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MEDICAL INTELLIGENCE: A THEATER ENGAGEMENT TOOL

BY

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ABSTRACT

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Of all the intelligence challenges in the post-cold war world, medical issues are emerging as one of the most important. Increasingly our policymakers recognize that disease, environmental pollution, and health systems' failures threaten peace, stability, and economic progress throughout the developing world, shaping environments on terms other than ours and, at times, necessitating U.S. humanitarian and peacekeeping involvement. Medical intelligence is one tool that helps national policy makers, theater commanders and operational planners employ the medical instrument to best effect. To be properly employed, however, medical intelligence must be viewed as an intelligence function more than a medical function. Further, medical intelligence assets need to be distributed through the spectrum of intelligence support—strategic, operational, and tactical.

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MEDICAL INTELLIGENCE:
A THEATER ENGAGEMENT TOOL

It is a tired but true cliché that the post Cold-War world is a complicated place. Cold War has been replaced by something that isn't war but surely isn't peace. In this "other than war" environment the policymaking and intelligence challenges are far more complicated.

Of all the intelligence challenges in the post-Cold War world, medical issues are emerging as among the most important. Increasingly our policymakers recognize that disease, pollution, health systems' collapse, and misuse of science and technology all portend instability and interesting times. The United States has an unparalleled capability in its military medical departments to shape the future of nations and the lives of their citizens. As theater commanders employ the medical instrument in their engagement plans, medical intelligence will be a critical function. An examination of the roles, organization, and future of medical intelligence in the world envisioned in Joint Vision 2020 is meaningful and timely.

WHAT IS MEDICAL INTELLIGENCE

Medical intelligence is defined in Joint Pub 1-02 as "That category of intelligence resulting from the collection, evaluation, analysis, and interpretation of foreign medical, bio-scientific, and environmental information which is of interest to strategic planning and to military medical planning and operations for the conservation of the fighting force and formation of assessments of foreign medical capabilities in both military and civilian sectors."[1] The key points of the definition are that medical intelligence is an *intelligence* function, albeit focused on medical matters, and not a medical function; and that it is applicable to strategic and operational consumers.

Medical intelligence is frequently confused with preventive medicine. While the two disciplines are complementary, even interdependent, they are distinctly different. Preventive medicine seeks to identify those things that constitute medical threats, then assess the risks entailed by exposure to such threats, and advise commanders on preventive strategies. Medical intelligence, which informs the preventive medicine process, identifies medical threats to U.S. forces, but also assesses medical trends, organizations, and related events that affect foreign populations, and that may impact —directly or indirectly—U.S. policies and interests.

WHY IS MEDICAL INTELLIGENCE IMPORTANT?

> ... in peace enforcement operations, intelligence personnel must approach their task, not from the perspective of simply analyzing the enemy, but of knowing and

truly understanding the environment. U.S. joint doctrine asserts that analysis 'must often address **unique and subtle problems** not often encountered in war.' In peace operations, the traditional paradigm of Mission-Enemy-Terrain-Time-Troops Available (METT-T) has to be modified so that our understanding of **E** becomes environment, encompassing -- but not limited to -- the enemy.[2]

—LTC Melissa E. Patrick, USA
Intelligence in Support of Peace Operations:
The Story of Task Force Eagle and Operation JOINT ENDEAVOR

What made Somalia unique was that there were literally no host country hospital facilities to augment those that the United States was prepared to bring. One lesson from that experience is that it will be useful in the future to track medical facilities theater-wide as well as countrywide... Another point is that medical intelligence is crucial in helping prevent exposure to indigenous diseases. In Somalia, earthmoving equipment brought in to repair roads and other facilities released tuberculosis spores long dormant in the soil. An additional problem to be faced was that the full range of expertise in tropical medicine was required to help treat the medical problems not only of the indigenous populations but those of multinational contingents as well. Although the United States may not be directly responsible for these personnel, it is probably inevitable that we will be expected to give some form of medical support to future coalition partners.[3]

—Kenneth Allard
Somalia: Lessons Learned

At the beginning of the 21st century, the world is a less healthy place. For most of the world's population, living in less developed and developing economies, the contest with disease and environmental degradation is a losing game. Assessing the nature and scope of these health threats, as well as their downstream effects, is among the great intelligence and policymaking challenges of the coming decade. Disease and health systems' viability have a direct effect on political stability and economic development in the countries where U.S. forces are most likely to deploy. Moreover, the speed of international travel and the mass of persons who enter or transit the United States ensures that no "third world" disease remains isolated for long. The developing world is the canary in the mineshaft, warning of hazards ahead. What strikes Kigali one year may strike Kansas City the next.

As LTC Patrick indicated in her Army War College Strategy Research Paper, the enemy is often the environment. Indeed, throughout the Army's history, environment and disease have been the more dangerous enemies. Kenneth Allard's account is a reminder that Somalia may portend a dreadful future, but it is also a probable future, wherein uniformed Americans go in light , fast and minimally equipped to handle casualties and disease. In that future, commanders

need intelligence that tell them what will threaten their troops' ability to survive and accomplish their mission, and what resources are available to mitigate or counter those threats.

INFECTIOUS DISEASES—THE IMMEDIATE THREAT

Human diseases fall, broadly, into two categories, infectious and non-infectious. Infectious diseases are transmissible from human to human or from animal to human, either directly or via an animate or non-animate host or carrier. Non-animate hosts or carriers include soil, water, or contaminated objects. Non-infectious disease include those of genetic origin, or those caused by nutritional deficiencies or lifestyle. Both play a significant role in the development and progress of human societies. Because infectious diseases tend to be acute in their onset, thereby directly threatening U.S. personnel and operations, they have been the primary focus of medical intelligence efforts.

It has been 50 years since Hans Zinsser proposed that infectious disease is the historical determinant of war, rather than military skill or ability,[4] and 25 years since William H. McNeill described disease as a hidden hand throughout history.[5] Both men's studies were published to critical acclaim in their time. Yet it is only in the last decade that the intelligence community has seriously looked at disease and health as a factor worth considering in advising policymakers. Historically, intelligence on medical issues has been aimed at the operational level, mainly at identifying disease and environmental threats to friendly forces. It is only in the last five years that a significant amount of analysis has made its way into thinking about the effects of disease and ill health on other governments' and forces' stability and capability. In short, the intelligence community is awakening to the idea that disease and ill health are not only war–stoppers, they can also be war-starters.

The idea of humankind under assault has been a staple of science fiction ranging from H. G. Wells' Martians to Robert A. Heinlein's "bugs". Yet throughout history humans have been in an inter-species war with a ravenous predators (bacteria, viruses, etc.) that see *Homo sapiens* as food. For centuries humans believed diseases were the acts of angry gods or invidious miasmas. Only in the last two centuries have we understood that we share an ecosystem with enemies too small to see, too numerous to count, and too dangerous to ignore.

In April 2000, The White House declared emerging and re-emerging infectious diseases (ERIDs), including AIDS, threats to National Security. Three months before, the National Intelligence Council released an unprecedented *unclassified* National Intelligence Estimate (NIE), The Global Infectious Disease Threat and Its Implications for the United States. The NIE found that:

> New and reemerging infectious diseases will pose a rising global health threat and will complicate US and global security over the next 20 years. These diseases will endanger US citizens at home and abroad, threaten US armed forces deployed overseas, and exacerbate social and political instability in key countries and regions in which the United States has significant interests.
>
> Infectious diseases are a leading cause of death, accounting for a quarter to a third of the estimated 54 million deaths worldwide in 1998. The spread of infectious diseases results as much from changes in human behavior--including lifestyles and land use patterns, increased trade and travel, and inappropriate use of antibiotic drugs--as from mutations in pathogens. [6]

The NIE and the White House announcement met with skepticism that was, to an extent, understandable. In the common perception of most Americans, infectious diseases happen to people who live elsewhere (ebola) or do things they shouldn't (AIDS). But in this country infectious diseases are under control, aren't they? Even AIDS is being somewhat subdued by new drugs and effective screening of the nation's blood supply, isn't it? Mark Twain once said that "it isn't what you don't know that gets you into trouble, it's what you do know that just ain't so." In this case, what ain't so is that we have much control over infectious diseases.

In 1993, for instance, an unknown disease took 13 lives in the four-corners region of the southwestern United States. The disease agent, later called the *sin nombre* virus, was identified as a previously unknown Hantavirus, a relative of the agent responsible for Korean hemorrhagic fever, a serious and often fatal illness encountered on the Korean peninsula.[7] In 1998, *sin nombre* struck the area again, claiming five lives. [8]

In July 1976, a previously unidentified bacterium killed a number of men attending an American Legion convention in Philadelphia. The bacterium was finally identified as an organism that usually lived in fresh water lakes and streams, where it had little impact on humans. Ensconced in Philadelphia's Biltmore hotel, however, the organism thrived in the air conditioning system where it was able to become airborne and infect the convention-goers, killing a number of them. Once identified, the organism was dubbed, appropriately, *Legionella pneumophilius.* [9] In 1999, Legionnaire's disease struck at a tulip show in the Netherlands, killing nine people. The source of the infection was thought to be the spray from a hot tub display in the same hall at the tulip exhibition.[10]

The NIE offers more examples, including HIV, ebola, West Nile Virus, hepatitis C, multi–drug resistant tuberculosis (MDRTB), multi-drug resistant streptococci such as "flesh-eating bacteria", and highly pathogenic foodborne pathogens such as *e. coli* 0157. According to the NIE

> Annual infectious disease-related death rates in the United States have nearly doubled to some 170,000 annually after reaching an historic low in 1980. ... the next major infectious disease threat to the United States may be, like HIV, a previously unrecognized pathogen. Barring that, the most dangerous *known* infectious diseases likely to threaten the United States over the next two decades will be HIV/AIDS, hepatitis C, TB, and new, more lethal variants of influenza. [11]

The point of this litany is that ERIDs aren't just a problem in the third world or among marginalized populations in the first world. They are now, and will be, a threat to Americans at home and abroad. That they kill Americans in and of itself makes them a security concern. What ERIDs do in the developing world makes them a significant national security concern.

ERIDs shape the international security environment, leaving shattered sick societies in their wake. This has been the case with AIDS in sub-Saharan Africa and will likely be the case in South and Southeast Asia in the coming decade. AIDS is also on the rise in the the former Soviet States. Its co-epidemic, tuberculosis, has also reached epidemic proportions, with multi-drug resistant varieties increasing at an alarming rate and threatening Europe's populations.

ERIDs such as AIDS, tuberculosis, and malaria wreak severe psychological effects on the populations they affect. In many less developed countries, the collective response is often lassitude and resignation: When life is always tough anyway, why try to improve your lot? The fates will just send another curse your way.

The effect of disease on economic development is tremendous. AIDS has devastated the economies of Sub-Saharan Africa. The presence of infectious disease not only vitiates the work force, it also consumes financial resources that might otherwise have been used to further economic investment and development.

The impact of infectious diseases on annual GDP growth in heavily affected countries already amounts to as much as a 1-percentage point reduction in the case of HIV/AIDS on average and 1 to 2 percentage points for malaria, according to World Bank studies. A recent Namibian study concluded that AIDS cost the country nearly 8 percent of GDP in 1996, while a study of Kenya projected that GDP will be 14.5 percent smaller in 2005 than it otherwise would have been without the cumulative impact of AIDS. The annual cost of malaria to Kenya's GDP was estimated at 2 to 6 percent and at 1 to 5 percent for Nigeria. [12]

A look at America's recent past is instructive as well. Malaria, which remains the scourge of the developing world, was no stranger to American shores. Robert S. Desowitz, adjunct professor of epidemiology at University of North Carolina, writes:

> During the first quarter of the twentieth century an estimated 5 to 7 million cases of malaria occurred in the United States *each year;* from 1914 to 1923 malaria caused approximately 10,313 deaths....Surveys carried out in North Carolina

> from 1910 to 1920 revealed that in Pamlico County 32 percent of the whites and 38 percent of the African-Americans had malaria parasites in their blood, in Beaufort 50 percent were infected, and in Roanoke Rapids 75 percent.... What we should not lose sight of in these impersonal statistics is that each case, every number, represents a very sick, sometimes fatally sick person....
>
> [In 1938] President Franklin D. Roosevelt...assembled... experts ... [their] "Report to the President on Economic Conditions in the South" ... accused malaria of being a major economic retardant. The report stated:
>
> "The pressure of malaria which infects annually more than two million people, is estimated to have reduced the industrial output of the South one-third... the annual cost from this disease is $39,500,000. To this figure would be added the cost of illness, including days of lost work". [13]

Malaria is resurgent throughout the world, its progress aided by increasing resistance of the parasite to anti-malarial drugs. The World Health organization deems this a public health emergency, along with AIDS and tuberculosis. Malaria could regain its foothold in the United States. It needs only to be reintroduced in an area with the appropriate mosquito vectors. A drug resistant variety of the disease would be an unpleasant shock to the public, although our public health agencies could contain the disease at considerably increased cost.

Diseases contribute to political instability, partly because they do impact economies. Wars aggravate disease outbreaks even more. Witness the Spanish Flu pandemic in 1918:

> .... under normal circumstances the mildest offspring of any flu family will always triumph, because people who are infected with the worst strains go home and go to bed, whereas people infected with the mild strains go to work, ride the bus, and go to the movies. You're much more likely, in other words, to catch a mild virus than a nasty virus because you're more likely to run into someone with a mild case of flu than with a nasty case of flu. In 1918, ... these rules got inverted by the war. The Spanish flu turned nasty in the late summer in France. A mild strain of flu spreading from soldier to soldier in the trenches stayed in the trenches because none of the soldiers got so sick that they had to leave their posts. A debilitating strain, though, resulted in a soldier's being shipped out in a crowded troop transport, then moved to an even more crowded hospital, where he had every opportunity to infect others. Wars and refugee camps and urban overcrowding give the worst flu strains a huge evolutionary advantage...[14]

Diseases aren't static targets. Drug-resistant strains of malaria and tuberculosis have already been mentioned. They are but two examples of the problem presented by pathogens that learn how to survive the best efforts to kill them. The list also includes pnemococcal pneumonia, *Staphylococcus aureus* infection, *Streptococcus hemolyticus* (flesh-eating bacteria), gonorrhea, and others.

Diseases evolve and adapt in ways that favor their survival. For example, in its present form, the ebola virus is so lethal that it doesn't represent a serious threat to large numbers of

people. Simply put, it kills too quickly to form the reservoirs that it needs to become a significant human disease. But what if it were to mutate to a less lethal – and slower acting – agent? It could then infect larger numbers of people before its presence became detectable, and thus spread to even larger numbers. It would be less *lethal* but far more deadly.

Indeed this is how infectious diseases have behaved in history. When tuberculosis was introduced to the American Indians in the 1600s it manifested as a fulminant disseminated infection, killing its victims in days or weeks. Within a few generations, however, the disease had settled into the comfortable niche of a pulmonary infection, well known to its European victims, taking years to kill.[15] Syphilis, leprosy, and other feared diseases have followed similar courses.

HEALTH SYSTEMS—CAUSE AND EFFECT

A sucking chest wound is a good indicator that you have just been ambushed

—FMF wisdom found on a T-shirt in Okinawa, 1977

The tongue-in-cheek message of the above-mentioned T-shirt is that bullets (or bullet-holes) may be the *immediate* problem, but they aren't the *only* problem. Diseases are the *effect* of conditions that impact health, just as sucking chest wounds are the *effect* of a bad guy's capability to organize and execute an ambush.

One of the primary functions of medical intelligence is to assess the capability of health systems to defend their populations against disease—either through education, medical intervention or government emphasis on maintaining public health related infrastructure—and then communicate those findings to the appropriate policy-maker or commander as actionable intelligence.

ERIDs don't occur solely as the result of health system failure, of course: consider the occurrence of *sin nombre* virus and Legionnaire's disease in the United States, with its superlative health system. However, the uncontrolled spread of ERIDs may well be the result of failed health systems. [16]

Put another way, an epidemic is an infection writ large. A body's response to infection is determined by the quality of the immune response, an amalgam of biological, psychological, and behavioral factors. The public health system is an immune system writ large. A country with a viable public health system can scramble resources when a *sin nombre* or ebola fever rears its head. It can isolate the affected areas, identify routes of transmission through epidemiological methods—even if the agent isn't readily evident—and it can communicate

preventive behaviors to its citizens. Its response truly resembles a competent immune system's response. A country with an ineffective or non-viable public health system can do none of these things and is immune-compromised at the mercy of its microscopic foe.

> The deterioration of basic health care services largely accounts for the [global] reemergence of diphtheria and other vaccine-preventable diseases, as well as TB, as funds for vaccination, sanitation, and water purification have dried up. In developed countries, past inroads against infectious diseases led to a relaxation of preventive measures such as surveillance and vaccination. Inadequate infection control practices in hospitals will remain a major source of disease transmission in developing and developed countries alike. [17]

Disease can directly cripple health systems by consuming resources (beds, personnel time, medicines, lab materiel) that are otherwise needed to support health services. Moreover, by lowering productivity, diseases such as AIDS and malaria retard or reverse economic development, which in turn impedes funding of health systems. The impact of malaria on the Southern United States is documented above. In Namibia, in 1996, AIDS cost the country eight percent of GDP. In Kenya, AIDS is projected to cost 14.5 percent of GDP.[18] Malaria costs Kenya up to 6 percent of GDP. The money represented by these statistics is then subtracted from the lowest priorities in the funding list – all too often health funds.

The collapse of Russia's health system offers a telling and frightening example of a transnational threat posed by disease and systemic failure. The Soviet health system was marginal in comparison to those of the United States and Western Europe; but after the Soviet Union collapsed, the health system went from marginal to atrocious. The pharmaceutical industry was mainly located in the satellite countries of Eastern Europe. Russian factories provided bulk ingredients that were finished into medicinals in the satellites. When the Soviet empire disintegrated, the Eastern European factories sought business partners in Western Europe, who were more likely to pay their bills than were the Russians. Consequently there was a sudden dearth of medicines in Russia, such as insulin needed for treating diabetics. There was also a dearth of antibiotics, particularly the ones used to treat tuberculosis. Shortly after the USSR collapsed, Russian President Yeltsin, in a gesture towards liberalization, freed a large number of political prisoners. The prison system that had housed these folks also had an inordinately high rate of tuberculosis among its inmate populations. So, just at the time Russia was short on the medications to treat tuberculosis, a group who was more highly infected than any other group in the country was released and disseminated among the greater population. Adding to the crisis, Russia had historically poor tuberculosis control in the general population, and the number of people who were trained to manage the problem shrank considerably as

poorly paid physicians sough more lucrative employment out of the country or out of the profession.

As tuberculosis cases increased in numbers they also increased in complexity. Inadequate stocks of anti-tuberculosis medications and inadequate supervision of those patients who were taking them led to epidemic numbers of drug-resistant tuberculosis in the general Russian population. Today, this has become a great concern to health officials in Eastern and Central Europe and Scandinavia.[19]

SCIENCE AND TECHNOLOGY

Analyzing medical scientific and technological (S&T) issues has, historically, been a part of the medical intelligence mission. Medical S&T analysts approach the problem from two general directions: assessing what S&T advances represent a potential threat, and determining what S&T advances represent a potential advantage for the United States. S&T advances that enable the production or improvement of BW and CW arsenals are obviously a concern to the United States. Similarly, advances that improve an adversary's capability to operate in a BW or CW environment—of their own creation most likely—are of concern.

S&T advances that improve a nation's ability to provide health care to its population are indicative of how strong a medical sector is or how well it is supported politically. They may also reveal, in some cases, a degree of desperation in the face of a health catastrophe. The sad story of South Africa's flirtation with virodene is an example. In January 1997 virodene was hailed as an inexpensive AIDS cure. Its researchers were praised in a cabinet meeting, and the Minister of Health tried to get virodene "fast-tracked" through the trial and approval processes so that it could be quickly put into use. But it turned out to be a highly toxic industrial solvent that was being explored for its cryogenic properties. The people on whom virodene was tested knew little or nothing about the "drug" and in some cases had given no consent whatsoever. The initial test data was misleading at best. [20] The virodene episode is illustrative: The South African Government had not, at the time that the controversy erupted, publicly addressed their grave concern about AIDS. Virodene also fed President Mbeki's desire to find an "African" solution to the epidemic, which accounts, in part, for his rejection of conventional therapeutic and preventive strategies.

INDICATIONS AND WARNING

Countries often display signs of impending behavior through their medical sectors. In this area of "indications and warning," medical intelligence offers some intriguing possibilities. Indications and Warning (I&W) intelligence seeks to identify behaviors that a nation or non-state

actor will likely display as it prepares to undertake destabilizing actions such as invading their neighbor, launching a terrorist attack, or abdicating political or military power.

While intrinsic to the overall intelligence process, I&W is a formalized, even bureaucratic, process that uses carefully constructed and vetted indicators. Its results are carefully scrutinized and debated before warnings are published. Given the potential for embarrassment if an analyst "shoots from the hip" or "cries wolf" – and the potential for disaster (and more embarrassment) if an analyst misses the indicators – or provides them and is ignored by his agency-- I&W is worth getting as right as possible. [21]

Medical indicators, among others, provide warning that an actor (state or non-state) plans an action or prepares to execute it. Scrutinizing activities in a country's medical sectors may enable us to predict when it is preparing for offensive action, or to differentiate between an exercise and an incipient invasion. Similarly, tracking material purchases enables us to predict actions or intentions. The purchase of equipment and supplies that are dual-use, in excess of historical needs, may indicate that an unconventional weapon is being sought or developed. Importation of supplies such as needles and syringes, IV solutions, antibiotics or painkillers in excess of historical requirements may indicate a government's intention to launch military action against a neighbor or internal population.

MEDICAL FACILITIES

Developing and maintaining a database of critical facilities around the world is an essential aspect of basic intelligence, which is the unexciting concrete slab upon which stands the rest of the intelligence structure. Basic intelligence is the backdrop against which current intelligence ought to be analyzed. Without good basic intelligence, current intelligence analysis is severely limited, even flawed.

Much of basic medical intelligence consists of locating medical facilities around the world and keeping a database of the locations and capabilities of those facilities. While such database maintenance is exhaustive and detailed, it is absolutely necessary. This information is needed by planners for a variety of reasons, including developing restricted target lists, planning non-combatant evacuation operations, and supporting medical requirements for VIP travel. The information used to develop and maintain the databases is gathered from open sources, tourist maps, embassy brochures, and reports from official travelers. National intelligence collection methods are also used, particularly in denied areas.

Whether this is actually a medical intelligence function or a general intelligence function is debatable. Locating medical facilities does not require medical expertise per se, but assessing

capabilities based on frequently incomplete knowledge may indeed require medical expertise. Moreover, where medical facilities are located in a country—whether any rational planning is evident by their placement and capability—is indicative of the country's ability to execute health policy and respond to health crises.

AFMIC AND THE ORIGINS OF MEDICAL INTELLIGENCE

One of America's smallest, and perhaps least known, intelligence centers is located at Fort Detrick, on the northern boundary of Frederick, Maryland. The Armed Forces Medical Intelligence Center (AFMIC), a tri-service organization under the Defense Intelligence Agency, is the only organization of its type in the intelligence community or the Department of Defense. It may be the only organization of its type in the world. But, the concept that AFMIC represents—applying intelligence collection and analysis to health conditions, systems and infrastructures—is neither new nor limited to AFMIC. However, it is at AFMIC that the concept is gaining the most attention and where the methods, techniques, and responsibilities of medical intelligence are being shaped.

WORLD WAR II

Medical Intelligence in the United States had its beginnings in May 1940, when the War Department tasked the Army's Office of the Surgeon General (OTSG) to provide a chapter to the field manual on military government.[22] The chapter was to describe the general functions of a health department. OTSG was also asked include a draft directive for inhabitants of future occupied territories, warning them to comply with health laws.[23]

The request called attention to the need for detailed planning for taking over and operating foreign health departments. As a result, the need to collect information and produce intelligence on medical conditions and capabilities in selected regions was evident. The Army didn't have to look far. By June 1940, France had fallen to the Nazis and the United States worried that French islands in the West Indies, which were loyal to the Vichy regime, might threaten the Panama Canal and disrupt shipping on the eastern seaboard. In response, the Army called two reservists from the Sanitation Corps (nowadays they would be environmental health officers in the Medical Service Corps) to active duty for 28 days to assemble as much information as possible on health conditions in the French West Indies and other locations in the Caribbean and Central/South America. In August of that year, Great Britain leased bases in Newfoundland and Bermuda to the United States. Teams were dispatched to both locations to assess the

health and sanitation conditions and capabilities and report back to the Army Surgeon General who used the reports to plan health support to the future U.S. bases. [24]

Because of the pioneer work done in 1940, as war loomed closer in 1941, the Army created a Medical Intelligence Branch within the Preventive Medicine Division on 18 April 1941. The mission of the Medical Intelligence Branch, as proposed by its first chief, was to:

> ...collect, analyze, and summarize current data on disease incidence and health organizations and services inside and outside the United States, and to maintain files of such data for use by G-2, War Department, and of the Planning and Training Section of the Surgeon General's Office...

The mission statement also called for "[d]evelopment of plans for defense against biologic warfare" and for analysis of research on "military preventive medicine." [25] [26]

In spite of the work accomplished in 1940 and 1941, the Medical Intelligence Branch was not prepared for the outbreak of war. By its own estimate, it was two years behind where it should have been. Nevertheless, with a small staff, the Branch prepared 96 medical intelligence inputs to the War Department Strategic Surveys in the first year after Pearl Harbor. Although the War Department Strategic Surveys only printed synopses of the medical intelligence surveys, the full reports were retained, forming the core of the medical intelligence reference files.

During 1942, the Medical Intelligence Branch was called on to prepare special studies supporting the North African Campaign:

> As the Army Air Force developed its air routes, information regarding disease hazards to be met was essential to the health protection of personnel assigned to, or travelling over, those routes. Probably no period of the existence of medical intelligence witnessed a heavier demand for special secret reports and studies and at no time were the files so frequently consulted by others."[27]

In 1944 the Medical Intelligence Branch was expanded and upgraded to a division with collection, analysis, and dissemination branches. In the same year the Joint Chiefs of Staff replaced the War Department Strategic Survey with the Joint Army-Navy Intelligence Study (JANIS) series. Whereas the War Department Strategic Survey incorporated only a brief paragraph summarizing the corresponding medical intelligence survey, JANIS provided a full chapter for medical intelligence.

> [This] marked the first time that the military services had recognized the Medical Department as a major contributor to the intelligence planning of a military operation. It signified acceptance of the fact that full knowledge of medical facilities and hazards is of major concern, parallel in importance with knowledge of weather and terrain. Medical intelligence had actually assumed its rightful role in the intelligence field, and the [Medical Intelligence] division had become the source to which other parts of the Armed Forces were to turn for their information."[28]

The Medical Intelligence Branch and Division wrestled with the question of what qualifications they should look for in a medical intelligence staff. As interest in tropical diseases and medical trauma care increased, the medical intelligence division requested physicians be assigned who specialized in related specialties such as internal medicine, orthopedics, surgery, neuropsychiatry, and dentistry. The various divisions within the Surgeon General's office who would have provided such specialists, however, declined to do so, claiming that those specialties were needed elsewhere. Instead, the medical intelligence staff was expected to gather as much medical intelligence material as possible and then distribute the original documents to the OTSG divisions to which they were of interest. This placed the main emphasis on collection to the detriment of analysis and dissemination, at least in the first couple of years.[29]

In 1944 and 1945, medical intelligence also began to exploit captured German medical equipment scientific research, further broadening the concept and charter. As the war wound down, the Medical Intelligence Division was downgraded to a branch and the staff reduced from a high of 33 to 15, then fewer. The liaison that flourished with G-2 atrophied, and the files, so laboriously gathered, were boxed and stored, or in some cases, destroyed. [30]

The experience and organization of the war years set the pattern for the successor organizations up to and including AFMIC. The competencies and mission remain consistent over the years, as has the ebb and flow of the organizations' staff, stature, and status within the medical departments and the intelligence community.

POST- AND COLD-WAR YEARS

The medical intelligence branch was revitalized at the outbreak of the Korean War and, due to Cold War tensions, sustained its tempo of operations after Korea settled down. In 1956 it was redesignated the Medical Intelligence Division (MID) under OTSG. In 1959 the MID was absorbed into the Medical Intelligence and Information Activity (MIIA) of the U.S. Army Medical Service. In March 1963, all MIIA functions except for the Foreign Liaison Office and Special Projects Office were transferred to the newly formed Defense Intelligence Agency (DIA). DIA's medical intelligence division, staffed with up to 40 analysts and support staff, produced a health and sanitation input as a chapter in the the National Intelligence Survey (NIS) program run by the Central Intelligence Agency. The NIS was the successor to the JANIS and War Department Strategic Survey programs of WWII. [31]

Meanwhile, to ensure that medical intelligence issues remained relevant to the medical departments, the OTSG established the Medical Intelligence Coordination Office (MICO), which

retained MIIA functions that DIA had not absorbed. The MICO was assigned the analytic responsibility for foreign medical S&T intelligence in 1965, functioning as a production agency and monitored by the Army Assistant Chief of Staff for Intelligence (ASCI).

Throughout the Vietnam years the MICO (renamed the Medical Intelligence Office (MIO) produced intelligence on foreign medical S&T and also participated in foreign medical materiel exploitation. Meanwhile, the DIA medical intelligence division maintained databases of medical facilities on a world-wide basis, but concentrated on the Soviet Union and Indochina. DIA intelligence division also continued to produce the Health and Sanitation chapters for the NIS.

In 1973, the MIO was elevated to a Field Operating Agency of the OTSG and designated the U.S. Army Medical Intelligence and Information Agency (USAMIIA). The scope of the medical S&T mission was expanded, foreign medical materiel exploitation was formalized, and the staff was considerably enlarged. The new organization, while still under OTSG command, was supervised by the ASCI and was task-monitored by DIA for national level intelligence production.

Late in 1973, as part of the post-Vietnam draw-down, DIA eliminated the Medical Intelligence Division and transferred responsibilities for the medical intelligence databases to OTSG, along with about 20 percent of the staff. Thus USAMIIA became solely responsible for Defense medical intelligence, incorporating the general medical intelligence mission as well as the ongoing medical S&T and medical materiel exploitation programs. In 1975, USAMIIA began producing a "Weekly Wire", a compilation of concise and timely medical intelligence assessments of military significance. Around the same time, USAMIIA began producing encyclopedic country medical capabilities studies, which replaced the old Health and Sanitation Chapter of the NIS, and began gathering, analyzing, and disseminating information on significant epidemiological trends and events.

In 1979, USAMIIA relocated to Fort Detrick, MD. Both its staff size and physical plant were expanded to accommodate its increased mission responsibilities. In 1981 the Navy committed resources to USAMIIA, starting it on the road to jointness. Previously the Navy, which had consulted with USAMIIA, treated medical intelligence solely as a subset of preventive medicine and relied mainly on its Naval Medical Research Units, Environmental and Preventive Medicine Units, and afloat medical department personnel to gather and relay port medical reports and statistical reports of disease among deployed U.S. naval personnel. By assigning personnel to USAMIIA and actively participating in the medical intelligence processes, the Navy acknowledged the importance of medical intelligence in operational planning. Moreover, the

Navy likely recognized that the process of medical intelligence required analyzing medical reports within an all-source information context.

In the draft FY 1982 budget, the appropriation for USAMIIA disappeared. The appropriations committee concluded that medical intelligence was duplicative of other U.S. Government functions such as the (then) Center for Disease Control. The committee was also responding to what it perceived as funding irregularities noted in the previous year. The Services' Surgeons General and the intelligence chiefs appealed medical intelligence's case and the appropriation was reinstated, contingent on USAMIIA becoming a tri-service organization with DoD oversight and using only General Defense Intelligence Program (GDIP) funds. As a result, in December 1982, by direction of the Secretary of Defense, USAMIIA became the Armed Forces Medical Intelligence Center (AFMIC). [32 33]

The new center was established as a joint agency under the authority, direction, and control of the Assistant Secretary of Defense for Health Affairs (ASD/HA) and under the management of the Secretary of the Army as executive agent, who delegated the authority to the Surgeon General and the ACSI. A "board of governors" was established in the form of the Interdepartmental Advisory Panel, chaired by a representative designated by the Director of DIA and consisting of representatives of the services medical and intelligence chiefs, as well as a representative from ASD/HA.[34]

During the early 1980's AFMIC assumed a critical role in evaluating foreign offensive biological warfare programs. During World War II, the medical intelligence branch listed "development of plans for defense against biologic warfare" as one of its competencies, and the various iterations of medical intelligence organizations had assessed foreign medical research programs that could enable development of biological warfare (BW) programs. But the charter for conducting intelligence analysis of foreign BW programs belonged to the Army's Foreign Science and Technology Center (FSTC) in Charlottesville, VA (now the National Ground Intelligence Center). FSTC also was responsible for S&T programs related to chemical warfare. It had been customary to group chemical and biological warfare together -- partly because there was some commonality in the way physical protection from the respective agents was approached, but perhaps even moreso, because both unconventional weapons were considered similarly unthinkable and barbaric and were emotionally linked for that reason.

AFMIC's became directly involved in BW analysis (while it was still USAMIIA) over allegations that the Soviet Union had used tricothecene mycotoxins (yellow rain) as a biological weapon in Laos and Afghanistan, an accusation made public by Secretary of State Alexander Haig in a news conference in March 1982. Much of the material the Secretary of State brought

to the podium was based on the work of a USAMIIA analyst who attended the news conference as a subject matter expert. Haig's Yellow Rain announcement and the ensuing controversy over whether the Soviets had in fact used tricothcene mycotoxins or whether "yellow rain" was bee feces established USAMIIA and then AFMIC as a valuable resource where BW was concerned.

It only made sense. AFMIC had the only concentration of life-science specialists doing intelligence analysis in the Department of Defense. They were located at Fort Detrick, MD along with scientists who had run the United States' offensive BW program before President Nixon canceled it in 1972. Many of them had transferred to the Army's Medical Biological Research and Development Lab and Medical Research Institute for Infectious Disease. Thus AFMIC's S&T analysts could draw on the Fort Detrick scientific community's expertise as well as their own. Moreover, the FSTC had its hands full with CW S&T analysis, a growth industry given Iran's and Iraq's mutual uses of CW during their war. In October 1984, therefore, AFMIC was formally assigned responsibility for foreign offensive BW programs. [35]

Throughout the 1980s AFMIC provided support to theater commanders and national policy-makers. Its tasks remained consistent with those performed throughout WWII and the early Cold-War periods: collection, analysis and databasing and dissemination of medical and health data on foreign countries. Added, of course, was analysis of foreign biological warfare programs.

The medical intelligence role was also recognized in FM-8-10-8, Medical Intelligence in a Theater of Operations, prepared by the Army Medical Department in 1989. While FM-8-10-8 had no directive authority over AFMIC, it represented what medical operators thought medical intelligence should be doing. FM-8-10-8 was notable for broadening the scope of medical intelligence by articulating the idea that national policy was predicated, in part, on the medical capabilities and conditions in other countries, which were therefore legitimate intelligence matters. It also differentiated the objectives of strategic level medical intelligence and operational/tactical level medical intelligence. Finally it cast medical intelligence squarely in the intelligence arena, helping resolve the intelligence–medical ambiguity. [36] [37]

During the 1980's an internal debate in AFMIC started over whether and how far to address the AIDS pandemic. From an operational perspective, AIDS was seen as of little significance. U.S troops were screened for HIV and the U.S. blood supply was screened. So the only way an American service-member was likely to contract the infection was by indulging in behaviors that were proscribed by the UCMJ or operational rules of engagement. And if service-members became infected, the long incubation period meant that they would be able to perform their duties for quite a long while anyway.

From a strategic perspective, however, AIDS was perhaps the most significant global medical event since the Black Death. Even by the late 1980s, it was evident that AIDS would decapitate the leadership cohorts in a number of sub-Saharan African countries. And by aggravating instability in severely affected regions, AIDS could contribute to state failures that would draw in the United States in a humanitarian or peacekeeping role.

DESERT SHIELD/DESERT STORM, ETC.

Medical Intelligence hit the big time during the Persian Gulf War. Commanders and policy-makers were worried about Saddam Hussein's BW arsenal. AFMIC had the BW expertise to address their questions: what organisms had Iraq been playing with, had they weaponized anything, where were their BW weapons, what dangers attended bombing Saddam's BW factories? The BW focus grew in importance following the Gulf war, as the fear of weapons of mass destruction spread throughout the government. Indeed by the end of the Gulf war, it was often difficult to sell the idea that AFMIC did something other than BW.

Another issue that moved to center-stage during the Gulf War was identifying "non"-targets such as hospitals, medical schools, pharmaceutical factories and medical warehouses. Because AFMIC had the only current databases (although far from comprehensive) for medical facilities in Iraq and Kuwait, the responsibility fell to them to answer many of CENTCOM's targeting questions. The question of databases and AFMIC's participation in identifying restricted targets extended well beyond the Gulf war and remains a major focus of AFMIC's efforts today.

During the early stages of Desert Shield, the Army Intelligence Agency (AIA) -- then delegated Executive Agency over AFMIC, as well as other several other intelligence centers -- was concerned about the amount of requests coming into the intelligence centers and also about the amount of intelligence analyses going out to the field, with little or no control over who was being asked to do what, and what was being provided in response. Attempting to gain some control over the process, AIA ordered all subordinate activities to clear requests for intelligence (RFI's) and responses through AIA. The order didn't sit well with some of the AFMIC staff, who thought that the nature of medical intelligence was such that the AIA staff wasn't competent to understand, much less to review and approve their responses. The review process would only delay getting needed intelligence to the field.

This begged an important question: If medical intelligence was too specialized to be understood in the AIA HQ, how was it to be understood by anyone other than the medical staffs

in the field? Or was medical intelligence something that only the medical staffs needed or could use?

The promulgators of FM-8-10-8 clearly never thought so. Under AFMIC responsibilities the manual states:

> AFMIC maintains a delicate balance: reports must be general enough so they can be understood by the intelligence layman but detailed enough to be technically accurate and trusted by the medical consumer. [38]

It is clear that the AMEDD authors of FM-8-10-8, in trying to articulate a concept for a medical intelligence contribution to operational art saw that it was first and foremost *intelligence* that happened to address medical matters. This debate had gone on since WWII -- witness the discussions about how best to staff the Medical Intelligence Branch/Division and the decision to emphasize collection of raw information that would then be disseminated, unanalyzed, within OTSG for the benefit of that staff. Implicit in that decision was that any intelligence that came out of the raw information would not be available to the larger intelligence community. This debate continues.

In the Defense appropriation for fiscal year 1992, executive agency for AFMIC, along with the Missile and Space Intelligence Center in Huntsville, AL, was transferred from the Army to Defense Intelligence Agency. AFMIC was subordinated under DIA's Science and Technology Directorate, which was later incorporated within the Directorate for Intelligence Production. Due to DIA's interpretation of "executive agency," AFMIC lost much of the autonomy it had enjoyed under the Army. On balance, however, the transition served AFMIC well by increasing the Center's exposure and visibility within the intelligence community. AFMIC gained personnel and was integrated into ongoing DIA programs to an unprecedented extent.

An important event in AFMIC's evolution was the introduction of the Military Intelligence Digest, or MID. The MID was introduced by DIA in September 1993 as DIA's flagship product, the vehicle for providing current and timely intelligence to the Joint Chiefs of Staff, Secretary of Defense, and the White House. MID articles were expected to be about 450-500 words and focused on a single topic. The publication was strikingly similar to the Weekly Wire[39] in concept so AFMIC analysts began writing prolifically for the MID. This offered a superb opportunity to present medical intelligence issues to the National Command Authority and a number of the analysts made the most of the opportunity. Articles dealt with AIDS in military forces, nutrition and health crises in North Korea, collapse of the pharmaceutical industries in the former Soviet States, health service support planning in the People's Liberation Army, and a host of other topics.

The AIDS question continued as coverage waxed and waned through the 1990's. AFMIC made substantial contributions to national level intelligence analyses of the disease's effect on societies in sub-Saharan Africa and particularly on security and military forces. In 1996, ERIDs were recognized within the Clinton Administration as a possible threat to American national security. AIDS, as the most significant ERID of the last half-century was singled out for attention by an interagency working group. In 1997, Assistant Secretary of State for Global and Multilateral Issues Timothy Wirth requested a National Intelligence Estimate on the threat posed by ERIDs. AFMIC was directed to provide a primary author to the Estimate, which was published in an unclassified version in January 2000. The document established the strategic significance of AIDS and other ERIDs and, to a considerable extent, established AFMIC's position as a national intelligence asset.

In November 1992, AFMIC was tasked with maintaining the DIA database for medical facilities worldwide. AFMIC had long maintained files on medical facilities around the world. Indeed one of its recurring products was a medical facilities handbook, initially produced to support Air Mobility Command's medevac flights, but expanded considerably to support operational forces as well as official U.S. Government travelers. Still, the AFMIC files were far from comprehensive, nor could they easily support mission planning because the contents couldn't be easily configured for inclusion in DIA automated databases. Consequently, AFMIC personnel began to translate the data in the original files to the data structures of the DIA "Integrated Database" while attempting to expand the depth and breadth of information on medical facilities world-wide. Notably, this was undertaken without any increase in staff size.

In 1996, the BW Division was transferred from AFMIC to DIA's Transnational Warfare Group. At the time of the transfer there was some concern that AFMIC would be lessened by the BW Division's departure to the point where its existence would be imperiled. The concerns were largely unfounded. The rest of AFMIC's divisions had established their own identity and reputations. Indeed, the transfer of the BW division worked to AFMIC's advantage because it clarified the role Medical Intelligence played in the complex operations that characterized the 1990s. As long as BW was part of AFMIC, it tended to overshadow the balance of the medical intelligence mission such as monitoring infectious disease trends, health sector advances and failures, improving the medical facilities databases, and tracking foreign medical research and development sectors.

This last role needs further mention. The original USAMIIA and AFMIC S&T intelligence missions had, by 1995, been entirely subsumed by BW, at a time when many countries, thanks to advances in biotechnology, were making great strides in medical technologies. As the BW

division turned its attention more and more to weaponizable agents and weapons technologies, the focus on enabling technologies and research slipped. It wasn't until the BW program was reassigned in DIA that AFMIC was able to begin reconstituting its former capability.

Also during the 1990's AFMIC began to experiment with innovative dissemination methods, often leading the way for the rest of DIA and the military intelligence community. AFMIC made a good "stalking horse" for automated dissemination because the majority of its operationally targeted products were unclassified. Thus, in 1991 AFMIC began a trial of an unclassified bulletin board system to allow DOD and USG customers access to unclassified products over a dial-up bulletin board system. This immediately proved a great success. The next step in the evolution was a CD-ROM containing the AFMIC infectious disease risk, environmental health risk, and medical capabilities assessments, titled Medical, Environmental, Disease Intelligence and Countermeasures (MEDIC), on many of the world's nations. Moreover, in the process of producing the MEDIC CD-ROM, AFMIC chaired a conference of preventive medicine experts from the Services' medical departments. This joint meeting harmonized the Services' preventive medicine guidance and countermeasures for the disease and environmental threats which were published along with the intelligence assessments. Now AFMIC and DIA have a best-seller that serves as a boon to operational planners and medical personnel. The MEDIC is published annually. Its users of the product are advised to consult AFMIC's current intelligence products for further updates. It aims to provide 70 to 80 percent of the answers 70 to 80 percent of the time, which allows the user to more tightly focus intelligence requirements.

THE FUTURE OF MEDICAL INTELLIGENCE

> Environmental and health problems can undermine the welfare of U.S. citizens, and compromise our national security, economic and humanitarian interests abroad for generations. These threats respect no national boundary. History has shown that international epidemics such as polio, tuberculosis, and AIDS, can destroy human life on a scale as great as any war or terrorist act we have seen, and the resulting burden on health systems can undermine hard-won advances in economic and social development and contribute to the failure of fledgling democracies.
>
> —William Jefferson Clinton
> A National Security Strategy for a New Century
> The White House, December 1999

In the 1990's, medical intelligence became a matter of interest to national level intelligence customers. As the interest grew, so did the number of players. In addition to AFMIC,

the Director of Central Intelligence established an Environmental Center, chartered to examine the effects of environmental degradation on the nation's security. In 2000 the Environmental Center's mission was expanded to include assessment of infectious disease patterns around the world. Subsequently, the Environmental Center was consolidated with the CIA's Office of Transnational Issues to form the DCI Environmental and Societal Issues Center. The success of the NIE has secured the intelligence community's role in complementing such agencies as the Centers for Disease Control and the World Health Organization.

Ironically, at the theater and operational level, where much of the emphasis has been placed historically, medical intelligence is an invisible entity. Although the J-2's usually know about AFMIC as a source for finished intelligence, the product and its implications, are almost always consigned to the CINC Surgeon staff for action. Discussions with two individuals recently transferred from the EUCOM J-3 and J-5 staffs, respectively, were instructive. Neither person had heard of medical intelligence or AFMIC, and had only a passing acquaintance with the CINC's medical staff. They agreed emphatically that medical issues were important in planning and executing operations in their theater.[40]

This much seems clear: Medical engagement needs to be part of theater engagement planning, and medical intelligence needs to support theater engagement planning. The health catastrophe that EUCOM faces right now is separated from similar problems in SOUTHCOM, CENTCOM, and PACOM only by degrees. Thorough analysis and understanding of the complexities of disease, social structures, and medical practices are a command concern, not just a command surgeon's concern. The CINCs need, and deserve, intelligence support that addresses the medical issues in their theaters, much as they get political, economic, and forces intelligence.

Who will provide it? AFMIC has been the primary provider of medical intelligence to operational commanders. But AFMIC isn't adequately staffed to keep up with increasing demands for operational intelligence support. Moreover, AFMIC doesn't have timely access to information gathered by theater intelligence collection assets, information that is needed to keep abreast of the dynamism that characterizes an unfolding event. Because AFMIC isn't "there" when the intelligence requirements are formulated, medical intelligence as a whole tends to fall out of the picture. Perhaps, most importantly, the emphases of strategic and operational intelligence, while complementary, aren't necessarily compatible within the same organization.

Operational and tactical level medical intelligence is focused principally on what threatens the force in terms of disease and environmental threats, and on the location and capabilities of medical facilities and related infrastructure in the AOR. It depends heavily on collecting discrete

and very current data and communicating that data widely throughout the theater. Because information on medical infrastructure and medical activities has broader applications, such information must not be stove-piped to the Surgeon. Rather, it must be analyzed and assessed within the context of other information that is flowing into the J-2.

The solution appears evident: Embed medical intelligence at the operational and tactical levels. Each CINC has a joint intelligence center (JIC)[41] with analytical expertise in ground, air, and naval forces, along with logistics, transportation, political, economic and social issues in the AOR. Simply add analytical expertise in medical issues. Doing so provides the CINC *hands-on* medical intelligence analysis and collection guidance, rather than having him reach back to a national level office where his intelligence needs are prioritized in competition with other CINC's and national customers and where the analysis that is produced may not reflect the most current intelligence or area expertise.

Medical intelligence in the theaters would not replace AFMIC, just as the JIC's don't replace DIA or CIA. It would, however, provide the CINC greater analytic depth as he addresses the medical aspect of his theater. Assigning medical intelligence capabilities to the CINCs also provides the opportunity to manage medical intelligence databases within the CINCs' JICs. Proximity to official travelers, such as the CINC Surgeon or SOF personne,l that perform training missions within the AOR would give theater medical intelligence analysts ready access to medically significant information developed in the course of duties. They would also be able to leverage theater collection assets that aren't available to analysts at the national level. The improved information flow and the finer granularity of detail would greatly improve CINCs' intelligence support on medical issues.

A MEDICAL INTELLIGENCE CADRE?

If medical intelligence is a growing concern, who is going to do the work? Beyond the 35 or so civilian and military medical intelligence analysts employed at AFMIC, there aren't another half-dozen anywhere in the government. Nor is there a readily identifiable pool to draw potential candidates from.

There is any number of reasons why no medical intelligence cadre exists. The main reason is that the medical and intelligence communities haven't seen a need to develop one. For years it was enough to hire or assign medically personnel to intelligence duties, teach them a little about the intelligence business and back them up with a staff that knew the ins and outs of intelligence collection and dissemination. That was effective when medical intelligence analysts produced encyclopedic compendiums on their respective countries for a audience that

was mainly medical. The support staff ensured that the analysts received the intelligence information that they needed, and then ensured that the intelligence product was properly packaged and disseminated.

Today, medical intelligence analysts—as do analysts throughout the intelligence community—must be able to navigate information systems of increasing power and complexity. Further, they must be able to converse and coordinate findings with counterparts throughout the intelligence community. They don't have the luxury of being medical persons *doing* intelligence, they must be medical *and* intelligence persons at the same time.

Because medical intelligence is receiving high levels of attention, and because medical intelligence findings are being closely scrutinized, the analysis must be done by people with medical and life sciences backgrounds. It is far easier to teach a medical- or life-science expert about intelligence than it is to teach an intelligence officer about medicine or biology. Because AFMIC (and future theater medical intelligence personnel) concentrates first and foremost on medical issues of military consequence, *military* medical backgrounds are a premium.

The need suggests a simple solution: teach medical intelligence analysis to military medical personnel. Once they are taught, assign them to AFMIC as interns, then to unified commands or service components where their skills are needed. A curriculum actually exists although it will have to be assembled from courses scattered around the medical services. AFMIC has taught an introductory course in medical intelligence since 1984. Elements of the course are also integrated into the Navy's Plans, Operations, and Medical Intelligence Officer training program as well as the Joint Medical Planning Course. Expanding the medical intelligence component of those courses would offer a robust introduction for medical department officers and senior enlisted members. AFMIC also developed, in conjunction with the Uniformed Service University of Health Sciences, a two-week introductory course in military medicine for intelligence analysts. The course was intended to give medical and non-medical intelligence analysts a better understanding of the peculiarities of military medicine, as opposed to civilian medicine. DIA's Joint Military Intelligence College offers a year long program leading to graduate and undergraduate degrees in strategic intelligence. Enrollment is open to officers and enlisted. The Army and Navy medical service corps send students every year, about half of whom perform little if any intelligence duties after graduation. Given these education opportunities, it should be no great feat to produce a medical intelligence curriculum, train medical intelligence professionals, rotate them through at least one medical intelligence assignment, and generate a cadre of future military and civilian medical intelligence specialists

able to fill future billets and respond to national, theater and unit medical intelligence requirements.

CONCLUSION

In January 2001, the National Intelligence Council released yet another unclassified National Intelligence estimate, Global Trends, 2015, which echoes the National Security Strategy of 1999, predicting among other things:

> Disparities in health status between developed and developing countries—particularly the least developed countries—will persist and widen....Developing countries...are likely to experience a surge in both infectious and noninfectious diseases and in general will have inadequate health care capacities and spending....
>
> AIDS, other diseases, and health problems will hurt prospects for transition to democratic regimes as they undermine civil society, hamper the evolution of sound political and economic institutions, and intensify the struggle for power and resources.[42]

This prediction captures the rationale for ensuring the United States has the means and willingness to effect improvements in health conditions in developing nations. The consequences of ignoring the prediction are far-reaching—instability and economic woes on distant shores and the threat of imported disease to our shores.

The threat can be pre-empted. The United States has an unparalleled capability in its military medical departments to respond to *health* crises before they become *military* crises. To do so effectively, however, requires an intelligence capability that is able to assess and quantify the threat, understand the underlying factors, and identify the most amenable approaches to interdicting the threat. Since World War II, the Army and the Department of Defense have had a medical intelligence capability that enables just such an intelligence effort.

The question for the future is whether AFMIC, on its own, is able to support an enlarged medical engagement role. The answer is probably not, which should not be seen as a negative criticism of AFMIC, but as a statement of the obvious. In no other area of intelligence would a theater commander or an operational commander consign a vital intelligence capability and assets beyond his control. Once medical intelligence is properly understood by theater commanders to be an *intelligence* function that supports their mission, they will insist on "owning" the capability within their intelligence component.

To meet future challenges, the United States must ensure medical intelligence is integrated into the theater intelligence organization and that medical issues are addressed alongside all other relevant intelligence issues that concern the CINC,. We must further ensure

that cadre of medical intelligence specialists are trained and available to staff national and theater intelligence organizations.

WORD COUNT: 10,319

ENDNOTES

[1] Joint Chiefs of Staff, Joint Pub 1-02, available at <http://www.dtic.mil/doctrine/jel/dodict>, accessed 17 December 2000.

[2] LTC Melissa E. Patrick, USA, Intelligence in Support of Peace Operations: The Story of Task Force Eagle and Operation JOINT ENDEAVOR

[3] Kenneth Allard, Somalia Operations: Lessons Learned (Washington DC: National Defense University Press, 1995) 84-85

[4] Hans Zinnser, Rats, Lice, and History (New York, NY, Bantam edition, 1965). This is the classic text used by students of disease's role in history. It is the story of typhus fever and its role in upsetting empires, but has broad application to other disease patterns and their impacts.

[5] William H. McNeill, Plagues and Peoples (New York, NY, Anchor Press/Doubleday, 1976). McNeill's book launched a new school of historical inquiry when it was published in 1976. It remains one of the best of its genre.

[6] National Intelligence Council, National Intelligence Estimate: The Global Infectious Disease Threat and its Implications for the United States, NIE 99-17D, January 2000, available at <http://www.cia.gov/cia/publications/nie/report/nie99-17d.html>, accessed 17 December 2000.

[7] Brian Hellje,MD, Hantaviruses, with emphasis on Four Corners Hantavirus 14 March 1995, available at <http://www.bocklabs.wisc.edu/ed/hanta.html>, accessed 17 Jan 2001

[8] Peggy Rodriguez-Moran, Lancet "Hantavirus infection in the Four Corners region of USA in 1998.(Research Letters)," 24 October 1998, available from <http://www.findarticles.com/cf_0/m0833/1998_Oct_24/53457274/print.jhtml>, accessed 17 January 2001

[9] Glenda Garvey, MD, Infectious Disease, New or Emerging Infections, available from <http://cpmcnet.columbia.edu/texts/guide/hmg18_0003.html>, accessed 17 January 2001

[10] Jack Woodall, MD, <woodall@bioqmed.ufrj.br> "Legionellosis, Flower Show – Netherlands" electronic mail message to PROMED Mail Discussion List <http://www.healthnet.org/programs/promed.html>, 15 March 1999

[11] National Intelligence Council

[12] Ibid

[13] Robert S. Desowitz, Who Gave Pinta to the Santa Maria, (New York, NY: Harcourt Brace & Company, 1998) 196-197. Desowitz has written three emminently readable texts on human societies and their diseases. Who Gave Pinta to the Santa Maria is the most recent and adresses the exchange of diseases between the old and new worlds. Desowitz manages to craft enlightening books that read as well for the novice as the expert.

[14] Malcolm Gladwell, The New Yorker, "The Dead Zone 29 September 1997, available at <http://gladwell.com>, accessed 10 December 2000.

[15] William H McNeill, 61

[16] * I would submit that AIDS *should* have been an example of an effective systemic response. Indeed the rapidity with which the human immunosuppressant virus was identified speaks to the effectiveness of the response. The system tripped however over political stumbling blocks and the full effectiveness that the health systems should have been able to bring to bear on the problem was delayed.

[17] National Intelligence Council

[18] ibid

[19] ibid

[20] The Capetown Daily Mail and Guardian e-site maintains a compendium of articles on the virodene controversy from January 1997 to the present. The information is available at <http://www.mg.co.za/mg/za/links/sa/virodene.html>, accessed on 12 February 2001

[21] According to Bob Woodward, such an event occurred just before Iraq invaded Kuwait.The US was also caught by surprise when India detonated a nuclear bomb.

[22] War Department Basic Field Manual FM 27-5, Military Government, 30 July 1940.

[23] Gaylord Anderson, MD, "Medical Intelligence" Preventive Medicine in World War II, Vol IV, Special Fields, ed. COL Robert S. Anderson, MC, USA and Ebbe Curtis Hoff, PhD, MD (Washington DC, Department of the Army, 1969) 252-253

[24] ibid, 253-255

[25] ibid, 256-257

[26] With only a few changes, that statement captures the AFMIC mission and competencies as they exist today.

[27] Gaylord Anderson, MD, 261

[28] ibid, 269-270

[29] ibid, 264-265

[30] ibid, 271-273

[31] AFMIC Unit History. This history was compiled at the Armed Forces Medical Center in 1985 and is retained in the center HQ. The history drew largely on Dr Gaylord Anderson's history of WWII medical intelligence and, for the post-war years, on official records and

documents from USAMIIA and its post-war predecessors. To my knowledge, no other history of AFMIC has been prepared.

[32] Ibid

[33] Interview with Mr Jeff Matt, Deputy Director, AFMIC, conducted on 1 February 2001

[34] AFMIC Unit History

[35] ibid

[36] FM-8-10-8, Medical Intelligence in a Theater of Operations, Department of the Army, Washington DC, July 1989

[37] Interview with LTC Vince Mennito, USA (Ret), 16 February 2001

[38] FM-8-10-8, para 4-5

[39] The Weekly Wire, which began production under USAMIIA continued under AFMIC. In 1993 it went from weekly to bi-weekly and was re-christened the AFMIC Wire. It is still produced today, its articles often echoing the DIA MID, but with emphasis on operational medicine implications, while the MID emphasises policy implications of the story.

[40] Interviews with LTC Cary Hilton, USA at USAWC and LTC(P) Kieth Armstrong, USA at USAWC. LTC Hilton had been assigned to the EUCOM J-5 and was responsible for drafting the TEP. LTC(P) Armstrong had been assigned to the EUCOM J-3, responsible for planning NEO's in the theater.

[41] Normally joint intelligence centers are abbreviated JIC's, thus JICPAC, JICSOUTH, JICCENT, etc. The exception is in EUCOM which has a joint *analysis* center, or JAC. It does the same things as a JIC but is titled differently as a courtesy to the British government (the JAC is located in Molesworth, UK) which has a Parliamentary body known as the Joint Intelligence Committee. The potential existed for ministers and members of parliament to confuse acronyms.

[42] National Intelligence Council, National Intelligence Estimate: Global Trends – 2015: A Dialogue About the Future With Non-government Experts, December 2000, available at < http://www.cia.gov/cia/publications/globaltrends2015/index.html>, accessed 12 February 2001.

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