Immunization, was lower than in the year 1982, i.e., 3 years after implementation of EPI.83

The University of Alberta initiated special research on the question of measles immunity, as a result of a measles epidemic which "swept" the University campus in 1987, despite a "98 percent immunization rate." The research team's head immunologist R. Marusyk (who is also affiliated with the Alberta Provincial Public Health Laboratory) has subsequently confirmed that it is an invalid assumption that vaccination programs for measles--which are normally administered at 9 to 12 months, and a later childhood booster shot--confers lifelong immunity. One of their findings indicated that 93 percent of infants "who were studied" showed no immunity by the age of six months. The mothers of the 120 babies had all been vaccinated. Normally, antibodies that have been transferred at birth from the mother to the child remain present for a year."[84] (According to D. de Saving at IDRC, this transfer and retention of antibodies apparently occurs when the mother has had an actual measles infection, and not just vaccination.)

Similar to the experience at the University of Alberta, the *National Geographic* in its January 1991 issue article "The Disease Detectives," refers to a 1988 measles epidemic at Fort Lewis College, Durango, Colorado USA in these words: "Surprisingly most who fell ill had been vaccinated. CDC (US Center for Disease Control) investigators rushed to the campus during the 1988 outbreak to trace what had gone wrong."

There are repeated reports of measles epidemics occurring in fully vaccinated populations. These failures have occurred repeatedly since the vaccines introduction.[85] Other documented research findings follow:

- A survey conducted in 1978--covering 30 states in the US--revealed that "more than half of the children who contracted measles had been adequately vaccinated;"[86]
- Moskowitz et al. found that in those states with comprehensive (k-grade 12) immunization requirements, between 61 and 90 percent of measles cases occur in persons who received the recommended vaccines;[87] and
- A review of 1,600 cases of measles in Quebec, Canada in the period of January to May of 1989, revealed that 5 8 percent of school-age cases had been previously vaccinated.[88]

According to an unpublished WHO research study comparing what would be defined as a "measles susceptible" group of children, to a control group that had been immunized for measles, it was observed that the non-immunized group manifested a normal contraction rate of 2.4 percent, whereas the immunized group exhibited a 33.5 percent contraction level. This implies a 15 times greater likelihood of infection by the immunized.[89] (The researchers responded to these results with the comment that the vaccine must have been mishandled, or perhaps the vaccine used was badly manufactured.)

It is of interest that there is an emerging body of mathematically based epidemiological research which suggests practicable problems with EPI efforts in the control and eradication of measles in the Developing World. For example, P. Kenya observes that:

> *Horizontal mass immunization campaigns at regular intervals may be impractical in terms of costs and operational logistics. . . . In spite of high measles immunization coverages, measles epidemics are often reported, not only in the less developed regions but also in those developed countries with measles elimination targets.*[90]

Data on Polio

An article in a major consumer journal titled "Twentieth-century miraclemaker," in extolling the value of Salk's polio vaccine, indicated that in 1953, there were 15,600 cases of paralytic polio in the United States; by 1957, due to the vaccine, this number dropped to 2,499." Since this popular conception persists to this day as an important demonstration of the effectiveness of vaccination procedures in general, and the polio vaccine in particular, it bears some re-examination.

Bernard Greenberg (late Dean--School of Public Health, University of N. Carolina) who--during the polio epidemics of the 50's--chaired the Committee on Evaluation and Standards for the American Public Health Association, submitted testimony to the Congressional Hearings on polio vaccines (*HR0541*, 1962). His evidence respecting diagnostic modifications and statistical manipulation, seriously challenged the popularly promoted view that the epidemics subsided as a result of vaccine intervention. In his words "As a result of . . . changes in both diagnosis and diagnostic methods, the rates of paralytic poliomyelitis plummeted from the early 1950's to a low in 1957." This involved:

- redefinition of what constitutes an epidemic

- redefinition of the disease; and
- mislabelling, and later reclassification (prior to 1954 "large numbers" of presumed "paralytic polio" cases were actually "Coxsackie . . . and aseptic meningitis," statistical reclassification of "polio" cases (not leading to permanent paralysis) in the ensuing 4 year period became the norm in virtually all regions of the country.

It is of further interest that Greenberg testified that after the introduction of much more intensive and frequently compulsory immunization programs--beginning in 1957--there was a correspondingly substantial increase in polio cases (which were presumably paralytic, due to the aforenoted reclassification process). In the period of 1957-1958 there was a 50 percent increase, and 1958-1959 an 80 percent increase in such cases. He also indicated that during this period statistics were manipulated and statements made by the US Public Health service, to give an opposite impression.[92]

A distinguished interdisciplinary medical panel moderated at the 120th Annual Meeting of the Illinois State Medical Society, confirmed that in the year 1959, roughly 1,000 cases of paralytic polio occurred in persons who had previously received multiple doses of the Salk vaccine. As a panel member, B. Greenberg contributed the following observation:

> *One of the most obvious pieces of misinformation . . . is that the 50 percent rise in paralytic poliomyelitis in 1958, and the real accelerated increase in 1959 have been caused by persons failing to be vaccinated This represents . . . an unwillingness to face facts and to evaluate the true effectiveness of the Salk vaccine. . . . A scientific examination of the data and the manner in which the data were manipulated, will reveal that the true effectiveness of the present Salk vaccine is unknown and greatly overrated.*[93]

When pediatrician R. Mendelsohn, was asked whether polio would return if vaccinations were stopped, he replied "Doctors admit that forty percent of our population is not immunized against polio. So where is polio? Diseases are like fashions, they come and go . . ." Later on US National television he referred to epidemiological records which revealed the disappearance of polio in Europe during the 40's and 50's, without benefit of immunizations.[94]

Speaking at an international health convention in 1978, A. Burton reported that statistical data compiled by the University of New South Wales in Australia revealed that polio immunization programs had no measurable impact in reversing what was a recent epidemic in that country. He expressed the view that polio comes in cycles anyway, and when it does subside, it is inadvertently considered "conquered" by vaccines.[95] This naturally occurring cycle in polio epidemics was well illustrated in Great Britain where polio peaked in 1950, and had declined by 82 percent by the year 1956, at which time the vaccine was first introduced.[96]

Returning to the earlier cited US Congressional Hearings (HR 1054), we find that the nation of Israel experienced a major "type I" polio epidemic in 1958. Mass polio immunization had already been enforced and there was no appreciable difference in contraction levels between the vaccinated and unvaccinated. Additionally, 3 years later in 1961, the state of Massachusetts experienced a "type II" polio outbreak in

which "there were more paralytic cases in the triple vaccinates than in the unvaccinated".[97]

It is noteworthy that in one of the few double blind trials that have been conducted on a vaccine, was for the Salk polio vaccine, in which trial over 200 individuals who received the vaccine went on to contract polio, whereas no observed polio cases developed amongst the controls. This trial was reported by Mendelsohn who in the same 1984 article wrote:

> *The evidence points to mass inoculation against polio as the cause of most remaining cases of the disease . . . there is an ongoing debate among the immunologists regarding the . . . killed virus vs. live virus vaccine. Supporters of the killed virus vaccine maintain that it is the presence of live virus organisms in the other product that is responsible for thepolio cases that . . . appear. Supporters of the live virus type argue that the killed virus vaccine offers inadequate protection and actually increases the susceptibility (to polio) of those vaccinated. . . . I believe that both factions are right, and that use of either of the vaccines will increase not diminish the possibility that your child will contract the disease.*[98]

Thirteen scientists recently concluded that: vaccine failures in the major Oman polio epidemic could not be explained by failures in the cold chain, nor on suboptimum vaccine potency; the efficacy of OPV in inducing "humoral immunity" was lower than expected; and primary reliance on routine polio immunization may be "inadequate" to achieve the goal of eradicating polio by the year 2000. (They also noted similar paralytic polio epidemics in other highly vaccinated populations,[99] e.g., the Gambia, Brazil, and Taiwan.)

Data on Pertussis (Whooping Cough)

V. Fulginiti, Chairman of the American Academy of Paediatrics Committee on Infectious Diseases made this incisive observation:

> *Despite more than 30 years of experience with pertussis immunization, the reasons for recovery from the acute infection and subsequent immunity, are still uncertain. It is known that second attacks are rare following natural disease. It is also known that 45-95% of recipients of pertussis vaccine are susceptible to pertussis up to 12 years later . . . we do not understand the immunologic mechanisms involved in resistance to infection after natural disease or immunization.*
>
> *Is pertussis vaccine effective? . . . prior to the widespread use ofpertussis vaccine, both the incidence of pertussis and the case-fatality ratio declined. A 50-fold reduction in incidence and an 84% reduction in case-fatality were recorded in Great Britain in the years between 1947 and 1972. . . . In England, protection provided by vaccines prior to 1968 was meager; no greater than 20% protection was noted. . . . Britain is in the position of advocating use of a vaccine for which there are not hard data.*[100]

G.T. Stewart's observations as published in the British Medical Journal indicated that "of 8,092 cases of whooping cough, 2,940 (36%) were fully immunized, while only 2,424 (30%) were definitely not immunized."[101]

A *Medical Tribune Report* (January 10, 1979) details an outbreak of whooping cough in which 46 out of 85 fully immunized children contracted the disease.[102] (the reason that the other 39 did not contract the disease could have been related to any number of predisposing factors).

Ekanem's earlier noted research (Table IX) , reveals an increase of 21 percent in the number whooping cough cases by the end of the three year period following implementation of an Expanded Program of Immunization in Nigeria.[103]

Data on Tetanus Toxoid and Immune Globulin

Neustaedter indicates that "Tetanus seems to be nearly eliminated from the United States, primarily because of good hygiene and proper wound management." His research suggests that in the period of 1982-1984 in the US, there were a total of nine tetanus cases among both children and adolescents, in which there were no deaths.[104] Whereas Coumoyer's research points to "contaminated umbilical stump infections" as a principal cause of tetanus in the Developing World.[105] Such infections can be effectively rectified through providing appropriate information and training to traditional birth attendants.

Both Cournoyer and Johnson indicate that there have been some reports of lock jaw death in properly inoculated individuals.[106 & 107] Additionally Cournoyer suggests that "Evidence in support of the (tetanus toxoid) vaccine comes from epidemiologic studies which are by nature controversial, and which do not satisfy the criteria for scientific proof.[108]

According to the data contained in Table XVII, in the Dominican Republic the incidence of tetanus among children actually increased in the two year period following administration of tetanus toxoid. Table XVIII indicates that in the same country, the rate of neonatal tetanus--among mothers underwent an increase in the year following administration of tetanus toxoid.[109]

WHO SMALLPOX ERADICATION SUCCESS RECONSIDERED

Although smallpox is apparently now accorded to the history books, it will be necessary to re-examine the issue of this disease having been universally eradicated, with particular reference to the WHO eradication campaign. An honest look at this question is of considerable importance, as the current worldwide UCI-EPI program gains much of its legitimacy and inspiration from this widely acclaimed success story.

A strong challenge to this now popular view, is reflected in the post-campaign findings of medical researchers like Buttram and Hoffman:

> *Most people probably credit the smallpox vaccine with playing the major role in recent eradication of smallpox throughout the world, but let us examine the facts. In the article 'Vaccines a Future in Question,' statistics showed that less than 10 percent of children in developing countries have received vaccines.*

They went on to comment that with this level of coverage, the WHO campaign was not a real factor in the eradication. Data obtained in their broad based research also led them to conclude that "mass smallpox vaccination was not necessary for the eradication of smallpox.[110]

In further examining this question from a longer historical perspective, it became readily apparent that the WHO claim did not at all square with the earlier data, i.e., historical smallpox eradication efforts. If we go back as far as the last century, we discover that Creighton's independent research findings as published in the *Ninth Edition of the Encyclopedia Britannica,* strongly contradict the effectiveness of mass smallpox immunization programs. A few revealing excerpts follow:

- . . . in Bavaria in 1871 of 30,742 cases 29,429 were in vaccinated persons, or 95.7 percent.
- Notwithstanding the fact that Prussia was the best re-vaccinated country in Europe, its mortality from smallpox in the epidemic of 1871 was higher (69,839) than any other Northern state.
- According to a competent statistician (A. Vogt), the death-rate from smallpox in the German army, in which all recruits are re-vaccinated, was 60 percent more than among the civil population of the same age . . . although re-vaccination is not obligatory among the latter.
- It is often alleged that the unvaccinated are so much inflammable material in the midst of the community, and that smallpox begins among them and gathers force so that it sweeps even the vaccinated before it. Inquiry into the facts has shown that at Cologne in 1870 the first unvaccinated person attacked by smallpox was the 174th in order of time, at Bonn the same year the 42d, and at Liegnitz in 1871 the 225th.[111]

As we move on into the earlier part of this century we find the same dismal picture of increased susceptibility correlated with increased vaccination coverage. Dettman and Kalokerinos describe a visit they paid to the Philippines about 15 years ago:

> *. . . We were fortunate enough to address their own medical (and) health officials where we reminded them of the incidence of smallpox in formerly "immunized" Filipinos. We invited them to consult their own medical records and asked them to correct us if our own facts and figures disagreed. No such correction has been forthcoming, and we can only conclude that between 1918-1919 there were 112,549 cases of smallpox notified, with 60,855 deaths. Systematic (mass) vaccination started in 1905, and since its introduction case mortality increased alarmingly. Their own records comment that "The mortality is hardly explainable."* [112]

Speaking at a 1973 environmental conference in Brussels, Professor George Dick admitted that in recent decades, 75 percent of those that have contracted smallpox in Britain, have had prior a history of vaccination. In that "only 40%" of children were

vaccinated (and at most 10 percent of adults), such figures clearly indicate that the vaccinated--as in the much earlier historical record--continue to show a higher tendency to contract the disease. Dick also admitted that smallpox had been eradicated in certain tropical countries without mass vaccination.[113] (Table VIII reveals that in the 16 year period preceding the year the WHO eradication campaign was launched--38 additional countries had ceased to report any smallpox cases.)[114]

A. Hutchison writing in the *Journal of the Royal Society* in 1974, referred to the smallpox vaccines "lack of potency" and the inadequacies of other measures for containment, in his words, "I have given details of the various outbreaks of smallpox in Britain and where they were diagnosed. These clearly indicate that the (preventive) measures are most ineffective.[115]

An article in the *New Scientist* indicates that "The smallpox family of viruses is genetically unstable," and that new viral strains which threaten the "WHO smallpox eradication programme, could emerge anywhere.[116] It is thus of interest that in a 1980 article in the *Australasian Nurses Journal,* Dettman and Kalokerinos pointed out that electron-microscopy cannot distinguish between the various "poxviruses.[117] (According to D, de Saving of IDRC, as of 1990 DNA sequencing can make the distinquishingment. What is not known though, is whether this has any beating on the reporting of the various "pox" diseases worldwide.) This fact led them to raise a vitally significant question "as to whether smallpox may be declared conquered, (it's estimated that only 10 percent of the world population actually received the vaccine) with the possibility of it masquerading under the guise of a similar pox." Their line of evidence and reasoning is summarily stated:

> *. . . we claim that if the evidence is honestly evaluated that smallpox has actually been prolonged and that the so called protective vaccinations actually put the recipient at risk from . . . the disease itself. Authorities now realize this and the 'top world' countries are making vociferous protests about third world countries continuing use of smallpox vaccination because (a) suddenly it has become recognized that it is an extremely dangerous procedure,* (To give some idea of the vaccine's dangers, it was reported--in the late sixties--that annually, roughly 3,000 children were experiencing varying degrees of brain damage due to the smallpox vaccine; and according to G. Kiftel in 1967, smallpox vaccination damaged the hearing of 3,296 children in West Germany, of which 71 became totally deaf.[117]) *and (b) it has now been conquered. The ultimate in ingenuity. . . .*[118]

In turning to recognized textbooks on human virology and vertebrate viruses we find that attention has been given since 1970 to a disease called "monkeypox," which is said to be "clinically indistinguishable from smallpox." Cases of this disease have been found in Zaire, Cameroon, Nigeria, Ivory Coast, Liberia, and Sierra Leone (by May 1983, 101 cases have been reported). It is observed that " . . . the existence of a virus that can cause clinical smallpox is disturbing, and the situation is being closely monitored."[119] (For a highly detailed account of the history of this disease and efforts to eradicate it, which further corroborates these observations, see, Razzell P., *The Conquest of Smallpox,* Caliban Books, United Kingdom, 1977.)

VACCINE ASSOCIATED DANGERS--GENERAL OBSERVATIONS

Another basic issue that has never been raised in the programming, or evaluation contexts of Official Development Assistance supported mass immunization, is the requirement for effective monitoring and research on potential vaccinal adverse effects. The issue of vaccine dangers and damage is obviously a rather unpleasant subject that no one really enjoys thinking or talking about. In fact it appears to have been totally ignored in both the planning and execution phases of Canada's International Immunization Programme(CIIP). Furthermore, the recently completed *Qperational Review of CIIP 1986--1991,* which according to its sub-title was supposed to address inter alia ". . . lessons learned in the first three years," failed to even raise the two very fundamental issues of vaccine effectiveness, and vaccine damage.[120]

In special PHC-EPI research conducted for the CIDA Evaluation Division, the conclusion was reached that the extensive literature written on the subject of immunization, adverse reactions and contra indications, points clearly to the reality that "massive immunization programs carry with them a number of very real risks and hazards.[121]

According to information recently provided by CIDA's Health and Population Directorate the World Health Organization as of October, 1990 has instituted a policy for "adverse event monitoring" in Developing World Immunization activities. A definitive policy statement on this issue titled *Monitoring of Adverse Events Following Immunization,* is apparently available as of April 1991. The implications of VMO's recognition of the significance of this issue to the setting of public policy priorities for EPI research, monitoring and evaluation should be apparent. In order to provide some background on why the WHO is now taking these measures, a few critical observations follow.

In recognition of potential vaccine dangers, David Karzon of the Vanderbilt University School of Medicine raises important policy considerations with respect to mass immunization programs in the Editorials section of the *New England Journal of Medicine.*

> *. . . there are two compelling reasons for reinspection of the process of formulating and implementing our immunization program: the emergence of new societal considerations and responsibilities; and the need for a fuller public disclosure of the costs of disease prevention . . . we as a society have not recognized and accepted all the costs . . . costs measured not only in dollars spent or saved, but also as adverse biologic reactions.*
>
> *Literally no drug or procedure used in medicine is risk free. Immunizing antigens, originating from complex biological materials or arising as genetically attenuated live agents, have their own peculiar endogenous hazards, Complications . . . are particularly apt to be visible in mass immunization campaigns. . . . The quality of the data base for national decisions is critical because any vaccine recommendation carries such a vast Potential for harm or good.*[122]

It is unfortunate that UNICEF EPI field reports tend to dismiss the concerns raised by "targeted" locals to the issue of vaccine damage, as based on misinformation provided by unreliable local health staff, or the ignorance of fearful mothers, both of whom need re-education. For instance a recent UNICEF annual project report in discussing EPI stated, "A WHO-UNICEF team found that drop out rates were high because of the fear of side effects as expressed by mothers, (and) misinformation about contraindications . . . as communicated by health workers. . . . As a result, increased attention is being directed toward health education. . . ."[123]

To say the least, it seems incongruous that this issue is paternalistically ignored as an insignificant concern raised by the misinformed and the ignorant, when Canadian citizens are being alerted by the media that the Canadian Government is expected to announce "disaster relief" to families "of vaccine damaged children."[124] This relatively recent report suggests that vaccine damage is likely more pervasive a problem than is generally acknowledged or believed. In fact, it appears that chronic under-reporting of vaccine-induced morbidity, disability, and mortality appears to be the norm. Probably the most erudite scholar who has thoroughly investigated the issue of vaccine hazards, is Sir Graham Wilson. As Honorary Lecturer in the Department of Bacteriology at the London School of Hygiene and Tropical Medicine, the following observations are excerpted from an earlier lecture series delivered at that school.

> *The risks attendant in use of vaccines and sera are not as well recognized as they should be. Indeed our knowledge of them is still too small, and the incomplete knowledge we have is not widely disseminated.. a very small proportion [of the actual numbers of vaccine accidents] . . . have been described in the medical literature of the world.*
>
> *. . . a large number of accidents--I suspect the majority--have never been reported in print, either through fear of compensation claims, or of giving a weapon to antivaccinationists . . . I have come to the conclusion that no vaccine or antiserum can be regarded as completely safe . . . no vaccine or antiserum that has yet been used has been free from complications or accidents . . . [with respect to assessing the "degree of possible danger" he indicates that] Unless both the numerator and the denominator are known, quantitative assessments may fall wide of the true mark. Moreover, the risk, even for a single vaccine, is not uniform. It varies, among other things, with the immunological status of the population concerned..*
>
> *The inherent danger of all vaccination procedures should be a deterrent to their unnecessary or unjustifiable use. Vaccination is far too often employed, especially in the developing countries . . . and should not be used as an [instead] excuse from applying the well tried standard methods for the prevention of infectious disease. Most important is it to realize the potential dangers of mass immunization. In such an operation time does not permit an inquiry into the suitability of each individual subject for vaccination.*[125]

A strong echo of Wilson's conclusion that vaccine damage is chronically under reported, is found in the official minutes of the 15th session of the US Panel of Review of Bacterial Vaccines and Toxoids with Standards and Potency.

> *Many physicians are not cognizant of the importance of reporting untoward reactions, or may be unaware of their clinical features. Further, both physicians and manufacturers have been held liable for damage suits by patients who may suffer adverse effects from established vaccines. All of these factors undoubtedly discourage reporting; without some other form of surveillance, definition of the rates and significance of untoward reactions to current and future vaccines cannot be ascertained.*[126]

H.S. Martland, former Chief Medical Examiner for Essex County New York, describes how the above unawareness actually translates into practice:

> *Deaths from brain and spinal cord diseases (poliomyelitis, encephalitis, and meningitis) resulting from . . . immunizations sometimes are attributed to other causes, because doctors are not sufficiently alerted to the connection between immunizations and the deaths. . . .*[127]

Neustadter maintains that the research on vaccine side effects by the pharmaceutical industry remains seriously marginalized due to a significant number of vaccine reactions going unreported, and the fact that it is often difficult to attribute delayed effects with a vaccine. He further suggests that the reason that the medico-pharmaceutical industry has consistently failed to address the unanswered question of the long term effects of vaccines, stems largely from their overriding interest in the active promotion, and rapid marketing of vaccines. Investigation of their adverse side effects generally remains a non-priority issue, insofar as such efforts may undermine the public's acceptance of their products.[128] On the other hand, Snead suggests that when laboratories go public to the media and confirm that "no known problems" exist, this does not mean that scientists have researched to the limits of their knowledge and found no side effects, but rather that no research has actually been done.[129]

Although there is compelling evidence that vaccine induced damage remains chronically under-reported, it is of interest that B. Bloom of the Albert Einstein College of Medicine, openly admits that there is today an emerging reluctance on the part of medico-pharrnaceutical industry to further develop vaccines, for both the developed and Developing Worlds. According to Bloom, this reluctance stems from the fact that financial losses due to the "liability" of established vaccines, actually exceed the "profits" derived from them.[130] In this vein, Mendelsohn indicates that vaccine costs have "skyrocketed" as a consequence of multiple jury awards to damaged children. In his words:

> *As more and more parents begin to recognize the link between vaccines and their child's condition--epilepsy, convulsions, mental retardation, cerebral palsy, Sudden Infant Death, etc.--lawsuits have become commonplace. As drug companies exit the vaccine field, public health authorities worry about vaccine shortages.* [131]

OF WHAT DO VACCINE PRODUCTS CONSIST?

It would be instructive to consider the range of substances--additional to the attenuated virus etc. normally found in vaccine products. Specific viruses and bacteria

are grown in the following substances, with their foreign proteins (antigens) including those derived from: pig or horse blood; rabbit brain tissue; dog and monkey kidney tissue; chicken and duck egg; and calf serum. (It is generally acknowledged that any foreign substances including proteins--which have not been filtered through the body's normal digestive assimilative, and excretory processes, can be highly toxic when freely ranging in the lymphatic and blood systems.) Other foreign additives normally found in various vaccines include:

- formaldehyde--(a known carcinogen)
- thimerosal--(an organomercurial antiseptic--49% mercury--although the mercury is "closely bound," it nonetheless is a toxic metal difficult for the system to eliminate)
- aluminum potassium sulphate (toxic)
- aluminum phosphate--(a toxic substance commonly used in deodorants)
- lactalbumin hydrolysate
- phenol (carbolic acid)--(extremely toxic, not permitted in anti-toxins)
- acetone--(volatile, and can easily cross the placental barrier)
- glycerin--(tri-atomic alcohol derived from decomposed fats which can damage kidney, liver, lungs, local tissue; cause dieresis and possible death.)[132]

Commenting on the inclusion of such substances in vaccine products, R. Moskowitz indicates that "the fact is that we do not know and have never attempted to discover what actually becomes of these foreign substances, once they are inside of the body."[133] Although there are "rigid" precautions in licensing the use and quantity of these common stabilizers and preservative, it certainly seems self-evident that there should be further research to better determine what relationship--if any--exists between such poisons, and various adverse reactions.

SOME OBSERVED AND POTENTIAL ADVERSE EFFECTS OF SPACIFIC VACCINES AND TOXOIDS--DIAGNOSABLE IN THE SHORT TERM

By principally focusing on stimulating the production of antibody--which increasing evidence suggests is only one marginal indicative factor among many in immunity to disease--while ignoring the basic multiple determinants of natural immunity (health), viruses, foreign antigens and proteins are placed directly into the body tissues and are in turn carried throughout the circulatory system (without censoring by the liver) giving them direct accessibility to all of the body's vital organs and systems. Furthermore, it is an EPI strategy that this short-circuiting of the body's natural defense system is imposed at an extremely vulnerable time of life.[134] The stage has thus been set for the advent of a wide range of adverse complications and sequelae.

What follows is a simple listing of observed side effects of specific vaccines, or when noted toxoids. Practically all of the conditions listed are commonly reported in the medical literature as linked to the prior administration of the particular vaccine or toxoid noted. A few conditions listed--such as the sudden infant death syndrome linked to the pertussis vaccine--are not admitted by mainstream medicine as an adverse effect of that particular vaccine, however the research as referenced is reputable and points otherwise. (The vaccines covered in this section have been confined to those prescribed in the Universal Childhood Immunization program.)

MEASLES

- atypical measles (a more serious form of measles)
- encephalopathy (irreversible brain damage)
- subacute sclerosing panencephalitis (progressive brain damage which can lead to death)
- ataxia (incoordination in voluntary muscular movements)
- mental retardation
- aseptic meningitis (inflammation of the membranes of spinal cord or brain)
- seizure disorders
- encephalitis (inflammation of the brain)
- hemiparesis (half-body paralysis)
- retinopathy and blindness
- secondary complications can include:
    - juvenile-onset diabetes
    - Reye's syndrome
    - Multiple sclerosis (degeneration of the central nervous system)[135]

PERTUSSIS (WHOOPING COUGH)

- hyperactivity
- anaphylaxis (hyper-reaction which can include convulsions, unconsciousness and or death)
- epileptic type convulsions
- learning disorders (including IQ reduction)
- encephalopathy
- febrile seizures
- invasive bacterial infections
- hay fever
- asthma
- encephalitis
- sudden infant death (SIDS)[136]

DIPHTHERIA

(The following has occurred with combined diphtheria-tetanus vaccination, and could be associated with either.)

- altered electroencephalogram readings
- seizures [137]

TETANUS TOXOID

- brachial plexus neuropathy (disease affecting nerves which serve the arm, forearm and hand)

- anaphylaxis
- encephalitis
- recurrent abscesses (at injection site)
- abdominal pain
- debility [138]

POLIO (OPV--ORAL LIVE-VIRUS)

paralytic polio
- congenital brain tumors (transmitted by mothers who received vaccine during pregnancy)[139]

GENERAL (I.E., IN COMBINATION)
- meningitis [140]

EXTENT AND NATURE OF OBSERVABLE VACCINE DAMAGE

There is a considerable range in estimates given as to the frequency of damage being produced by particular vaccines. A case in point is the American manufactured DPT vaccine, for which the claim is made that only 1 in 300,000 vaccinates exhibit permanent neurologic damage,[141] whereas other researchers suggest that permanent damage levels can reach as high as 1 in 300.[142] Coumoyer's research findings fall between these two extremes for permanent neurologic or brain damage. Her conclusions indicate that the following varied rate reactions occur in vaccinates, per number of children vaccinated:

- Persistent crying--1 in 20
- High fever--1 in 66
- High pitched screaming--1 in 180
- Convulsions--1 in 350
- Shock like condition or collapse--1 in 350
- Acute brain disorder--1 in 22,000
- Permanent brain damage--1 in 62,000
- Death--1 in 71,600.[143]

Again to illustrate the great variation in estimates, a relatively recent study at UCLA (see Cody et al, ref 136) found that as many as one in every 13 children exhibited persistent high pitched crying after receiving the DPT vaccine. In reference to this specific reaction, physician B. Young states that "This may be indicative of brain damage in the recipient child."[144]

According to data researched by Coulter and Fisher, of the 3.3 million children vaccinated yearly in the US: 16,038 have high pitched (encephalitic) screaming (which is considered by many neurologists as indicative of central nervous system irritation); 8,484 have convulsions; and 8,484 undergo collapse; "for an annual total of 33,006 cases of acute neurological reactions within 48 hours of a DPT shot." The authors further suggest that there is a strong basis for concern with respect to the long term reaction to the DPT vaccine.

Severe neurologic sequelae may . . . occur after vaccination in the absence of an acute reaction. When the baby reacts to a DPT shot with "a slight fever and fussiness for a few days" this may be, and often is, a case of encephalitis which is quite capable of causing even quite severe long-term neurologic consequences . . . . They further suggest that any who would dismiss this possibility, must first establish a basis for distinguishing between post-vaccinal encephalitis and encephalitis arising from other causes.[145]

As a final observation on the issue of short term vaccine dangers, is the postulated linkage of immunization with the "mysterious" problem of sudden infant death (SIDS) in which infants can die "suddenly and quietly" in their cribs. Australian microbiologist Glen Dettman explains that when large amounts of an antigen are given the body responds by a massive release of adrenal products including: cortisol, adrenalin, and an excessive level of endorphins, actually "as much as a thousand times more than is normally released by the brain." He goes on to observe that:

> *The endorphins will suppress respiration and cardiac function. Thus if a child with malnutrition, or an immune problem, is given a load of antigen larger than it can handle--and this antigen may be an immunisation--endorphins may result in respiratory or cardiac failure and death.*[146]

Torch's research indicates that two-thirds of 103 infants who were victims of the sudden death syndrome had been immunized with DPT vaccine within the 3 week period preceding death, with many dying within a day of receiving the vaccine.[147] In a widely debated occurrence of SIDS in Tennessee (USA), in which eleven infant deaths occurred within eight days of a DPT vaccination, (nine from the same lot), and five within 24 hours of vaccination (four from the same lot). Mortimer reported that the probability of this being mere chance or coincidental to be between 2 and 5 in 1,000;[148] whereas Shannon reported a much lower chance association of 4 and 5 in 10,000.[149]

LONG TERM (DELAYED) POTENTIAL ADVERSE EFFECTS OF IMMUNIZATION

Leaving the continuing controversies that exist over the extent and nature of observable adverse reactions to vaccines, we go on to the equally serious spectre of delayed reactions and the larger unanswered questions which surround the long term consequences of immunization. (The material in both this and the following section on "Immunization and Immune Malfunction" is afforded not necessarily as definitive and factual conclusions, but rather as preliminary research observations on vital--albeit controversial--issues and questions which undoubtedly merit further examination, research and analyses.) We began the exploration of this issue by reviewing some basic concepts and concerns relative to the strongly suspected linkage between live viral vaccines and the enormous escalation of varied auto-immune disorders.

Joshua Lederberg, a Stanford University School of Medicine geneticist and Nobel Prize winner, was perhaps the first to raise the warning that the use of live virus

vaccines in mass immunization campaigns represents "biological engineering on a rather large scale." He goes on to comment:

> *While these [vaccines] are thought to be of indubitable value for preventing serious diseases, their global impact on the development of human beings of a side range of genotypes is hard to assess at our present stage of wisdom. . . . Live viruses are themselves genetic messages used for the purpose of programming human cells for the synthesis of immunogenic virus antigens.*[150]

Researchers such as Buttram postulate that the use of live viral vaccines in mass immunization programs introduces foreign genetic material into the human system, which has precipitated an unprecedented escalation of various auto-immune disorders in recent decades. These are disorders wherein antibodies or immune cells indiscriminately attack the tissues of one's own body-mind complex.[151]

Harvard graduate and physician, R. Moskowitz, explains how the live viruses in vaccines can, in the long term, lead to such auto-immune disease conditions. Vaccinal attenuated viruses attach their own genetic "episome" to the genome (half set of chromosomes and their genes) of the host cell, and are thus capable of surviving or remaining latent within the host cells for years. The presence of this foreign antigenic material within the host cell sets the stage for their unpredictable provocation of various auto-immune phenomena such as herpes, shingles, warts, tumors--both benign and malignant--and diseases of the central nervous system, such as varied forms of paralysis and inflammation of the brain.[152]

Markowitz further poses the caution that vaccines do not act by merely producing pale or mild copies of the original disease, but all of them commonly produce a variety of symptoms of their very own. In some cases "these illnesses may be considerably more serious than the original disease, involving deeper structures, more vital organs, and less of a tendency to resolve spontaneously. Even more worrisome is the fact that they are almost always more difficult to recognize."153

A *British Medical Journal* article by Miller et al, reports that "Various German authors have described the apparent provocation of multiple sclerosis by--vaccination against smallpox, typhoid, tetanus, polio, and tuberculosis."[154] No less disconcerting is the warning raised by Rutgers University Professor R. Simpson when he addressed science writers at a seminar sponsored by the American Cancer Society:

> *Immunization Programs against flu, measles, mumps, polio and so forth may actually be seeding humans with RNA to form latent proviruses in cells throughout the body. These latent proviruses could be molecules in search of diseases, including rheumatoid arthritis, multiple sclerosis, systemic lupus erythematosus, Parkinson's disease, and perhaps cancer.*[155]

As if echoing Simpson, Dettman also raises the caution: that "some of the attenuated strains of vaccines that we advocate may be implicated with . . . a number of degenerative diseases including rheumatoid arthritis, leukaemia, diabetes and multiple sclerosis."156

A study in *Science* reported a notable similarity between certain different viruses (including measles and influenza) and the protein structure of the brains protective myelin sheaths. This being the case, antibodies induced by live viral vaccines could well be cross reacting and attacking brain cells.[157] Medical historian Harris Coulter has developed a systematic and comprehensive thesis that childhood immunizations frequently result in a demyelinating encephalitis.(As already noted, encephalitis [inflammation of the brain] has been associated with the pertussis, tetanus, and measles vaccines.) This condition prevents the normal development of the protective myelin sheaths of the brain and nerve cells during infancy and early childhood. Such adverse pathologic changes may, on a visible level, lead to a range of learning disabilities and behaviourial problems, (As many as one in five elementary school children are now considered to have some form of minimal brain damage."[158] It is also estimated that in the US over one million children are medicated with powerful amphetamine drugs.[159]) [158, 159] which are now being encountered in the West with increasing frequency.[160]

Bruce Rabin, a professor of pathology and psychiatry at Western Psychiatric Institute, Pittsburgh has found evidence that approximately one-third of all cases of schizophrenia are auto-immune in nature, with immune bodies attacking the brain cells.[161] When we consider the alarming increase in the numbers of schizophrenic cases, and the now credible "viral hypothesis of mental disorders,"162 childhood vaccine programs can be considered as highly suspect in playing a causative role.

Medical Professor, R. Mendelsohn summarily comments that:

> *While the myriad short-term hazards of most immunizations are known (but rarely explained), no one knows the long-term consequences of injecting foreign proteins into the body . . . . Even more shocking is the fact that no one is making any structured effort to find out.*
>
> *There is growing suspicion that immunization against . . . childhood diseases may be responsible for the dramatic increase in auto-immune diseases since mass inoculations were introduced. These are fearful diseases such as cancer, leukaemia, rheumatoid arthritis, multiple sclerosis, Lou Gehrig's disease, lupus erythematosus, and the Guillain-Barré syndrome. . . . Have we traded mumps and measles for cancer and leukaemia? [163]*

Noted Russian specialist in neuro-pathology, A.D. Speransky, concurs with the foregoing premonitory insights when he warns that post-vaccinal diseases might occur long after the operation has been forgotten. He raises the disquieting observation that ". . . it is conceivable that by these methods we may be crippling humanity."[164]

Whether considering the short or longer term dangers of immunization programs, it is further unsettling when we consider the evidence that the public cannot really place much confidence in organized medicine to conduct itself in an honest and forthright fashion. For example, in 1982 the Forum of the American Academy of Paediatrics (AAP) rejected a proposed resolution which would have ensured that the:

> *AAP make available in clear, concise language information which a reasonable parent would want to know about the benefits and risks of routine*

immunizations, the risks of vaccine preventable diseases and the management of common adverse reactions to immunizations.[165]

EVIDENCES FOR IMMUNIZATION INDUCED IMMUNE MALFUNCTION

There is a growing body of evidence that vaccinations damage the immune system itself. For example, during a placebo controlled trial of acellular pertussis vaccines, a cluster of invasive bacterial infections with fatal outcome occurred among vaccinated children, as compared with unvaccinated children of the same birth grouping. A review of the trial data led to the conclusion that "The hypothesis of an immunosuppresive effect of the vaccines, which would explain the deaths . . . could not be refuted by the data."[166]

It is the studied conclusion of H. Buttram and J. Hoffman (Harold Buffram M.D., a graduate of Oklahoma Medical School, with a post internship in internal medicine, has over 30 years of medical practice in the State of Pennsylvania. John Hoffman Ph.D., is a Cell Biologist and when interviewed was serving as a biomedical researcher in the Department of Molecular Biology at the University of Wyoming), that early childhood vaccination "cannot help but have adverse effects on the immunologic system of the child, possibly leaving this system crippled in its ability to protect the child throughout life . . . . opening the way for other diseases as a result of immunologic dysfunction."[167]

In reviewing their hypothesis of vaccine induced immune malfunction the evidence they present is substantive (citing numerous references, including four recognized textbooks on paediatrics and immunology), and their line of reasoning convincing. The following observations are made:

- "For many years immunologists have been aware of a state of anergy (immunological unresponsiveness) following certain vaccinations"
- A US Center for Disease Control examination of 700 Peace Corps volunteers who had undergone a set of multiple vaccine injections in the US before departure, exhibited an extremely weakened immune system response to the vaccine (HDCV) administered after their arrival overseas
- Vaccination against one disease seems to provoke another (on this point, a physician's report of 15 case histories, over a five year period, where diphtheria-pertussis vaccination lead to paralytic polio is described, and Sir Graham Wilson is quoted [this doc. ref 7], "when a vaccine is injected . . . a latent infection that might have given rise to no illness is converted into a clinical attack.")
- Vaccines have been implicated by numerous investigators as playing a "causative or contributory role" to various auto-immune and degenerative diseases, and suggests that their role in the onset of allergies or their worsening, and lowered resistance to infections needs to be further investigated
- Given the one cell--one antibody rule, once an immune body (plasma cell or lymphocyte) becomes committed to a given antigen, it becomes inert and incapable of responding to other antigens or challenges to the immune system. It is estimated that up 7 percent of the body's overall immune capacity is

committed in the natural immunological response to the usual childhood diseases, whereas a child who undergoes the course of routine childhood vaccines could be realizing a committal level of up 70 percent

- The consequences of this significantly higher committal could result in increased susceptibility to other infections, allergies, and auto-immune diseases. (This particular observation is based upon sophisticated research carried out by the Arthur Research Corporation, based in Tucson, Arizona.)
- Evidence indicates that maternal immunization "may remove (abrogate) immune defense from the level of the mucosa, thus potentially weakening mucosal resistance" (immunologists have long recognized that the mucosal surface serves as a "first line of defense" against infection)
- Abnormal drops in the ratio of helper-to-suppresser T--lymphocyte cell subpopulations in healthy subjects (a condition now associated with AIDS, and possibly linked to transient hypogammaglobulinemia), observed after tetanus booster immunization
- Circumstantial evidence indicates that "cross-cultural" mass immunization programs may be predisposing the onset of acquired immune deficiency syndrome in "virgin soil" populations as found in the Developing World, "which have not historically been subjected to the common diseases of Western civilization"
- There remains a great need to conduct careful studies on the potential "immunosuppressive effects of vaccines," particularly with respect to "cross-cultural immunizations where exaggerated adverse responses would more likely be detected"
- Where there is already advanced impairment in a child's general immune system, the injection of multiple antigens (vaccination), can weaken it further to the point of precipitating death in the vaccinate
- Before public endorsement is accorded to the extensive usage of vaccines, certain preconditions should be addressed which include: a comprehensive evaluation of the multiple factors which constitute the etiologic basis of infectious disease; and the full range of factors and influences which determine natural resistance to infection and disease; with a full public disclosure of such research data.[168]

Despite the fact that immune malfunction is "often delayed, indirect, and masked, (and) its true nature is seldom recognized," there is now sufficient evidence to suggest that growing disclosure of both the short and longer term dangers of current vaccination programs will serve to precipitate public demand for research to examine danger-free alternative methods for the prevention of infectious diseases.169

J.E. Craighead, in summarizing the results of a workshop on "Disease Accentuation after Immunization with Inactivated Microbial Vaccines," sponsored by the US National Institutes of Health, indicated that the process of:

> *. . . immuno-prophylaxis can be carried out safely only when the natural history and pathogenesis of a disease is understood. In each of the conditions considered at the workshop, this detailed knowledge was lacking when vaccine trials were initiated in man. Had the vaccines induced lasting solid immunity, prolonged protection might have resulted, although this conclusion is far from certain. Moreover, production of circulating antibodies or*

induction of cellular immunity (or both) may be hazardous when local immune mechanisms of the mucosa are not operative.

Accentuation of disease was an unexpected complication of immunization in each of the conditions. Disease was accentuated when the subject (vaccinate) was exposed again, experimentally or under natural circumstances, weeks or even years after completion of the immunization regimen. Prolonged, intensive surveillance of immunization subjects apparently is a requirement. . . . One can only wonder whether or not recipients of currently licensed vaccines . . . that provide variable and transient immunity are being followed adequately. . . . Accumulating evidence strongly suggests that susceptibility to infection and disease is affected by still undefined constitutional influences. [170]

It is evident that Craighead's key question of what constitutes the still undefined "influences" will be effectively resolved only when the focus of selective medicine is able to make a radical shift towards displacing its present adventitious arsenal of vaccines and toxic drugs, with the normal and natural requisites of life and health. This is stated because the historical record, and common sense point to the latter approach as constituting the only sound basis for ensuring--not undermining--immune functionality, thus effectively resolving the actual underlying causes of both infectious and degenerative disease in man.

THE ETHICS OF UNIVERSAL CHILDHOOD IMMUNIZATION

There is indeed more than sufficient evidence to warrant far greater caution and questioning, than is now evident in the public drumbeating, idealism, and unqualified affirmations promoting the safety and effectiveness of Universal Childhood Immunization Programs. In fairness, it can be noted that some cautions have been raised on this issue from within medical circles. In summarizing an article on whether prevention of post-immunization adverse effects is possible, the editor(s) of Postgraduate Medicine recommend that:

Parents must be informed of the rare possibility of serious adverse effects, including seizure and allergic reaction. Every physician who administers vaccine therefore needs to become familiar with the reactions that may occur with each immunologic agent used. The best safeguard against litigation, when and if a serious reaction follows vaccination, is the indication that these considerations were discussed and that an informed choice was made.[171]

Nonetheless, we find that UCI-EPI as it has been generally conceived and executed represents two major departures from the time honoured ethics and traditions of medicine. These are:

- that all forms of treatment should be individualized, particularly when prescribing or injecting substances which carry the potential for disease, disablement, and death; and
- the objectively informed patient (or parent) should always have absolute freedom to accept or reject any given measure or therapy, and have reasonable opportunity to consider alternatives.[172]

Just as environmentalists rightly challenge the appropriateness and right of big business interests to pollute our fragile natural environment with man-made chemicals, there arises the more personal, urgent and serious matter of protecting the precious body-mind complex from foreign and complex biological products that may well be touted as safe today, but condemned as dangerous tomorrow. Indeed scientists and physicians now openly admit that they have only a limited knowledge of the short term, and even less understanding of the long term consequences of challenging the bio-immune systems of children with a myriad of manufactured vaccines and related toxins.

This in turn poses the more basic question of whether medical and political authorities have the actual right--by reason and moral justice--to compel and expose unnumbered children the world over to undertake what are in fact unnecessary and potentially dangerous risks to their life and long term health. It is reprehensible that such actions continue to be enforced by authorities, while parents and local health workers are not accorded any practical knowledge of the known dangers involved, and the extent to which there prevails a general ignorance of the longer term consequences.[173]

It goes without saying that monopolization is just as dangerous in public health as is it is in the field of general business. The human experience has demonstrated time and again that monopoly and compulsion in any field inevitably brings stagnation, whereas freedom of choice and the opportunity to explore alternatives brings genuine progress.[174]

BANE OR BOON? SELECTIVE MEDICINE IN PRIMARY HEALTH CARE

Given the fact that UCI stands at the forefront as a centrepiece in the "selective medicine primary health care model" (around which has grown a powerful multi-billion dollar pharmaceutical industry), we must reconsider its overall relevance to human health. In selective medicine the relationship becomes one where the professional alone holds the authorized enlightenment and skills, while the community and its people come to represent the baser qualities of ignorance and subservient faith. This dynamic engenders in the community an unhealthful respect for officially authorized solutions, even when their effectiveness is in fact illusory. The Aboriginal peoples of N. America have now reached the unenviable distinction of being not only the most thoroughly immunized and medically drugged, but also the sickest group on the continent (e.g., by the late 1970s, the Canadian Aboriginal infant mortality rate was double that of the general population, with life expectancy at 36 years compared with 62 years among Canadians generally.)[175]

Furthermore, alarming evidence suggests that in many Aboriginal communities there is a continuing escalation in degenerative diseases and social malaise. Both paleopathological and historical data convincingly indicate that when living a way of life closely predicated upon natural law, and free of adventitious medical interventions, North American Aboriginals were distinguished as being one of the healthiest of world peoples.[176]

A more recent, albeit equally instructive picture can be fund among the Maori (Polynesian) people, who likewise have been especially earmarked by their national government (New Zealand) to receive the benefits of selective medical intervention. A study covering the period of 1968 to 1971 found that when compared with their racial counterparts who live in the remote island nations of the Pacific, the New Zealand Maoris appeared more inclined to suffer from infectious disease, rheumatic fever, and tuberculosis. They also seemed considerably more prone to develop degenerative conditions such as heart disease and diabetes, afflictions which were then virtually foreign to the remote island peoples. (In fact, among Maori women in the age grouping of 35 to 55, coronary heart disease was four to five times as frequent as among women of the same age group living on the atolls of the central Pacific.)[177]

In the final analysis, disquieting evidence--much of which is not cited in this research--suggests the overall irrelevance of selective Western medicine to effecting longevity and ensuring general freedom from a range of infectious and degenerative diseases. Furthermore, as a system, it continues to significantly contribute to human morbidity and mortality"[178] (e.g., it has been shown in the USA, Holland, Israel and other developed nations that when physicians engage in a complete strike, within a week to 10 days death rates actually plummet, in some cases by as much as 60 percent).

It would be appropriate here to quote Illich's unambiguous observation that "Society can have no quantitative standards by which to add up the negative value of illusion, social control, prolonged suffering, loneliness, genetic deterioration and frustration produced by medical treatment."[179] In reference to selective medicine's central focus on absolving mankind from giving due respect to the natural laws of cause and effect, Mahatma Gandhi shares the following perspective.

> I was at one time a great lover of the medical profession. . . . I no longer hold that opinion. . . . Doctors have almost unhinged us. . . . I regard the present system as black magic. . . . Hospitals are institutions for propagating sin. Men take less care of their bodies and immorality increases. . . . ignoring the soul, the profession puts men at its mercy and contributes to the diminution of human dignity and self control. . . . I have endeavoured to show that there is no real service of humanity in the profession, and that it is injurious to mankind. . . . I believe that a multiplicity of hospitals is not test of civilization. It is rather a symptom of decay.[180]

Evidence suggests that Western medicine's over specialization and singular focus on pathology has literally obfuscated its perception and undermined its faith in the preventive and restorative power of the normal requisites of health. To a great extent it thus remains as an inexact and ever shifting system of trial and error, apparently more interested in maintaining its monopolistic pecuniary interests and professionalist pride, than in opening itself to new avenues of thinking and practice.

With all seriousness then we must raise the question as to whether we can realistically expect the self-same medico-industrial system that has for so long offered humankind little more than palliative and pathological inducing vaccines and drugs, to offer us anything better. (To obtain additional background on the practical impacts which the medico-industrial system of the West is having on the Developing World, please refer

to Annex I--*Problems With Developing World Medicalization and the Traditional Medicine Alternative.*) It is here that we turn to consider the larger issue of what constitutes safer, more effective and sustainable approaches to ensuring the development and maintenance of human health.

SECTION II

TOWARDS MORE APPROPRIATE PRIORITIES IN DEVELOPING WORLD PRIMARY HEALTH CARE

> *We should ascertain whether natural resistance to infections could be conferred on man by definite conditions of life. Injections of a specific vaccine or serum for each disease, repeated medical examinations of the whole population, construction of gigantic hospitals, are expensive and not very effective means of preventing diseases and of developing a nation's health.*
>
> Alexis Carrel in *Man the Unknown, p.207*

THE REAL DETERMINANTS OF HEALTH

IN a recent article in the WHO publication *World Health*, Khan et. al suggest that normatively health services in the Developing World continue to be either substandard, inaccessible, unaffordable and under-utilized, or to "suffer from a combination of these factors." The authors go on to comment that while the governments of many nations "have spent millions on building physical infrastructures at district levels, the over-all health status, especially of the urban and rural poor remains deplorable."[181]

This and a number of like articles on Primary Health Care and UCI, suggest that the prime weaknesses now requiring rectification relate to inadequate local involvement in and the non-sustainability of medical services. Without any intent to lessen the critical importance of local participation and sustainability in development, I would put forward the view that each of the specific problems and weaknesses as identified, including the larger issue of overall ineffectiveness, stem from the very principles and nature of conventional selective medicine itself Primarily the medicine (both vaccines and drugs representing the arsenal of what is postulated as a "war on disease") and secondarily the established system whereby it is "delivered," is what is ineffective. In place of the popular drumbeating for local communities to further embrace and sustain this system, there are far more urgent and fundamental health priorities that must be addressed.

In a chapter on "Health and the Human Environment" found on the classic work *Health, Food and Nutrition in Third World Development,* M. Sharpston provides critical insights on how multiple social and environmental factors ultimately serve as the real determinants of survival, or alternatively death. In his words ". . . there is a limit to what conventional health services can achieve in an unchanged physical and social environment." He then refers to the experience of a medical school affiliated

hospital in Cali, Columbia which had a special program for premature infants. During their period of critical care, survival rates remained comparable to those found in North American critical care settings, however within three months of being discharged, 70 percent of the infants had died. With reference to those regions within the Developing World where notable health improvements have occurred he suggests that:

> *The most likely factors leading to health improvements . . . are a rise in the levels of nutrition and the slow spread of modern ideas of personal hygiene. Across the Developing World, per capita incomes are rising, and transport systems are improving,, the result is more food, better quality food, fewer localized food shortages, and a more varied diet. In other words, the principal factor behind the improvement in health . . . in Developing countries is probably not any form of health measure, but economic development itself. . . . Mere exposure to a disease agent need not produce clinical disease and very frequently does not do so. Malnutrition is of such significance essentially because it hampers the body's resistance. Malnutrition acts "synergistically" with disease agents to increase the incidence of clinical disease and aggravate its severity."*[182]

In a very recent article focusing on the major influences on health in the Developing World, Thomas McKeown, past Chairman of the World Health Organization (WHO) Advisory Group on Research Strategy also articulates a view that clearly takes the issue of human health out delimiting bounds of selective medicine. His incisive conclusion follows:

> *. . . evidence is now available from a number of Third World countries that have advanced rapidly in health: China, Costa Rica, Cuba, India (Kerala State), Jamaica, Sri Lanka, Thailand, and a few others.. . . The improvement in health was almost entirely due to a reduction from infectious disease. To assess priorities in health policies in the Third World the chief requirement is therefore to come to a conclusion about the reasons for the decline of the infections.*
>
> *. . . All the countries that advanced rapidly achieved a substantial improvement in nutrition, which led to increased resistance. Indeed in some countries this was the only important direct influence. It is perhaps surprising that immunization appears to have contributed relatively little to the advances . . . the reduction in mortality occurred during a period when vaccine coverage was still low.*
>
> *To anyone who has traveled extensively in the rural areas of the Third World, the common causes of ill health may seem self-evident. Many children are visibly malnourished, sanitary conditions are primitive, drinking water is unclean, the food . . . is contaminated, and the number of people competing for the means of life is clearly excessive. Our conclusions concerning the determinants of health can be epitomized by the simple statement that people must have enough to eat and must not be poisoned.*[183]

In a World Health article highly germane to the "determinants" as raised by McKeown, Finland's H. Hellberg (a former Division Director at the WHO) postulates that the success of any genuine effort to alleviate disease in the Developing World must incorporate "intersectoral and multisectoral action." In his words "involvement of specialists other than the traditional healing professions; water, food, housing, sanitation and education are all important prerequisites for health. If they are neglected curative repair . . . may even be impossible."[184]

To conclude these critical observations on Developing World health development priorities, it would prove instructive to consider the similar conclusions reached by K.L. Standard (Professor and Head of the Department of Social and Preventive Medicine, University of the West Indies).

> *. . . . mere survival is not enough. With no improvement in their standard of living and nutrition, they (children) frequently succumb to infection, with repeated relapses . . . . It will be extremely difficult to make further reductions in mortality rates in developing countries without significantly raising standards of living, including nutrition. Among the general measures of primary prevention that may be considered, an increase of food production is of paramount importance. Environmental sanitation deserves high priority, and health education of the public is a key activity at both national and community levels. . . . The final and permanent answer to the problem will rest in. social and economic development . . . taking into account the need for nutritional improvement of the present generation.*
>
> *For obvious reasons, the highest priority must be given to preventive measures. If good nutritional status is maintained in the first years of life, successive attacks of most infectious diseases of moderate virulence will probably produce no more than mild effects. . . . Optimal maternal diet during pregnancy, prolonged breastfeeding, progressive weaning with appropriate foods, and education of mothers on infant-feeding practices are the basis of good nutritional status in children.*[185]

ECLIPSING THE SPIRIT OF ALMA ATA

It would be instructive at this point to go back to relatively recent history to see how this vitally sound and rational perspective was officially recognized at an international level, but then practically scuttled in favour of the annamentarium of Universal Childhood Immunization.

On the opening page of the recently completed Evaluation Assessment of the Canadian International Development Agency's (CIDA) Health Sector the observation is made that by the mid-seventies, "after more than 30 years of international health assistance, it had become apparent that curative strategies that directly addressed disease causing agents had failed . . . recipient countries . . . [in meeting] their long term health needs."[186] It was a recognition of this reality that presumably led Canada and other industrialized nations to the signing of the historic Alma Ata Declaration in 1978. The basic principles of Primary Health Care as embodied in this Declaration follow:

The Principles of Primary Health Care
As Embodied in the Alma Ata Declaration

1 . Equitable Distribution-- addressing the root causes of ill health, and ensuring health resources are equitably distributed among all groups and across geographic regions

2. Community Involvement-- genuine health decision-making by the community

3. Multisectoral Approach-- due recognition of the key influence on health of environmental (incl. nutritional), economic, and social factors as well as health services

4. Appropriate Technology-- sociocultural acceptability and relevance.[187]

By 1980 CIDA published a public affairs statement on CIDA's Involvement in Health thereby reaffirming that in its support of Bilateral Primary Health Care initiatives in the Developing World, the Agency would place central priority on: the training of health auxiliaries; health and nutrition; essential education; adequate food production; potable water supply; family planning; and provision of simple equipment and supplies.[188]

Despite the virtual eclipsing of these priorities by Canada's massively increased support for Universal Childhood Immunization in the late 80's and into the 90's, the Canadian Government's Official Development Assistance Policy as embodied in the 1987 policy document Sharing Our Future, actually emphasizes that a fundamental priority of CIDA "must be to supply all the basics of health" which is defined as "clean water, sanitation, (and) adequate nutrition." Furthermore there was to be a mobilization of the poor at the community level as "partners" in the design, implementation and evaluation of health activities.[189]

Canada's aforenoted actions have not been singular, as it must be noted that virtually all of the industrialized nations had likewise overshadowed their earlier vision and commitment to ensuring fundamental health improvement measures by instead allocating a major portion of their "health" investments to mass artificial immunization and selective curative programs. In response to this major reversal, in November of 1985 alarmed community health specialists and practitioners from several developed and developing nations convened at Antwerp, and there articulated what is called *The Antwerp Manifesto For Primary Health Care.* Some key excerpts from the Manifesto follow:

> *. . . In spite of the lessons of history and of past experiences, major and international donor agencies are diverting scarce resources into a short term approach known as "selective primary health care. . . " This approach is in total contradiction with the fundamental principles underlying Primary Health Care. These principles are:*

The main roots of poor health lie in living conditions and the environment in general, and more specifically in poverty, (and) inequity . . . of resources in relation to needs

- *Since health is . . . of people, it is self defeating not to consider them as partners who are able to play a great part in the protection and improvement of their own health*
- *Health services must provide . . . promotive and rehabilitative measures. This has to be done in a coordinated and integrated way which responds to the peoples needs.*

This manifesto is issued because the proliferation of selective health intervention programmes undermines . . . Primary Health Care. It is issued also because these interventions purport to offer "quick solutions" and "instant success" for which they divert scarce resources from the solution of the real underlying and continuing problems, thus helping to maintain ill health. In addition, experience has taught us that selective interventions tend to become permanent even though they are presented as "interim" responses only. . . . And above all, the selective approach rules out the possibility of people's participation in decision making about their own health.190

EMERGING--A MORE PRACTICABLE PRIMARY HEALTH CARE MODEL

Table E which follows on the next two pages, was developed with the appreciated assistance of medical sociologist L. Chetelat. It provides a clear picture of the paradigmatic contrasts existing between the selective war on disease model as exemplified in Western selective medicine, and the emerging causal based approach to health sustenance and restoration.

The causal model is strongly predicated on the principle that man's relationship to the laws of nature (natural law) and life, must undergird any effective health maintenance and or restoration strategy. Such an approach is recommended as inherently more sensible, balanced, and cost effective for attaining and sustaining public health, whether among Developed or Developing World populations. The causal based model strongly emphasizes the importance of strengthening self-knowledge, self-responsibility, and self-care and thus far more closely corresponds to the challenge and direction mandated in the historic Alma Ata Declaration. It also affords genuine respect for the integral principles which undergird the practice of participatory development. As a final point its characteristic qualities of local accessibility, manageability, affordability, and effectiveness herald its great promise for humankind.

Table E--The War on Disease Approach Versus The Health Causal Approach

WAR ON DISEASE APPROACH	HEALTH CAUSAL APPROACH
1. Orientation & Philosophy	**1. Orientation & Philosophy**
Disease is understood as an entity separate from and attacking the patient.	Recognition of acute disease as a systemic reparative process inseparable from the person.
The body and mind are separated, with distinct diseases and organs treated singly.	Recognizes the body and mind as being inseparably one, to be treated as a unity.
The focus on labeling, isolating, and destroying "disease," i.e., its entities, and symptoms.	The focus on strengthening the protective and regenerative health energies, and resources of the person.
2. Causality	**2. Causality**
The focus of causality is external to the patient--viruses, bacteria, poisons, and in more recent time stresses in the environment.	The focus of causality is both internal to the person as it relates to primary lifestyle practices, deficiencies, negative emotions, etc.; and external as it relates to debilitative factors in the natural and social environments.
3. Prevention & Cure	**3. Prevention & Cure**
Artificially separates preventative and curative measures.	Recognizes that health sustenance and restoration depend on the selfsame measures.
The emphasis is on removing or palliating symptoms. It aims at achieving quick results.	The emphasis is on removing causes through lifestyle, psycho-spiritual, and other sustainable changes to debilitative bio-nutritional, environmental, social, and political conditions.
Relies on highly sophisticated technological and costly measures that are not amenable to self and include: family based care, i.e., manufactured vaccines, organ transplants, drugs, etc. These measures are noted for bearing harmful side effects (latrogenesis).	Relies on health building and restorative measures that are harmless, non-invasive, efficacious,and uncostly. These include adequate and quality nutrition, potable water, local (non-toxic) plant medicines, enhanced natural environment, and other apropos regenerative measures.
4. Care Providers	**4. Care Providers**
The emphasis is on exclusive management and control of health and disease by medical professionals who know all, while	Emphasis is placed on the informed and responsible involvement of people in understanding and managing their own

patients blindly follow the "doctor's orders."	health needs.
Relies solely on the expertise of highly trained medical professionals, holding occult knowledge, and unfathomable wisdom.	Builds upon the distinctive knowledge and inherent capacities of individuals, families and communities. "Local healers" are prepared to provide basic care, coupled with training in wellness principles and family self care.
5. Cost	**5. Cost**
Cost is escalating to the point of being an unmanageable and unsustainable burden on society.	Cost is de-escalating, to the point of being negligible.
6. Research	**6. Research**
Research focuses on tracking, isolating and destroying "disease" and its associated entities.	Research focuses on better understanding and appropriating the fundamental requisites of life and health.
The absence of disease is considered the result of techno-medical interventions.	The absence of disease is recognized as the consequences of compliance with the natural laws of creation.
7. Health Care Outcomes	**7. Health Care Outcomes**
Produces a system of disease care and disease scare. People learn to fear, distrust and disrespect the natural world, and their own bodies.	Produces a system of health care based upon people developing a practical knowledge of, trust in and respect for the natural world, and for their own bodies.
People become unduly dependent on medical institutions and authorities. This in turn diminishes self-respect and moral responsibility, while coping strategies are diminished leading to resignation, helplessness and hopelessness.	People develop and carry out coping strategies, which in turn will inevitably lead to better health, along with longer and fuller life.

SECTION III

A CONSIDERATION OF ALTERNATIVES TO ENSURING NATURAL IMMUNITY

THE SOIL AS CHIEF DETERMINANT OF HEALTH AND THE FOUNDATION OF PUBLIC HEALTH POLICY

In recognition of the indubitable axiom that all forms of life derive their basic sustenance from the earth itself, it remains equally evident that any policy to ensure public health must first and foremost be predicated on ensuring the quality and integrity of the soil. Prominent British horticulturist Sampson Morgan offers the following incisive observation.

> *My long continued studies in the dust have convinced me that diseases in soils, plants and men arise from conditions, brought about by the introduction of poisons and by imperfect environment,- and experiments have satisfied me beyond doubt that this is the natural and correct explanation.*[191]

Indeed there is a substantial basis for suggesting that it is of the highest importance that health and development ministries in both industrialized and Developing World nations should henceforth predicate their strategic health policies upon a practical recognition that the treatment and condition of the soil is by far the most critical determinant of health (whether in plants, animals, or human beings). In his seminal research on the underlying causes of the outstanding health and longevity among the population of Hunza--a society that until very recently has remained essentially free of medical intervention--G.T. Wrench aptly concluded:

> *The importance of the method of culture of food is primary, radical, and fundamental in the matter of health. It exceeds all other aspects of nutrition. . . Nature endows life with a powerful, eternal capacity to renew itself healthfully, given the right conditions. The genes know nothing of diseases.*[192]

Shelton seconds this conclusion in his observation that through the relatively simple measure of building up our soils, crops can be freed of fungal infections. In his view fungi, which live at the expense of living plants, "are incapable of successfully attacking one that is completely healthy. . . . In plant, as in animals, the nutritional status largely determine the . . . soundness . . . of tissue developments.[193]

INSIGHTFUL EXPERIMENTS

The historically significant experiments of Sir Albert Howard, British Imperial Economic Botanist, based in India in the first quarter of this century, confirm the correctness of this view. Through natural soil feeding and regeneration methods, the plants and crops under his management demonstrated continuous improvements to the point of being impervious to all forms of disease as well as insect pests. Speaking of his organic gardens and orchards at Indore, he stated that during seven years of observation "I cannot recall a single case of insect or fungus attack." Indeed it was his studied opinion that:

> *. . . plant diseases . . . only attack unsuitable varieties or crops improperly grown. Their true role in agriculture is that of censors for pointing out the crops which are imperfectly nourished. Disease resistance seems to be the natural reward of healthy and well-nourished protoplasm. The policy of protecting crops from pests by means of sprays, powders and so forth is thoroughly unscientific and radically unsound; even when successful, this procedure merely preserves material hardly worth saving. The annihilation or avoidance of a pest . . . are mere evasions.*

However, Sir Howard's most vital findings pertained to the animals feeding on his crops who in turn developed total freedom from disease and deformities.

> *For twenty-one years I was able to study the reaction of the well-fed animals to epidemic diseases such as rinderpest, hoof-and-mouth disease, septicaemia, and so forth, which frequently devastated the countryside. None of my animals were segregated, none were inoculated; they frequently came in contact with diseased stock. No case of infectious disease occurred.*[194]

This calls to mind a personal interview I conducted with A. Kalokerinos, Chief Medical Officer at the Aboriginal Health Clinic in Redfern (Sydney), Australia. He related an experience wherein cattle feeding on grass grown on re-mineralized soil, were grazing literally nose to nose--at the fence line--with another herd infected with hoof and mouth disease. Without the benefit of any specific protective measures including vaccines, the uninfected herd manifested total immunity.

In returning to the subject of insect pests, we find that there is clear evidence that insects have an innate ability to detect mineral deficiencies and imbalances--even at a subtle level--in plants, and selectively devour only those which are deficient or imbalanced. According to horticulturist S. Mueller "Satellite photographs of Africa have shown how gigantic flights of locusts will cover thousands of miles ignoring healthy vegetation, then descending and destroying fields where the soil is wom out.[195]

This and the earlier observations made on the relationship of microbes to human disease, parallels the view that pathogenic microorganisms act as nature's censors, proliferating only when the host's psychophysiology has been imbalanced and weakened by factors such as stress, malnutrition, endo and environmental toxins, etc. Sir Howard's experiences with the building of natural immunity in plants had been preceded by such great soil scientists as Julius Hensel in Germany, and Sampson

Morgan in England, whose findings were later replicated by Dr. Charles Northern and Albert Savage in North America.

These scientists employed soil re-mineralization and regeneration techniques, employing the use of ground stone dust or sea vegetation, and green (plant) compost, and the periodic aeration of plant or tree roots through cultivation. The results were indeed phenomenal. Marketed spinach grown on ordinary soil contained from 600 to 1,600 parts per billion of iodine, whereas spinach grown on re-mineralized soil contained as high as 640,000 parts per billion. Testing revealed that various vegetables grown in Savage's "mineral garden" possessed as much as 400% more iron and other minerals than crops grown by standard methods.[196]

SOIL RE-MINERALIZATION--A RETURN TO PRIMEVAL CONDITIONS

The necessity of soil re-mineralization is based on the premise that over the millennia the earth's surface has undergone a progressive erosion of both its major and trace minerals. As well, the widespread and serious de-mineralization problem has been vastly exacerbated in this century by deforestation, massive mono-culture cropping, and heavy agrochemical dependency. Today the only place where the full range of vital minerals can be found is in the seabeds where streams and rivers have carried them, or in the earth's rocks. Thus the utilization of sea plants and rock dust became a central feature in strategic efforts to achieve balanced soil re-mineralization.

The place of soil re-mineralization--as a fundamental health strategy--is corroborated not only by experimenters in improving plant and animal wellness, but as well in prehistoric fossil records. For instance, paleopathologist Roy L. Moodie has found that "the early faunas were free of disease" and that "the most ancient bacteria were harmless," i.e., non-pathogenic in nature. He maintains that "There are no known cases or examples of infection, no tumors, few traumatic lesions or injuries of any kind prior to Devonian" and that "the earliest animals were free from disease.[197] It is also worth noting in this regard that the earliest book of antiquity in the Judeo-Christian record, Genesis, gives no account of any specific human diseases, and as well makes no reference to conditions such as imbecility, blindness, deafness, or other deformities.

SOIL DIETETICS AND DISEASE

In reviewing a modern text-book of domesticated crop diseases, one is as appalled by their number and variety as one is by the list of human illnesses in a text-book of medicine. The correlation is remarkable. We find in both a number of deficiency diseases; excess diseases; parasitic diseases; virus diseases; diseases due to insufficient or defective water, oxygen and sunlight; those associated with excessive heat or cold; chemical induced diseases (i.e., spraying/drugging); and last but not least multiple degenerative and deformity diseases. How did the major share of these diseases come into being? By cause, or mere chance? Wrench answers:

> *I take it that what has happened to man has happened no less to his domesticated plants. Science has effected a marvelous progress in variety and fragmentation, but at the same time it has torn plants from their traditional conditions upon which their health depends. . . . here is, no doubt, I think, that modern man has made plant life in his own image.*[198]

Part of today's larger shift toward environmental responsibility and sustainability, are the commendable efforts to reduce excessive dependency on soil and plant chemicals in agricultural methods. However, the growing impetus toward "organic" approaches to agriculture relies heavily upon manure fertilizers. On this point Shelton comments that ". . . it has long been known that heavy manuring of the soil results in the plants grown thereon being subject to parasitic infestation because of their lack of health.[199]

Morgan also contends that fertilizers derived from stable manure or of animal origin (as well as chemicals), were significantly injurious to the health of soil and plants. In fact, he maintains that their widespread use has served to create conditions of disease and degeneration consecutively in soil, plant, animal and human life. In his words:

> *I have proved that susceptibility to disease is greatest with large dressings of dung. It is the main cause of fungoid infections of plants . . . and bad eyesight, bad teeth, and kindred troubles in human beings. . . . As to [chemical] fertilizers, they often deplete the soil of its fertility and induce acidity. . . .* [200]

His experimental work in England in the early part of this century, closely paralleled those of Sir Howard in India. The farms surrounding his own--all employing conventional agribusiness methods--were struck again and again over the years by multiple forms of disease and a variety of pests. Morgan's vast fruit orchards, vegetable gardens and grain fields thrived, totally immune' to these perennial problems.[201] (For more background discussion on the need and potential for achieving an enhanced agricultural system that is more conducive to ensuring natural immunity, in plants, animals, and man please refer to Annex II--Agrochemical Agriculture--the Need for a Saner Alternative.)

Another notable and much more recent horticultural experimenter who bears mentioning is Australian David Phillips. In his outstanding book *From Soil to Psyche,* he maintains that when plants are deprived of vital organic and mineral nutrients and instead are stimulated to undergo enforced growth--as in the case of chemical fertilization--such plants "react by a wild development of cellular structure which is deficient in trace elements and amino acids." He goes on to affirm that:

> *Such poorly constituted crops cannot avoid, and must inevitably attract, any prevalent form of disease. At our own organic farms, not one papaya tree was lost during the severe disease epidemic of 1973 which followed Eastern Australia's 1972 partial drought. Every newspaper reported the severe plant losses of up to 90 percent of plantations from "three strains of virus. . ."*
>
> *It was no strange or mystical phenomenon that our farm, with its organically mulched plants, registered not even a decline in crop production while other farmers in the district were bemoaning their huge losses.*[202]

KEY NUTRITIONAL MEASURES IN PREVENTING INFECTIOUS DISEASE

> *Until lately disease was regarded as a sin of commission by some unseen and subtle agency. The vitamins are teaching us to regard it . . . as a sin of omission on the part of civilized and hyper-civilized man. By our habit of riveting our attention on microbes and their toxins we have sadly neglected the side of the question which concerns itself with our own bodily defenses.*
>
> Prominent British Physician--Leonard Williams

Given the necessity for limiting the scope of this document, and the wide ranging dimensions which the issue of alternatives represent, it would be impracticable to attempt to highlight all the promising directions for systematic applied research on strengthening natural immunity that exist. However, given the singular recognition that is being accorded to the role of nutrition as a lifestyle factor in both the prevention and treatment of infectious and degenerative diseases, it clearly represents a primal area for undertaking far more intensive applied research and experimentation.(The scope of viral, toxin and bacterial associated conditions to be considered in this section on nutrition and infection will not necessarily be delimited to the UCI-EPI childhood diseases.)

It seems remarkable that some of the most significant experimental and clinical based research literature that exists on the relationship between nutrition and infectious disease were published in the first half of the twentieth century. Much of this early and now largely forgotten applied research documented the considerable preventive and therapeutic values of the newly discovered vitamins. Given that the relationship between nutrition and health represents in itself a vast and complex subject, for brevity's sake this discussion on nutritional measures will necessarily be limited to an examination of the two vitamins which both clinical research and practice have revealed as holding the most significant role in the prevention and alleviation of various infectious diseases, i.e., Vitamins A and C.

VITAMIN A

Vitamin A is recognized as an essential nutrient for maintaining normal physiologic functions, including cellular differentiation, membrane integrity, vision, immunologic responses and growth. Literature dating back as far as the 1920's has noted an association between Vitamin A deficiency and an increased incidence and severity of infection,[203] which led to the labeling of Vitamin A as the "anti-infective Vitamin" by Clausen. [204] In more recent time, Vitamin A deficiency has received considerable attention in international health circles. This has been largely due to various field studies which have linked Vitamin A deficiency with an increased risk of childhood morbidity and mortality.[205, 206, 207]

Of these,[206] it was observed by the field researchers that preschool children with mild xerophthalmia (night blindness and bitot's spots, a condition clearly attributable to Vitamin A deficiency) were dying at a rate ranging from 4 to 12 times greater than that of neighboring children with normal eyes and vision. (This represented an 18

month longitudinal study of 4,600 Javanese [Indonesian] preschool children from six separate communities.)

In fact such relationships persisted even after stratifying for the presence or absence of respiratory disease, protein energy malnutrition, and diarrhoea. The researchers asked but did not answer why mildly Vitamin A-deficient children died at such increased rates, "especially those who were [apparently] well nourished and seemingly free of diarrhoea and respiratory disease," which are considered the major causes of childhood mortality in developing countries.

The first major controlled field study to be published in an established medical journal detailing an observed relationship between Vitamin A deficiency and infectious disease, [207] reported on the results of a randomized, community trial of Vitamin A supplementation in northern Sumatra (Indonesia). 450 villages were randomly assigned to either participate in a Vitamin A supplementation scheme (229 villages), or serve for one year as a control (221 villages). The study observed that among children aged 1 to 6 years at baseline, the death rate in the 221 control villages--which did not receive the vitamin nor any placebo--was 49% greater than in those villages where supplementation was given. (Although the study was actually designed to examine nutritional blindness, these unanticipated results were found when comparing mortality rates between the treatment and the control villages.)

Despite such promising findings, the posture of the medical community has generally been one of either questioning the "validity" of the research methodology and findings, or of putting the brakes on initiating any actual policy and or programming changes. To quote a 1990 statement of Kjolhede and Gadomski of Johns Hopkins University in response to the various Sommer et al studies:

> *Because scientific evidence relating to Vitamin A is being generated by diverse sources, and because there is a paucity of data strictly relevant to childhood survival in developing countries, the implications of these and other findings have been difficult to translate into specific policies and programmatic recommendations.*[208]

According to secondary research carried out by Mamdani and Ross, and reported in their exhaustive article "Vitamin A supplementation and child survival: magic bullet or false hope?,"[209] Vitamin A deficiency represents". . . a major nutritional problem among preschool children in many countries of Africa, Asia, as well as some areas of Central and and South America." In fact an estimated 250,000 young children will go blind each year due to a lack of Vitamin A in their diets, while another 250,000 will experience lesser degrees of permanent impairment of vision due to corneal damage; (According to West and Sommer, an estimated 700,000 preschool children will develop active corneal lesions; and 6,700,000 new children will manifest mild Vitamin A deficiency annually. As well--at any one time--an estimated 20 to 40 million are suffering from mild levels of Vitamin A deficiency.) [210] with up to 75 percent of the blinded children dying within a few months of the blinding episode. The literature indicates that the association between "severe Vitamin A deficiency and infant and child mortality has been established for some time." The authors go on to conclude that:

An association between Vitamin A deficiency and infectious diseases, in particular diarrhoea, respiratory infections and measles--which are among the most important causes of death during childhood in the Developing World--has significant policy implications. . . .

> *Overall, the balance of evidence suggests that Vitamin A deficiency does lead to an increased risk of infections such as measles, respiratory infections and diarrhoea, and hence to an increased risk of death. Conversely, the evidence suggests--but as yet does not prove conclusively--that Vitamin A supplementation, or other strategies'* [211] (Other strategies include the fortification of selected commercial foods which are commonly consumed, and dietary modifications. The latter measure includes a "long term solution," i.e., the increased production of Vitamin A-rich foods through home, school, and community gardens, wherever climate and soil conditions permit. An example where the increased production and distribution of garden produce--coupled to basic nutrition education--worked well was the Applied Nutrition Program in Tamil Nadu, India. Mothers diagnosed as anaemic and Vitamin A deficient were given access to this produce. Examination, after six months, revealed "considerable" improvements to their general nutritional status, along with the "disappearance of all the clinical signs of Vitamin A deficiency. [211]) *for improving Vitamin A status, would lead to a decrease in the incidence and/or the severity of these infections and of the substantial mortality associated with them. The magnitude of this potential effect remains unclear, however, though the evidence from the Indonesian studies implies that it may be substantial.*[212]

It is encouraging that as of 1987 the following nations have already adopted home gardening as a national priority: Barbados, Chile, Colombia, Dominica, Honduras, India, Indonesia, the Philippines and SriLanka.[213]

VITAMIN C

In introducing the subject of Vitamin C, it would be fitting to share the following observation made by the Australian microbiologist/physician team of Dettman and Kalokerinos, who over many years have conducted wide ranging research--both secondary and original--on the prophylactic and therapeutic potential of Vitamin C.

> *If you were offered a substance that could assist with the endogenous production of interferon and PGE1, that activated enzyme systems, assisted with mineral uptake and collagen production, aided healing, prevented capillary fragility and stimulated renal function, was capable of curing both viral and bacterial infections, was a universal detoxifier effective against drugs and venomous bites and was currently being used more and more in the treatment of degenerative diseases, you would rightly scoff. More particularly if you were told that this substance was Vitamin C, yet all these claims and more have been documented and put to clinical trial.*[214]

As we go on to examine what is indeed a vast body of experimental and clinical data on Vitamin C, we find that there are indeed substantive evidences for its efficacy as a

low cost, perfectly safe, and wide spectrum anti-viral, anti-toxic and anti-bacterial agent. Internationally noted biochemist Irwin Stone has alone described and documented a wide range of applied biomedical research and clinical experience employing 122 literature citations--spanning a 40 year period showing its marked efficacy as a prophylactic and therapeutic agent.[215] In obtaining and reviewing a number of the original source documents cited by Stone--relative to Vitamin C and the infectious diseases--it was both amazing and perplexing that so little of this vital knowledge which was discovered earlier in this century is being further researched and or utilized today.

I. Viral Infections

Within a relatively limited timeframe after the 1933 discovery of ascorbic acid (Vitamin C) and its identification as an anti-scorbutic (scurvy) substance, a diverse range of researchers found that ascorbic acid had significant potential as a wide-spectrum antiviral agent. Throughout the 30's in rapid succession Jungeblut showed that ascorbic acid would inactivate the virus found in poliomyelitis; [216] Holden and Molley, inactivation of the herpes virus; [217] Lagenbusch and Enderling, inactivation of the virus found in hoof and mouth disease; [218] and Amato, inactivation of the rabies virus.[219] It should be noted that Jungeblut observed that the "antiviral" effect of Vitamin C is not due to the acid reaction of the ascorbic acid, since it occurs also when the latter has been adjusted to a pH at which the virus remain "unharmed."[220]

Jungeblut continued his experimental work at Columbia University with primates in which he demonstrated that a scheduled administration of ascorbic acid both enhanced resistance to poliomyelitis, and in cases of infection markedly reduced the severity of the disease. His experiments also demonstrated a very marked superiority in the level of effectiveness of natural source ascorbic acid, versus the laboratory synthesized product. For example in one experimental series, "the percentage of non-paralytic survivors following treatment with natural Vitamin C was about six times as large as that of the untreated controls," whereas" in the animals treated with synthetic Vitamin C this percentage was only twice that of the controls.[221] (Despite such promising early findings, no serious or systematic efforts were made by organized medicine during this historical time period to incorporate the vitamin as a prophylactic or therapeutic agent.)

However, the later results achieved in the direct clinical practice of North Carolina physician F. Klenner approached the extraordinary. He graphically describes--from his own practice and other sources--the substantive efficacy of this vitamin in preventing and/or reversing pathological and life threatening conditions which literally extend over "the entire gamut of medical knowledge." The following list details the range of conditions as described in this and other journal articles by Klenner. Although viral related conditions are being discussed in this section, a few bacterial diseases have been included in this list and are italicized for identification (the list also includes some serious toxic and degenerative conditions).

TABLE F -- CONDITIONS SUCCESSFULLY PREVENTED AND OR REMEDIATED EMPLOYING VITAMIN C	
infectious hepatitis	virus pneumonia
influenza	diphtheria
virus encephalitispoliomyelitis	pertusis (whooping caugh)
measles	chicken pox
parotitis (mumps)	tetanus (lockjaw)
mononucleosis	rheumatic fever
scarlet fever	botulism
heavy metal intoxication	poisonous insect, spider and snake bites
trichinosis*	bacillary dysentary
malignancies	post-operative deaths
childbirth labor (easing and shortening)	postpartum hemmorages (prevents)
cardiovascular diseases	peptic and duodenal ulcers
pancreatitis	severe burns (mostly external treatment)
radiation sickness	carbon monoxide poisoning
barbiturate poisoning[222]	
*In Klenner's successful reversal of trichnosis, a combination of Vitamin C and para-aminobenzoic acid were used.	

He describes the role played by ascorbic acid in intercellular reactions and its neutralization and perceived control of virus production. Its enzymic action contributes to the breakdown of virus nucleic acid to adenosine deaminase which converts to inosine. The end result are purines which are "extensively catabilized." As well, when ascorbic acid joins the available virus protein, it results in a new macromolecule which acts as the "repressor factor." In fact it has been "demonstrated that when combined with the repressor, the operator gene, virus nuclcic acid, cannot react with any other substance and cannot induce activity in the structural gene, therefore inhibiting the multiplication of new virus bodies.[223]

Writing in an early article published in the Journal of Southern Medicine and Surgery, he ascribes the relative limitations in success as attained in much of the earlier experimental results with Vitamin C, to the very low dosage levels used. Conversely, the key to his unprecedented clinical achievements lay in the much higher dosage he administered. He comments:

> *The years of labor in animal experimentations; the cost in human effort and "grants, and the volumes written, make it difficult to understand how so many investigators could have failed in comprehending the one thing that would have given positive results [i.e., to the degree Klenner attained] a decade ago. This one thing was the size and frequency of its administration.* [224]

In the same article he goes on to describe:

- a measles epidemic in which "Vitamin C was used prophylactically," in which without exception all who received 1 gram every six hours either intravenously or intramuscularly "were protected from the virus."
- In treating 60 acute cases of poliomyelitis, (in a number, the diagnosis was confirmed by lumbar puncture, with cell counts ranging from 33 to 125) for the first 24 hours, 1 to 2 grams depending on age--of Vitamin C was administered every second to fourth hour (intramuscularly in children up to four years). For the following 48 hour period the 1 to 2 gram dosage was given only every sixth hour, with all 60 patients diagnosed "clinically well" within 72 hours from the commencement of treatment.
- Six cases of virus encephalitis were similarly treated with Vitamin C injections, and all without exception made dramatic recoveries.
- Diphtheria was successfully treated using the same intensive treatment method "in half the time required to remove the membrane and get negative smears by antitoxin.[225]

Summarily, Klenner could well affirm that "we have been able to assemble sufficient clinical evidence to prove unequivocally that Vitamin C is the antibiotic of choice in the handling of all types of virus diseases." As well he demonstrated--through trial and experimentation--that where tissue levels of the vitamin are maintained, an environment that is extremely unfavourable for virtually all forms of viral infection is created in the human body.[226]

II. Bacterial Infections

Within five years of the discovery of Vitamin C, research studies were being published in the medical literature on the clear association between scurvy and the prescorbutic state (both evidencing Vitamin C deficiency) to a range of infections (both bacterial and viral) in guinea pigs and humans.[227]

Beginning in this same time period other applied researchers discovered that ascorbic acid has both bacteriostatic (inhibiting) and bactericidal (destroying) properties. For example, researchers Gupta and Guha, demonstrated that 2 milligram percent (2 mg% is equivalent to 2 parts of ascorbic acid to 100,000 parts of bacterial suspension) inhibited staphylococcus aureus, and B. typhosus. The same inhibitive effect was produced at 5 mg% for B. diphtheria, and streptococcus hemolyticus.[228] Whereas Sirsi reported that 10 mg% was sufficient to destroy virulent strains of M. tuberculosis.[229] Other researchers found that ascorbic acid was effective in completely neutralizing and rendering harmless a wide variety of bacterial toxins. These included: diphtheria--Jungeblut and Zwemer,[230] tetanus Jungeblut; [231] staphylococcus--Kodama and Kojima; [232] and dysentery--Takahashi. [233]

In a revealing nutritional status survey conducted close to mid-century on the aboriginal population in Northern Manitoba (Canada), it was found that the most prevalent micro-nutrient deficiency was Vitamin C, i.e., on average less than 1/71 the recommended daily allowance. At the time, the death rate from tuberculosis among this group stood at 1,400 per 100,000 in comparison to 27 per 100,000 in the white

population. The researchers concluded ". . . it is probable that the Indian's great susceptibility to many diseases, paramount amongst which is tuberculosis, may be attributable . . . to their high degree of malnutrition arising from lack of proper foods.[234]

Charpy reports on a clinical trial where 15 grams (15,000 milligrams) of ascorbic acid were administered daily to a group of extremely advanced (terminal) Tuberculosis patients. (Of the six to be tested one actually died before the trial could begin). The five patients who were fortunate enough to receive this treatment, all underwent a spectacular transformation in their general condition, and not only left their beds, but within a six to eight month period had regained from 20 to 70 pounds in body weight. As an added point of interest, each patient had cumulatively taken about 3 kilograms (3,000,000 milligrams) of ascorbic acid during the test period with absolute safety and perfect tolerance.[235]

Hochwald employed injections of 1/2 gram of ascorbic acid every one-and-a-half hours (6 grams in a 12 hour period) in croupous pneumonia until the fever and local symptoms subsided. The speed with which this treatment worked was so rapid that it was actually possible within the first day to practically eliminate all local symptoms of infection including the fever, and to attain a normalization of blood counts.[236]

Two articles in the Canadian Medical Association Journal reported on oral Vitamin C therapy i.e., 1/2 gram the first day, followed by an average 1/5gram each day thereafter--on 29 pertussis (whooping cough) patients. The researchers concluded that "this treatment markedly decreases the intensity, number and duration of the characteristic symptoms.[237]

In DeWit's clinical experimentation in the Netherlands 1/2 gram of ascorbic acid was administered daily in the treatment of children with pertussis for a period of one week, after which it was gradually reduced stepwise. Of the 90 children treated (who were divided into 3 comparable groups) the duration of the illness was 15 days for those receiving the injections, 20 days for oral recipients, and 34 days for the control group who did not receive the vitamin in any form, but had alternately received the newly developed vaccine.[238]

Other clinical trials on the reversal of human bacterial infections by ascorbic acid exist in the biomedical literature, e.g., in the treatment of leprosy, typhoid fever and dysentery. In these various reports, without exception, the level of success as reported correlates directly with the amount of dosage administered.[239]

III. Phagocytotic Activity

From an historical perspective, it is of interest that as early as 1943 Cotingham and Mills demonstrated the necessity for the presence of ascorbic acid in maintaining defensive phagocytotic activity.[240] It appears that their important discovery remained largely unknown. However, three decades later the rediscovery and public pronouncement of this same finding by DeChatelet et al, did at least generate wide newspaper coverage, if not any real impact on medical practice.[241]

IV. Conclusion

Not unlike earlier clinicians who employed Vitamin C prophylactically and therapeutically, R. Catheart's extensive clinical experience led him to conclude that proportional to the level of ascorbic acid depletion, there would follow human immune system failure, consequently increasing the susceptibility and potential manifestation of a wide range of disorders including various acute, secondary, and chronic infections (viral and bacterial), allergic reactions, inflammatory and collagen diseases, as well as an impaired ability to heal.[242]

It was the Noble Prize Laureate Linus Pauling who made the observation that:

> *I have been astonished . . . that in the last quarter of the twentieth century a single substance would be recognized to be helpful no matter what disease a person is suffering from. . . . Vitamin C is such a substance . . . by its involvement in many biochemical reactions in the human body it makes the body's natural defenses more powerful, and it is these natural defenses that provide most of our resistance to disease.*[243]

In considering the practical implications and strategic importance of the knowledge of Vitamin C relative to the issue of child survival in the Developing World, it would be worthwhile to conclude this discussion of Vitamin C with the following summarization of Canadian Physician W. McConnick.

> *From increasing evidence of the anti-toxic and anti-infectious action of Vitamin C, and from personal clinical experience in the prophylactic and therapeutic application of this vitamin, the author is firmly convinced that the major factor in bringing about . . . [the major decline in] infectious disease incidence has been the steady and phenomenal increase in the consumption of Vitamin C-rich fruits . . . during the period in question.*
>
> *In many cases of deficiency, where the dietary intake indicates a subnormal intake of Vitamin C over a lengthy period, the correlated clinical history shows repeated occurrence of infectious processes. . . . The author has made intensive application of Vitamin C therapy, orally and parenterally, in many . . . infectious diseases . . . with results in every case even more rapid and favorable than could be expected from the use of the modern antibiotics, and with the added advantage of complete exemption from toxic or allergic reactions.* [244]

A New and Better Strategy

From the foregoing evidence it is clear that a markedly greater emphasis on the development of home, school, and community horticultural and gardening crop production of Vitamin A and C rich foods designed to increase local consumption--coupled to appropriate community nutrition education campaigns, could in and of

itself make significant inroads in reversing the phenomena of infectious disease in today's Developing World.

GENERAL CONCLUSION ON APPROPRIATE ALTERNATIVES

To summarize and conclude the vital issue of what constitutes a more appropriate policy alternative in the effective prevention of human disease--whether infectious or degenerative--we must return to what are the original and thus fundamentally legitimate sources of health immune system success. There is indeed an abundance of evidence confirming the fact that multiple lifestyle factors are not only effective in preventing and reversing degenerative diseases, but the full range of infectious diseases as well. Having already reviewed two key nutrient factors in relation to the prevention and cure of infections, what follows is a concise cross-sampling of research demonstrating the role of other lifestyle and nutrition factors in strengthening natural immunity.

- Evidence suggests that physical exercise can enhance natural killer cell ftinction; and elevate interferon, serum leukocyte, and interleukin-1 levels. (Interleukin-1 enhances both B and T lymphocyte activity and is involved in the body's initial response to infection and inflammation; 245 while interferon is known to arrest the reproduction of viruses, and is vital in reversing many forms of viral infection including hepatitis, chicken pox, herpes simplex and zoster etc.[246]
- Recent studies have documented that even sub-clinical levels of "malnutrition and deficiencies of vitamins, minerals and trace elements" have been linked to the "impairment of immune responses.[247]
- A reduction in dietary fat in humans, correlates with a strengthening of natural killer cell activity.[248] It has also been shown in vitro that polyunsaturated fats weaken lymphocyte ability to respond to antigens.[249]
- Even brief periods of sleep deprivation (7 hours) have been linked to dramatic decreases in basic host immune responses.[250]
- "Stressful conditions can profoundly suppress immune responses of blood and splenic lymphocytes, including T-cell mitogenesis, natural killer cell activity, production of interleukin-2 (IL-2) and interferon, and IL-2 receptor expression."[251]
- Bodily exposure to ultraviolet rays as found in natural sunlight, significantly strengthens the immune system. For example:
- It increases the number of lymphocytes, antibodies (mostly gamma globulins), and lymphocyte produced interferon. As well, the effectiveness of neutrophils in engulfing bacteria can be at least doubled; [252]
    - A 12 year study of male college students revealed that only 10 minutes of irradiation with ultra violet light, up to 3 times weekly during the winter months, reduced colds by up to 40.3 percent; [253] under similar treatment during Winter, there was observed a greatly increased resistance to a range of infectious diseases in Russian children.[254]
    - Truly dramatic results have been and can be achieved in treating a broad range of both viral and bacterial associated diseases.[255]
    - The current medical concept pictures a sun that is destructive to human health, i.e., responsible for accelerating the aging of the skin, and the

prime causative factor behind the now endemic onset of skin cancers. However, extensively documented research on the health effects of both sunlight and nutrition by Kime clearly point to the fact that "the highly refined western diet plays the leading role, both in the aging process and in the development of skin cancer.[256]

- Alcohol is an "immunosuppressive drug with far reaching consequences," e.g., it interferes significantly with antibacterial defense, and adversely affects cell-mediated immunity, thereby increasing risks for viral infections, tuberculosis, and neoplasia (tumor formation).[257] Alcohol inhibits the normal function of B lymphocytes, with as little as 3 ounces (2 drinks) reducing antibody production to1/3 normal amounts.[258] It has been documented that there is increased susceptibility to HIV (AIDS associated virus), with the virus growing more rapidly when even moderate intake levels (e.g., 4 beers) are taken, immune suppression lasting 3-7 hours with T-cells producing less interleukin-2, and T-suppresser cells producing less of the soluble immune response suppression factor.[259]
- Smoking of cigarettes weakens host defenses against bacteria and viruses, including the impairment of macrophage function.[260]

Table G on the following page provides a fully rational explication of the dynamic processes and factors determining health (natural immunity) and disease. In reviewing this table, we may safely conclude that our individual and collective states of "health" and "disease" depends essentially upon our understanding of and respect for nature. Indeed we must come to the ultimate realization that it is in the very best interest of humankind to seek and to obey the voice of nature, with the assurance that the consequences of this commitment will be sound and lasting health of both body and mind.

Table G -- Psycho-Physiological Integrity-The Health and Disease Continuum

Life healing--i.e., vital systemic cleansing, balancing, reparative and renewal processes--with varied infectious disease symptoms being severe and acute manifestations are continuously at work, at all stages from the highest level of functioning and on downward to the point of death. The efficacy of these healing processes depend solely upon the appropriate and moderate provision of the following primal and lawful requisites of human life.

- Air (pure, with electrically balanced ion levels)
- Water (in potable form, employed for bodily--internal and external--cleansing, and environmental sanitation)
- Sunlight (early morning and late afternoon, including regular exposure to living quarters)
- Exercise (physical, mental, social and spiritual faculties)
- Rest (physiological and psycho-emotional)
- Sound Nutrition (i.e., a balanced variety of unrefined and unadulterated plant foods derived from mineral rich-living soil)

- Positive Thinking (including positive/constructive motives, emotions and relationships)

Psycho-Bio-Physical lntegrity depends upon the foregoing requisites, coupled with: sound heredity; non-abuse of the central nervous system; and general freedom from adverse influences, e.g., chemicals, drugs, radiation, foreign antigens, trauma and physical injuries. Whether through inheritance [i.e., pre-dispositional weaknesses] or in one's own life, DENIAL OF THESE BASIC LIFE REQUISITES, OR THE INTRUSION OF THESE ADVERSE INFLUENCES, CONSTITUTES THE PRIMARY AND SUSTAINING CAUSES UNDERLING THE MULTIPLE SYMPTOMS OF PSYCHO-BIO-PHYSICAL DEGENERATION (PHYSICAL AND MENTAL DISEASE). The distinction between "prevention" and "cure" is an artificially contrived notion and does not exist in nature, viz. the self-same primal, i.e., original causes by which systemic (psychophysiological) health is maintained, also serve as the only sound measures by which lost health can be restored.

Compliance with primary psycho-physiological laws ensures an increase and strengthening of inherent vital force and immunity leading to *High Level Health.*

Death > Degeneration > Impairment > Low > Medium > High health

Non-Compliance with primary psycho-physiological laws ensures a weakening of inherent vital force and immunity, leading to *Degeneratlon and Death*

Death < Degeneration < Impairment < Low < Medium < High Health

CONCLUSION

Belief in artificially induced immunization is actually predicated on an assumed technological ability to annul the natural bio-system laws of cause and effect. It is in essence an imaginative belief that we can improve upon nature's original design and purpose through deceitfully manipulating her to our own heedless benefit. It would be fitting at this point to quote from Kime:

> *We may believe that we are responsible to nothing but our own pleasure, that we may freely violate and disregard natural law and then artificially manipulate the deleterious consequences. We may believe that we can eat poorly, sleep rarely, work constantly, exercise sparingly, and avoid any physical consequences by some wonder drug. . . It requires no discipline and no sacrifice. . . .*
>
> *[However] For all our advances in science, we still remain humbly, pitifully dependent upon the forces of nature: air, water, food, and sunlight. It seems in fact, the more advanced our technology becomes, the more capable we are of destroying ourselves . . . by more insidious inroads into our health.*[261]

Finally, it is indeed incontrovertible that the only sure answer to the frightening dilemma that indiscriminately employed artificial universal childhood immunization now poses, is a counter-public health policy which supports a studied and respectful return to the original and immutable laws of life and health, thus encouraging people of all nations to return to the grand design as embodied in the creation by an all wise Creator.

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***Note: Some may understandably raise the concern that a number of the references cited are not directly related to Development and the Developing World, and secondly are not uniformly recent. In response to this point, it remains obvious that the conventions of Western Selective Medicine are inherently predicated on a Western perspective of health and disease. Consequently it seems only consistent and apropos that Western based applied research and experience can and should be brought to bear in any serious effort to constructively examine these areas.

On the issue of the how recent the data is, it is one of the foibles of Westernized thinking (particularly in the medical field) that unless an observation or a practice is very recent, it should be held suspect as being obsolete and due for relegation to the trash can. 'Ibis view is correct only insofar as erroneous concepts undergird a system, and faulty theories and ever changing practices have no better foundation than unanchored and footloose empiricism. More precise sciences such as astronomy, and physics continue to heavily utilize and build upon older research sources and practices, some even going back over many centuries. The reason this is so, is because insofar as the principle ---> practice ----> observation continuum is correct and valid, the data remains unchanging and unaffected by the vagaries of both time and circumstances.

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ANNEX 1

PROBLEMS WITH DEVELOPING WORLD MEDICALIZATION AND THE TRADITIONAL MEDICINE ALTERNATIVE

By: Raymond 0bomsawin

The medicalization of large parts of the Third World . . . has occurred in the context of the destruction of whole systems of traditional philosophies in the name of science and health. Present patterns of dependence are a product of this . . . evolution. The addictive nature of the new pill culture may as one of its unwanted consequences have played a role in creating and sustaining poverty in the Third World. The price of foreign products is often out of proportion to the purchasing power of the poor, who thus may squander a large part of their income in the pursuit of what may be illusory hopes of benefit.. . . Pharmaceuticals are an inappropriate solution to many major health problems and . . . their consumption often does not meet the health needs of people.

Goran Sterky, Dag Hammarskjold Foundation,
Uppsala, Sweden.

THE DISTURBING DILEMMA OF DEVELOPING WORLD MEDICALIZATION

Some leading international health officials, such as Robert Bannerman of the World Health Organization, have legitimately raised the concern that "orthodox" and "conventional" health care services--as devised for and administered to Developing World populations--remain culturally alienating and "economically unobtainable." He also maintains that, whether in the Developed or Developing Worlds, the disparity between the actual benefits and the high costs of Western medicine continues to be an issue of major socioeconomic and political concern. As part of this picture, it is noted that in the Developing World, roughly one third of all health care costs are devoted to "the drug bill alone," with relatively poor countries importing such drugs against payments in scarce hard currency.[1]

Charles Medawar, Director of a London-based research unit, Social Audit Ltd., has conducted extensive international research on the issue of medicalization practices in the Developing World. He has documented the following disturbing conclusions in an article on the need for the strengthening of international regulation in pharmaceutical practice:[2]

- The major proportion of pharmaceuticals on the world market are "unessential and/or undesirable products"
- there are well documented cases of the ongoing marketing of pharmaceuticals to the Developing World that are known to be inherently unsafe and dangerous
- excessive prescribing constitutes a major cause of "adverse reactions," with "chronic and serious under-reporting" of adverse reactions being the norm (Estimates of the extent of under-reporting of adverse reactions in the United Kingdom, "which has one of the most sophisticated post-marketing surveillance systems in the world' through the mechanism of the UK Committee on Safety of Medicines, range from 90 to 99 percent.)
- information from tests and trials on drugs typically ranges from inadequate to appalling (in most clinical trials, the sample sizes are too small and the length of treatment too short to substantiate the claims made on the strength of them)
- most prescribing information is partial, unreliable and incomplete, with the benefits routinely "emphasized and over-emphasized," while the disadvantages and potential dangers are routinely played down or ignored
- in most countries (especially in the Developing World), the right to redress of damaged patients or clients is extremely limited, or does not exist at all
- as a rule, decisions about medicines are almost totally dominated by professional and commercial interests, and are usually carried out in secret, with public accountability for the medical system and its practitioners severely restricted
- Internationally, the pharmaceutical industry devotes about 1 percent of its research and development expenditures on "poor world" diseases, despite the fact that no "good drug treatments" exist for over half of the diseases specific to the poor countries.

Medawar also provides evidence which suggests that the World Health Organization's (WH0) intimate cooperation and "contractual relations with many pharmaceutical companies," inter alia, cripples its capacity to effectively represent and support the most fundamental health needs of the Developing World through developing a system of care in which the most prevalent and serious health needs are met. Multisectoral measures which are safe, effective, simple, and uncostly hold the answer to attaining sustainable and long term health improvement. Indeed, without due leadership in this direction he contends that "Health for All by the year 2000 must appear a sham."

Even where the WHO has been able to advocate a more rational public sector approach to medical practice in the Developing World, as in its 1981 Action Program on Essential Drugs and Vaccines, the fact remains that in most Developing World countries there is readily available in the private sector from 10 to 20 times as many pharmaceutical products as the 250 which are recommended in the Organization's Action Program.

According to Sterky ". . . in some Third World countries, up to 75 percent of the drugs moving in the market may be outside the control of health ministries." This active trade in up to 4,000 drug products is largely monopolized by powerful transnational corporations. In fact, it is estimated that 90 percent of the world's production of commercially marketed pharmaceuticals originates in the industrialized countries, with this percentage growing.[3]

INDIA--AN ALARMING CASE IN POINT

Trisha Greenhalgh's seminal survey of 2,400 individual patients under treatment in the public and private medical sectors of India is illustrative of conditions which are becoming increasingly prevalent throughout much of the Developing World.[4] It will thus be reported on in some detail.

Her research confirmed that drugs which have a high incidence of side effects or a "significant risk of fatal idiosyncrasy" are being sold over the counter and prescribed by doctors for trivial complaints. Chloramphenicol, barbiturates, anabolic steroids and high dosage oestrogen preparations "are used freely, often from bizarre indications and in unsuitable dose regimens."

She refers to one national study which estimates that India is experiencing between five to ten thousand deaths annually, from chloramphenicol-induced aplastic anaemia alone. High dose estrogen-progesterone (EP) although containing warnings of teratogenicity (potential to cause birth defects) remain the cheapest and most widely employed pregnancy test in the country.

Furthermore, medical drugs which have been banned in Western countries due to their dangers are actively prescribed, dispensed and marketed. A few cases include: phenylbutazone, which has been associated with more deaths in Britain than any other drug; and clioquinol which is officially accepted as a "safe drug," in apparent ignorance of the major scandal in which literally tens of thousands of people were left crippled from the drug, with its manufacturer, Ciba Geigy conceding full blame.

Greenhalgh further reports that the pharmaceutical industry argues that "these drugs have not been shown to be hazardous to the Asian population," and that it awaits the results of post-marketing surveillance before withdrawing them. In her words "this is less a cry for objectivity, than a justification for exploiting the sorry state of medical audit." Indeed, case records are rarely kept by doctors engaged in private practice, and polypharmacy remains rife, so most adverse drug reactions remain inevitably undetected. Even if they were detected, there exists no system for the reporting of suspected reactions, and there is no official procedure or mechanism for alerting doctors of suspected adverse reactions in new drugs.

This situation is further compounded by the fact that to all appearances with the exception of teaching hospitals, postgraduate education in clinical pharmacology remains the "unchallenged province of representatives from the pharmaceutical industry."

Simple solutions appear to be ignored. For example, 30 percent of all child deaths in the nation are due to diarrhoea, yet in over 90 percent of such cases oral rehydration is ignored by practicing medical doctors. In the population, millions are known to have a Vitamin A deficiency, with as many as 30 thousand children being blinded each year. This occurs despite the fact that "a fresh mango provides many weeks supply of Vitamin A for a child and costs much less than a bottle of vitamin syrup."

To conclude this summary of Greenhalgh's findings, I would share her following observation.

> *. . . one cannot ignore the long term effects [and the ethical implications] of encouraging a poorly educated population to develop blind faith in the infallibility of modern medicine, and the magical properties ofprescribed pills . . . . people who are too poor to buy rice are being led to believe that they need a cough mixture for every cough, an antibiotic for every sore throat, and a tranquiliser to solve the problems of everyday life.*

A COMPELLING VOICE OF PROTEST

Mira Shiva, Coordinator of the Voluntary Health Association of India, drawing upon her practical experience as a medical doctor in her home country, protests that low cost, self reliant, and indigenous "health care alternatives" have been unduly marginalized with the rapid growth of the medical-industrial complex. Indeed, while clinics and drug dispensing units,, nursing homes, drug marketing outlets, and diagnostic labs have literally mushroomed throughout the nation, at rapidly escalating costs, there has been "no significant and substantial change in the health status of the people."

She further contends that:

> *Simple health care solutions, for example changes in diet, simple massages, home remedies and herbal medicines, which are as relevant today as in the past . . . have been gradually excluded from the health care scene, because of an assumed superiority of modern drugs for all kinds of health problems. This assumed "scientificity" has not been demonstrated by comparing the existing and new pharmaceuticals with alternative therapies in terms of efficacy, side effects, drug interaction, costs, acceptability, and availability.*

Shiva also puts forward the view that the worldwide indigenous traditions encompassed a superior holistic concept of health and disease, in which the use of medicines served to complement and not displace more fundamental and broadly based nutritional and environmental provisions. She concludes by stating that:

> *. . . the concept of the universalization of the pharmaceutical medical solution . . . irrespective of the nutritional and health status of patients [and or recipients] in deprived areas, is irrational. . . . It also indicates an unhealthy First World bias on the part of drug exporters, transferors of technology and propounders of myths.*[5]

THE TRADITIONAL MEDICINE ALTERNATIVE

The human experimentation with and exploration of plant medicines has evolved over the millennia to what is a current usage of some 20,000 plant species, which remarkably--according to scientists Phillipson and Anderson, of the School of

Pharmacy on London--"form the major sources of medicine for the population of the majority of the World.[6]

Nonetheless--as the preceding sections portray--initially in the First World and now universally, there has been an aggressively pursued and increasingly actualized goal to displace this traditional knowledge and practice system, with commercially marketed Western pharmaceuticals. Commercially subsidized and influenced university-based medical curricula have functioned to shift the focus and faith of medical practitioners--and in turn those they practice upon--from plant medicines, towards what is considered a modernized pharmacopoeia. This public faith receives continual reinforcement through the medium of public media advertising. (It should be noted that approximately 75% of modem commercial pharmaceuticals are strictly synthetic chemical substances,[7] that without exception, bear toxic and thus harmful side effects.)

It is widely acknowledged that synthetic agents can be far more easily patented and thus profited from. This, inter alia, has led Pharmacological researchers such as de Smet (Royal Dutch Association for the Advancement of Pharmacy, the Hague, Netherlands) and Rivier, (Institute of Legal Medicine--The University of Lausanne, Switzerland) to suggest that the predominant view that traditional plant medicines are of marginal value "could well be an economic verdict, rather than a well balanced scientific judgment." They go on to "deplore the commonly held belief that the study of traditional agents is nothing but an evaluation of outdated exotic, which cannot be relevant for Western Medicine.[8] Their view is backed by Labadie, who has conducted extensive research on traditional plant medicine at the State University of Utrecht in the Netherlands. He confirms that although it "in general represents a still poorly explored field of research," there is nonetheless a compelling basis for recognizing "the international relevancy of research and development in the field of traditional drugs. . . .[9]

This relevancy that Labadie speaks of, has in part arisen from the growing recognition of the practical limitations, high costs, and iatrogenic features incidental to allopathic (conventional) medicine, with such awareness being the most prevalent in the First World, where it has been the most widely practiced. Consequently, there has arisen in very recent decades--from the lay to professional levels--a significant counter-movement towards according "natural," (variously termed e.g., nature based, lifestyle, and holistic) approaches to health care more prominent recognition and employment.

An important part of this increasingly worldwide trend has been the prominent re-emergence of an integrated science termed ethno-pharrnacology. Although it central focus is on traditional pharmacognosy (medicines derived from natural sources), it is necessarily interdisciplinary in scope encompassing the functional co-relationship and integration of scientific data in the areas of cultural anthropology, archaeology, linguistics, history, botany, toxicology, botany, chemical physics, and biochemistry. Furthermore, it entails both the preventive and therapeutic dimensions of medicine.[10]

University of Messina pharmaco-biologist Anna de Pasquale in conducting a detailed historical review of plant derived medicine, which she has coined "The Oldest Modern Science," came to the conclusion that

> *The re-examination of nature in the search for new therapeutic means has obtained remarkable results. The study of ancient official drugs, which had fallen into disuse . . . has brought about a re-discovery of therapeutic means used for millennia . . . . [ethnopharmacology], this millenarian precursor of medical sciences, is still alive and vital and it has its own place in the future of man. It possesses all the premises to enable it to give a substantial contribution to a more efficacious and rational research of medicaments. . . .*[11]
> (Eugene Linden's September 23, 1991 article in Time "Lost Tribes Lost Knowledge," cites M. Balick's (Director of the New York Institute of Economic Botany) observation that only 1,100 of the earth's 265,000 species of plants have been thoroughly studied by Western scientists, but as many as 40,000 may have medicinal or undiscovered nutritional value for humans. He concludes with the recommendation that traditional "healers . . . can help scientists greatly focus their search for plants with useful properties.")

Anne Mcllory's article "Medical secrets of the forest" in the February 18, 1991 issue of *The Toronto Star* speaks of the renewed interest of a limited number of Western scientists in the "enormous" potential of traditional plant medicines. Such interest has of course taken on much greater urgency as the forests, and the elders who've retained this knowledge appear to face impending extinction. One noteworthy example where this renewed interest has richly paid off is found in the rosy periwinkle, which now furnishes an extract providing Western medicine with an 80 percent recovery level for the once fatal condition of childhood leukaemia.

In going back to the 1978 Alma Ata Conference on Primary Health Care, we find pragmatic approval given--at a political level--to the recommendation that essential drugs and biologicals be locally produced and distributed "at the lowest feasible cost." In concert with this recommendation, the Conference recognized the need to curb the growing over-dependency on medical drugs. It was further affirmed that "proved traditional remedies be incorporated in primary health care, including the establishment of effective "supply systems."[12] In the Words of Medawar," The importance of local medical need is recognized in the AlmaAta recommendation on drugs, partly in the provisions on local manufacture and use of indigenous remedies."[13]

From within the WHO, Bannerman has since gone on to play a vital role in encouraging a renewed reliance upon "well known and tested herbal medicines in primary health care." He refers to a growing interest on the part of Developing World governmental and research institutions in Africa, Asia, and Latin America with respect to the possibilities of further developing and re-utilizing their own medicinal plant resources. He forcibly argues that:

> *. . . medicinal plants are generally locally available and relatively cheap, and there is every virtue in exploiting such local and traditional remedies when they have been tested and proven to be non-toxic, safe, inexpensive and culturally acceptable to the community. . . . There are many records of traditional therapies employing herbal medicines that are said to be effective against common ailments and usually without any side-effects. . . The cultivation of medicinal plants and herbs can also be linked with the*

production of vegetables and fruit with high nutritive value that should be of particular benefit to mothers and children.

(While conducting an evaluation mission in Northeast Thailand, the writer, in the company of UNICEF Officer Dr. Supote Prasertsri, visited the Reanunakorn District Health Centre to examine its experimental traditional plant medicine program. Program Director Pradit Tongyus--who also directs the Centre's health, mental health, nutrition and sanitation services--explained why he was inspired to establish the program. His own son developed a serious urinary infection which failed to respond to regular antibiotic treatments throughout 10 days of hospitalization. Upon turning to a known local plant medicine, virtually all symptoms of infection subsided within a 10 hour period. He went on to describe various local plant medicines which had proven to be non-toxic and highly efficacious in the remediation of a wide range of conditions such as: burns; herpes simplex; snake and scorpion bites, kidney stones, ulcers, and high blood pressure. Indeed, such reputable attestations exist worldwide, and only await honest inquiry and further clinical testing.)

As well, Bannerman recommends that community health workers be afforded with a working knowledge of the therapeutic value of local medicinal plants, including their identification, cultivation, collection, preparation, and therapeutic application. He maintains that provisions for such training and practice represent a fundamental strategy to the strengthening local and community self-reliance in health care.[14]

One of the key arguments of those who would oppose this is view, is that before such medicines can be employed there must be extensive and detailed testing of each specific plant medicine, extraction and refinement of the active ingredients, followed by official recognition and approval. However, there are some basic reasons why this conventional drug development methodology is not only impracticable, but as well unnecessary.

A significant number of plant medicines have been used successfully for centuries, and in some cases millennia. Where there has been a long and established history of efficacy, no apparent adverse side effects, and social acceptance, the only common sense response is to fully permit and encourage continued usage. Researchers such as de Smet and Rivier forcefully maintain that the endorsement of and reliance upon traditional plant medicines in the Developing World, cannot and should not be made conditional upon the full assemblage and weighing of "chemical, pharmacological, clinical and toxicological evidence," as such requirements "would be untenable in the developing countries . . . where Western alternatives for traditional therapies may be unavailable, unpayable or socially unacceptable."

Consequently, the most practical course recommended--as a means of attaining more "immediate health care improvement"--is to conduct simple assays on a series of traditional plant medicines, rather than undertake costly and detailed chemical, clinical and toxicological studies of each and every particular medicine.[15] As an added and important point, internationally such "simple assays"--as well as some very sophisticated pharmacological and clinical studies--already exist on a number of traditional plant medicines, with the former primarily found in the bio-etbnographic, and the latter in the bio-science literature.

CRITICAL CONCLUSIONS AND DIRECTIONS

As a fitting synthesis of the issues and concerns as raised in this paper, we can turn to the outstanding work of the Dag Hammarskjold Foundation in Uppsala, Sweden. The Foundation convened a landmark international seminar in 1985 on the issue of attaining Another Development in Pharmaceuticals. The following salient observations are derived from the "Summary Conclusions" of the Foundation's report on the seminar, which had both public and private sector representation from Europe, Africa, Asia, and Australia.

- The pharmaceutical industry has evolved and been sustained, in part, by encouraging the vision of human health problems as being solvable only by technological means. A contrived international "pill-popping culture" may be in the short-term economic interests of the industry, however it effectually undermines the vital long term interest of attaining "indigenous," and "self-reliant" health development.
- There has been too great a tendency to dismiss traditional medicine as unscientific and superstitious, while accepting unquestioningly all that is new. This is true despite the fact that traditional forms of medicine at times "yield better results" than those which can be obtained by the use of "modem pharmaceuticals."
- Perhaps more important than the actual nature of traditional remedies, was the holistic perception of the nature of illness and the healing process. This view often led to the use of therapies which enhanced the healing process through treating the whole being, rather than the specialized "targeting" of specific symptoms.
- Medical policies and practices must be "ecologically sound," viz. avoiding the "unnecessary pollution of patients bodies with toxic chemicals." The pharmaceuticals market should be replaced by programs and therapies for better health. The crisis will be solved only by a fundamental change both in the training of health workers, and in the thinking of a community which has "been seduced into believing that every ill can be solved by a little pill."
- Both the mystique of professional monopolies of expertise and transnational corporation monopolies of technology, which in concert deny development to the South, "must be shattered." Medicine should be "endogenous," that is primarily derived from the cultural, human and material resources available to each society.[16]

It is the view of the writer, that to ignore these conclusions and oppose these recommendations will be but to help insure the continuation of oppression, poverty, and disease throughout the Developing World. Furthermore, it will serve to deny both the developed and developing nations with the enormous opportunity of properly assessing and accessing a vastly untapped reservoir of vital experiential knowledge, insights, and plant medicines which may tragically perish with the older generation of increasingly marginalized and threatened indigenous "nature based" societies.

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ANNEX II:
AGROCHEMICAL AGRICULTURE THE NEED FOR A SANER ALTERNATIVE

By: Raymond Obomsawin

THE DILEMMA OF CHEMICAL FERTILIZATION

The worldwide use of commercial chemical fertilizers and pesticides has increased by factors of 9 and 32 respectively, during the recent 35 year period.[1] For an appreciation of the impact of this on soil and plant nutrition we should consider the observation of Chesworth:

> *Geochemically, farming is a kind of rape, with annual harvests removing plant nutrients one or two orders of magnitude faster than . . . (natural processes) can replace them. . . . The inherent fertility of soil, a renewable resource, is largely ignored in modern mechanized agriculture in favour of chemical fertilizers largely mined from non-renewable deposits. A saner attitude once should be re examined as a possible basis for future strategies.*[2]

A highly significant practical concern is the increasingly high costs associated with agrochemical fertilizers, coupled to their incapacity to provide a range of essential micro nutrients to the soil.

> *Since the energy crises of the seventies, the cost of artificial fertilizer has increased at least three fold, and most tropical countries are faced by severe restrictions in foreign currency. The second drawback is that commercial fertilizers are invariably incomplete. They look after N, P and K, but most of the minor nutrients are left out . . . With this form of agriculture becoming increasingly beyond the means of the Developing World, alternatives are needed.* [3]

A further critical question that is rarely given due consideration is the popularly promulgated belief that synthetically developed chemicals bear no difference from those which naturally occur in the biosphere. In response to this view, eminently successful horticulturist D. Phillips contends that such a view overlooks the highly vital "life force" factor. In his words "A synthetic chemical can appear to represent a natural one only to the extent that a waxen image is a dummy of its living model."4

PESTICIDE POISONS

Throughout the Developing World, it is estimated that close to a million people are annually poisoned by pesticides, of which 40,000 die. It is also well worth noting in comparison with the Developed World, "the incidence of pesticide poisoning is 13

times higher in the Third World." To give but one example, in Sri Lanka where there was not a single death from malaria in 1978, in that same year it is estimated that there were 1,000 deaths from pesticide poisoning.[5]

Not only is there an accelerated use of pesticides as pests adapt to and resist these poisons, but the pesticide manufacturers make them ever more deadly. This all seems very strange, when we consider that extensive research conducted by Cornell University Entomologist, David Pimentel (editor of the *Handbook of Pest Management in Agriculture,* CRC Press, 1981) and others, confirms that data covering the last four decades indicate a direct cause and effect relationship between pesticide dependency--along with other large scale agribusiness techniques and highly significant increases in crop losses due to pest damage.

"The share of crop yields lost to insects has nearly doubled (7% to 13%) during the last 40 years, despite a more than 10-fold increase in the amount and toxicity of synthetic insecticide used." As if this wasn't damning enough, it has also been found that "often less than 0. 1 %" of pesticide applications actually reach the targeted pest(s).[6]

BIOLOGICALLY SOUND ALTERNATIVES TO PESTICIDES

To give only one example in the developing world of the potential for local alternatives to toxic pesticides, while visiting Thailand's Reanunakom District Health Centre's Traditional Herbal Medicine Program (Nakhon Phanom Province), I found that there has been successful development of and early field trials for non-toxic plant source alternatives to chemical pesticides. The biological product shown, had as its base a locally growable variety of lemon grass.

In my discussion with the Program Coordinator P. Tongyus, it became evident that there remains a considerable potential for villages to raise the basic ingredients as a means of replacing their present dependence on commercial chemical pest control products. Furthermore, there remains potential for large scale industrial production of such non-toxic herbal pest control products, if interest could be further generated, investments made, and appropriate marketing channels established.

THE PROMISE OF CLEAN ORGANICULTURE METHODS

It is also of compelling interest that little acknowledged, albeit superior agricultural methods such as the "clean culture" system (see pp. ??? in main text) developed by Sampson Morgan bear great promise not merely for preventing disease and human degeneration, but for alleviating the crippling effects of starvation in the underdeveloped regions of earth.

At the time of Morgan's experiments the average potato yield for the world, stood at about 6 tons per acre, that of wheat 15 bushels. In the words of Morgan, I broke all records for potatoes . . . digging fine samples at the rate of 65 tons an acre, a success never achieved by any other experimenter." As for wheat, he was able to produce up to 100 bushels per acre. He correctly perceived that the bankruptcy of the soil means

the impoverishment of the people; both in quality and quantity of food provided. In his words "'ne colossal loss of foodstuffs through the present system is criminal." His products included the largest apple that had ever been recorded at 34-1/2 oz and nearly I-1/2 ft in circumference. Additionally "clean culture" methods produced plants far more impervious to adverse weather conditions, including frost. The shelf life of produce was also greatly extended.[7]

A further major benefit of clean culture--of great significance to more and regions--is the fact that porous rock based "mulches" are generally highly potent in reducing evaporation of water from the soil. In fact, evidence suggests that such mulches actually serve to extract "moisture from humid atmospheres."[8]

A RECENT INTERNATIONAL INITIATIVE IN CLEAN ORGANICULTURE

With support from Canada's International Development Research Centre, the University of Guelph (Ontario) Department of Land Resources Science--in cooperation with various Tanzanian universities in the late 80's undertook an historic applied research initiative on the potential of locally accessible rock dust (what the University has coined as agro-geology) applications to restore what has become largely infertile and acid soils in the Mbeya, Morogoro and Mbozi regions of Tanzania.

- At its outset, Johnson Somoka of Sokoine University of Agriculture in Tanzania realistically projected that through rock dust fertilization:

- vital micronutrients will be replaced
- reductions in dependency on commercial chemical fertilizers will be achieved

- farmers can anticipate -potential increases of 50% to 70% in crop yields.
- (This particular project's level of success, and potential for replication was assessed upon its completion in 1991.)[9]

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