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and

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Introduction

There is considerable research and literature on crisis management, especially as it applies to formal organizations dealing with crisis. This literature focuses mainly on the for-profit sector of organizations; attempting to provide useful frameworks to facilitate understanding of how to react at different points in different crisis situations. The great majority of this literature can be divided into two sections: (1) preparation for and (2) reactions to different crisis situations. The dynamic which is missing from the crisis management literature is leadership. Crisis management literature takes an active view towards the preparation for crisis and identification process of a crisis, but falls short in the area of action during the process of resolving an actual crisis. This crisis management literature provides a reaction based approach to taking action during the crisis situation.

However, an active approach to crisis situations based on leadership concepts is an area that is currently neglected both in research and in literature. Even though leadership, as an academic field, is relatively new there has not been adequate focus on how to effectively lead during crises. The purpose of crisis leadership is to develop good leadership that has the potential to influence, and in some cases even control the outcomes of crisis situations. Minimal research has been done in this field, and few theories exist to explain the types and styles of leadership that are most effective during a crisis situation.

The Wei-ji Theory attempts to further the study of crisis leadership by doing the following three things. First, it establishes a working definition of crisis in a situational context. Second, it defines the constructs and variables which affect the leadership exhibited during a crisis situation. Third, it proposes combinations of these variables that should lead to positive and successful resolution of the crisis. This is the first time that a leadership theory has attempted to focus on the situational field of crisis. This project is critical to further the understanding of leadership within the context of crisis, including actions of the leader as well as actions of the followers within these situations.

The Wei-ji Theory of Leadership, developed by a team of leadership studies students, is named after the Chinese symbol for the term crisis. Wei-ji, in Chinese, is a combination of two symbols which alone represent "danger" and "opportunity" (Darling 49). This theory is named after this Chinese symbol as a reminder that although leadership in a crisis context is stressful and
possesses the possibility of destruction, there is also potential for growth and other positive results to come from crisis situations. Issues such as a renewed focus on or adjustment of organizational values, redefined goals and a clearer understanding of mission are other benefits potentially rising from these situations. Furthermore, it is a reminder that crisis situations can still be simplified and broken down into component parts, making it easier to manage.

In developing this theory of crisis leadership, the definition of crisis must remain broad enough to encompass many types of crises, including those of catastrophic proportions as well as those with less severe consequences. The theory attempts to distinguish the most effective combination of variables of leadership during the two time phases, identification and action, of a crisis. This is important so that there is understanding of the concepts of time, the process within the context and the different demands placed on the leadership and followership in these different phases of crisis. One can hope to more fully understand what a crisis is, that is, how the process of crisis evolves, and how to effectively work toward positive resolution of a crisis from a proactive perspective.

The purpose of choosing the Wei-ji Theory of Crisis Leadership was to learn more about crisis situations, about leadership and to understand the most effective way of reaching positive resolution in crisis. Therefore, this Senior Project addresses several aspects which arise in crisis situations. Aspects are outlined and presented as different variables in this theory. They include: the leader’s “power,” the leader’s “level of directiveness,” the leader’s “level of supportiveness,” the group’s “degree of cohesion,” and the group’s “commitment to task.”

The Wei-ji Theory was designed because there is a need to acquire more information and to develop an understanding of the most effective manner in which a leader can act in a crisis situation. With this motive, the primary goal of this theory is to explain the relationship between leader behavior and task accomplishment within the situational contexts of crisis and to determine the most effective combinations of these contexts. Although the Wei-ji Theory appears complex, it attempts to simplify the necessary elements of successful crisis resolution.

Finally, there remain other aspects of crisis leadership which this author yields to future generations of leadership scholars. This theory and the senior project as a whole, does not attempt to answer every aspect of crisis leadership. Rather, it begins an exploration into the realm of crisis leadership and attempts to better understand the phenomenon of leadership within crisis.
situations. Hopefully, this will provide a solid base for greater understanding and study of this subject which will lead to better leadership.
Literature Review

Definition of Crisis

The crisis management literature offers many definitions and ways to understand crisis. But in order to understand what crisis is, one must first have an understanding of what crisis is not. In other words, what is “normal.”

"Under normal conditions, a system functions without dramatic fluctuations. A set number of regulations helps the system remain in balance and maintains its everyday pace. Naturally this frame of reference itself may be 'disturbed' to a greater or lesser degree, calm, or close to the breaking point, but on the whole, the system holds together within its established framework.” (Lagadec 3)

Thomas Kuhn and Patrick Lagadec suggest that crisis is characterized by a disturbance of a normal course of events or specifically a “technical breakdown of a normal process” (69). When there is an understanding of what is deemed to be “normal” or at least “status quo” for any given system, then an understanding of what is not normal or crisis can be understood.

Lagadec places middle ground between a crisis and normalcy. He refers to this middle ground as the “Classic accident: one [situation] that can be handled by existing emergency regulations” (3). This, has several different criteria, that when passed, fit the criteria for crisis.

"Conventional incidents:

- A well-understood event, or limited scale
- Clearly defined emergency procedures
- A limited number of actors
- The organizations involved know one another
- Clear-cut roles and responsibilities
- A well-acknowledged authority structure
- A situation that is perceived to be manageable
- A breakdown that is quickly brought under control” (Lagadec 5).

Once this level has been surpassed, things come into the seemingly more nebulous realm of crisis situations.
"Crisis" is a relative and highly subjective term that gains meaning through the individual needs of an organization and the environment in which the organization exists. Each organization formulates its own definition of a crisis by studying its own environment for potential hazards and assessing the accomplishment of organizational goals in light of them. This allows the organization to characterize as a 'crisis' any event that has a direct relationship to the accomplishment of its goals" (Littlejohn 8).

This definition, while vague, raises many interesting and critical components of crisis. First, the concept that crisis is a subjective term is key. Each and every crisis needs to be framed as a "crisis" by those individuals involved within the context of the situation. One group or organization dealing with emergencies of an emergency medical services might not view one individual's heart attack as a crisis, but, to the family of this individual, it will definitely be considered a crisis. The second concept critical in this definition of crisis is the assessment of accomplishing organizational goals. The goals of the group and the circumstances of the situation potentially interfering with goal accomplishment is the second critical component to understanding how a "non-crisis" situation differs from a "crisis" situation.

The criteria for a crisis, or in Lagadec's words a "major event." Elements included in this criteria include:

- A large scale breakdown
- A very destabilizing type of breakdown
- Grave situations that degrade exponentially
- Emergencies that do not play by the rules
- Unknowns
- A growing number of authorities involved
- Critical communications problems
- Huge stakes
- The issue of time (7-19)

Are there different levels of crisis? If so, are there certain crisis situations which have the possibility of extreme consequences? Does frequency of the "crisis" situation play any role in its severity? These questions lead us to delve into a level of understanding of crisis and, if so, there
are different magnitudes of this phenomenon. When these questions are addressed, then one can have the knowledge to more appropriately respond to the situations when they arise. If an event happens on an extremely frequent basis (i.e. weekly) it might be of less consequence than an event that happens less frequently (i.e. annually).

"You can usually classify a crisis as common when you expect it to occur rather frequently [in terms of crisis situations as opposed to daily events]. It might strike only once every two years, or twice every five years, but it does tend to happen with some regularity" (Silva 79). According to Silva, crisis can not be expected to be a frequent occurrence for any particular organization (80). This states that even a "common" crisis only happens every few years, and then the leadership of the different organizations attempt to prepare for such crisis's on the basis of how often they occur. "The element of frequency that makes a crisis common provides the motivation to prepare for the crisis. A crisis you can anticipate with some regularity rarely catches you off guard" (Silva 80). If something can be expected, the motivation can be there to train and prepare for the crisis. So, there is an element of frequency to crisis, and it affects the response, or at least planning and preparation of a response to a crisis.

"All organizations encounter normal problems they must overcome on the path toward meeting their goals. When a challenge crops up that forces a detour off the planned path, that also signals a common crisis.

Common Crisis present more detours, distracting management from their intended course. By its very definition, a detour poses a temporary condition that may force a company either to stop momentarily its forward progress or put forth enough effort to go around the obstacle. But in either case, sooner or later, the organization will 'get back on the road.'" (Silva, 80)

This is a definition and explanation of distraction, often termed crisis by individuals who are in the situation (Silva 80). "In business, a crisis is a situation that, left unaddressed, will jeopardize the organization's ability to do business normally. The term is frequently used to describe everything from a nagging problem to a busy day" (Gottschalk 397). This is not to be confused with a true or "unthinkable" crisis. The difference between a distraction and a crisis is that distractions are composed of every day events and the obstacles which get in the way of achieving goals. This is a mere delay of time, as opposed to a critical incident with potentially
severe consequences to the organization. Crises are a more severe level of obstacles, which often force a reevaluation of goals, values of organizations and groups, and even challenge the fabric of the core values of groups involved. This is evident through a reevaluation of vision, mission, and fundamental purposes all involved. There are many different organizations and groups who have common problems, termed by the group to be “crisis” situations, but in reality these are, to use Silva’s metaphor, mere detours or bumps in the road which are to be expected as opposed to a full blown crisis.

"Identifying an unthinkable crisis involves evaluating conditions using the same three criteria of anticipation, damage, and recovery, only in the case of unthinkable crisis, the evaluation results in vastly different conclusions on each point. While common crisis strikes frequently, distracting management and forcing a reality check, the unthinkable occurs randomly, can be dangerously destructive, and demands that the organization make a radical paradigm shift or perish" (Silva 82).

In the crisis management literature, there is even an attempt to classify different types of crisis. Lerbinger defines four types of crisis:

- Technological crisis - caused by human error or unforeseen side effects in the equipment and processes designed to produce goods and services
- Confrontational crisis - actions of government or social action groups that oppose organization policies and behaviors or its employees
- Crisis of malevolence - individual or groups with criminal intent or malevolence toward the organization
- Crisis of managerial failure - ineptitude, negligence, callousness, or misconduct (6)

Although there are several different aspects and categorizations of how to divide this phenomenon, the end result is the same, there is a problem of potentially catastrophic proportions. No matter what the division, or the individuals who are determining what is dubbed a crisis as opposed to a normal every day occurrence, they all follow similar guidelines of beginning, middle and end.

Meyers and Holusha’s book, When It Hits the Fan: Managing the Nine Crises of Business,
examines the aspect of time in crisis situations. "For those who have not acted in time, the world caves in" (Meyers 15). This book tells of three different periods of crisis: precrisis, crisis and post-crisis. This is an important note for understanding crisis. One of the fundamental aspects to the dimensions of a crisis situation is that it has tangible time constraints.

Meyers breaks this first period into two stages. "The first stage is simple nonperformance: someone or some group is not getting the job done" (Meyers 13). Meyers’ book is like the majority of books on the subject of crisis management; it is designed from an organizational perspective. This perspective can be translated to a broader application. It would translate to some part of the process, be it one person, part of a group, or the entire group, not going according to plan to the extent that it halts the entire process. This halting of the process of achieving the group’s goal forces a critical reevaluation of the process, the goal and the best way in which the group is going about accomplishing the goals to achieve the vision of the group.

"It is when the problems are recognized that the second stage begins; this is usually a prolonged period of denial" (Meyers 14). The recognition of the problem has occurred successfully ending the first stage of Meyers. The happenings of both the second and third stages of Meyers’ "precrisis" period has a great deal of potential to be ugly. Periods of denial, blame, anger and fear are symptoms of increased anxiety of the group during this stage. It is also the stage, where a group that needs to be effective in the resolution of the crisis begins to determine the potential impact and severity of the crisis, who is affected by this situation, and the resources available to resolve the crisis.

According to John Darling, a crisis can be dealt with by attempting to control the crisis, and by attempting to influence how the crisis affects the group. The latter can be accomplished by "exert[ing] some degree of influence as to where, how, and when the crisis erupts" (Darling 54). Therefore, the leader in this stage is responsible for assessing how the crisis may affect the group. This can potentially include the amount of danger, the time frame, and the vulnerability of the group.

"For those who have not acted in time, the world caves in. . . Management can’t hide the problems from itself or anyone else. The next phase of the uncontrolled crisis is the crisis period itself - and it is awful" (Meyers 15). The heat of the crisis is termed the “crisis period” by Meyers. The perimeter of the crisis has been determined, resources identified, groups affected by the
situation and then the active stage of dealing with the crisis is upon the group. This is where the leader comes to the helm, formulates a vision of resolution of this crisis and communicates it to the followers. "When a crisis strikes, there is no time for recriminations; it is too late to take preventive measures. All a chief executive can do now is react, try to minimize the damage, buy time, and prepare for better days" (Meyers 16). It is evident that Meyers takes a passive view of the role of leadership in the heat of the crisis. He has broken up the second phase into three stages: failure, panic and collapse. The aspect of failure is "of devastating proportions and visible for all to see" (Meyers 16). A restatement of what a crisis is, just the fact that this stage symbolized that crisis has gone beyond the point of no return. The organization or group has failed, crisis has won and the organization is effectively destroyed, or at least changed for the worse beyond any control. "After the failure, panic starts to set in. Events are unstructured; people are running on adrenaline; personal survival becomes paramount" (Meyers 18). This second stage of the crisis phase is that of complete breakdown of the entire group. Individuals become paramount, and the group cohesion is virtually nonexistent and the possibility of resolution of the crisis does not even exist without the group remaining intact. The final stage is complete collapse (Meyers 20). This is when there is virtually nothing left, the core group and all of the individuals and groups which this crisis has affected have broken most, if not all, ties.

Darling described the speed of the crisis as "dependent primarily on the type of crisis," and the intensity as "determined by the severity or importance of the possible outcome(s)" (54). As a result of this speed, action and damage that occur during this stage cannot be reversed. For this reason, Darling refers to this time in the crisis as the "point of no return" (54). Once this level has been reached, speed of actions and events appears to increase exponentially while the amount of control on the part of both the leader and the group, whether perceived or in reality, decreases at a correlating rate.

In each crisis which affects groups, there are at least two distinguishable players: the leader and the group. There might be many different roles that are played by different members at different times, but when the actions are evaluated at the end of the crisis, it comes down to the leadership and the team being two tangible and measurable elements of the process of crisis resolution.
"Leadership of your Crisis Action Team must be vested in one person, who should designate an alternate capable of acting independently in his or her absence. . . . He or she must have sufficient authority to make on-the-spot decisions. . . . access to top decision-makers when required . . . and the ability to recognize which decisions to make independently and which to refer to upper management" (Nudell 33).

There are several elements which ring true in this passage from Nudell and Antokol. The first is that the leadership should be vested in one individual. This individual should be identified and available to deal with the crisis as the highest priority. Then, the passage gets into different aspects of power. The different types of power referred to are authority, connection or access, and experience or expertise. The translation of the specifics in the paragraph is that there needs to be one identifiable leader who has the ability to get the job done. This ability comes with power, no matter what type it is.

"One of the leader's principal responsibilities will be to supervise (manage, if you will) the team to see that this happens. If the leader does not retain control over the team's activities, then the team is likely to lose control over the crisis.

With effective control over the team's activities and with proper supervision and delegation freeing the team leader and alternate from the preoccupation with details . . . [and] will enable the team leader(s) -and, therefore, the team itself-to get ahead of the power curve, thereby maximizing opportunities and minimizing dangers and damage to the organization" (Nudell 46-47).

This is a definitive argument in support of being task oriented, not micromanaging every detail of the situation. This also has the implication of shared power, through delegation, while retaining ultimate responsibility for the outcomes of the crisis. This ability of the leader stems from the positional power of this individual being the leader, and is not necessarily tied to any formal organizational hierarchy (Nudell 33). However, if the leader happens to have a high authority amongst the members of the team on a normal basis, this power will be enhanced through the actions of the leader.

"The emergency will bring with it a large measure of stress (people's lives may be at stake) and anything the team leader can do to eliminate [or mitigate] unnecessary pressures will improve team morale and effectiveness" (Nudell 47). This sentence speaks strongly to managing
the less tangible elements of the crisis so that the tasks which need to be accomplished can be done in the most effective and positive way possible. It also directly relates to the crisis being resolved, for individuals who can concentrate on the tasks are more likely to get them resolved. "Following these guidelines will enable the . . . team to devote its attention and activities toward the successful management of the crisis" (48).

In the first half of the 1900's, the theory that traits and skills exhibited by different leaders would hold the key to understanding effective leadership. Research of many leaders identified several different traits which were associated with different leaders, but they did not have the complete picture in mind.

"Traits relevant to the assumption and performance of this role included intelligence, alertness to the needs of others, understanding of the task, initiative and persistence in dealing with problems, self-confidence and desire to accept responsibility and occupy a position of dominance and control. However, despite the evidence that leaders differed from nonleaders with respect to certain traits, Stogdill found that the results varied considerably from situation to situation" (Yukl 255).

This conclusion was revolutionary for the time, for it destroyed the myth of one specific leader which would be ideal. It instead opened up the researcher’s minds to the fact that different types of individuals would be better suited to different situations, a beginning of the shift of the paradigm to more recent leadership scholars. "A person does not become a leader by virtue of the possession of some combination of traits. . . the pattern of personal characteristics of the leader must bear some relevant relationship to the characteristics, activities, and goals of the followers" (Stogdill 64). The paradigm shift had begun to shift to include the followers into the equation.

Littlejohn, in Crisis Management: A Team Approach, has outlined "five necessary characteristics of an effective team" (Littlejohn 36). They are high levels of: communication, trust, involvement, commitment to the organization and delegation (36). He states that communication is the most important and the one which is most neglected. He goes on to say that it is not just one way communication, but it is also honest, vertical, horizontal and intergroup communication. This is an extremely important factor when viewed through the perspective of accomplishing tasks and allowing information to flow to the leadership of the group so decisions
can be made with the greatest amount of accurate information. This, in theory, should naturally lead to the best decisions being made about how to handle the crisis.

According to Littlejohn, trust comes from open communication. In-depth communication among the different members of the team will be contagious, leading to more supportive and effective working relationships, especially between members of the team who might not have experience working with one another, and that, possibly, come from different perspectives and backgrounds (36).

Aspects of trust are quickly followed with the members of the team taking active roles in the different aspects of resolving the crisis. “Team members should be involved in goal setting, role clarification, problem diagnosis, conflict resolution, and decision making” (Littlejohn 36). If the different members of the team are involved in many different aspects of the resolution process, the commitment to the greater whole will lead to successful resolution of the crisis. This would tend to be the basis of building strong relationships, which could and should lead to a better working relationship and subsequently a greater chance at positive resolution of the crisis.

Commitment naturally follows from the strong relationships formed, whether over a long period of time, or an extremely stressful short period of time. One critical measure is how the members who are in the predicament view the predicament. If they have a more united stance, such as using terms like “we” and “our”, as opposed to the terms “I” and “me,” it would be reasonable to assume that more things were getting completed in a unified fashion. Whether the tasks are completed individually or by members of the team working together, there is a shared common vision of resolution of the crisis, and mutual goals which are understood and directed at achieving said goals.

Finally, the aspect of a high degree of delegation is included. The way this is suggested in the literature is that the manager should not micro-manage each aspect of the process. Rather, she should give the authority to different individuals of the team, based on the aforementioned aspects of trust and communication, and that she should also be comfortable in this delegation of power. Then, the power resides in the hands of the members of the team, and not just in the hands of the leader. In crisis situations, keeping the power could prove to be overwhelming for the leader, and could lead to the crisis overrunning the leader and destroying the entire team. So, this element, based on the others, is critical to an effective team and the greatest chance of
successful crisis resolution.
Methodology

During a crisis situation, there are five key variables which need to be accounted for to determine leader effectiveness. These variables are on the part of the leader are: Power, Level of Directiveness, Level of Supportiveness. The variables on the part of the follower are: Degree of Cohesion, and Commitment to Task. From these variables, it has been determined that there are many relationships which may result in effective resolution of the crisis. Of these relationships, there are two which will be successful in virtually all cases of crisis leadership. When one refers to the Wei-ji Board (appendix X) it can be seen that duoseptuagintants, combinations of the aforementioned variables, one and five maintain effectiveness throughout all of the four stages of a crisis. Therefore, the Wei-ji Theory supports the thesis that a leader who maintains a high level of directiveness and a high or middle level of supportiveness under the conditions of a high level of power, a high degree of cohesion and a high commitment to task during both phases of the crisis situation will achieve the most positive task accomplishment.

This study used a case study methodology to examine the applicability of the Wei-ji theory. This theory was examined through a case study of the 1997 Hong Kong incident. The incident involves common virus in birds infecting humans with a rare and deadly version of Influenza. Specifically, the Avian-Flu virus, H5 and N1 spikes being the biological characteristic of this extremely deadly virus, at least to humans, is the virus which was the root of this crisis. The potential, according to the Center for Disease Control and Prevention (CDC) is for a more common and contagious version of the Flu, Common-Flu Virus covered with H3 and N2 spikes, to combine with the Avian-Flu Virus. This could potentially form a “Super-Flu Virus” with the H5 spike from the avian-flu virus, the N2 spike from the common-flu virus and have RNA primarily from the avian-flu virus. These two types of flu could combine to form a super-flu virus which is both deadly and highly contagious (Time 56). This incident was chosen because it is a good example of how a modern-day crisis was resolved before it reached epidemic or even pandemic proportions. It is well documented, and would allow through research while being both interesting. It is also a subject about which many are familiar due to its coverage in the popular press.

"The essence of a case study, the central tendency among all types of case study is that it tries to illuminate a decision or a set of decisions: why they were taken, how they were
implemented, and with what result” (Schramm 1971, Yin 23). Since “The [senior] project should: (2) make an original contribution to leadership studies,” the application of the Wei-ji Theory to a case will definitely make an original contribution (Senior Project Syllabus, 1998). The primary goal of this project is to understand what transpires between a leader and her followers within the context of a crisis situation.

The case study methodology attempts to answer these questions in a logical manner with specific contexts of application.

“A case study is an empirical inquiry that:

• investigates a contemporary phenomenon within a real-life context; when
• the boundaries between phenomenon and context are not clearly evident; and in which
• multiple sources of evidence are used” (Yin 23).

This study should satisfy the three aforementioned criteria of a the case study method as outlined by Yin. The Hong Kong Flu incident provides a contemporary phenomenon in a real-life situation. There is no clear definition or break in “the boundaries between phenomenon and context” (Yin 23). Since leadership is part of the context of the resolution of this crisis, there seems to be no way to extricate either leadership or the context of the crisis from one another.

Yin divides the case study method into “5 components which are especially important: study’s questions, study prepositions, units of analysis, logical linking of data to the prepositions [a.k.a. analysis] and criteria for interpreting the findings” (23) These compare extremely well with the Wei-ji Theory of crisis leadership and this specific case study.

The first component focuses on the study’s questions. “The case study strategy is most likely to be appropriate for ‘how’ and ‘why’ questions, so your initial task is to clarify precisely the nature of your study questions in this regard” (Yin 29). The primary questions addressed by the Wei-ji Theory are: “How does a crisis occur?” “How do the does the leader influence the group?” And “why is there successful resolution of any given crisis situation by a group and its leadership?”

The second component focuses on the study propositions. “Each proposition directs attention to something that should be examined within the scope of study” (Yin 29). The Wei-ji
theory has five such propositions for each stage of the Theory. They are: Power, Level of Directiveness, Level of Supportiveness, Commitment to the Group and Commitment to Task. Each of these propositions must be examined for each stage of the crisis situation, and will contribute to a well based and through case study. This will be done through research of literature on the case and interviews conducted with individuals involved with the different aspects of this crisis. The research and interviews will answer the questions determining which levels of the different variables were utilized in the resolution of the crisis. An example might be that in Phase I stage A (Figure IA-1) the leader utilized a high degree of power to communicate the existence of the Avian Flu virus to other individuals who could be affected by the crisis. This will prove to be a systematic evaluation of each of the variables for each different stage of the crisis, determining what actions were taken to yield positive resolution of the crisis. It will also successfully answer the primary questions of the Wei-ji Theory.

"Each case study and unit of analysis either should be similar to those previously studied by others or should deviate in clear, operationally defined ways. In this manner, the previous literature therefore also can become a guide for defining the case and the unit of analysis" (Yin 33).

The Wei-ji theory of crisis leadership is a combination of both of these elements. The first element is the similarity to previously studied and defined variables (units of analysis). This is based on work previously done in crisis management and leadership fields, the majority being rooted in academic work. This was accomplished through an original literature search when the theory was first composed. The second element is independent thought and compilation which is some what unique from works previously done, and therefore original to this theory. Where previous literature was lacking, the group determined what we observed to be most likely to transpire in crisis situations. Decisions were discussed at length and then the group normally reached consensus as to the decisions in the original paper [Appendix X]. If the material is unique, it is defined in a way which is concrete enough to allow analysis and measurement of the defined variable. "Specific time boundaries are needed to define the beginning and the end of the case" (Yin 33). This aspect of beginning and ending of the case study is inherently tied to the different Phases and subsequent stages of the time constraints which are present in the definition
of crisis used by the Wei-ji theory. This is important because Yin stated that there needed to be a definitive beginning and end to the case. It also helps to tie the theory to reality, most specifically to the role which time plays in these crisis situations.

The issue of a multiple case versus single case was raised in Case Study Research:

“One rationale for a single case is when it represents the critical case in testing a well formulated theory. The theory has specified a clear set of propositions as well as circumstances within which the propositions are believed to be true.

The single case can then be used to determine whether a theory’s propositions are correct, or whether some alternative set of explanations might be more relevant” (Yin 47).

The purpose of this paper is to more thoroughly define the Wei-ji theory and then to apply the theory to a case to test its initial validity. Provided that the case study proves successful, then the Wei-ji theory will be ready to stand up to more thorough and more in depth examinations of different components of the theory. An in-depth study involving many different case studies would not be prudent at this time with the stage of development which the theory is currently.

“Single-case designs require careful investigation of the potential case to minimize the chances of misrepresentation and to maximize the access needed to collect the case study evidence” (Yin 49). With the concentrated focus on one study from a variety of viewpoints, the strength of this one case study should assist in the proving or disproving of the validity of this theory.

Assumptions and Weaknesses

The weaknesses of this theory are a result of the assumptions used in the theory, and the generalizations used to explain crisis leadership. Throughout the development of the theory, the originators attempted to limit the conclusions drawn by the theory and also to expand the theory so that it would encompass the complete definition of crisis within groups, defined as having three or more individuals, so that it would not be limited to any specific type or magnitude of crisis. The group then made assumptions to compensate for many of these generalizations so that the theory would not be deficient from fulfilling its purpose.

One of the greatest weaknesses of the theory may be the limited number of options
(duoseptuagintants) which were determined to represent the combinations of variables that resulted in a positive crisis resolution. In the process of deciding which variables have an influence on successful leadership, the originators were forced to make generalizations regarding the nature of the variables. Though the theory attempts to remain consistent with its original definitions, it was found that there are still different interpretations of these terms and their relationships with one another in the academic realm. For example, the originators struggled to determine whether the relationship between group cohesion and leader supportiveness had any effect on task accomplishment. It was debated as to whether group cohesion may undermine leader supportiveness and perhaps create resentment toward the leader.

After making such generalizations about the relationships among variables, the team discovered that it had determined that there are many situations which may allow for effective task completion in a crisis. The first step taken to narrow this information was to focus on what would be considered successful leadership, which was taken to mean being effective more than 50% of the time. This also produced far too many effective duoseptuagintants to draw heuristically useful conclusions. To further limit the inferences drawn about crisis leadership, the group looked to the duoseptuagintants which had reoccurred the most in each stage. From these conclusions, the group reached the final conclusion that there are specific variables which are most effective in producing effective leadership in a crisis situation in a large majority of situations.

One of the greatest assumptions made during the decision process was the debate surrounding supportive and directive leader behavior. It was assumed to an extent that subordinates are not looking for supportive behavior during a crisis. In Leadership in Organizations, Yukl states that during a crisis "subordinates expect the leader to be more assertive, directive, and decisive" (40). Although subordinates are depending on a leader to direct the group and maintain order, supportiveness alone will not meet these needs. Ideally, supportiveness would be present in the group already, so the leader would not have to create a supportive atmosphere.

Another assumption made with regards to supportive and directive behavior is that the two behaviors behave independently each other. It is assumed that a leader can posses either a high, middle, or low level of directiveness and a high, middle, or low level of supportiveness.
Between the variables of directiveness and supportiveness there are nine possible combinations, ranging from high directiveness/high supportiveness to low directiveness/low supportiveness. It is also assumed that, because of the indecent nature of the two variables, a high degree of supportiveness will not subtract from a high degree of directiveness and vice versa. This is due to the fact that they are two separate variables, and viewed as independent of one another. Some literature and theories in the past have linked these two variables inappropriately, as on the surface there seems to be dependence, but in reality there is little, if any, interdependence between these two variables.
Explanation of Wei-ji Theory and Definition of Constructs and Variables

Before a discussion of the theory can fully begin, the definition of crisis must be operationally defined. The situational context of crisis is composed of four fundamental components in the Wei-ji theory. The first is that the situation has the potential to result in severe consequences affecting both the group and others involved directly or indirectly in the situation. The second component is that it has definitive time constraints. The third component is that the crisis situation is of a nature which is both urgent and important (Figure Time-1). The final component of this situational context is that a crisis can occur in both open and closed systems. Open systems may include any individual present during the development of the crisis, while closed systems encompass only those who are members of the group in crisis. Taking these four components into account, it is necessary for a leader to rise quickly and initiate action to deal with the crisis.

\[\text{Figure Time 1}\]

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Leader behavior

Leader behavior is defined by the actions, thoughts, vision and communications of the leader. During a crisis situation, there is the ability for more than one individual to occupy the role of leader. This individual normally just rises to the occasion, displaying the characteristics and style which are necessary in the situation. It ranges from just the presence of a certain individual in the group to positional leadership based on authority to demand a vote or other formal or informal decision of the group to appoint a leader. Any member of the group at any point in time can assume the leadership role within the group; it is not just limited to one
individual occupying this role.

Leader behavior includes directive behavior, supportive behavior and power, the three causal variables of the Wei-ji theory. These types of behavior are independent of one another and therefore, may be utilized equally, and are interdependent and independent of one another throughout the different stages of the situation. Directive and supportive behavior have also been used for Fiedler's contingency theory, which has received much criticism for assuming that one type of behavior would exist over the other. Therefore, the Wei-ji Theory suggests that the relationship which exists between these aspects is more complex than Fiedler hypothesizes. The Wei-ji theory allows for a middle ground where a leader can be directive and supportive at any level at the same time.

Directive leader behavior is the degree to which the leader is task oriented and seeks to initiate action. This is accomplished through the reduction of role ambiguity by definition of task, emphasizing expectancies, and telling followers how to work in the most effective manner (Yukl 55). This is also accomplished by initiating structure and defining the roles of both the leader and the followers in order to accomplish the group's formal task, accomplishing its mission to realize its vision (Yukl 54). This could potentially include such functions as planning, scheduling, coordinating follower activities, providing resources, equipment and technical assistance, and the setting of both high and realistic goals for the group (Yukl 59). In crisis situations, a high level of directiveness is often necessary. This would be visible from a rigid formal structure and statements in the form of commands to accomplish specific tasks. Slight variations of commands in the form of telling in a polite manner and emphatic requests to perform certain tasks would be considered to be in the median level. Finally, normal requests and pleading without clear tasks or goals established would be considered to be in the low level of directiveness.

Supportive leader behavior variable is the degree to which the leader focuses on the needs of the group as well as intra-group relations. Supportive leader behavior also includes the amount of consideration that a leader possesses. "Consideration is the degree to which a leader acts in a friendly and supportive manner, shows concern for subordinates, and looks out for their welfare. Examples include personal favors, listening to subordinates problems, backing up or 'going to bat' for a subordinate, being willing to accept subordinate suggestions, and treating subordinates as equals" (Yukl 54). The leader also encourages freedom and independence in accomplishing the
task and does not outline the specific actions that the subordinates must take or the way in which they complete them (Yuki 59). The middle level of the level of supportiveness is considered the status quo in an organization where members of the group are familiar with one another and have an established relationships, or what could be considered normal interaction on a more personal level amongst individuals who are unfamiliar with one another. It naturally follows that high levels are above and beyond the median level and low fall short of this established and normative status quo.

Leader power, which is the final variable of Leader Behavior, is defined as an attempt to influence another person’s or persons’ behavior to produce desired outcomes through a communication and interaction process (Shockley-Zalabak 68). This can be determined by examining the leader's ability to successfully implement and use any of the six different types of power. The six types of power are reward, coercive, legitimate, expert, referent and connection. They can all be relevant during a crisis situation, but in order to be an effective leader one must have at least one of these powers. The use of these powers may vary between stages, but this theory does not attempt to distinguish among these differences of types of powers employed in different stages. A determination of a high level of power is realized by the successful attempt to influence others’ behavior. Conversely, a low level of power would indicate that there was no influence exercised over another person or other persons in determining their behavior.

Group Interaction

Group interaction comes from the basis of the members of the group that is directly involved with the crisis. These members have a certain level of relationship to the given situation. This relationship can be as strong as their life depending upon the outcome of the situation or as weak as a general interest to get involved with the given situation. It includes each and every individual who is involved during the time of their involvement and relationship to the situation.

The first construct of group interaction is divided according to the degree of cohesion within the group and the degree of commitment to the tasks, goals and mission of the group. The degree of cohesion is defined as the extent to which the followers work well with each other. This may be determined by prior or existing relations among the members of the group, or by the very structure of the group. Open and honest communication combined with equality of
interaction among the group members is vital to creating this high degree of cohesion. One of the more implicit factors of cohesion which stems from communication is the aspect of trust between individual members of the team. A low level of cohesion would be a dysfunctional group which constantly argues and is counterproductive in accomplishing the goals of the group. This group does not work well with one another. The relationships amongst one another are rudimentary if they exist at all. Roles are not defined and if they are, there is little or no respect for the roles different members of the group are assigned.

The commitment to task accomplishment is determined by the followers' ability to identify and relate to the formal mission and subsequent goals and tasks to accomplish the mission of the group. In order to have a high level of commitment, everyone must be willing to dedicate their time and resources toward a solution to and resolution of the crisis. Commitment requires that the goals for problem solving are clearly stated by the leader. Therefore, the followers are dependent on the abilities of the leader to facilitate, communicate, organize, direct and most importantly, lead during the crisis situation.

**Time Element**

To aid in the understanding of a crisis situation, the Wei-ji Theory divides the series of events which occur during a crisis into two primary time frames each of which will be further divided into two subsequent stages. The first time frame is referred to as the Identification Phase and the second is the Action Phase. These phases are based upon the assumption that a leader must first identify that there is a crisis and the resources and parameters of the crisis before action can be taken to resolve the crisis.

This theory distinguishes four distinct time frames within a crisis and addresses how leaders should act, or appropriately lead, in order to be effective during each stage. To accomplish this, the theory addresses the relationships between the variables during each stage of crisis in order to explain how leader behavior is influenced by the situation. Within the context of each individual stage, it has been determined which relationships between the variables will produce successful task accomplishment. After evaluating several different crisis situations, patterns of effectiveness among the variable relationships become apparent.
Accomplishment of the Mission - Crisis Resolution

Accomplishment of the mission is the end-result construct. The Wei-ji Theory breaks this into two parts, success and failure. Success can be defined as the effective and efficient completion of the goals of the group; primarily, the survival of the crisis. Failure is the inability to obtain the goals established by the group. This is identifiable by a possible splintering of the group, inability to accomplish a formal goal on the part of the group and general ineffectiveness of accomplishing the desired result (a.k.a. crisis resolution). Success is determined by the group surviving intact and able to continue about the attainment of their vision. While there might be some loss of life, property, or other value, the whole is not destroyed, thus equaling successful resolution of the crisis.
### Wei-ji Theory of Leadership

**"The Wei-ji Board"**

Basic Duoseptuagintant Chart

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**Phase I, Stage A** - Leader's realization & identification of crisis

**Phase I, Stage B** - Leader's identification of resources & parameters in the situation

**Phase II, Stage A** - Leader's assignment of task
Phase I: Identification Phase, Stage A

Identification and Realization of the Crisis (Figure IA-1)

Definition:

The Wei-ji theory continues to explain the process which occurs during a crisis by breaking each phase into two stages. Stage A of the Identification Phase has been titled Identification and Realization of the Crisis. This stage can be accomplished by anyone who has the potential to be involved in the crisis situation. It then falls under the responsibility of this leader to determine who needs to be informed of the event or situation and to subsequently inform them of the crisis. The conclusion of this stage is signaled by all members of the group being informed that there is a crisis and coming to the realization that they are involved in this crisis.

In Phase I Stage A, a high level of leader power is crucial because the leader is responsible for not only identifying the crisis but also alerting others, the followers, to the existence of a crisis. Without the credibility that power gives a leader, this realization would not be possible. As for level of directiveness, a high or middle degree is necessary because once again the leader needs to convey the message that there is a crisis to the followers. During this stage he or she must be task-oriented and concentrate on the job so that all come to the realization that there is a crisis. The leader, while being task-oriented, must also have the ability to calm his followers and reassure them. Therefore, the level of supportiveness is to be either high or middle as well, following the same reasoning. Moving down the board, the degree of cohesion, under any of the effective levels of supportiveness, may be either high or low, as can the commitment to the task. The reasoning is that the leader's realization and identification of the crisis is in no way affected by the groups cohesiveness nor commitment to the task because group action is not yet required. Therefore, duoseptuagintants 1 through 8 and 13 through 20 represent the most effective combinations during this phase.
### Wei-ji Theory of Leadership

**The Wei-ji Board**

Phase I, Stage A

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<th>Level of Supportiveness</th>
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- High = Most Effective Leadership

\[ \square = \text{Most Effective Leadership} \]
Illustration:

"It was a subtle warp in an otherwise routine day. Dr. Wilina Lim, chief virologist with the Hong Kong Department of Health, was sorting through the usual load of blood and tissue specimens sent to her laboratory from nearby hospitals, typically about 80 a day. On this particular day, Tuesday, May 20, 1997 - one specimen came from Queen Elizabeth Hospital in Kowloon, at the far side of Victoria Harbor, where a three-year-old boy had been admitted with what turned out to be a fatal respiratory illness. Her lab quickly determined that the infectious agent was some type of Influenza A, one of two broad classes of flu virus that commonly affect humans. To identify the specific strain or subtype, the lab tested the sample, using reagents distributed by the World Health Organization. The test kits triggered no response.

"Lim was intrigued but not terribly concerned. While she did not often receive flu viruses that resisted identification, it did happen. She retested the virus and again got no reaction. A month later, she forwarded samples to the Centers for Disease Control and Prevention in Atlanta and to England’s Mill Hill, two laboratories in the top tier of a quiet but elaborate global surveillance network that tracks changes in the world’s flu viruses. Almost as an afterthought, Lim sent a sample to Jan De Jong, a virologist at the Dutch National Institute of Health and the Environment who liked to collect unusual strains of influenza.

"For more than a month, she heard nothing. Then suddenly, on Friday, August 8th [1997] De Jong called. He was coming to Hong Kong. He had booked a flight that day. He would arrive Sunday. It seemed at first, just a friendly visit, a chance, at last, to meet face to face.

"Lim picked him up at the Kowloon Ramada on Monday morning. As she drove back to her laboratory, high in Hong Kong’s craggy western hills, De Jong turned to her and asked mildly, Do you have any idea what virus you sent me” (Larson 55)?

Findings:

The first aspect of Phase I stage A was the level of directiveness of the leader, Dr. Lim. In this instance, it seems fair to say that with the proper identification tests being conducted, and failing to identify the specific strain of the virus, that the correct things were done.

The aspect of power is in the high category and manifests itself in several different
manners. The primary would most likely be because of Dr. Lim’s expert power comes from her distinguished medical career. She also has legitimate power because of her position of her position in Hong Kong’s department of health, specifically being the department’s chief virologist. Connection power flows from her professional relationship with other virologists, especially Dan De Jong, who is extremely well respected in the influenza community. Since the two had a professional relationship which precipitated De Jong flying into Hong Kong to discuss the matter, it is clear that referent power was present. While other types of power might exist, it is clear that she does have sufficient power to be recognized as a leader and communicate to others that a potential crisis might be at hand.

The level of directiveness was status quo, or in the middle range. There were no sudden drastic actions demanded for the situation, nor were they needed. The leader did not need to relax the standards of what was to happen in her laboratory and focus on other issues so that the quality of the work was disregarded, so there was not a low level of directiveness.

As the established leader of the laboratory of Hong Kong’s Department of Health, it is clear that Dr. Lim needed to run a laboratory with an effective level of interpersonal interactions with the individuals who work both under and with her. Working with one’s coworkers tends to lead to a certain level of interdependence, and working relationship often combine with other types of relationships, especially personal relationships. Therefore, it is accurate to state that the individuals who work in this group were treated in a similar manner as they are every other day, so a medium level of supportiveness is indicated. Also, the other individuals who Dr. Lim contacted who were experts in the field, and polite social demeanor needed to be utilized, as the different members within this interacted primarily on a professional level. This is also an indication that a medium level of supportiveness was utilized by Dr. Lim.

The next construct is the group of followers. This group, at least in this stage of this situation, is limited to a small but elite group of the world’s experts on Influenza, including the global surveillance network. The appropriate connections and communications were made by Dr. Lim when she sent the three samples for further testing and identification. It is obvious that the level of commitment to task is extremely high with these individuals. The first indication is that this is their entire line of work, and the individuals and organizations whom she contacted are of the most elite in this network. These individuals are accomplished not only academically, but also
through their experience and contributions to this field of medicine, specializing on the subject of Influenza.

The variable of the commitment to the group is not as applicable at this stage of the scenario. The different members are loosely tied to one another through professional organizations and their work, but as a group, a high level of cohesion could not be proven. A low degree of cohesion is applicable for the following reasons. Communication between the different agencies involved is of a business nature, and does not exist during relaxed or normal times. It is also clear that the different members of the group at this point in time do not spend much time together and have not had the ability to build strong bonds with one another. However, during times of crisis, this group has both the authority and the ability to come together and work as a team if appropriate (Brammer 1998).
### Wei-ji Theory of Leadership

**"The Wei-ji Board"**

**Phase I, Stage A**

#### Power

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#### Commitment to Task

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□ = Most Effective Leadership
Analysis Phase I Stage A:

The question of how a crisis occurs can be addressed in this stage. This crisis just happened due to reasons beyond the control of anyone. It could be said that it was "the will of God." When there was the realization that something was wrong with the small boy, action was taken. It was not reasonable to say that this could have been prevented or that it was a mistake that caused this crisis to occur. It was an occurrence of nature that happened. The crisis resulted from the framing of the problem by the subsequent leaders of the situation combined with the reaction of the members of the group, as well as the public's reaction, that made this situation a crisis situation. It also includes the potential of this virus to affect other individuals.

Dr. Lim did not really influence the group, for the only action taken by the leader of this stage was to forward the cultures to the WHO, CDC and to De Jong. There was little if any interaction between the different members. It was one way communication with the sample and virus standing on its own as evidence of the Flu's danger.

There is successful resolution of this stage because the members of the medical Influenza community and Dr. Chan realized the implications of this virus. They understood what the virus could do, and the possibility of causing a severe health risk, possibly even an epidemic or pandemic. With this realization of a possible crisis situation, the goal of this stage had been met and the ability to identify the parameters and resources available was next.

While most of this stage appears to be fairly concurrent with the Wei-ji theory, there is the issue of who was the leader in this stage: Dr. Lim or Jan De Jong. The criteria set are established in such a loose way that it is difficult to say for sure. It raises one question specifically. Does the individual who discovers the event or first indication become the leader, or is it the individual who comes to the realization that it is a crisis? The reason that this is difficult in this case study is because Dr. Lim realized that it was not a normal strain of influenza, but did not have a clear picture of the full potential of the effects this virus. For the purposes of this case study, Dr. Lim is the leader, as it was through the realization that something was not right and merited more through and complex evaluation that the potential magnitude of the situation was avoided.

The second focus is related to the first. There is the issue of degree of cohesiveness of the group. In this stage, the group was loosely connected, or only connected by circumstance.
Therefore there might not be a group or an identifiable group to accurately measure while this crisis is beginning, and, perhaps, not even after the situation becomes part of history. This also raises the question about the level of directiveness and the level of supportiveness on the part of the leader. If the group is not defined, or cannot be defined, let alone measured, it might be impossible to determine the different levels involved. The definition of the situational bounds attempt, to address this question by stating that the situational context must be with a minimum of three individuals, or a group. However, the potential problem of identifying the members of this group may be challenging, for sometimes the group’s connection and interrelation is vague and intangible.
Phase I: Identification Phase, Stage B

Identification of Resources and Parameters (Figure IB-1)

Definition:

Phase I Stage B of the Wei-ji is the Identification of Resources and Parameters. This stage is separate from the prior one because it is possible that the person assuming the leadership role within this stage is different from the leader in the previous stage. It involves the identification of who and what will be most affected by the crisis, how the group will be affected and what the parameters of the crisis are. It involves utilizing the group to determine what resources are necessary to achieve a successful resolution of the crisis. For this purpose, it is necessary for the leader to have at least a medium level of supportiveness because this individual will be required to communicate with people to gather information about available resources.

In Phase I Stage B, the leader's level of power must be high in the ideal situation because the recognized power gives the leader credibility and legitimacy in identifying resources and parameters in the situation. Without this credibility the leader's ability to complete this will be hindered. The level of directiveness must also be high because the leader must be task oriented and directive in identifying available resources and parameters of the crisis. By definition of a crisis there are great time constraints. In order to identify the resources and parameters in a timely manner, the leader must give full attention to doing this. Following the Wei-ji Board to supportiveness, all three options, high, middle, and low are equally effective, this stage requires no support, but will not be negatively affected if there is support. Degree of cohesion, however, must be high as must the commitment to task. The followers' ability to work together effectively and their commitment to the task is necessary for the most effective outcome here. The followers must be able to assist the leader in identifying resources and parameters. Duoseptuagintants 1, 5, and 9 are the combinations of variables which result in the most effective outcomes for this stage (Figure IB-1).
### Wei-ji Theory of Leadership

**"The Wei-ji Board"**

Phase I, Stage B

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**Commitment to Task**

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**Duoseptuagintants**

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**Identification of resources & parameters**

- Hi = High
- Lo = Low

**MOST EFFECTIVE LEADERSHIP**

- Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo Hi Lo

Figure IB-1
On August 20, 1997 a press release was sent out from the Government of Hong Kong, Special Administrative Region, Department of Health. The title confirms that there was successful realization and subsequent actions taken by Dr. Lim in the previous stage of this situation, and the perimeters are in the process of being identified. The title of the release, was “Discovery of the first case of influenza A virus (H5N1) in man in HK.” While this did not send a panic into the community, a professional stance was taken and a special team was established to work with experts and health agencies to “assess the global health impact of this strain of influenza virus in man, and where applicable, to expedite the development of a new vaccine. Meanwhile, the Department of Health is actively conducting field investigations and laboratory tests with other organizations to trace the source of the infection” (Press Release, August 20, 1997). It is clear at this point that the department of health has attempted to limit the panic by stating that they have everything under control, but have kept open lines of communication and the possibility of this being a future threat. The parameters had been limited by blood tests of the family of the deceased child, for the results for the specific strain of Influenza A were negative. The case was considered to be an isolated incident at this time, but an attempt to identify other perimeters was ongoing. To reassure the public that everything possible was being done to combat this situation, “We have also stepped up our influenza surveillance activities and shall continue to monitor the situation closely with international experts/centers” (Press Release August 20, 1997).

“The CDC’s investigation of the boy’s illness lasted 2.5 weeks. By the time Fukuda [the CDC’s Epidemiologist on site in Hong Kong] left Hong Kong, his team had collected 2,000 blood samples. Antibodies indicating previous exposure to H5N1 were found in only nine samples, including one of the boy’s classmates and one of his doctors. None of the nine recalled being ill. The fact that so few showed signs of exposure was concrete evidence that the virus was not particularly contagious.

“For the moment, there appeared little reason to fear that this first case, however tragic, represented the start of a pandemic. Says Fukuda: ‘I left thinking, ‘You know, this is probably some odd, sporadic thing’’” (Larson 60).

A few months later, the system was working and their greatest fears were realized. “On
Nov. 8., Lim’s virology lab got its usual load of new specimens to analyze, including one from a two-year-old boy admitted the day before to the Queen Mary Hospital. Her lab applied the ordinary WHO reagents for H3 and H1, but just as in May, got no reaction. This time Lim tried an H5 reagent supplied by the CDC. And got a positive reading” (Larson 63). This case, combined with a relative influx of H5 positive Influenza A patients, raised greater concern in the health community. As it was put in a conversation between Lim and Webster, a member of the CDC, “The virus is moving” (Larson 63)

The total was up to four patients, two of which were killed by the virus. “It is one thing to plan rationally, [Fukuda] says. ‘It’s another thing all of a sudden to be struck with a sense that, my God, what will happen if there are a thousand cases like this? What will happen to all of those people? How will hospitals cope? How will any of us cope’” (Larson 64)? Things quickly elevated, as seen by the accounts of these two major actors in this situation.

“In Fukuda’s war room, Room 58 of the health department’s downtown headquarters, a large whiteboard listed all the cases and tracked their medical progress. . . With new urgency, Fukuda and the CDC hunted the sources of infection, collecting 3,000 blood samples and helping question some 2,500 people” (Larson 64). There was definitive escalation of the efforts to track down the culprit, and the tentative link was through poultry, as four poultry farms had been connected to outbreaks of the Influenza A, H5 strain. With a link to the poultry farms, the first indications for action became clear.

**Findings:**

It became clear that there was a problem some time, between August 8th, when De Jong arrived, and August 20th, when the announcement was released by the Hong Kong’s Department of Health. The Director of Health, Dr. Margaret Chan, has taken the role as the leader in this situation, as it falls under her jurisdiction. Her power in this situation is more ample, on the basis of her position and authority. This type of power is legitimate, as it is based on the power of position. There is also a substantial amount of expert power present as well. She has several degrees including a B.A., M.D., M.C.P.S. from Canada, F.F.P.H.M. from the U.K., M. Sc. P. H. from Singapore and a F.H.K.A.M. from Community Medicine and has a strong reputation in the medical field (Brammer). Based on these two types of power, there was a high level of power
present in this stage.

The level of directiveness is also evident, based on this press release. Dr. Chan was not the only individual responsible for assembling the team and placing the international influenza on higher alert, but she is the leader of everything which happens under her jurisdiction. Therefore she gets the credit or the blame. The level of directiveness for this stage is high, as it is an attempt to identify all of the different parameters of the situation on both a local level and around the world. From the press release, it appears that the focus of the search was to find the cause of the infection and to determine its magnitude.

The level of supportiveness in this stage is between middle or low. The primary focus is on the task at hand, and not on the relations. However, with the differing frequency of these experts in this field being close to one another and working on what could potentially be the largest and most exciting event of their careers, there are some bonds formed through mutual support.

The degree of cohesion and the communication between the team and the leader, Dr. Chan, is essential. With communication between the two several times a day regarding findings and tasks accomplished, the degree of cohesion is extremely high. With a wide variety of experts from different backgrounds, there might be difficulties, but the level of respect and professionalism amongst the different members of the team is high. There is also little if any reason for the different members of the team to be uncooperative with each other. The success is to be determined through teamwork. Without this teamwork there is little chance of accomplishing the necessary tasks.

Commitment follows from the high level of the degree of cohesion. The reason that all of these experts are assembled is to work together to determine the cause and the proportions of the disease. Since these are all professional individuals from around the world, their commitment to the task is extremely high. Not only is it their job to do this adequately, but it is also the focus of the majority of their time while in Hong Kong. Whether in the laboratory or in the field, attempting to track down the origin of this strain of influenza A is the goal.

Another aspect which this case study raises is that monitoring and surveillance for influenza A (H5N1) does not have a specific ending. This process continued throughout the remainder of the situation, and is ongoing. This has implications for the Wei-ji Theory. Although
it has not been discussed previously in the theory, the assumption of the theory could be read that the stages need to end before the next one begins. This does not appear to be the case with this stage. Actually, the opposite appears to be true. Phase I stage B begins after Phase I stage A, but the monitoring of the parameters and available resources continues through the remainder of the crisis. This appears to be an area where the theory, but it does not void any of the findings nor the Wei-ji Theory itself, as the theory only claims to simplify crisis situations and the process of their resolution.
### Wei-ji Theory of Leadership

**"The Wei-ji Board"**

Phase I, Stage B

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|--------------------|------|--------|-----|

□ = MOST EFFECTIVE LEADERSHIP
**Analysis Phase I Stage B:**

In this stage, there is little if any influence exerted on the members of the group. The only way in which influence could be used is over how to establish parameters and resources. Normally, the group as a whole frames the situation. In this study, the parameters set themselves. The group and its’ leadership discovers what these parameters actually are. The resources are a constant, but the influence of the leader on other members of the group might help to obtain more resources. This would most likely flow from referent or connection power. For example, if De Jong used his position and asked his superiors for more resources then the resources might be extended. The definition of what the resources are, however, does not fluctuate. It is only their identification that might be at issue. The amount of resources in a situation is fixed (unless the resources are used or become invalid).

The resolution of this stage is successful when there is enough accurate information to take preliminary action. The parameters need to be identified to the extent that the gravity of the situation as well as the potential consequences are realized. This was realized it was seen that there was more than one case of Influenza A (H5N1). The resources followed. The level of resources that will allow preliminarily action to combat the virus' spread and resolve the situation must be identified. The ultimate goal of this stage is to identify the full extent of the situation's parameters, both current and potential, and to identify all available resources, present and future.
Phase II: The Action Phase

Definition:

Following the Identification phase is the Action phase. This phase of the Wei-ji Theory is characterized by the speed and intensity of events. The Action phase (Phase II) of the Wei-ji Theory is sub-divided into two stages.

Phase II: The Action Phase, Stage A

Leader’s Assignment of Task (Figure IIA-1)

Definition:

Stage A is described as the Leader’s Assignment of the Task. After enough information is gathered in the Identification of Resources and Parameters Stage, the leader can begin forming a vision, breaking down the crisis into realistic, achievable goals, developing possible procedures, and coordinating and communicating these to others. Communication and understanding is vital in this stage of the crisis, as the followers need to have a clear understanding of the tasks, goals and mission for the next stage to be successful.

Phase II Stage A, the Leader’s Assignment of the Task, requires the leader to have a high level of power over followers. The leader needs this power to help legitimate the assignment of tasks to followers and to convince them to accept the leader’s vision. The reason for this is that, in the next stage, the group will need enough motivation to complete the task. Along with a high level of power, the leader must also be highly directive in order to convey the assignment, goals and objectives to the followers in an understandable manner. The leader must be clear in her assignment of tasks and must ensure the followers’ understanding of the assignments. Power and leader directiveness are the two most important variables which affect the outcome of this stage. It is the leader's position and behavior which determine the success of the individual assignment tasks. The follower and group behavior are of less consequence to the success during this stage than the leadership. This is because it is more important for the vision, mission, goals and tasks to be clear and communicated to the followers in the group so that they might be understood and adopted as their own to begin the next stage. In a best case scenario, a high level of the degree of cohesion would be present and the commitment to task, once fully explained, would be adopted with enthusiasm. It would be ideal to go into the final stage of the Wei-ji theory, but the chances
for successful resolution are still probable if other options are identified and articulated. The best duoseptuagintants for Phase II stage A are numbers 1 through 12. (Figure II-A-1)
**Wei-ji Theory of Leadership**

"The Wei-ji Board"

Phase II, Stage A

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**Note:**

- **High** represents the highest level of effectiveness.
- **Low** represents the lowest level of effectiveness.

**Legend:**

- Hi = High
- Lo = Low

**Figure IIA-1**

- □ = MOST EFFECTIVE LEADERSHIP
Illustration:

A tentative link to the poultry markets, steps were taken to attempt to narrow the margin of error to an even more specific degree.

“To Webster and Shortridge, Hong Kong’s many outdoor markets held the key to why the confirmed cases of H5 were spread in such haphazard fashion throughout Hong Kong. In some cases, the CDC team and health-department investigators were unable to prove direct contact with poultry, which suggested that some of the victims caught the virus through contact so casual they simply weren’t aware of it. Says Shortridge: ‘It suggested to me there was a hell of a lot of virus in the environment that we weren’t aware of.’

“Webster and Shortridge quickly arranged an ad hoc task force to begin testing poultry in the city’s ‘wet’ markets . . . The group began its probe on Dec. 22 and worked 18 hours a day right through Dec. 28, the day Hong Kong authorities began their territory-wide slaughter. The research showed that 10% of chickens in the markets carried the virus. Ducks and geese in the markets carried it too-especially worrisome, given their ability to carry infections without outward sign of illness. In the markets, all poultry-ducks, geese, chickens—was killed. The slaughter, according to Shortridge and Webster, removed a substantial reservoir of H5 virus from contact with people” (Larson 64).

The first action taken when the hunt for the cause and magnitude of the virus continued and six cases were confirmed was a press release on December 9, 1997 directed to Health Professionals. It outlines the treatment of this strain of Influenza A. This was followed with advice of how to diagnose this strain through tests, including the statement, “Doctors are advised that they should not wait for the laboratory diagnosis of H5N1 infection before they start appropriate treatment” (Department of Health December 10, 1997). Two days later, guidelines for individuals who came into contact with poultry was issued. These three press releases are the first actions taken by Hong Kong to educate different members of the public.

On December 16, 1997, another press release was issued to update the public on the situation. It served to limit rumors, instill confidence in the leaders who were involved with the situation and educate the public about how best to prevent infection. “The Inter-departmental Co-ordinating Committee on H5N1 convened this morning came up with a plan of action including tightened control on import of chicken, enhanced surveillance in both man and poultry,
as well as improvements in environmental hygiene in markets” (Hong Kong Government December 16, 1997). This is an indication that the situation reached the point where definitive action could be taken. This same day, another press release was directed to the medical community entitled, “Information and advice to doctors on H5N1 influenza” (Hong Kong Government December 16, 1997). This release keeps this community aware of the latest developments in this situation, helping them to be best prepared to combat this virus should they encounter it.

“The export of chicken from mainland to Hong Kong would be temporarily suspended from midnight today (Tuesday) to allow for appropriate controls to be introduced” (Hong Kong Government December 23, 1997). The Inter-Departmental Co-ordinating Committee on Influenza A H5N1 came up with these measures to take an active role in limiting the spread of the virus. This press release stated that there were going to be tests to insure the safety of the poultry. It continued to update the public on the progress the leadership was making. Readers were briefed about “two municipal services departments [that] had completed another round of inspection of fresh provision shops and market stalls and issued guidelines to all operators on the handling of poultry” (Hong Kong Government December 23, 1997). The final update was in regards to the “publicity and education front” (Hong Kong Government December 23, 1997) and everything that was done for this aspect of the situation.

While the aspects of identification of parameters continued, the actions to combat the spread of this virus were in full swing. In a press release dated December 27, 1997, CDC serology test preliminary results stated that the viral transmission was from poultry to humans as opposed to human to human transmission. It continued to back up this claim with the results from 508 blood tests and the breakdown of antibody positive persons demographics. The major news from this press release was that, “blitz cleaning of chicken stalls has been started and will continue over the next few days to improve the hygiene conditions of these places” (Hong Kong Government December 27, 1997).

This continued to January 2, 1998 when Infection Control Measures for Health Care Workers in relation to Influenza A (H5N1) was issued. Guidelines were reiterated and reference to previous documentation for infection control was outlined in the press release.

These decisions for action also included decisions for inaction. This was the case with the
issue of screening travelers both into and out of the region. "We appreciate other countries' concern over the issue [screening for the virus]. However, the main mode of transmission of this virus is considered at this stage to be from bird-to-man. The transmission from man-to-man, if occurring, is considered inefficient at this stage" (Hong Kong Government January 5, 1998).

Issues of ducks and this virus was a topic of much discussion and debate. In a statement issued on January 14, 1998, the officials had determined that there was little if any need to take action with ducks from local farms due to negative test results for the virus in this poultry population. Then, a now traditional list of precautionary measures to prevent the spread of the virus was also included (Hong Kong Government January 14, 1998).

A follow up statement issued to tourists going to Hong Kong was released on January 20, 1998 and answered numerous questions in an attempt to limit panic and prevent individuals from canceling their trips to the island. It gave facts as well as ways to limit potential exposure to the virus. It even went as far as addressing the necessity of getting a vaccine for the virus. (Hong Kong Government January 20, 1998)

The final action decided upon by the leaders was revealed in The Hong Kong Department of Health’s “Comprehensive plan to combat avian flu” (Hong Kong Government January 23, 1998). This plan included immediate and long range plans to limit the spread of this virus. There were vague plans which were referenced, and then the plan to deal with imports of poultry was outlined. This outline included every level of the process from the entry points and wholesale level to local chicken farms criteria. Other elements of the plan were revealed including the division of the government responsible for enforcement and penalties for non-compliance. The details even reached the depth of frozen poultry imported to Hong Kong. Health certificates and fines of up to $ 25,000 were mentioned.

Findings:

In this stage, the situation has reached a critical point, as there is a possibility that things could get worse if definitive action is not immediately taken. Decisive action by Dr. Chan through the Inter-departmental Co-ordinating Committee on H5N1 infection began to occur.

The critical issue of power is present. It is also high for the different governmental agencies, as they are empowered from the people to act in these crisis situations. So, the level of
power is high, due to the legitimate power and expert power in this stage of the situation. It has even come to the level that the followers in this situation are awaiting for some sort of action to be taken, above and beyond that of just increasing the surveillance for the H5N1 strain of the Influenza.

Dr. Chan, Director of the Department of Health, had a clear vision of what she is attempting to accomplish in her department. The vision is followed by the fairly clear mission of limiting the spread of the virus, and sustaining life to the highest possible degree. The more complex aspects came into play when different goals and strategies for dealing with the containment and elimination of the spread of the virus became clear. When the discovery of the connection between the four different poultry farms and the spread of the virus the critical link that focused the energies of the leadership. With this clear, the leadership could take more definitive action to resolve this crisis. The specifics were outlined by this committee and steps for actions were being formulated. With a potential proportions such as this, everything would be outlined and described in great detail. The level of directiveness, therefore, is high because of the clarity of the vision, mission, goals and tasks combined with the aspect of communication. This communication ranged from commands to accomplish certain tasks to asking for suggestions. Overall, her communication was focused on addressing different aspects of the situation and resolving them with definitive actions.

The aspect of supportiveness during this stage is moderate to low. The communication between Dr. Chan and the committee along with other experts, is primarily concentrated on the task. There is very little focus on the needs of the group or inter-group relations. Instead, the overwhelming concentration and interaction between the leader and the followers was task related. Working 18 hours a day is a perfect justification for the interactions being task related.

With the construct of the group, it is important to understand who the group members are at this stage. The group members consist of the Inter-departmental Co-ordinating Committee, the team of experts from the WHO and the CDC, including the local experts from Hong Kong, and the different governmental staff members directly involved with the resolution of the crisis. The degree of cohesion is high. This is because the members of the interagency committee were spending a great deal of time together and were dedicated to solving this problem. The roles were specific, so there was little infringement on other's duties and responsibilities. Their
dedication to one another and necessities of the project and played a great role in the high level of group cohesion.

The final variable of commitment to the task is at a high level. The different experts and other members of the group are dedicated to lending the resources at their disposal to the different tasks. The commitment to task accomplishment is high. All involved wanted a quick and effective resolution to the problem and, by working together with a concentration on the tasks, goals and mission, it had the greatest chance of happening.
### Wei-ji Theory of Leadership

**"The Wei-ji Board"**

- **Phase II, Stage A**

<table>
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<tr>
<th>POWER</th>
<th>LEVEL OF DIRECTIVENESS</th>
<th>LEVEL OF SUPPORTIVENESS</th>
<th>DEGREE OF COHESION</th>
<th>COMMITMENT TO TASK</th>
<th>DUOSEPTUAGINTANTS</th>
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**□ = MOST EFFECTIVE LEADERSHIP**
Analysis Phase II Stage A:

In communicating with the different members of the group, the leader effectively influences the group to find the best possible solutions to the crisis. The way Dr. Chan did this was from a combined strategy. The first element of the strategy was to use her personal characteristics to gather support. In the position that she holds, she has come into contact and developed relationships within medical community and with civil servants and elected officials. These relationships were called upon for resources. Individuals were called into sit on the different Co-ordinating Committees to bring their diverse expertise and resources to the table.

The next element of the influence strategy came from her dedication to the solution of the crisis by being task oriented. Dr. Chan had a clear vision of how things should be resolved. Her vision was unimpaired, and the focus remained on the vision's realization. From this frame of reference, she viewed the situation with all of her available information. She then developed a mission to address the situation. From this flowed different achievable goals that took tasks to achieve. By the creation of the mission and the secondary goals and tasks, there were then tangible aspects which the followers could concentrate on achieving. When these different concepts were communicated to the followers, the influence and agenda setting were powerful tools. The leader influenced the group by framing the situation by establishing the mission and setting goals and assignment of tasks. When the frame of reference had been set and the followers accepted that point of view, a great deal of influence was extended. The leader successfully established a unified way to view the situation. Each individual or subgroup had a greater understanding of their role. This is possibly the greatest influence that the leader can have.

The final element that the influence stems from is the power that the leader possesses. This power was utilized in a variety of ways. The first was legitimate power and it had several different effects. The first was the gathering of individuals together to form a group. This was done through a chain of command. Also, connection power was utilized to complete this task. Different political offices and other communication with branches of the government were brought together through contacts that Dr. Chan had established over the years. Expert power was utilized with her knowledge of the system and how most effectively work within it. She was the best link between the medical community and the government and could influence the
decisions that her followers made. If she believed that a thing needed to be done or that something was incorrect this power gave her the ability to influence how things were done. If it did not meet with her approval, it most likely would not happen. Influence of a more relational nature would be used to determine the way in which things were done. Her relationship with the different members of the CDC and other agencies leadership was used to gather resources and to insure that certain decisions were made.

The resolution of this stage was completed because of the following reasons. The first was that there was a realization of a crisis, and the parameters of its extent currently and its possible extent. The second is that individuals, groups and other resources were identified in this stage of the process. The next is that there was a coordinated effort on the part of the group members involved in the process to effectively deal with this situation. There was a high level of directiveness which kept these individuals concentrated on task resolution. Third is that there was communication and coordination among these groups so that tasks would complement each other, as opposed to a haphazard attempts to resolve the crisis. With good planning, the chances for successful resolution were enhanced, as there would not be any tasks or goals missed.
Phase II: Action Phase, Stage B

Follower's Implementation of Assignment

Definition:

Stage B of the Action Phase is the Follower's Implementation of Assignment. This is the most action oriented phase of the crisis. It involves the followers' understanding of the situation, and the effectiveness of their implementation of actions to accomplish the mission. This is also the stage which will ultimately lead to the successful completion of the task or lead to failure to achieve resolution of the crisis.

During Phase II Stage B, the followers' implementation of assignments and goals, leader power can be either high or low, because during this stage the accomplishment of the task is in the followers' control. The followers, for the first time in this process, have the power and authority to resolve the crisis. The leader no longer needs power because the followers have been given their assignment and are now in control of whether or not the task is completed. Under high power, the leader's level of directiveness can be at a high or middle degree. The leader must remain directive in order to be consistent with his or her behavior during the earlier part of this phase. The directiveness can be high but can also be effective at the middle level. When the power is low, however, the leader directiveness must be high to compensate for the lack of power. At this stage of the process, the directiveness might be manifest in the ability to communicate the vision and mission clearly, so that focus can remain on the appropriate goals and tasks. Following the Wei-ji Board to level of supportiveness, high or middle level is effective. The leader needs to be supportive in this stage because the followers are working toward task accomplishment. This is because the followers should have a clear understanding of the vision, the mission, and most importantly, the way they fit into the greater picture to accomplish and achieve the mission and vision. It is at this stage, that it is necessary for the group to make the mission and vision of the leader their own. This will facilitate a greater ownership of the outcome, increase the levels in commitment to task, and raise the level of cohesion.

Degree of cohesion, the next variable on the Wei-ji Board, may be high or low when in conjunction with a high level of supportiveness. The leaders' support can compensate for poor group relationship. Under the middle level of supportiveness, however, cohesion must be high, as not to risk losing group effectiveness. Commitment to task must be high during this stage,
regardless of the other variables, because the high commitment directly correlates to the success of task completion. This results in duoseptuagintants 1, 3, 5, 13, 15, 17, 37, 39, and 41 as being the most effective. (Figure II-B-1)
Wei-ji Theory of Leadership

"The Wei-ji Board"

Phase II, Stage B

Followers' implementation of assignment

Figure IIB-1

= MOST EFFECTIVE LEADERSHIP
In a press release issued on January 2, 1998, the details were revealed of the actions taken.

“The Environmental Protection Department (DPD) had recorded almost 1,300 tonnes of chicken and poultry carcasses being buried in three landfill sites in Hong Kong in the past few days.

“He noted that more than 95 per cent of the chicken destroyed by the Agriculture and Fisheries Department (AFD) earlier this week had been disposed of yesterday.

“These had been carried out with the support of the Regional Services Department (RSD) which had deployed more than 1,500 staff and 250 vehicles in the past four days to help out with the exercise.

“Staff of all departments concerned were working very hard to clear the remaining lot today. RSD had sent 30 vehicles with 90 staff to help out with the operation and had another 45 vehicles and 135 staff to standby, in an attempt to help the AFD to complete the disposal of the last batches of chicken carcasses today.

“All departments had been working their best to complete the task. It was hoped that all would be sorted out today” (Hong Kong Government January 2, 1998).

Further directives which the different agencies would be undertaking were mentioned. The Hong Kong government also mentioned health and social services offered by the government.

Finally, the resumption of the import of chickens from the mainland was allowed on February 7, 1998 and marked by the release of another statement on the same date. All of the details were released, ranging from the agencies responsible for different duties and specification of what those tasks are. Specific markets were identified with accompanying restrictions which were to be upheld for the importation to resume. Protocols of what is to take place if infected birds are found are outlined in this document. Statements to improve the system in place, with special emphasis on hygiene, was emphasized. Even standards in the industry were being reevaluated to determine how to protect against another such outbreak of this virus.

Findings:

The leader in this stage is still Dr. Chan. However, all of the decisions had or were being made by different committees. The level of power she possesses is still high, as the tasks have been made and she still holds authority over the entire operation. However, it should be noted
that she has less power, relative to the previous stage. Decisions have been made and the
different individuals and agencies with resources have been assigned specific tasks to accomplish
to resolve the crisis. The vision and the mission have been clearly communicated to all involved,
and the goals are understood as to how they affect each individual agency and individual in the
situation. They also fully comprehend their role in the resolution of the crisis, as their tasks have
been assigned and they can see how their specific task directly relates to the resolution of the
crisis.

The level of directiveness is at a medium level. While the tasks have been assigned and
coordinated from original followers of the last phase, there is no need to communicate to any one
group to explain or clarify anything, as it all took place in the last stage. It is important to note
that communication with the press and public will keep them informed and minimize the effect
that they have on the resolution of this situation.

The level of supportiveness is most to be returning to the middle level. It fluctuates in this
level, as praise is given to different levels, especially the experts whose work is primarily over. In
the office and to the followers in general, congratulations and praise are also given. After a short
period of congratulations and praise, things begin to settle back to the status quo and the level of
supportiveness follows.

The group has now expanded many times what it originally was. Members now include
not only the leaders who comprised the different committees from the previous stage, but also all
of the individuals who work for them who are directly related to the completion of the tasks they
were assigned. Their respective leaders explained the tasks and their role in the resolution of the
crisis. The members of the group successfully adopted the mission of resolving the crisis, and on
the basis of doing the tasks assigned, they worked effectively toward accomplishing the goals
established by the leadership. Since this crisis situation is of such great proportion, it is difficult to
assess the degree of cohesion. One would have to say that it was low, as the only thing that
linked certain elements to one another were the work to resolve this situation and stem the spread
of the virus. Many of the followers did not even know one another and, most likely, never will.
Therefore, it is difficult to say that there is a high degree of cohesion amongst them.

The dedication to the task was at a high level. This is evidenced by the quote from above
stating that "all departments concerned were working very hard" (Hong Kong Government
January, 2 1998). It is also easy to see the tasks that were accomplished by the different members of the group and subgroups. Some of their contributions, such as the disposal of tons of chickens, are tangible.
### Wei-ji Theory of Leadership

**"The Wei-ji Board"**

Phase II, Stage B

<table>
<thead>
<tr>
<th>Power</th>
<th>Level of Directiveness</th>
<th>Level of Supportiveness</th>
<th>Degree of Cohesion</th>
<th>Commitment to Task</th>
<th>Duoseptuagintants</th>
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 Miyagi's implementation of assignment

= MOST EFFECTIVE LEADERSHIP
Analysis of Phase II Stage B:

The findings revealed a few things about how a crisis occurs. First, the question about how the leader influenced the group was addressed. This stage of the resolution is almost completely by the followers. The leader might not even be a figure head to many of the followers, but just someone beyond the visible chain of command who has made the decisions that they are carrying out. The closest relation that some of the members of the group now might be two or three individuals away from direct contact to Dr. Chan. However, the accomplishment of the tasks and subsequent attainment of goals and the mission are entirely dependent on these followers playing their role in the situation. The only way that the leader gets to influence the group is through the establishment of realistic goals and influence on other leaders in the chain of command.

This stage of the crisis reveals a great deal about the final question: Why was there successful resolution in this crisis situation by the group (and subgroups) and its leadership? There are two primary levels which this question can be answered. The first is that the situation was one that could indeed be resolved once it was completely understood. This understanding includes what made the different individuals sick, how they became infected and what could control, limit, or eliminate the virus from being transmitted to other individuals. There was the technology, resources and educated individuals that were knowledgeable and available to assist. The next is that the members of the group, including the leadership, were dedicated to seeing the resolution of the crisis. Whatever the reason, members of the group were committed to resolving of the problem, and they channeled their efforts and resources to insure that it would be resolved. These two primary factors lead to the successful resolution of the crisis.
Analysis of the Paper:

The findings communicated to me that this crisis took place in the manner that the Wei-ji theory outlines for it to happen. The first stage was the realization that there was a crisis. This was evidenced by the blood cultures from the three-year-old boy which were unidentifiable. The second stage was the identification of the parameters and resources. The parameters were originally misjudged because this situation was thought to be a fluke. Then, when there were other confirmed cases of the virus in others, the current parameters, as well as potential parameters, were realized. Resources to combat the problem were similar, as any sort of potential major medical problem comes with the resources of the CDC and the WHO. Beyond that, there were the resources of the Hong Kong government. Also, international resources could have been accessed, but the crisis situation did not elevate to that level. The next stage saw the first steps of action and general planning to resolve this situation taking place. Many different individuals were organized into committees to effectively determine goals and assign tasks to be completed. Finally, the resolution of the crisis came with many different agencies playing their role in the slaughtering of the chickens, the cleanup of different areas where poultry were both housed and sold and enforcement of guidelines for the import and sale of poultry.

The leader, Dr. Chan, did influence the group. The main way this was accomplished was through framing the situation. With a vision for the Hong Kong's Department of Health already in place, the mission for dealing with this situation was established. Once she and the rest of the medical community were in agreement, the stage was set for all members of the group to buy into the vision and the mission for dealing with the situation. This is where the preliminary influence came in, and subsequent to that, every action and inaction that the committee chose was affected by that influence. There were other smaller items where influence was used, but this set the stage for prioritization of different efforts as well as the setting of goals and assignment of tasks for followers and sub groups. It also allowed all members of the group to accept the vision as their own, enhancing the level of commitment to the task and group cohesion.

The resolution of the crisis appears to be successful. The group with its leadership accomplished its goals and its mission. There have been no more cases of the virus since the slaughter of the chickens and the institution of the new guidelines. The virus itself and its source was accurately identified, and there were successful measures to combat the spreading of the
The spread of the virus was contained to 18 confirmed cases, and has not progressed from that point. There is increased surveillance in Hong Kong and internationally to insure rapid identification of the virus if it affects anyone in the future. The resolution of the crisis seems to be a success.

There were several different insights gained from this case study. The first was on the construct of the leader. There were definitely different individuals who stepped up to fill the role of the leader at different stages of the situation. Not only that, but it even seemed that in the first and second stage, there could have been more than one individual filling the leadership role at different times during the same stage. However, there was never more than one individual in that role at any one particular time.

The second was on the subject of the leader's power. While many different types of power were available, not all were used. Power was shared with the followers to the extent that they were making the majority of the decisions with the input of the leader as a member of the group. While Dr. Chan retained the leadership role and ultimate responsibility for the decisions made and actions taken, the followers played a tremendous role in the successful resolution of the situation. Also, with power being an issue, it seems that there was little disagreement as to what needed to be done, so there was never a challenge of power of the leader. The primary reason for this appears to be that the power was shared with the followers. This appears to be extremely successful in this situation, and serves as an interesting point for further examination.

The level of directiveness varied a great deal. As the situation progresses, there seems to be a bell curve on the directiveness. Between the Phases, the highest level of directiveness is needed, while at the beginning and the end of the situation, lower levels of directiveness were needed. There is also room for confusion as to what composes directiveness. Currently it stands that it is the clarity of the vision, mission, goals and task combined with how they are communicated to the followers. Since these two elements are separate, there is the possibility that they could not be in alignment with each other, thus causing a problem for identification of what level of directiveness is being employed.

The level of supportiveness is also an area of concern. It appears that there is a strong correlation between the level of supportiveness and other factors such as time of a crisis and history with other members of the group. This is definitely an area which warrants further
exploration. The tie between supportiveness and the different phases, while valid and influential in the resolution of the various stages, might not be inherently linked just to one stage without being tied to the aforementioned issues of time and history. It also depends upon the group as to what is needed in the area of supportiveness, as opposed to the leader choosing based on what stage of the crisis the group is currently experiencing.

The construct of the group interaction has another dynamic to it. In this case study, it was nebulous as to who was a member of the group. This situation had a great potential to affect many different individuals, even millions world wide, but it did not. Even so, as the different stages progressed to the resolution of the crisis, the group of individuals and subgroups expanded exponentially. There were many divisions and different agencies involved, all adding to the number of communicators and complexity of communication with the group in a limited amount of time.

The variables of the group construct are a little bit different. The concept of group cohesion takes on a different meaning and role when there are 1,500 members directly involved with the resolution of a crisis as opposed to 100 different individuals attempting to identify the parameters of the situation. While group cohesion is always positive in the resolution of a crisis, it is not as critical in the first stage and the last stage as originally thought. This is the case when there are different elements or tasks that different subgroups are working on together, but are not directly related to other tasks which are happening. The smaller the group, the greater the cohesion. The middle stages of the situation also depend on cohesion to a greater extent than larger groups in the first or last stages of a crisis situation.

Through this case study, it was determined that the commitment to task accomplishment is extremely important. It appears to become more important as the stages progress. In the first stage, it is virtually without consequence, while in the final stage of the situation, it is critical. It is also more difficult to measure. When there is an extremely large group, including multiple subgroups, it is difficult to assess the overall level of commitment to task accomplishment. This is especially true, as different members of the group might not have a high level of commitment, while others do have a high level of commitment. This poses a problem to evaluating the level of commitment and influences the validity of the Wei-ji Theory's measurement tools.
Finally, it was determined that the time element in the Wei-ji theory needed some analysis. In this case study, it was clear that each stage was present, but that they did not run consecutively. Rather, stage B of the first phase and both stages of the second phase seemed to run concurrently. There were many different versions of this present in the case study. There was constant reevaluation and a feedback loop from parts of the ending of Phase II stage B to Phase I stage A. It also depends on the complexity of the length of time available for resolution of the crisis and the quantity and complexity of the different tasks which need to be accomplished to achieve the goals and mission of the crisis.
Recommendations:

This study had several points which furthered the study of crisis leadership. A greater understanding of the different elements (variables and constructs), how they interacted with one another, and their role in the resolution of the crisis is clearer now than it was at the beginning of the study. It also establishes a foundation for future scholars to work from to establish an even greater understanding of crisis leadership. Specifically, the role that the size of the group plays in the resolution of crisis situations and how this affects the variables, of group cohesion. Also, the construct of the leadership role and who occupies the role at any given point in time is an issue to be resolved. While all of the variables could use further exploration and refinement, the level of directiveness and the level of supportiveness are in the greatest need of clarification and greater study. The level of supportiveness needs to be studied to see what role it plays with the entire aspect of crisis resolution and the other variables, as well as what determines the most appropriate level of supportiveness. The level of directiveness is in great need of clarification and further study. Specifically, is the level of clarity that the leader has of the vision, mission, goals and tasks most important? Or, is it the communication from the leader to the followers of this vision, mission, goals and tasks? Or, is it a combination of the two?

Altogether, this study is a good foundation for further exploration of leadership within crisis situations. It provides some clear insights as to the basic elements which play a role in successful resolution of these situations and takes a proactive approach to dealing with these situations when they arise.
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Appendix A:
The Wei-ji Theory of Crisis Leadership
INTRODUCTION

Leadership during crisis is one aspect of leadership which has not been the subject of much study in the past. Minimal research has been done on crisis leadership and few theories exist to explain the type or types of leadership which are most effective during a crisis situation. The Wei-ji Theory furthers the study of crisis leadership by establishing a working definition of crisis, defining the constructs and variables which affect the leadership exhibited during a crisis and determining the most effective combinations of these constructs and variables. The Wei-ji Theory of Leadership is named after the Chinese symbol for the word crisis. This symbol, called Wei-ji, is a combination of "danger" and "opportunity" (Darling 49). This theory is named after this word as a reminder that although leadership in a crisis context can still be simplified, there remain other aspects of crisis leadership which this group yields to future generations of leadership scholars.

In developing this theory of crisis leadership, the definition of crisis will remain broad enough to encompass all types of crises, those of catastrophic proportions as well as those with less severe consequences. The theory attempts to distinguish the most effective style of leadership during each of the four stages of a crisis, all of which will be identified in the following explanation.

GOALS OF THE WEI-JI THEORY

The Wei-ji Theory was designed because there is a need to acquire more information and to develop an understanding of the most effective manner in
which a leader can act. With this motive, the primary goal of this theory is to explain the relationship between leader behavior and task accomplishment within the situational contexts of crisis and to determine the most effective combinations of these contexts. Although the Wei-ji Theory is complex, it attempts to simplify the stages that occur during a crisis situation.

**DEFINITION OF CRISIS**

Before a discussion of the theory can fully begin, the definition of crisis must be further defined. The situational context of crisis is composed of four fundamental components. The first component is that it has definitive time constraints. The second is that the situation has the potential to result in severe consequences affecting both the group and others involved directly or indirectly in the situation. The third component is that the crisis situation is of a nature which is both urgent and important. The final component of this situational context is that a crisis can occur in both open and closed systems. Open systems may include any individual present during the development of the crisis, while closed systems encompass only those who are members of the group in crisis. Taking these four components into account, it is necessary for a leader to rise quickly and initiate decisions.

This theory distinguishes four distinct time frames within a crisis and addresses how leaders should react in order to be effective during each stage. To accomplish this, the theory addresses the relationships between the variables during each stage of crisis in order to explain how leader behavior is influenced by the situation. Within the context of each individual stage, it has been determined which relationships between the variables will produce successful task accomplishment. After evaluating several different crisis situations, patterns of
effectiveness among the variable relationships become apparent.

To aid in the understanding of a crisis situation, the Wei-ji Theory divides the series of events which occur during a crisis into two primary time frames, each of which will be further divided into subsequent stages. The first time frame is referred to as the Identification Phase and the second is the Action Phase. These phases are based upon the assumption that a leader must first identify that there is a crisis and the resources and parameters of the crisis before action can be taken.

The Wei-ji theory continues to explain the process which occurs during a crisis by breaking each phase into two stages. Stage A of the Identification Phase has been titled  \textit{Identification and Realization of the Crisis}. This stage can be accomplished by anyone who has the potential to be involved in the crisis situation. This is true for any stage of either phase. Any member of the group at any point in time can assume the leadership role within the group; it is not just limited to one leader. It then falls under the responsibility of this leader to determine who needs to be informed of the situation and to subsequently inform them of the crisis. The conclusion of this stage is signaled by all members of the group being informed that there is a crisis.

Phase I Stage B is the  \textit{Identification of Resources and Parameters}. This stage is separate from the prior one because it is possible that the person assuming the leadership role within this stage is different from the leader in the previous stage. It involves the identification of who and what will be most affected by the crisis, how the group will be affected and what the parameters of the crisis are. It involves utilizing the group to determine what resources the group possesses. For this purpose, it is necessary for the leader to have at least a medium level of supportiveness because this individual will be required to communicate with people to gather information about available resources. According to John Darling
of Louisiana State University, a crisis can be dealt with by attempting to control the crisis, and by attempting to influence how the crisis affects the group. The latter can be accomplished by "exert[ing] some degree of influence as to where, how, and when the crisis erupts" (Darling 54). Therefore, the leader in this stage is responsible for assessing how the crisis may affect the group. This can potentially include the amount of danger, the time frame, and the vulnerability of the group.

Following the Identification phase is the Action phase. This phase is characterized by the fast-paced speed and intensity of events. Darling described the speed of the crisis as "dependent primarily on the type of crisis," and the intensity as "determined by the severity or importance of the possible outcome(s)" (Darling 54). As a result of this speed, action and damage that occur during this stage cannot be reversed. For this reason, this Phase II resembles what Darling refers to as the "point of no return" (Darling 54).

The Action phase of the Wei-ji Theory is also sub-divided into two stages. Stage A is described as the Leader’s Assessment of the Task. After information is gathered in the Identification of Resources and Parameters Stage, the leader can begin forming a vision, breaking down the crisis into realistic, achievable goals, developing possible plans of procedure, and coordinating and communicating these plans and objectives to others. Communication and understanding is vital in this stage of the crisis, for the followers need to have a clear understanding of the goals and plans for the next stage.

Stage B of the Action Phase is the Follower’s Implementation of Assignment. This is the most action oriented phase of the crisis. It involves the followers' understanding of the situation, and the effectiveness of their implementation of corrective actions. This is also the stage which will ultimately lead to the successful completion of the task or lead to failure.
DEFINITION OF TERMS

Leader behavior

Leader behavior is the first construct and it includes directive and supportive behavior, the causal variables. These types of behavior are independent of one another and therefore, may be utilized equally throughout the situation. Directive and supportive behavior have also been used for Fiedler's contingency theory, which has received much criticism for assuming that one would exist over the other. Therefore, the Wei-ji Theory suggests that the relationship which exists between these aspects is more complex than Fiedler hypothesizes. Wei-ji allows for a middle ground, where a leader can be partially directive, supportive, or both.

Directive leader behavior is the degree to which the leader is task oriented and seeks to initiate action. This is accomplished through the reduction of role ambiguity by definition of task, emphasizing expectancies, and telling followers how to work in the most effective manner (Yukl 55). This is also accomplished by initiating structure and defining the roles of both the leader and the followers in order to accomplish the group's formal task (Yukl 54). This could potentially include such functions as planning, scheduling, coordinating follower activities, providing resources, equipment and technical assistance, and the setting of both high and realistic goals for the group (Yukl 59).

Supportive leader behavior is the degree to which the leader focuses on the needs of the group as well as inter-group relations. Supportive leader behavior also includes the amount of consideration that a leader possesses. "Consideration is the degree to which a leader acts in a friendly and supportive manner, shows concern for subordinates, and looks out for their welfare. Examples include personal favors, listening to subordinates problems, backing up or going to bat for a subordinate, being willing to accept subordinate suggestions, and treating subordinates as equals"
The leader also encourages freedom and independency in accomplishing the task and does not outline the specific actions that the subordinates must take or the way in which they complete them (Yukl 59).

**Task accomplishment**

Task accomplishment is the end-result construct. The Wei-ji Theory breaks this into two parts, success and failure. Success can be defined as the most effective and efficient completion of the goals of the group, primarily survival of the crisis. Failure is the inability to obtain the goals established by the group. This is identifiable by a possible splintering of the group, inability to accomplish a formal goal on the part of the group and general ineffectiveness of accomplishing the desired result.

**Leader-Follower Interaction**

Leader power, which is one variable of Leader-Follower Interaction, is defined as the influence the leader has in persuading followers to act in a certain manner. This can be determined by examining the leader's ability to successfully implement and use any of the five different types of power. The five types of power are reward, coercive, legitimate, expert and referent. They can all be relevant during a crisis situation, but in order to be an effective leader one must have at least one of these powers. The use of these powers may vary between stages, but this theory does not attempt to distinguish among these differences.

A second category of Leader-Follower Interaction is the follower variable. This variable is divided according to the degree of cohesion within the group and the degree of commitment to the task. The degree of cohesion is defined as the extent to which the followers work well with each other. This may be determined
by prior or existing relations among the members of the group, or by the very structure of the group. Communication among the group members is vital to creating this high degree of cohesion.

The commitment to task accomplishment is determined by the followers' ability to identify and relate to the formal goals of the group. In order to be committed, everyone must be willing to dedicate their time and resources toward a solution to the crisis. Commitment requires that the goals for problem solving are clearly stated by the leader. Therefore, the followers are dependent on the ability of the leader to facilitate during the crisis.

**HYPOTHESIS**

A high level of directiveness and a high or middle level of supportiveness will result in the most positive task accomplishment when there is a high level of power, a high degree of cohesion and a high commitment to task.

There were two steps taken to determine this statement as being the overall hypothesis of our theory of leadership. First, each variable was defined and its role (both in the overall crisis situation and in the individual stage) was assessed. At this point, each variable was evaluated independently as to whether or not it would have a significant impact on task accomplishment in a crisis situation. The second step was to determine the relationship between each of the variables. The goal of this step was to recognize any conflict or cases of mutual exclusion among variables. These relationships were assessed by analyzing prior studies of leadership behavior. These steps were repeated for all four stages of a crisis that have been identified.

In the first stage of the crisis, Phase I Stage A, the duoseptuagintants 1 through 8 and 13 through 20 were determined to have the highest probability of effectiveness for completion of that stage. In Phase I Stage B it has been determined
that duoseptuagintants 1, 5, and 9 are the most effective. Analysis of the Action Phase yielded some different results. In Phase II Stage A, it was determined that duoseptuagintants 1 through 12 would yield the greatest probability of successful completion of the task in a crisis. In Phase II Stage B, it was determined that duoseptuagintants 1, 3, 5, 13, 15, 17, 37, 39, and 41 would be the most successful.

After gathering this information, it was noted that in each stage, duoseptuagintants 1 and 5 held the greatest possibility for success. It was then determined that in the overall situational context of a crisis, the combinations of variables most likely to result in successful overall task accomplishment are a high level of directiveness and a high or middle level of supportiveness when there is a high level of power, a high degree of cohesion and a high commitment to task.

MEASUREMENT AND GRAPHIC ILLUSTRATION

The first component of measuring the Wei-ji Theory is creating a tool which can successfully measure the variables. Before the relationships between the variables can be understood and evaluated, the individual variables must be measured using a tangible scale. To measure each of the variables (power, level of directiveness, level of supportiveness, degree of cohesion, and commitment to task) a questionnaire, the Leader Behavior Description Questionnaire (LBDQ), will ask questions of the leaders and followers. The questions will be situational, allowing for the leaders and followers to evaluate each variable and to score it in terms of degree. A predetermined scale will illustrate what scores correlate to high, low, and possibly middle, degrees for each variable.

Once each variable has been classified individually as existing at a high, middle or low degree they can be combined according to the situation to result in one final combination. This process is necessary for each phase and stage of the
theory. These variables are interrelated using the Wei-ji Board. The Wei-ji Board illustrates each possible combination of the variables resulting in one of the seventy-two duoseptuagintants. Based on the general hypothesis of the theory and the specifics of each phase and stage the most effective duoseptuagintants were selected for each of the four stages. They are based on the most effective combinations of the leader/follower variables and suggest the ideal style for the leaders to use and the followers to be in, in order to successfully accomplish the task.

In Phase I Stage A a high level of leader power is crucial because the leader is responsible for not only identifying the crisis but also alerting others, the followers, to the existence of a crisis. Without the credibility power gives a leader, this would not be possible. As for level of directiveness, a high or middle degree is necessary because once again the leader needs to convey the message that there is a crisis to the followers. During this stage he or she must be task oriented and concentrate on the job so that all have the realization that there is a crisis. Following the Wei-ji Board for Phase I Stage A, under high level of directiveness, a level of supportiveness must be determined. Here, supportiveness must be either high or middle. The leader, while being task oriented, must also have the ability to calm his followers and reassure them, while making them aware of the parameters of the crisis as well as the resources. The level of supportiveness under middle directiveness was determined to be either high or middle as well, following the same reasoning. Moving down the board, the degree of cohesion, under any of the effective levels of supportiveness, may be either high or low, as can the commitment to the task. The reasoning is that the leader's realization and identification of the crisis is in no way affected by the groups cohesiveness nor commitment to the task because group action is not yet required. Therefore, duoseptuagintants 1 through 8 and 13 through 20 represent the most effective combinations during this phase.
In Phase I Stage B, the leader's level of power must be high in the ideal situation because the recognized power gives the leader credibility and legitimacy in identifying resources and parameters in the situation. Without this credibility the leader's ability to complete this will be greatly hindered. The level of directiveness must also be high because the leader must be extremely task oriented and directive in identifying available resources and parameters of the crisis. By definition of a crisis there are great time constraints and in order to identify the resources and parameters in a timely manner, the leader must give full attention to doing this. Following the Wei-ji Board to supportiveness, all three options, high, middle, and low are equally effective for the reason that this stage requires no support but will not be negatively affected if there is support. Degree of cohesion, however, must be high as must the commitment to task. The followers' ability to work together effectively and their commitment to the task is necessary for the most effective outcome here. They must be able to assist the leader in identifying the resources and parameters. This leads to duoseptuagintants 1, 5, and 9, which are the combinations of variables which result in the most effective outcomes for this stage.

Phase II Stage A, the leader's assignment of the task, requires the leader to have a high level of power over followers. The leader needs this power to help legitimacy in assigning tasks to followers and also to convince them to accept and complete the task. Along with high power, the leader must also be highly directive in order to convey the assignment, goals and objectives to the followers in a simple, concise, and easily understandable manner. The leader must be clear in his or her assignment of tasks and must ensure the followers' understanding of the assignments. During this stage, power and leader directiveness are the only two variables which affect the outcome of this stage. It is the leader's position and type of behavior which determine the success of the individual assigning tasks. The
follower and group behavior are of trivial consequence to the success during this stage.

Finally, during Phase II Stage B, the followers' implementation of assignments and goals, leader power can be either high or low, because during this stage the accomplishment of the task is in the followers' control. The leader no longer needs power because the followers have been given their assignment and are now in control of whether or not the task is completed. Under high power the leader's level of directiveness can be at a high or middle degree. The leader must remain directive in order to be consistent with his or her behavior during the earlier part of this phase. The directiveness can be high but can also be effective at the middle level. When the power is low, however, the leader directiveness must be high to compensate for the lack of power. Following the Wei-ji Board to level of supportiveness, high or middle level is effective in all three of the channels. The leader needs to be supportive in this stage because the followers are working toward task accomplishment, and will benefit just as much, if not more from leader supportiveness as leader directiveness. Degree of cohesion, the next variable on the Wei-ji Board, may be high or low when in conjunction with a high level of supportiveness. The leaders' support can compensate for a group with a loose or poor relationship. Under the middle level of supportiveness, however, cohesion must be high, as not to risk loosing the group effectiveness. Commitment to task must be high during this stage, regardless of the other variables, because the high commitment directly correlates to the success of task completion. This results in duoseptuagintants 1, 3, 5, 13, 15, 17, 37, 39, and 41 as being the most effective.

Attached in the appendix is a Wei-ji Board illustrating the most effective combinations for each phase and subsequent stage.
ASSUMPTIONS AND WEAKNESSES

The weaknesses of this theory are a result of the assumptions used in the theory, and the generalizations used to explain crisis leadership in its broadest possible manner. Throughout the course of the theory, the group found itself attempting to limit the conclusions drawn by the theory and also to expand the theory so that it would encompass a complete definition of crisis so that it would not be case specific. The group then made assumptions to compensate for many of these generalizations.

One of the greatest weaknesses of the theory may be the limited number of duoseptuagintants which were determined to represent the combinations of the variables which resulted in a positive task completion. In the process of deciding which variables have an influence on successful leadership, the group was forced to make generalizations regarding the nature of the variables. Though the theory attempts to remain consistent with its original definitions, it was found that there are still different interpretations of these terms and their relationships with one another. For example, the group struggled to determine whether the relationship between group cohesion and leader supportiveness had any effect on task accomplishment. It was debated as to whether group cohesion may undermine leader supportiveness and perhaps create resentment toward the leader.

After making such generalizations about the relationships among variables, the group discovered that it had determined that there are many situations which may allow for effective task completion in a crisis. The first step taken to narrow this information was to focus on what would be considered successful leadership, which was taken to mean being effective more than 50% of the time. This also produced far too many effective duoseptuagintants to draw heuristically useful conclusions. To further limit the inferences drawn about crisis leadership, the
group looked to the duoseptuagintants which had reoccurred the most in each stage. From these conclusions, the group reached the final conclusion that there are specific variables which are most effective in producing effective leadership in a crisis situation in a large majority of situations.

One of the greatest assumptions made during the decision process was the debate surrounding supportive and directive leader behavior. It was assumed to an extent that subordinates are not looking for supportive behavior during a crisis. In Leadership in Organizations, Yukl states that during a crisis “subordinates expect the leader to be more assertive, directive, and decisive” (40). Although subordinates are depending on a leader to direct the group and maintain order, supportiveness alone will not accomplish these needs. Ideally, supportiveness would be present in the group already, so the leader would not have to create this supportive atmosphere.

Another assumption made with regards to supportive and directive behavior is that the two behaviors behave independently each other. It is assumed that a leader can possess either a high, middle, or low level of directiveness and a high, middle, or low level of supportiveness. Between the variables of directiveness and supportiveness there are nine possible combinations, ranging from high directiveness/high supportiveness to low directiveness/low supportiveness. It is also assumed that, because of the indecent nature of the two variables, a high degree of supportiveness will not subtract from a high degree of directiveness and vice versa.

CONCLUSION

Since this theory focuses primarily on leadership during crisis, there are different aspects of leadership that will occur after the crisis has ended. In conclusion, during a crisis situation, there are five key variables which need to be
accounted for to determine leader effectiveness. These variables are Power, Level of Directiveness, Level of Supportiveness, Degree of Cohesion, and Commitment to Task. From these variables, it has been determined that there are many relationships which may result in effective resolution of the crisis. Of these relationships, there are two which will be successful in virtually all cases of crisis leadership. When one refers to the Wei-ji Board it can be seen that duoseptuagintants one and five maintain effectiveness throughout all of the four stages of a crisis. Therefore, the Wei-ji Theory supports that a leader who maintains a high level of directiveness and a high or middle level of supportiveness under the conditions of a high level of power, a high degree of cohesion and a high commitment to task will achieve the most positive task accomplishment during a crisis. The application of this theory is purely for heuristic purposes at this point in time. Further studies will be needed in order to understand the simplicity that the Wei-ji Theory attempts to create.
Works Consulted


Works Cited


The Phases and Stages of the Wei-ji Theory of Leadership

Phase 1: Identification Phase

Stage A - Identification and Realization of the Crisis
Stage B - Identification of Resources and Parameters

Phase 2: Action Phase

Stage A - Leader’s Assessment of the Task
Stage B - Follower’s Implementation of Assignment
The Wei-ji Theory:

Constructs & Variables:

Causal Variable
- Leader Behavior
  - Directiveness
  - Supportiveness

End Result Variable
- Task Accomplishment

Situational Moderator Variables
- Leader-Follower Interaction
  - Leader’s Power
  - Followers:
    - Commitment To Task
    - Degree of Cohesion
### Wei-ji Theory of Leadership

**"The Wei-ji Board"**

**Basic Duoseptuagintant Chart**

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**Chart used with:**

- **Phase I, Stage A** - Identification & Realization of crisis
- **Phase I, Stage B** - Identification of resources & parameters
- **Phase II, Stage A** - Leader's assignment of task
- **Phase II, Stage B** - Follower's implementation of assignment
**Wei-ji Theory of Leadership**

"The Wei-ji Board"

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**Most Effective Leadership**

- A = Most Effective Leadership

Leader's realization & identification of crisis
### Wei-ji Theory of Leadership

#### "The Wei-ji Board"

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- **Hi** = High
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- **□** = Most Effective Leadership

Identification of resources & parameters
**Wei-ji Theory of Leadership**

"The Wei-ji Board"

**Phase II, Stage A**

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**DUOSEPTUAGINTANTS**

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□ = MOST EFFECTIVE LEADERSHIP
Wei-ji Theory of Leadership

"The Wei-ji Board"

Phase II, Stage B

Followers' implementation of assignment

□ = MOST EFFECTIVE LEADERSHIP
Appendix B:

Press Releases of

The Government of Hong Kong

Special Administrative Region

Department of Health
Discovery of the first case of influenza A virus (H5N1) in man in HK

August 20, 1997

A strain of influenza A virus (H5N1) has been isolated in man in Hong Kong recently, the Department of Health announced today (Wednesday).

This virus, known to infect birds primarily, was for the first time ever detected in man.

The case involved a three-year-old boy who died in Queen Elizabeth Hospital in May 1997 due to multiple medical complications.

Tracheal aspirate of the boy, sent to the government Virus Unit for testing, grew atypical influenza A virus.

Isolates were then sent to World Health Organisation Collaborating Influenza Laboratories in the United States of America and the United Kingdom as well as a research laboratory in the Netherlands for further identification.

Results from USA and Netherlands showed that the virus was influenza A of H5N1 strain. This is the first time in history this virus was isolated in human being.

The World Health Organisation was informed of the recent discovery.

Speaking at a press briefing today, the Director of Health, Dr Margaret Chan advised members of the public not to panic as there was as yet no conclusive evidence indicating the virus posed any significant threat to man. Investigations indicated that this was the only case found so far.

"In view of the importance of this discovery, a special team has been set up to work closely with local experts, international experts and health agencies to assess the global health impact of this strain of influenza virus in man, and, where applicable, to expedite the development of a new vaccine," Dr Chan said.

"Meanwhile, the Department of Health is actively conducting field investigations and laboratory tests with other organisations to trace the source of infection.

"On the other hand, a medical team was sent to the deceased's
home to collect blood specimen from his family members. Blood tests results showed that his family members had not been infected with the virus and the case is considered to be an isolated incident.

"We have also stepped up our influenza surveillance activities and shall continue to monitor the situation closely with international experts/centres," she said.

Dr Chan supplemented that the best way to combat influenza infection is to build up body resistance by having a proper diet with adequate exercise and rest.

Good ventilation should be maintained to avoid the spread of respiratory tract infection, she added.
Use of Amantadine in the Management of H5N1 Infections

December 9, 1997

From the drug sensitivity study of the isolates from the 2 H5N1 cases at Centres for Disease Control and Prevention (CDC), it has been shown that the H5N1 virus is sensitive to amantadine. This drug is an effective agent for the treatment and prophylaxis of influenza A (but not B). However, it is prudent to note that the influenza viruses can rapidly develop resistance to this drug. Hence, doctors are advised to use the drug appropriately for treatment or prophylaxis of influenza A. The following guidelines which have incorporated the advice from the CDC experts are recommended for doctors' reference.

Confirmed case of H5N1 infection

Amantadine 100mg twice a day for 5 days can be used to treat cases of H5N1 infection. If started within 48 hours of the start of illness, amantadine can reduce the severity and shorten the duration of illness. Doses should be reduced for children and elderly, and those with underlying renal diseases. For children aged 1 to 9, the dosage is 5mg/kg/day in 2 divided doses up to 150 mg. For children aged greater than 9, adult dosage can be used but if the body weight of the child is less than 45kg, use the regime of 5mg/kg/day in 2 divided doses up to 150 mg.

Symptomatic or Positive Contacts of H5N1 cases

Close contacts, i.e. home contacts and medical staff providing direct care to patients with H5N1 infection, should be put on medical surveillance. If they develop symptoms compatible with influenza (fever of 38°C or higher, together with cough or sore throat), they should have a throat swab taken for viral cultures. Treatment with amantadine (100mg twice for 5 days) can be started pending viral culture results.

Chemoprophylaxis for contacts

Amantadine should only be prescribed as chemoprophylaxis for close contacts upon the advice of the health officer in charge of the investigation of the institutional outbreaks.

Side effects

Amantadine can cause neurological and gastrointestinal side effects. In one study of healthy adults, approximately 14% of those
treated with amantadine developed side effects. Neurological side effects include nervousness, anxiety, difficulty in concentrating and dizziness. More serious neurological side effects like marked behavioural changes, delirium, hallucinations, agitation and seizures have been observed. Gastrointestinal side effects include nausea, vomiting, abdominal pain and constipation. These side effects will stop once the drug has been withdrawn. Cautions must be exercised for people with renal insufficiency and in the elderly age group. The drugs are contraindicated for persons with seizure disorders.

*It should be noted that winter season is not the high season for influenza in Hong Kong. Many common cold or flu-like illnesses are caused by other viruses like adenoviruses, parainfluenza viruses etc.*
Laboratory Tests for H5N1 Influenza

December 10, 1997

Judging from the investigation of the 4 H5N1 influenza cases, the initial clinical presentation is not different from ordinary influenza cases. However, complications like viral pneumonia, respiratory distress syndrome and renal failure set in rapidly in three cases. Hence, doctors taking care of influenza patients are advised to watch out for symptoms and signs of complications and early hospitalization is advised once the clinical conditions warrant.

There has been concern about the availability of laboratory services to diagnose H5N1 infections. Doctors are advised that they should not wait for the laboratory diagnosis of H5N1 infection before they start appropriate treatment. The laboratory diagnosis would usually take 7 to 10 days because of the time needed for viral culture and sending of specimens to Centres for Disease Control and Prevention in Atlanta, USA. It is prudent to note that treatment for H5N1 infection is essentially the same as for other influenza viruses. Appropriate treatment, including the use of amantadine, should be guided by the clinical assessment and should be started immediately once influenza with complications is clinically diagnosed.

As recommended by the Special Investigation Group on H5N1 Influenza, the surveillance system for influenza has been extended to all the general out-patient clinics under the Department of Health. These centres would undertake the surveillance functions including laboratory investigation of specimens taken from surveillance subjects. This would yield useful information about the incidence and time trend of the H5N1 infection in the local community. At this stage, the laboratory facilities in the Government Virus Unit would be conserved for surveillance activities and for providing support to hospitals.

*This advice will be updated when further information becomes available.
Guidelines for officers coming in contact with birds during the course of their work

December 12, 1997

Recently, there have been several cases of influenza in humans, apparently caused by an H5N1 influenza virus.

This type of virus is more commonly associated with poultry and other species of birds. Some officers who, during the course of their work, deal with birds or visit places where birds are kept are concerned that they may become infected.

Avian influenza viruses can infect a wide range of birds, but during this investigation so far the H5N1 virus has only been isolated from domestic chickens.

Officers may be exposed to a wide range of birds in their work, and the majority of these birds will not be excreting virus. Therefore, the risk of becoming infected is low.

No clinical cases of disease associated with H5N1 infection have been reported in workers contacting birds regularly, such as market workers or poultry farmers. In three of the four human cases of H5N1 infection there is no evidence of direct contact with poultry or other birds.

At present, it is not known how the human cases became infected with the virus, and therefore these guidelines are based on normal hygiene practices and the predicted behaviour of the virus.

Guidelines

1. Where possible, minimise direct contact with birds.

2. If you must contact birds, wash your hands thoroughly with soap and warm water after handling them. Disposable plastic or rubber gloves may be worn when handling birds or cleaning and handling cages. After the gloves are removed wash hands thoroughly with soap and water.

3. When visiting poultry farms wear additional protective clothing (such as overalls or gowns) which should be removed on leaving the farm.

4. Staff handling bird carcasses or collecting samples directly from birds are advised to wear paper face masks and appropriate protective clothing.
5. Avoid working for prolonged periods in confined spaces with birds, especially if ventilation is poor.

6. If you develop a fever or respiratory disease contact your doctor immediately for appropriate treatment and investigation. Please inform your doctor of the history of exposure to birds.

7. If you see unusually high numbers of sick or dead birds contact AFD's animal health staff (2455 1125 or 2461 8791) so that the problem can be investigated properly.

Agriculture and Fisheries Department
Department of Health
Initial assessment of Influenza A H5N1 cases

December 16, 1997

Initial assessment made by the Special Working Group on Influenza A H5N1 noted an association with poultry in some of the cases under investigation, Director of Health, Dr Margaret Chan said at a press conference today (Tuesday).

She noted that genetic analysis of the H5N1 virus in the first four cases so far had shown avian gene sequences while laboratory results of the other cases were pending.

Information collected during the investigation of the first seven cases - six confirmed and one suspected - indicated that some patients had contacts with poultry before the onset of the disease while others had not.

"This points to the fact that the transmission of the virus both from bird-to-human and human-to-human are possible," Dr Chan said.

"However, the efficiency of transmission from human-to-human should not be high or there should be hundreds and thousands of such cases in the territory by now, according to past experience with other types of influenza. Thus, the present cluster of cases detected in Hong Kong had not reached epidemic proportions."

"While the mode of transmission requires further study, the Hong Kong Government is proactive and considers it necessary to introduce a number of preventive measures to protect public health.

"The Inter-departmental Co-ordinating Committee on H5N1 convened this morning came up with a plan of action including tightened control on import of chicken, enhanced surveillance in both man and poultry, as well as improvements in environmental hygiene in markets."

She said that the Hong Kong Health Authority had been working very closely with the World Health Organisation (WHO) and the Centres for Disease Control (CDC) in USA in dealing with the investigation and study of this new strain of Influenza A H5N1 strain in man.

As one of the 110 surveillance centres for the monitoring of influenza, Hong Kong had played a vital part in detecting this new strain of flu in human.

The Department of Health was currently conducting four
epidemiological studies to ascertain the mode of transmission.

CDC was conducting further tests on genetic sequencing of the virus and also working at full speed on the development of a test for blood samples taken.

WHO would distribute H5N1 virus testing kits to all of its Collaborating Centres around the world shortly for surveillance purpose.

However, time and more cases were required to provide scientific evidence that could be used for drawing up conclusive findings.

In the meantime, a lot of work had been done by the Department of Health and experts in this field to provide data for scientific analysis.

Of the seven cases being analysed so far, all were tested positive by the Hong Kong Government Virus Unit. Six had been confirmed by the CDC while the remaining one was classified as "suspected" pending CDC's independent confirmation.

Two of these cases indicated exposure to poultry within the incubation period, but the histories of the remaining five cases were less clear.

"Over 550 interviews were conducted and 2 550 laboratory specimens were taken during the course of investigations."

Follow-up on patient contacts showed all those with flu like illness had recovered. Results of throat swabs taken from contacts in the first few cases were all negative while results for the last three cases were pending.

Test results on the more than two thousand blood samples which could shed more light on the form of transmission could not be confirmed pending development and refinement of test by CDC.

So far, two patients had fully recovered, one under treatment in satisfactory condition, two under treatment in critical condition and two died.

In the meantime, two more cases were classified as "suspected" by the Department of Health, making the total number of Influenza A H5N1 cases in human nine.

The two latest cases involved a two year old boy and a three
year old girl who were cousins of a confirmed case (5 year-old girl).

They had mild symptoms only and were now receiving treatment in hospital. Their conditions were satisfactory.

Follow-up investigation of the two cases had already started. The public would be kept informed of the latest development.

On treatment for this new strain of flu, Dr Chan said amantadine was found to be an effective agent if used during the early stage. Such information had been made available to government doctors and private practitioners.

For the public, Dr Chan advised that the best way to combat influenza infection was to build up body resistance by having a proper diet with adequate exercise and rest.

"Good ventilation should also be maintained."

To prevent this avian flu, the public are advised to maintain good personal hygiene. They should wash their hands thoroughly after handling live poultry. They should also avoid coming into contact with sick or diseased poultry.

But Dr Chan also pointed out that chicken cooked thoroughly were safe for eating.

Note to Editors:

A table distributed at the press conference showing the update of the seven cases will be sent through the GIS fax machine.
Information and advice to doctors on H5N1 influenza

December 16, 1997

Up to 16 December 1997, seven cases of influenza A (H5N1) were discovered in Hong Kong. The first case was discovered in August and the other six cases were found in November and December 1997.

Four children and three adult were affected (age 2-54, 4 male 3 female). All of them enjoyed good past health except one child with ventricular septal defect. The initial clinical presentation was similar to typical influenza, with fever of acute onset, cough, sore throat and running nose. Four cases suffered a rapid downhill course with development of viral pneumonia, adult respiratory distress syndrome and renal failure. Two patients have died and three are receiving treatment in hospital. These cases probably represent a more severe form of the disease as they were taken from hospital in-patients. It is believed that like other types of influenza, most of the patients would make a full recovery.

It was noted that one fatal case had history of delayed treatment from travel. One fatal case was complicated by Reye's syndrome, and had a history of taking aspirin. In one of the severely ill cases, there was delayed hospitalization due to change of the attending doctor.

Influenza A (H5N1) was known previously to infect birds only, and these were the first cases in which humans were affected. The Department of Health is working closely with the Centres for Disease Control (CDC), Atlanta and local experts to ascertain the mode of transmission of the virus and determine its public health impact. Investigations showed no evidence that the four cases were linked or shared a common source of infection. Man-to-man transmission is not yet proven, but further investigations are being conducted to examine this possibility.

The data gathered so far suggest that influenza A (H5N1) has similar clinical presentation as other influenza viruses. The appropriate management should consist of adequate rest, fluid replacement and antipyretic as necessary. Aspirin should be avoided in children. If there are signs of complications such as pneumonia, the patient should be hospitalised. The use of specific anti-viral therapy such as amantadine is discussed in the attached note.

Appropriate counselling on prevention of influenza should be given to patients and members of general public. Important messages include no smoking, a balanced diet, regular exercise and adequate rest to maintain body immunity. Observation of good personal hygiene
and maintaining good ventilation are also useful.

* This advice will be updated when further information becomes available.
Preventive measures for avian flu implemented

December 23, 1997

The export of chicken from mainland to Hong Kong would be temporarily suspended from midnight today (Tuesday) to allow for appropriate controls to be introduced.

This voluntary measure by mainland authority was revealed by the Deputy Director of Health and Chairman of the Inter-Departmental Co-ordinating Committee on Influenza A H5N1, Dr Paul Saw, at a press conference after the Committee's meeting today (Tuesday).

Speaking at a press conference after the Committee's meeting today (Tuesday), Deputy Director of Health and Chairman of the Committee, Dr Paul Saw, said evidence so far suggested exposure to chicken or its faeces as a possible source of infection of the avian virus, while direct man-to-man transmission needed to be determined.

He reiterated that eating chicken is safe so long as they are well-cooked. Anyone who has been in contact with chicken should wash their hands thoroughly. He added that the virus could be easily killed by thorough cleansing using common disinfectants.

Also speaking at the press conference, Senior Veterinary Officer of the Agriculture and Fisheries Department, Dr Leslie Sims said the temporary suspension was introduced as a precautionary measure and to ensure the health status of chickens imported into Hong Kong in the future.

Dr Sims said when chickens are imported again from the mainland, the AFD would have in place a new blood test for imported birds.

"Each shipment of imported birds will be screened for evidence of Flu A infection using a rapid blood test."

"The laboratory will be working shifts to ensure that initial testing is completed before the birds are sold the following morning."

"Any shipments that test positive will not be allowed to be sold until further testing can be done to assess the birds."

In the meantime, the AFD would continue testing all local chicken farms for the H5N1 virus. All local farms should be tested within 10 days.
Dr Sims pointed out that results available so far found H5N1 virus in two swabs of chicken droppings collected from two market stalls. They were swabs collected some 10 days ago.

With the co-operation of the operator of the chicken stall involved, the whole batch of chicken had been handed over to AFD for destruction. Thorough cleansing of the market would also be conducted today.

Another sample collected from a dead bird at a wholesale market at the initial clean up was also tested positive but the source was not clear.

But Dr Sims stressed that there was no report of unusual deaths in wholesale and retail markets last week.

"The AFD would continue to monitor the situation and take appropriate action where necessary."

As regards other preventive measures of the action plan drawn up by the Inter-Departmental Co-ordinating Committee on Influenza A H5N1, they had been implemented smoothly.

Dr Saw reported that the Department of Health (DH) had stepped up surveillance for Flu A H5N1 at public clinics and hospitals since early this month. Apart from Government's General Out-patients clinics and hospitals, the assistance of 17 private doctors had been solicited. The programme involving private practitioners would begin after the Christmas holidays.

"This enhanced surveillance is expected to pick up more cases and is an important step to detect a wider spectrum of presentation of cases to provide more information on the new strain and its mode of transmission."

At the same time, the Department had made arrangements with private laboratories to offer quick test for Influenza A to private practitioners whose patients might want to have their swabs so tested. If the swabs were found to be Flu A positive, they could be referred to public laboratories for further testing of the H5 strain free of charge.

So far, some 15 private laboratories had agreed to offer such tests at a cost of about $400 each. The full implementation of this trial scheme was expected to start in early January. It would initially be put on trial for one month.

On environmental hygiene, the two municipal services departments had completed another round of inspection of fresh
provision shops and market stalls and issued guidelines to all operators on the handling of poultry.

Improvement measures on environmental hygiene at public markets and fresh provision shop had also been implemented. Blitz cleaning of markets and fresh provision shops would also be conducted in the coming week. So far, no sign of abnormal numbers of poultry showing symptoms of infection had been detected.

The Hospital Authority had set up a taskforce on H5N1 to provide expert advice on the matter and to liaise and collaborate with other Government Departments to ensure appropriate prevention and surveillance of the infection.

On the publicity and education front, Dr Saw said the hotlines set up by DH had received about 8000 calls. TV and radio announcements had been broadcast. Information on preventive measures had also been passed to schools, child care centres, welfare services units and the public through the Education Department, the Social Welfare Department and the Home Affairs Department.

He pointed out that while guidelines had been issued to doctors and fact sheet for tourist distributed through Hong Kong Tourist Association and the Hong Kong Government Overseas Office, members of the public and people from overseas could get the latest information from the Department's Homepage on the Internet.

Dr Saw stressed that all Government Departments concerned had been doing its best to implement preventive measures to combat the virus, while scientist were still working hard to find out more about its virulence and mode of transmission.

There was a new suspected case of Flu A H5N1 today. The case involves a 60 years-old female who was now under treatment and in critical condition. This brought the total number of cases to nine confirmed and three suspected ones.
First avian flu case CDC serology test preliminary results

December 27, 1997

Antibody to influenza A H5N1 virus was found in nine blood samples out of 502 tested in relation to the first avian flu case detected in Hong Kong. The antibody to the virus was detected mainly among poultry workers and people directly exposed to the virus.

The results, based on studies related to the first avian flu case in a human, suggested that the main mode of H5N1 transmission was from bird-to-human. Analysis of the viral genes shows that they are avian in nature without evidence of re-assortment with human influenza virus genes.

The results leave open the possibility of person-to-person transmission. However, the absence of antibody among the family members of the ill child and the overall low number of antibody positive people in contact with the child suggested that such transmission, if occurring, is relatively inefficient at this time.

These preliminary results and findings were released today (Saturday) jointly by the Hong Kong Department of Health, WHO and the Centers for Disease Control (CDC) and Prevention in Atlanta, USA. They stressed that the observations were preliminary and were based on serological test results done in connection with the first patient, using a microneutralization assay developed at CDC.

Additional findings are expected by late January next year when test results of other cases become available and other studies currently being conducted are completed.

The nine persons tested positive of antibody were all from the 502 people in the "exposed group", made up of poultry workers, people in contact with the boy and people working with the virus, such as laboratory workers.

In contrast, another 419 people in a "comparison group" who had no history of contact with the ill child were all negative for influenza A H5N1 antibody.

These results suggested that poultry workers and people known to have had direct contact with the virus were more likely to have antibody to this virus.

The nine antibody positive persons out of the 502 tested (1.8 per cent) were from the following groups:
People potentially in contact with the child

- 0 out of 4 family members
- 1 out of 54 health care workers (1.9 per cent)
- 1 out of 261 staff, students and their parents (0.4 per cent)

People in the same district

- 1 out of 63 (1.6 per cent)

Laboratory workers

- 1 out of 73 (1.4 per cent)

People exposed to poultry or pigs

- 5 out of 29 poultry workers (17.2 per cent)
- 0 out of 18 pig farm workers or neighbours

Follow up investigation of the nine antibody positive persons indicated that five were poultry workers, one was a student with exposure to poultry, one was a laboratory worker and one was a person whose exposure history was not clear.

The remaining antibody positive person was a healthcare worker who helped take care of the child. The healthcare worker gave no history of exposure to poultry raising the possibility of human-to-human transmission.

These data are consistent with the possibility that influenza A H5N1 virus might be transmitted to humans by:-

- exposure to infected poultry
- direct exposure to virus
- exposure to someone who is ill and infectious

"The Hong Kong Government has already initiated measures to help make sure that chicken sold in the market are free of avian flu," the Director of Health, Dr Margaret Chan said.

"With the co-operation of the mainland authority, export of chicken from the mainland to Hong Kong has been temporarily suspended to allow time to put in place a system in the mainland to ensure the health status of chicken exported to Hong Kong and a system here to conduct rapid tests on chicken imported again in the future."
"So far, surveillance of local farms has not detected any chicken that are positive for influenza A H5N1. The situation will be closely monitored by the Agriculture and Fisheries Department."

"At the wholesale and retail levels, blitz cleaning of chicken stalls has been started and will continue over the next few days to improve the hygiene conditions of these places."

"All these public health measures are taken to ensure that chicken sold in Hong Kong are healthy and to rebuild consumers' confidence."
Joint effort to dispose of chicken carcasses

January 2, 1998

The Environmental Protection Department (EPD) had recorded almost 1,300 tonnes of chicken and poultry carcasses being buried in three landfill sites in Hong Kong in the past few days, a spokesman for the Inter-Departmental Co-ordinating Committee said today (Friday).

He noted that more than 95 per cent of the chicken destroyed by the Agriculture and Fisheries Department (AFD) earlier this week had been disposed of yesterday.

These had been carried out with the support of the Regional Services Department (RSD) which had deployed more than 1,500 staff and 250 vehicles in the past four days to help out with the exercise.

Staff of all departments concerned were working very hard to clear the remaining lot today. RSD had sent 30 vehicles with 90 staff to help out with the operation and had another 45 vehicles and 135 staff to standby, in an attempt to help AFD to complete the disposal of the last batches of chicken carcasses today.

A spokesman for the Inter-Departmental Co-ordinating Committee on H5N1 said, the chicken slaughter operation and the disposal of carcasses was a huge and unprecedented exercise for the departments concerned.

All departments had been working their best to complete the task. It was hoped that all would be sorted out by today.

While AFD would be continuing with mopping up operations to check whether some live chickens had been missed out and whether there were carcasses uncollected, the spokesman appealed to the public for support by reporting any such incidents to the AFD's hotline at tel no: 2733 2278.

After the chicken slaughter exercise and the disposal of carcasses from chicken farms, RSD staff would conduct cleansing at collection/disposal stations and spray disinfectant on the paths in the vicinity.

Operators of chicken farmers would be given guidelines by AFD on conducting thorough cleansing of their farms including the disposal of all chicken feces. These farms would be inspected by AFD staff before they would be allowed to re-stock in future.

The Inter-Departmental Co-ordinating Committee which held a
meeting this morning noted that the chicken slaughter exercise and cleansing work at retail outlets had been carried out smoothly earlier in the week. Stall operators would be asked to carry out in-depth clean-ups and disinfection of their stalls again under the supervision of health inspectors of the two municipal services department.

The Department of Health (DH) recorded that some 1,331 poultry traders and workers had made use of the Department's 14 special clinics for health checks and tests. So far, none of them were found to have flu-like symptoms. Counselling services were given to these people by medical social workers where necessary.

The spokesman said all efforts would be made by departments concerned to complete their task as soon as possible to safeguard public health. Any inconvenience caused to the public due to this massive exercise was very much regretted.
Infection Control Measures for Health Care Workers
Influenza A H5N1 in the Outpatient Clinics

January 2, 1998

About Influenza A H5N1

Influenza A H5N1 is a new human pathogen first isolated in Hong Kong in 1997. The virus was previously known to infect birds only. As at 1 January 1998, there were 14 confirmed human cases and 6 suspected cases.

The initial presentations of influenza A H5N1 are very similar to other influenza viruses, typically with fever, malaise, myalgia, sore throat and cough. However, conjunctivitis is seen in some patients. From the study of recent cases, it appears that persistent high fever (>39oC) is another useful sign that could alert the health care workers of the possibility of H5N1 infection. Furthermore, influenza A H5N1 may cause a rapid downhill course in some cases, ending with viral pneumonia, respiratory distress syndrome and multi-organ failure. X-ray of the chest is useful in picking up early viral pneumonia which is also clinically detectable. Among the 14 confirmed cases, 4 have died and 2 are now in critical condition. Both children and adults can be affected.

Studies indicate that the main mode of transmission of influenza A H5N1 is from bird to man. The possibility of man-to-man transmission remains an open question; but even if it occurs, the efficiency of transmission is low at this time.

There is no vaccine for influenza A H5N1 as yet. However, the virus is known to be sensitive to amantadine and rimantadine.

Infection Control Measures

Adherence to The "Guidelines on Infection Control Practices in Clinics and Maternity Homes" by the Infection Control Committee, Department of Health in December 1993 should be adequate to prevent influenza A H5N1 infection.

It must be stressed that the main mode of transmission is from bird to human. Man-to-man transmission, even if occurring, is not efficient. Careful observance to general infection control measures can adequately prevent influenza A H5N1 infection.

For all patients

Handwashing is most important. Wash hands before and after
direct contact with patients or their body fluids. Also wash hands before eating and drinking, and after removal of gloves.

Blood and other body secretions from the patients should be handled with gloves. Gloves should be changed after contact with the patient, and removed before handling telephones or office work. Wash hands afterwards.

Equipment contaminated with blood and body secretions should be properly disinfected.

Medical waste should be disposed of properly in red plastic bags.

*For patients suffering from influenza and other respiratory infections*

In addition to the above measures,

Spillage of patient secretions should be cleaned with a detergent or disinfectant.

It is a good practice to ensure good ventilation in the clinics. To minimize the risk of infections, it is advisable that:

a. Plenty of fresh air should be continuously introduced into all the rooms in the clinics.

b. If the rooms are mechanically ventilated, proper air control should be instituted. As far as practicable, the rooms should have 6 air changes/hour. Direction of air flow should be adjusted such that air flows from clean areas to less clean areas.

c. Patients should be advised to cover their mouth and nose when coughing or sneezing.
Screening of travellers not necessary

January 5, 1998

The HK Government Health Authority would be providing information to its counterparts in the Philippines and Thailand on the latest situation of influenza A H5N1 in Hong Kong explaining that the screening of travellers was not necessary.

A spokesman for the Department of Health today (Monday) said: "According to World Health Organisation (WHO), the present cluster of cases is not at the scale of an epidemic. WHO has also not recommended any travel restrictions or quarantine measures.

"We appreciate other countries' concern over the issue. However, the main mode of transmission of this virus is considered at this stage to be from bird-to-man. The transmission from man-to-man, if occurring, is considered inefficient at this stage."

"Screening of travellers coming in or going out of Hong Kong is therefore not necessary and not practical."

The spokesman pointed out that the chicken slaughter exercise last week was a precautionary move to minimize the risk of avian flu to people in direct contact with live chickens. Thorough cleansing of poultry market stalls in Hong Kong was being conducted to ensure the hygiene conditions of these places.

With precautionary measures, such as good personal hygiene, being taken, the chance of tourist getting the avian flu is extremely small.

The spokesman said this information had been incorporated in an updated information sheet for tourists to be disseminated through Hong Kong Government Overseas Offices and the Hong Kong Tourist Association.

He also noted that there was no export of live poultry from Hong Kong in recent years.
Influenza Virus Isolation 1997

January 9, 1998

For the whole year of 1997, the Government Virus Unit, Department of Health has received a total of 8,321 specimens for influenza isolation. They came from various sources including public and private hospitals, public clinics and private clinics.

It can be seen from the table that the majority of the positive isolates are influenza A H3N2 (495 cases) and influenza B (208 cases). There are only 15 H5N1 isolates and they were isolated in May, November & December 1997.

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Measures to deal with ducks considered

January 14, 1998

The Administration was actively exploring the possibility of segregating ducks and chickens as a measure to prevent the spread of H5N1 virus, the acting Chief Secretary for Administration, Mr Michael Suen said today (Wednesday).

Mr Suen confirmed that the Government had received the surveillance results on poultry from the Hong Kong University. The results indicated that ducks in local farms were not infected with the H5N1 virus. However, some samples of chickens, ducks and geese collected at markets before the slaughter exercise were positive of H5N1.

He pointed out that according to scientists, infected chickens are amplifying host and will develop disease and die. But there is little risk of infected ducks dying of this infection since they are only intermittent carriers.

"In view of the differences between chickens and ducks to this virus, the Government Task Force on H5N1 has discussed the issue and drawn a preliminary conclusion that no killing of ducks at local farms is necessary at this stage," he said.

"To protect public health, the Government is considering a number of options to ensure that live chickens and ducks are handled separately at all levels.

"Our preliminary view is that live chickens should be allowed to reach retail outlets for slaughtering on purchase, but live ducks should not. We are exploring a number of options on how to handle ducks to achieve an effective segregation from chickens."

In addition, Mr Suen said in the interest of public health and food hygiene, the Government was actively discussing with its Guangdong counterpart the setting up of a stringent quarantine system so that live chickens could be imported again as soon as possible.

Members of the public are reminded to keep vigilance on maintaining good personal hygiene.

Avian flu is mainly transmitted from infected birds to humans. To prevent avian flu, the public should:

- Avoid contact with sick poultry
- Wash hands with soap immediately after handling poultry
- Poultry should be cooked thoroughly before consumption
- Chopping boards used for handling raw poultry must be cleaned thoroughly before re-use.
Information on influenza A H5N1 ("bird flu" or "avian flu") for tourists coming to Hong Kong

January 20, 1998

What is Influenza A H5N1 (bird flu)?

Influenza A H5N1 ("bird flu" or "avian flu") is a newly discovered virus affecting humans. It was previously known to infect birds only. The illness caused by this virus is similar to those by other influenza viruses, commonly presenting with sudden and high fever, malaise, cough and sore throat. Like other influenza viruses, bird flu may sometimes result in complications and deaths.

Is there an outbreak of bird flu in Hong Kong?

As at 4 January 1998 there were a total of 16 confirmed cases of bird flu in Hong Kong, a city of about 6.5 million population. The World Health Organisation stressed that the present cluster of cases in Hong Kong is not at the scale of an epidemic. There is no need for travel restrictions or quarantine measures.

How is bird flu transmitted? Should travellers from Hong Kong be screened?

Studies at this stage show that the main mode of transmission of bird flu is from bird to human. Contact with infected poultry is believed to be the source of infection in the majority of cases. The possibility of man-to-man transmission remains open. Such transmission, even if occurring, is considered inefficient. Screening of travellers coming in or going out of Hong Kong is not necessary.

Why did Hong Kong carry out a chicken slaughter operation?

An operation was carried out in late December 1997 to slaughter all chicken in local chicken farms and all poultry at wholesale markets and retail outlets. The move was a precautionary step to safeguard public health by minimising the risk of bird flu to people in direct contact with chicken. A thorough cleansing exercise has also been carried out to ensure the hygiene conditions of the market place.

How should I prevent bird flu?

Since bird flu is predominately transmitted from bird to man, avoiding contact with live poultry will minimise the chance of getting bird flu. Hands should be washed thoroughly after handling live poultry. Consumption of well cooked poultry poses no risk because the virus is easily killed at a temperature above 56 degrees Celsius.
Is it safe to go to Hong Kong? What is the risk of catching bird flu?

The chance for a tourist catching bird flu is very small. The risk is minimised if the appropriate measures described above are taken. Hong Kong is a safe place to visit.

Should I get inoculated before making the trip?

No. A vaccine has not been developed for influenza A H5N1 yet.

What should I do if I become ill while in Hong Kong?

Hong Kong is a cosmopolitan city and medical facilities are adequate and easily accessible. There are some 9 000 doctors in the public and private sector. You may consult your travel agent for a choice of doctors.
Comprehensive plan to combat avian flu

January 23, 1998

The Government announced today (Friday) a comprehensive action plan with immediate and long-term measures to minimise the risk of humans contracting influenza A H5N1 virus (avian flu) through contact with infected live poultry.

Speaking at a press conference, the acting Chief Secretary for Administration, Mr Michael Suen, said: "We are committed to introducing a number of measures to safeguard public health by ensuring that poultry on sale in the markets are healthy. At the same time, with the co-operation of the Municipal Councils and Housing Authority, all efforts will be made to improve significantly the hygiene standards of local markets to prevent the spread of diseases."

"In the long term, Government will examine in detail the feasibility and implications of introducing central slaughtering for all live poultry before they are delivered to retail outlets. In this connection, people may have to adjust their eating habits for the sake of better environmental hygiene standards," he said.

"As a matter of public health policy, the farming, transportation, slaughtering and trading of live chickens and of live ducks/other water fowls shall be segregated at all levels to minimise the risk of the transmission of the H5N1 virus from live ducks/other water fowls to live chickens."

Mr Suen pointed out that this policy was necessary because according to veterinary experts, ducks and water fowls are intermittent carriers of the virus. While infected chickens and other non-webbed birds, including pigeons, rapidly develop the disease and die, ducks and other water fowls do not develop the disease, but may pass on the virus to humans through other poultry.

"With this segregation policy, Hong Kong can resume the import of live chickens from the Mainland once an effective import control arrangement for chickens is in place and when the Administration is satisfied that farms and market places at all levels have been thoroughly cleaned and disinfected," he said.

"The date for resuming the import of live chickens from the Mainland to Hong Kong is February 7, 1998."

THE NEW IMPORT CONTROL SYSTEM WILL INCLUDE:

Mainland Farms
- Only chickens from farms licensed and monitored by the Mainland animal and plant quarantine services are allowed for export to Hong Kong

- Staff of Agriculture and Fisheries Department (AFD) will visit these farms from time to time to monitor their hygiene standards

- Chickens for export to Hong Kong will be segregated from other birds in the farm five days prior to export and tested negative for H5 virus

- Export chickens will require health certificates signed by a competent veterinary authority.

Entry Points

- Health certificates containing the identity of the farm, and stating the number of chickens and other non-webbed birds and the number of cages in the consignment will be collected and retained by AFD staff at entry points.

- Samples will be taken from each consignment for blood test, results of which will be available in a few hours.

- Law enforcement for non-compliance with import control requirements.

Wholesale Level

- Consignment will be withheld from sale until test results at entry points indicate that the consignment is free from H5 virus.

- Whole consignment of chickens will be seized and destroyed by AFD if any one of the samples is found to be infected with H5 virus.

- Labelling system to enable the tracing of poultry if problems are detected.

- Encourage replacement of wooden cages with plastic or metal ones which are easier to clean.

Local Chicken Farms

- Import of chicks for stock replenishing will be subject to the same health certification requirements to ensure that they are free from H5 virus.
- Farms will be inspected regularly and their chickens will be tested to ensure that they are free from H5 virus.

- Labelling system to enable the tracing of poultry if problems are detected.

OTHER MEASURES BEING TAKEN AT THE RETAIL LEVEL ARE:

- Cleansing exercises being conducted at retail outlets.

- Urban Services Department (USD), Regional Services Department (RSD) and Housing Department (HD) to ensure a good hygiene standard at poultry stalls.

- Seminars and courses organised for members of poultry trade on food hygiene and proper handling of poultry.

- Encourage replacement of wooden cages with plastic or metal ones which are easier to clean.

The Public Health (Animals and Birds) (Amendment) Regulations 1998 gazetted today provided legal support for the tightened import control system. It prohibits the bringing in to Hong Kong of any bird without a health certificate acceptable to the Director of Agriculture and Fisheries. Offender will be liable to a fine of $25,000.

Under the new policy, the import of live ducks and water fowls will continue to be suspended temporarily.

If despite efforts made to search for a central slaughtering facility for live ducks and other water fowls, no suitable place could be identified, other options might have to be considered, Mr Suen said.

As for chilled and frozen poultry, according to World Health Organisation (WHO), there appeared to be no risk of transmission of the H5N1 virus to humans from contact with raw, chilled or frozen poultry foods.

"Since poultry properly washed, handled and cooked are fit for human consumption, the import of chilled chickens, ducks and geese from the Mainland will resume at the same time as live chickens," he said.

"To safeguard public health, the Administration will step up health surveillance and sample inspections to ensure that the imported
 chilled poultry are fit for human consumption."

These chilled poultry would only be sourced from farms licensed for export to Hong Kong. They had to be slaughtered at designated marketing plants in the Mainland inspected by the Hong Kong Health Authority.

Health certificates would be checked at the entry points and samples would be collected for testing.

Members of the public are asked to maintain good personal and food hygiene as a prevention measure against the avian flu. They should wash hands with soap immediately after handling poultry. Poultry should be cooked thoroughly before consumption. Chopping boards used for handling raw meat should be cleaned thoroughly before re-use.

Mr Suen said in the long term, fresh impetus on public hygiene would be given to the Keep Hong Kong Clean Campaign under the two Municipal Councils. Efforts would be made to enhance public awareness of the importance of cleanliness and personal hygiene through this territory-wide campaign with stepped up public education activities.

At the poultry markets, a significant improvement to the hygiene standards of the wholesale and retail markets would be maintained by AFD, USD, RSD and HD.

Licensing requirements and conditions for fresh provision shops and market stalls were also being reviewed and revised to tighten up control. Vigorous enforcement action would also be taken.

Separately, the Department of Health (DH) would continue its surveillance effort on avian flu together with the Hospital Authority and private doctors. DH would continue to find out more about the mode of transmission of influenza A H5N1 in collaboration with the World Health Organisation, Centres for Disease Control in Atlanta, world experts and local medical personnel.

Mr Suen appealed to the community to support the comprehensive action plan to enable effective control of the avian flu.

"It is only with the concerted efforts of the Government, members of the public, traders, poultry workers and medical personnel that we can implement the measures smoothly and to make significant improvement to our environmental hygiene standards in the long run."
**Update on avian flu**

February 3, 1998

The Department of Health (DH) announced today (Tuesday) that there was no new case of influenza A (H5N1) today.

Moreover, the condition of Case No. 7, involving a 24-year-old female, has improved from critical to poor.

The total number of cases stands at 18 confirmed cases.

Following is a list of the cases and their latest conditions:

<table>
<thead>
<tr>
<th>Case</th>
<th>Sex</th>
<th>Age</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>3 yr</td>
<td>Died</td>
</tr>
<tr>
<td>2</td>
<td>M</td>
<td>2 yr</td>
<td>Recovered and discharged</td>
</tr>
<tr>
<td>3</td>
<td>F</td>
<td>13 yr</td>
<td>Died</td>
</tr>
<tr>
<td>4</td>
<td>M</td>
<td>54 yr</td>
<td>Died</td>
</tr>
<tr>
<td>5</td>
<td>F</td>
<td>5 yr</td>
<td>Recovered and discharged</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
<td>37 yr</td>
<td>Recovered and discharged</td>
</tr>
<tr>
<td>7</td>
<td>F</td>
<td>24 yr</td>
<td>Under treatment, condition poor</td>
</tr>
<tr>
<td>8</td>
<td>M</td>
<td>2 yr</td>
<td>Recovered and discharged</td>
</tr>
</tbody>
</table>
Case 9  
Sex / Age: Male / 4 yr  
Condition: Recovered and discharged

Case 10  
Sex / Age: Male / 1 yr  
Condition: Recovered and discharged

Case 11  
Sex / Age: Female / 3 yr  
Condition: Recovered and discharged

Case 12  
Sex / Age: Female / 60 yr  
Condition: Died

Case 13  
Sex / Age: Female / 25 yr  
Condition: Died

Case 14  
Sex / Age: Female / 14 yr  
Condition: Recovered and discharged

Case 15  
Sex / Age: Male / 3 yr  
Condition: Recovered and discharged

Case 16  
Sex / Age: Female / 19 yr  
Condition: Under treatment, condition fair

Case 17  
Sex / Age: Female / 6 yr  
Condition: Recovered and discharged

Case 18  
Sex / Age: Female / 34 yr  
Condition: Died
Resumption of import of chickens from Mainland

February 7, 1998

Hong Kong resumes importation of live chickens from the Mainland today (Saturday) with a new control system to safeguard public health and to prevent people getting influenza A H5N1 through contact with infected poultry.

The export of live poultry from the Mainland had been suspended voluntarily by the Mainland authorities from December 24 last year to enable both the Mainland and the Hong Kong authorities to put in place a stringent control system which ensures that live poultry imported into Hong Kong are free from H5 infection.

The new system implemented as of today included measures taken at both sides of the border.

In the Mainland, only chickens from farms licensed and monitored by the Mainland animal and plant quarantine services are allowed for export to Hong Kong. Staff of HK Agriculture and Fisheries Department (AFD) will visit these farms from time to time to monitor their hygiene standards.

Chickens for export to Hong Kong will be segregated from other birds in the farm five days prior to export and tested negative for H5 virus. Export chickens will require health certificates signed by a competent veterinary authority.

At the Man Kam To Animal Inspection Station, AFD officers will check and retain the health certificates which contain the identity of the farms and stating the number of birds and the number of cages in the consignment.

Thirteen samples will be taken from each truck load for blood testing, results of which will be available in a few hours. The sealed truck will be directed to the Cheung Sha Wan Temporary Wholesale Poultry Market to await results of the blood test.

At the Cheung Sha Wan Temporary Wholesale Poultry Market, the consignment will be withheld from sale until test results at Man Kam To entry point indicate that the consignment is free from H5 virus. The cages will be labelled there to enable the tracing of poultry if problems are detected.

The whole consignment of chickens will be seized and destroyed by AFD if the consignment is found to be infected with H5 virus.
A Government spokesman said the Hong Kong Government had taken a number of pro-active measures to control the avian flu since the detection of the world's first human case in the territory last year. Surveillance conducted by the Department of Health in conjunction with the Hospital Authority and private practitioners had been greatly increased.

A decision was made to slaughter all chickens at farms and poultry at markets at the end of last year when chickens were found to be infected with the H5 virus.

He noted that since this exercise, no new cases of avian flu had been reported.

At the market levels, great efforts had been made by the AFD, the Municipal Councils and Housing Authority to improve significantly the hygiene standards of local markets. At least two rounds of thorough cleansing and disinfection work had been carried out at these markets.

All those poultry market stalls that had been cleaned up to the satisfaction of the Administration were allowed to resume business from today.

The spokesman said that maintaining a good hygiene standard at the wholesale and retail markets would be a long term commitment of the Hong Kong Government.

Licensing requirement and conditions for fresh provision shops and market stalls were being reviewed and revised to tighten up control. Vigorous enforcement would also be taken. This would be supported by a public education campaign to enhance awareness on the importance of cleanliness and personal hygiene, he added.

The new import control system on live poultry implemented as from today is another major step taken by the Hong Kong Government to protect public health. It will provide an effective mean to verify the health status of all chickens imported into Hong Kong.

At the initial stage of the resumption of import of live chickens from the Mainland, the supply of live chickens is expected to be around 35 000 heads per day, depending on market demands.

The spokesman stressed that Hong Kong would work closely with the Mainland authorities to monitor the situation.

"The Hong Kong Government Task Force on H5N1 will also ensure the implementation of all interim and long-term measures of the
comprehensive action plan drawn up to combat the avian flu," he added.
Update on avian flu (February 10)

February 10, 1998

The Department of Health announced today (Tuesday) that there were no new cases of influenza A (H5N1) today.

The total number of cases stands at 18 confirmed cases.

The conditions of the last two patients still under treatment at Yan Chai Hospital are both stable. They are the 24-year-old female patient of Case 7 whose conditions has previously changed from critical to poor and now to stable, and the 19-year-old female patient of Case 16 whose conditions has previously changed from critical to poor, then to fair and now to stable.
Influenza situation update

February 12, 1998

Over 40 days have passed since the last onset date of influenza A H5N1 in Hong Kong (28 Dec 1997). Presently the number of confirmed influenza A H5N1 cases stands at 18, with 8 males and 10 females, age ranging from one to 60 years old. Two cases remain in hospital in stable condition.

Influenza A H3N2 activity has been gradually increasing since Dec 1997. Based on past experience on the flu season, it is expected to peak in Feb/Mar 1998. The predominant type isolated was influenza H3N2/A/Sydney/05/97-like.

Good progress is being made on a 2-week influenza vaccination program launched by the Department of Health on 2 Feb 1998 to immunise around 40,000 elderly people living in residential care homes. The program was endorsed by the Advisory Committee on Immunisation in 1997.

A separate section dedicated to influenza will soon be available on the Department of Health's homepage.
Update on avian flu (February 19)

February 19, 1998

The Department of Health (DH) announced today (Thursday) that there were no new cases of influenza A (H5N1) today.

The total number of cases stands at 18 confirmed cases.

The conditions of these cases remain the same as of February 10.
Round up on avian flu (February 20)

February 20, 1998

There were no new cases of influenza A (H5N1) in Hong Kong in the last few weeks since the slaughter of chickens between December 29 and 31, 1997.

A spokesman for the Department of Health said today (Friday) that the onset date of illness of the last confirmed case was December 28, 1997.

The total number of cases stands at 18 confirmed cases. Two patients are still under treatment in hospital. They are recovering and in stable conditions. Ten other patients had fully recovered and been discharged. Six people had died of the disease.

Following is the latest conditions of the 18 confirmed cases:

Case 1
Sex / Age: Male / 3 yr
Condition: Died

Case 2
Sex / Age: Male / 2 yr
Condition: Recovered and discharged

Case 3
Sex / Age: Female / 13 yr
Condition: Died

Case 4
Sex / Age: Male / 54 yr
Condition: Died

Case 5
Sex / Age: Female / 5 yr
Condition: Recovered and discharged

Case 6
Sex / Age: Male / 37 yr
Condition: Recovered and discharged

Case 7
Sex / Age: Female / 24 yr
Condition: Under treatment, condition stable

Case 8
Sex / Age: Male / 2 yr
Condition: Recovered and discharged

Case 9
Sex / Age: Male / 4 yr
Condition: Recovered and discharged

Case 10
Sex / Age: Male / 1 yr
Condition: Recovered and discharged

Case 11
Sex / Age: Female / 3 yr
Condition: Recovered and discharged

Case 12
Sex / Age: Female / 60 yr
Condition: Died

Case 13
Sex / Age: Female / 25 yr
Condition: Died

Case 14
Sex / Age: Female / 14 yr
Condition: Recovered and discharged

Case 15
Sex / Age: Male / 3 yr
Condition: Recovered and discharged

Case 16
Sex / Age: Female / 19 yr
Condition: Under treatment, condition stable

Case 17
Sex / Age: Female / 6 yr
Condition: Recovered and discharged

Case 18
Sex / Age: Female / 34 yr
Condition: Died