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Research Paper

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MEDICAL INTELLIGENCE AND PUBLIC HEALTH IN THE COMPLEXITIES OF CONTEMPORARY SOCIETIES THE ROLE OF FBI IN THE UNITED STATES

Abstract: *The term Medical Intelligence (Medint) defines the activities of collection, evaluation, analysis and interpretation of medical, bio-scientific and environmental information, regarding a specific country or geographical area, carried out mainly by military or intelligence agencies and carried out abroad, and useful for military or humanitarian strategic planning. It is of interest to Medint to know the potential of local health facilities, both civil and military, in the diagnostic evaluation, in case of infectious pathologies and in the evaluation of environmental risks as well as the "state of the art" of the development of computerized diagnostic technology and of biotechnology. The SMI (Strategic Medical Intelligence) is instead institutionally delegated to the intelligence agencies that deal with territorial control (counter-terrorism). In the United States, the SMI bioterrorism experts depend on the FBI. According to the definition offered by the FBI, Strategic Medical Intelligence (SMI) deals with all the management activities of a medical or health crisis situation following a terrorist act.*

Keywords: *Medical Intelligence, Security, Global Health, FBI, SMI*

Introduction

The SMI activity includes all suitable measures to identify, acquire and plan all the health resources necessary to anticipate, prevent, or resolve a terrorist attempt or action. In a terrorist attack, crisis management can respond both to traditional police measures such as prevention,

surveillance, tactical, negotiation, forensic and investigative activities, and to additional identification, search, and clearance activities of all the people involved or affected by terrorism. In these activities, functions that ensure the protection of public health and of the majority of those affected therefore prevail. In this regard, in the USA, some family doctors are called to notify the bioterrorism experts of the SMI, which is part of the FBI, of any "suspicious event" that could range from an unusual allergic skin reaction to the case of the loss of some fingers, due to an explosion. It is also requested that the notification, with all the information about the patient, must take place without the patient himself being informed in any way. According to some FBI sources, there are several family doctors called to collaborate with anti-terrorism experts and this collaboration has lasted for many years. In this way, all suspicious wounds or skin manifestations were brought to the attention of Government bodies especially in the period of maximum alert for anthrax, and all skin manifestations due to viral infection with an atypical development. In this regard, again from FBI sources cited events such as the one that occurred in 1985 where a religious sect headed by Bhagwan Shree Rajneesh contaminated the meal of some canteens and some restaurants with typhoid salmonella germs, to influence the local vote in a local political election. Terrorist acts can be sudden and immediately harmful, such as attacks with explosives, or have a slow and insidious impact, such as toxic and biological contamination of food, water and food material. As for this second case, it is important that all public health workers report unusual or suspicious diagnoses in the population to the police forces, immediately identifying the first victims and the initial epidemic origin. Only an early identification of toxic or infectious sources allows us to limit the emergency and stop infections or lethal chemical exposures. Planning for the management of a medical-health crisis involves continuous surveillance of the population's health status and rapid identification of target symptoms capable of triggering safety measures. As detectors of these target symptoms, the collaboration of both family doctors and First Aid doctors is necessary.

A network of intelligence monitors

Subsequently, health and police sections will have to monitor the epidemiological trend of the target diseases and arrange and enforce any quarantines or mass health treatments. In this regard, the creation of a network of monitors capable of immediately reporting suspected cases is

crucial:

- a)- in the population: in regular and irregular immigrants, in the transit population, in people who work in contact with the public, in people who work in transport companies, in people who work in the social welfare sector;
- b)- in services: in the medical diagnostic and epidemiological field, both public and private and in emergency services;
- c)- in the police force: reporting of unusual and abnormal behavior, for seizures of biological material of an unclear nature; for seizures of unusual or anomalous toxic substances;
- d)- in social events: sports, cultural or political events such as concerts, football matches, political elections, and religious gatherings.

Monitoring that can function as an indicator of an imminent medical-health crisis is described as:

- a)- suspicious events: anomalous amputations of fingers, hands, or arms; sudden deaths in people in well-being health conditions; toxic syndromes; anomalous reports of non-specific bacterial infections;
- b)- suspicious behavior: attempts to recruit or affiliate people; abnormal activities in aggressive or antisocial personalities; political or religious ideology aimed at social struggle and rebellion.

In the case of Italy, as regards the reporting of monitored events, since it deals largely with health-related information and therefore subject to particular legal constraints, a conflict would arise with the restrictions imposed by Law 675/96 on Privacy. However, since public health interests and the health of the whole community are at stake, it would not be difficult to think of exceptions to the legislation in view, for example, of preventing the effects of bioterrorism.

Terrorist attacks carried out with non-conventional nuclear weapons deserve a separate discussion. In these cases, it is possible to describe a preventive activity (security) and an activity following the event (safety). Preventive activity is essentially based on intelligence analysis, while health activity is based on the promptness and quality of assistance interventions.

The U.S. Intelligence Community dealing with COVID-19

During President Trump's administration, the U.S. Intelligence Community did not have a unified and clear view of the origins of the COVID-19 pandemic, despite President Trump and

Secretary of State Pompeo claiming that it was a modified strain released intentionally or accidentally by scientists from the Wuhan Institute of Virology. The debate over the origins of the virus highlighted how critical it is for intelligence assessments to be guided by science. Most of the seventeen agencies that are part of the U.S. Intelligence Community appear to agree that there is no evidence that COVID-19 was a bio-weapon, but they noted that the leak from the laboratory would not have been possible without the Chinese Government's awareness of it. Although the Trump administration has carried out several analyses and research as far as the origins of COVID-19, intelligence activities have not reached a firm conclusion.

The experience of COVID-19 has highlighted how FBI and CIA agents with scientific training have provided a substantial and valuable contribution to scientists, physicists and doctors in the information exchange of news on the pandemic. In an unclassified document published in October 2021, the Office of the Director of National Intelligence (ODNI) reported that the U.S. Intelligence Community collaborated with scientists on a review of intelligence data, to highlight any intelligence gaps and re-define the data obtained, encouraging collaboration to provide definitive assessments on the origins of COVID-19. In a classified report from February 2023, the US Department of Energy - one of the seventeen national intelligence agencies - identified the origin of the virus as an accidental release from a laboratory, reiterating the same conclusion as the FBI, which in 2021 assessed the epidemic spread as the result of animal-to-human transmission through direct contact with infected animals from the Wuhan market. The U.S. Intelligence Community has not yet given a definitive explanation of the origin of COVID-19.

How does intelligence work?

Any single intelligence activity begins through the collection of information, carried out according to targeted purposes and pre-established objectives. All the data collected must then be evaluated, for example, each piece of information is assigned a rating on the degree of reliability, both concerning the information itself and the source from which the information comes. Then follows the analysis of the information which is carried out by integrating it with the other information collected on the same topic and which often produces a new and surprising image. Just as happens with the pieces of a puzzle which alone have no meaning, but when joined

together they form scenarios, overviews, and portraits. To give an example the COVID-19 pandemic based many early assumptions on general misinformation due to casually shared misleading information and disinformation intended to be misleading on purpose via web and social media. The great amount of disinformation or deceptive information passed on by State and non-state players was really regarding. Once the analysis has been carried out, the production of scenarios, hypotheses and future events with a high probability of occurring as all the premises are verified (Colonna Vilasi, 2011). Scenarios and hypotheses, in the form of reports, must be distributed, as final products, to all intelligence clients, for example to the Government and to all State bodies that must prepare to face those scenarios and situations. Often further requests for investigations are made by the State bodies themselves which trigger further and more in-depth research.

In this way, a continuous cycle of "collection-analysis-research product" is established and never ends (Colonna Vilasi, 2011) as the analysis of the information always produces a scenario that requires further information in a continuously indefinite and incessant process. In this research and analysis work I am dealing with two specific and particular aspects of intelligence:

- Medical Intelligence (briefly called Medint), carried out mainly by external military agencies and mainly in other countries;
- Strategic Medical Intelligence (SMI), carried out mainly by internal agencies that deal with the control and defense of the territory, essentially from an anti-terrorism perspective.

The information from which the Medical Intelligence process starts concerns data on the quality of medical services, on medical-biological research and on the state of the environment. It is necessary to monitor the state of the application of medical knowledge and skills concerning specific problems, such as the appearance and spread of new infectious diseases or the degree of environmental risk that is incurred in relation to particular aggressions such as those of bioterrorism or attacks conducted with unconventional nuclear weapons.

As a rule, eighty percent of the collection of information to be analyzed, in normal intelligence activities, takes place from information coming from open sources, and accessible to all, such as newspapers, books, specialized publications and websites (Colonna Vilasi, 2011). In Medical Intelligence activity this percentage can rise significantly as, since they are scientific topics, they can have easier access to the media and scientific publications can be acquired or

consulted more easily than other sources or confidential documents. Scientific information is freer and above all on the internet it is possible to know more or less everything about the activity of private or university research centers. A recent facilitation, regarding infectious diseases, comes from the website of the World Health Organization. Through the Global Public Health Intelligence Network program, it is possible to collect in real-time all reports on infectious diseases around the world.

In this way it was possible to monitor the development and progress of the SARS epidemic, first in China and then around the world. The appearance and spread of infectious diseases significantly affects the performance of the economy in the country in which it develops and it is therefore essential to anticipate their repercussions on the mobility of people, on economic flows and on the performance of the market and local currency. There is always a connection between the quality of life, the state of social health and political background. The data collected must then be examined to highlight the degree of scientific, social, military, or strategic relevance. The information gathered, still in the form of news, must be evaluated on the degree of relevance or pertinence in order to assume an organic structure. In this way, irrelevant data are excluded from subsequent analyses. Each piece of news collected is registered in a vast database according to multiple entries or search keys, to highlight cross-references in the subsequent analysis site.

This activity requires a continuous comparison of thousands of data, filed according to multiple reading keys and this can only be achieved with IT media capable of managing many data simultaneously. However, only the human element, the mind of the analyst, can notice and highlight the significance of the intersection between two or more data, creating and extrapolating new data by inference which is the ambitious outcome of the analysis. In recent years, various news has focused on genetic engineering applied to viruses responsible for some infectious diseases such as smallpox. The smallpox virus is potentially a biological weapon and if it is not used it is because the majority of the population is vaccinated. However, the vaccine, since the infectious disease has been eradicated in the general population, has long been no longer mandatory and children are no longer protected against this virus. However, smallpox still exists in laboratories, is being replicated and is still being studied. Next years, a large part of the population will no longer be protected and therefore it is crucial that access to this virus is extremely restricted, to prevent it from falling into the hands of terrorists, and therefore no longer

being studied for genetic engineering. An artificial mutation of it would find the entire population, both civilian and military, uncovered by immune protection and without the possibility of a vaccine soon, because it would be a new virus, not yet known. The analysis activity concerns the core of intelligence since it is the activity in which the so-called inference is produced, that is, that additional information that completes and enriches information that is actually fragmented, sparse or insufficient (Colonna Vilasi, 2011). With the analysis, logical connections are produced between the various information coming from different sources. Interpretation keys are also studied to understand not only what is happening, but also what it will lead to and what the medical, economic, political and military consequences will therefore be. Analysis is therefore a logical and scientific procedure that interprets a set of information through a logical flow from one truth to another in a consequential way. With inductive analysis we arrive at reliable hypotheses, still provisional, but capable of being convincing. There are various types of analysis, which can be carried out according to very different methods, types of logic and purposes. The analysis that can be carried out can be divided:

- by type of logical procedure: deductive, inductive, abductive;
- by field of application: on evident phenomena, on real phenomena;
- by type of level: strategic, operational.

The Medint analysis activities must be carried out according to the inductive procedure, capable of providing plausible hypotheses for understanding the phenomena taking place in the monitored geographical area or at least very probable ones. Of the other logical procedures I can say that the deductive procedure adds nothing new to the knowledge of a given fact, while the abductive procedure appears to be highly hypothetical. The phases of study and inductive analysis of medical and health phenomena, to be analyzed at the strategic level, can take place in three stages:

- an initial description of the dimensions of the phenomenon;
- a subsequent logical explanation of the phenomenon and of its causes;
- a final prediction of the phenomenon and its evolution.

Intelligence produces hypotheses, scenarios, and evolutions underway in a specific geographical area and therefore the future of what is currently happening (Colonna Vilasi, 2011).

The purpose of the entire intelligence machine is precisely this: to be informed in order to be prepared to face the problem at the right time and in the right way, both for the possible spread of the phenomenon towards the Nation to be protected and for any interventions to be prepared in the site.

With the tool of inference, it is therefore possible to formulate new theories that allow us to objectively understand a studied phenomenon. It involves creating a model of the phenomenon, formulating hypotheses and predictions, on an objective basis, in reference to data, and not subjectively, on personal abductions. Information correctly acquired and correctly collected in homogeneous groups creates the conditions for making a correct inference. Every disclosure of the analysis produced should have the explanatory sentence of the inductive path in which the premises allow us to formulate the subsequent hypotheses.

The hypotheses and future scenarios determine the development of the national objectives to be defended or protected in the medical and healthcare field. Strategic health plans are also developed to be used for economic and foreign policy implications. Plans for military use are drawn up to be brought to the attention of the Government and the Secretary of Defense, regarding the development of necessary biotechnology of military significance.

The Italian Medint working group

The role of Medical Intelligence for public health with an interrelated approach is of major interest from many points of view and now requires a new operative and methodological taxonomy. The role of intelligence as regards health data is not at all well organized and shared as far as procedures

could be used as best practices. In an international health security program, intelligence agencies can foresee and define health risks. Including international and national intelligence agencies with a more assertive approach in a broad security, agenda allows roles and actions to be blended into a global health data collection. A better layout of global health policy with national and international intelligence agencies and Government data sources, for example, social media and the web, is desirable. Peer-reviewed scientific journals and open-access data sources report intelligence papers from many national and international agencies about health and security literature. Such scientific literature review is the empirical ground for the formulation of Medical

Intelligence. The domain of security, health and intelligence in the past years had different priorities that sometimes coincided. As diseases and international instability have become increasingly intertwined in a globalized society, thanks to the best practices due to the experience of Ebola and Severe Acute Respiratory Syndrome (SARS), it is essential to exploit common public health programs while finding aligned activities. It is necessary a groundwork plan scheme structure for a better connection of the fields of health, security and intelligence. To reflect on the issues of Medical Intelligence and develop the topic with the appropriate theoretical, methodological (Lucini, 2022) and operational considerations, taking into account the ethical and legal implications that this matter involves, it was established with a communication dated 18 March 2023 at the Catholic University of Milan, the first Italian Medical Intelligence working group. This group is made up of around fifty experts who cover different areas transversal to Medical Intelligence, such as:

- new technologies and development of artificial intelligence in the medical-healthcare sector;
- health and related risks (epidemics, CBRN);
- Osint methodologies and intelligence methodologies.

The disciplinary fields that characterize this working group are military, medical-health, engineering, psychology, sociology, and security policies and the perspective towards which it tends is the multidisciplinary one, so as to be able to highlight the need to work for the development of Medical Intelligence, an increasingly strategic sector for national and international security, contextualized in the present but with visions open to the future. The working group was born from two meetings on the topic of Medical Intelligence which were held at the Catholic University of the Sacred Heart of Milan. The first entitled "Medical Technical Intelligence", on June 23, 2022, the aim of which was to bring together experts and professionals to reflect on the current definitions of Medical Intelligence and the technical-operational areas within which it was developing.

The second meeting was the first international "Medical Intelligence" conference, on January 26, 2023, which had the aim of discussing together with a panel of experts, including international ones, and with varied professional experiences on the topic of Medical Intelligence and its many declinations.

The next steps of the Italian Medint working group are to define the contours of a

discipline that intersects with multiple current issues and which requires continuous reflection on the methodologies to be used and the ethical and legal values that may be of interest. In particular, some themes to be developed in the immediate future can be seen due to their strategic importance on which the Italian Medint working group is already working: – MedInt and pandemics – MedInt and Medical – Health risks – MedInt and wars – MedInt and new technologies – MedInt and activities of various criminal groups.

In this regard, a topic that deserves particular attention and in-depth analysis is that of Medical Intelligence applied to major events and for various reasons of national, international, logistical and infrastructural security. In the future sports events, concerts and mass gatherings in general could be a test for the lessons learned from the management of the Covid-19 pandemic and from important international experiences such as the one explored (Zumla et al., 2022) in reference to major religious contests held in recent years. The theme of the spread of epidemics during major events is not new but has already been considered in past years for example emerges from the work carried out in recent scientific literature (Friedman et al., 2009). The authors' focus is extremely interesting since it defines major events also meaning political changes and economic factors of a country that can influence epidemic risks and their trends.

Conclusion

The U.S. experience and the role of the FBI and the SMI are an excellent reference model for Italy. I hope that in Italy the same focus could foster the creation of a widespread network throughout the national territory, in which medical and healthcare personnel can play, as in the United States, an active and proactive role in defining a new approach to Medical Intelligence, in the direction of a wider future collaboration and with the constant commitment of every single healthcare worker, in the role of citizen and intelligence operator, dedicated to protecting the health safety of the population and national security.

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