

Cabinet Office Food Safety Commission
General Food Safety Report for Fiscal Year ending March 31, 2004

**Report on the gathering and dissemination of
information relating to food safety incidents
occurring within Japan**
(Report on the Wakayama Curry-Poisoning Case)

March 2004

Gyosei Corporation

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Notes on how to read this report

Names of cities, towns and villages reflect the names in use at the time the reference concerned was written.

Names of government ministries which have changed as a result of reorganizations reflect the names in use at the time the reference concerned was written.
(Ministry of Health and Welfare - Ministry of Health, Labour and Welfare)

Wakayama Curry-Poisoning Case

Chapter 1 Poisons and Poisoning Cases in the Past

1. About poisonous and deleterious substances

(1) Poisonous and Deleterious substances by definition

Chemicals that may cause adverse effects on living organisms are referred to as "poisons" or "poisonous substances." As different types of poisons affect living organisms through different mechanisms, types and severities of the resulting adverse effects vary from poison to poison. Furthermore, a poison to some creatures may not be harmful to others, or a life form may require a very small quantity of a certain chemical while that same chemical may trigger a poisoning process if taken in beyond a certain limit.

A toxin is a poisonous high-molecular chemical having a poisoning effect that originates from a living organism and that has antigenicity. Toxins can be classified into animal, plant or bacteria toxins. In some cases, chemicals engineered for industrial usages may have unexpected harmful effects. On the other hand, very toxic chemicals may be produced intentionally for use as chemical weapons.

The Poisonous and Deleterious Substances Control Law enforced in 1950 classifies potentially poisonous chemicals into "poisonous substances" that have severe impact on life and "deleterious substances" that can affect life adversely though not as severely as poisonous substances, and restricts handling of those substances respectively.

Additionally, the Pharmaceutical Affairs Law enacted in 1960 provides restrictions on handling of potential poisons classified as drugs and medicines by designating them as poisonous drugs or drastic medicines.

(2) Cyanide and arsenic

In the Wakayama curry-poisoning case, the initial response was to take actions against food poisoning. Subsequently, however, it was determined that the cause of injuries was some poisonous substance. The police initially assumed that the toxic substance was a cyanide compound. Eight days after the incident, however, they announced that some arsenic compound was detected as well.

A hydrocyanic compound is a generic name for chemicals that contain the hydrocyanic radical (CN) such as potassium cyanide and sodium cyanide, which are also called cyanides. Those compounds are used in metal-plating plants, chemical rubber plants, and in photo developing. They have a specific smell like that of almond.

They can be quickly absorbed through membranes in the stomach, lungs and other

organs or through cuts in the skin to intrude into the body, impeding the effect of cytochrome oxidase. The initial symptoms include headache, dizziness, the feeling of difficulty in breathing, tachycardia, high blood pressure, nausea, vomiting, and perspiration. As the process develops, consciousness disorder, spasm, irregular heartbeat or shock may occur.

Treatment includes managing respiratory tracts and the cardio-vascular system, gastric irrigation, and administering oxygen, amyl nitrite, sodium nitrite, and/or sodium thiosulfate (contained in the Pasadena - formerly Lilly - Cyanide Antidote Kit).

Arsenic is contained in insect/rat repellants, pesticides and chemicals used in glasswork. Previously, it was used for treating syphilis and epilepsy. It is quickly absorbed through the skin, lungs and digestive canals.

About 80% of arsenic taken orally is absorbed from the digestive canals. Within 24 hours, it is distributed via blood to the liver, kidney, lungs and spleen. Within two weeks, it reaches the skin, hair and bones. Arsenic is primarily discharged via the kidney, 90 to 95% of which is discharged into urine. In a case of acute poisoning, arsenic is detected in the victim's blood for several days, for one to three weeks in urine, and for several months in hair or nails.

Acute symptoms when orally taken include nausea, vomiting, diarrhea and severe abdominal pain. In some cases, shock may accompany, leading to death. Chronic conditions include desquamative dermatitis, excessive pigmentation, myeloid disorder, peripheral neuritis, jaundice and kidney failure.

Treatment includes managing respiratory tracts and the cardio-vascular system, gastric irrigation, intramuscular injection of dimercaprol (BAL: British Anti-Lewisite), and administering penicillamine and hemodialysis.

Trace amounts of arsenic compounds exist in living organs. It is one of the trace elements that the human body needs for survival. Some of these elements are trivalent and others are pentavalent, and the former type includes trivalent inorganic arsenic compounds that have stronger toxicity, for example arsenic trioxide. Nontoxic arsenic compounds or those that are neutralized in the body are contained in fish, shellfish and seaweeds.

(3) The Poisonous and Deleterious Substances Control Law

The Poisonous and Deleterious Substances Control Law (Law No. 303 of December 28, 1950) aims to control poisons and deleterious substances from a viewpoint of health management.

This law stipulates that manufacturers, importers and distributors of poisonous and deleterious substances must be registered in order to operate their businesses and that they must have qualified personnel such as pharmaceutical chemists in charge of handling of such substances. Furthermore, it provides for stringent regulations

concerning handling and transfer of those substances.

Of substances other than drugs quasi-drugs, this law designates drugs and other substances that may have an adverse impact on the human body as poisonous or deleterious. The "poisonous" category includes substances that have severe, life-threatening effects. All others are classified into the "deleterious" category. Poisonous substances are subject to more stringent regulation on handling than deleterious ones. Basically, the difference lies in the size of a lethal dose, which is classified by a specific standard.

When designating a substance either as poisonous or deleterious, the decision is made based on the LD50 value (acute toxicity value), or the amount of that substance sufficient for killing 50% of affected animals, among other criteria such as acidity to the skin membrane and accident cases involving persons. Poisonous substances that are distributed in quantities and could have a particularly serious social impact when abused are specified as "specified poisonous substances."

Substances specified as poisonous and deleterious or specified poisonous substances are controlled all through the processes of manufacturing, importing, selling and handling. Under this law, for example, those who are engaged in handling of such substances are required to take preventive measures against theft, loss, scattering, leakage, outflow, contamination, and permeation through the ground.

In some cases, like the case of sodium azide, those that do not satisfy the criteria for poisonous or deleterious substances can be specified as specified poisonous substances. Having a low toxicity level, sodium azide had not been designated even as a deleterious substance. However, after a chain of food/drink-poisoning incidents following the Wakayama case, it was specified as a poisonous substance for more stringent control. Presumably, this decision was made based on its potentially serious social impact after the publicity of such incidents.

Major poisonous and deleterious substances specified under the
Poisonous and Deleterious Substances Control Law

Poisonous Substances	Yellow phosphorus, hydrogen cyanide, sodium cyanide, parathion, mercury, nicotine, arsenic, etc.
Deleterious Substances	Ammonia, hydrogen chloride, potassium, cresol, chloroform, sodium cyanate, bromine, nitric acid, potassium hydroxide, sodium hydroxide, sodium, methanol, sulfuric acid, etc.
Specified Poisonous Substances	Dimethylparanitrophenylthiophosphate, tetraethylpyrophosphate, monofluoroacetate, monofluoroacetamide, etc.

2. Past cases involving poisonous or deleterious substances

Prior to the curry-poisoning incident in the city of Wakayama, the first murder case involving cyanide was committed in 1935, in which the principal of an elementary school was killed with tea tainted with potassium cyanide in Asakusa-ku (present Taito-ku), Tokyo.

There was also a case that occurred in Minami-Tama-gun, Tokyo, in 1946 in which four people died as they ate dumplings and tempura made from black market flour that was laced with potassium cyanide. Another case occurred in 1948 in Toshima-ku, Tokyo, in which a man wearing an arm badge with the logo of the Tokyo metropolitan government administered a "preventive drug" that was supposed to prevent dysentery to bank employees and their families (16 persons), killing 12 of them. This particular case is called "the Imperial Bank Case" because it took place at the Shiinamachi branch of the Imperial Bank (which was reorganized into the Dai-Ichi Kangyo Bank, and then later merged into the present Mizuho Bank).

There have been other poisoning cases as well.

In 1954, all nine family members of a rice miller were killed with cyanide and burnt at Tokushuku-mura (present Hokota-machi), Kashima-gun, Ibaraki Prefecture, in what has been called the "Ibaraki 9-person Family Murder Case."

In 1961, five people were killed and twelve people intoxicated with wine laced with an organophosphorus agricultural chemical which they drank after a general meeting of a living improvement club held at a public hall in the city of Nabari, Mie Prefecture. This case is called "Mie Nabari Poisoned Wine Murder Case."

In 1984, the Glico-Morinaga Case occurred. On May 10, 1984, a letter was delivered to four newspaper companies based in Osaka, containing a threat to poison certain products with cyanide. This caused several supermarkets and department stores including Daiei and Ito-Yokado groups to withdraw Glico products from their stores. On October 7, five Morinaga products labeled "Poisoned" were found at five supermarkets in Osaka, Hyogo and Kyoto. On October 8, five newspaper companies in Osaka received a threatening letter claiming that the sender had distributed twenty poisoned items between Tokyo and Hakata and that thirty poisoned items not labeled as poison would be distributed ten days later to shops all over the country. In the period from the 7th to the 13th, a total of 13 of such items were found at 12 stores in Osaka, Hyogo, Kyoto and Aichi, including the five found on the 7th. In the following year (1985), eight chocolate products tainted with cyanide were found in Tokyo and Nagoya on February 12 and 13.

This series of cyanide-tainted sweets incidents did not claim any victims, and the statute of limitations expired for all of them on February 13, 2000.

In another case that occurred on April 30, 1985, a truck driver bought a drink product named ORONAMIN C DRINK from a vending machine near the boarder of Okayama Prefecture while driving on the Route No. 2 running through Fukuyama-shi, Hiroshima Prefecture. He also found another bottle of the same product that had been placed on top of the vending machine and drank it later while driving. This driver fell unconscious and was hospitalized, but died on May 2. In this case, paraquat, used as an agrichemical, was found in the victim's vomit.

Following this case, in 1985 and subsequent years, a chain of indiscriminate murder cases using paraquat occurred around the country. In those cases, victims were killed with drinks that they bought from a vending machine or those placed in the machine's dispenser slot.

The sarin gas attack on the Tokyo subway system occurred on March 20, 1995. Acting on orders from Chizuo Matsumoto, one of the founding members of the Aum Shinrikyo (as it was then called) cult, some leading members released sarin on the Hibiya, Marunouchi, and Chiyoda Lines, which resulted in a serious tragedy that claimed twelve lives and as many as 5,500 victims including both severe and mild cases.

Chapter 2 Overview of Wakayama Case of Curry Poisoning and Issues and Challenges Involved

1. Overview

(1) Overview of the case

A curry poisoning crime was committed at a community summer festival held on Saturday, July 25, 1998, in the Sonobe area located in the north of the city of Wakayama, Wakayama Prefecture. This festival was sponsored by residents' association No. 14, a small organization composed of about 200 members from 69 households.

At the festival, Japanese lanterns were lit at six o'clock, followed by serving of curry, Japanese hotchpotch and other foods. The curry which a total of 67 people ate had been prepared by about 20 women from the residents' association. They started cooking that morning and finished preparing it around noon, and placed the three pots in a garage and in two residents' houses in the neighborhood.

Those who ate the curry immediately started complaining of nausea, spasm or other symptoms associated with food poisoning. Some were doubled up with abdominal pain while others started throwing up into an irrigation canal. The victims were rushed to a clinic located about 100 meters away from the festival site, and a single surgeon was unable to manage the situation by himself.

Around seven o'clock that evening, ambulances were called for and rescue teams transferred a total of fifty victims to medical institutions. On the following morning, at 3: 03, the chairman of the residents' association, Takatoshi Yanaka, died (aged 64). Eventually, this incident developed into a serious tragedy claiming a total of four lives, including the vice chairman, Takaaki Tanaka (aged 53), a freshman of the private Kaichi High School, Miyuki Torii (aged 16), and a fourth-grader going to municipal Isao Elementary School, Hirotaka Hayashi.

Initially, the incident was assumed to be a case of mass food poisoning. Later, it was suspected that cyanide had been added to the curry. Eventually, arsenic trioxide, an arsenic compound, was detected. The investigation team uncovered alleged cases of insurance fraud involving large amounts of insurance money concerning Masumi Hayashi (aged 37 at the time), a former underwriter for a life insurance company.

On October 4, the prefectural police force arrested Masumi Hayashi for an attempt to kill an acquaintances, in order to obtain insurance money. They also arrested her husband, Kenji Hayashi (aged at 53 at the time) on suspicion of fraud. He had previously been engaged in termite extermination.

Through repeated on-site investigations, the prefectural police collected information from eyewitnesses that Masumi Hayashi was attending the pots of curry all by herself during the hours when arsenic trioxide was allegedly mixed in the curry, and that an eye

witness had seen her entering the garage used as a kitchen for the event that day, holding paper cups in her hand and apparently checking the surroundings. They also collected eight samples containing arsenic trioxide from the pots of curry and the Hayashis' residence. Based on this evidence, the police obtained an expert statement that the arsenic trioxide collected from the curry, paper cups, and a plastic container in the couple's residence was identical with the arsenic oxide that Kenji Hayashi and his associates previously used. Also, they detected arsenic in a sample of skin taken from Masumi Hayashi's hair from the top of her forehead, which was proven to have come from around the period of the incident.

On December 9, 1998, the police re-arrested Masumi Hayashi on suspicion of murder and attempted murder, assuming that she mixed arsenic trioxide into the pots of curry. She was indicted in the Wakayama District Court on December 29.

In the first day of her trial on May 13, 1999, she pleaded guilty to a charge of insurance fraud but totally denied the charges of murder and attempted murder.

On October 20, 2000, Kenji Hayashi was sentenced to a prison term of six years on a charge of insurance fraud.

On December 11, 2002, the Wakayama District Court ruled that Masumi Hayashi was guilty in seven cases out of eight under indictment, including the curry poisoning case, and sentenced her to death as demanded by the prosecution. Her defense team immediately appealed the ruling.

On December 25, 2003, the Wakayama District Court ordered compensation of about 118 million yen to be paid to a total of 41 victims and families of victims who had required a compensation in a total amount of about 137 million yen.

(2) Actions by the Wakayama Municipal Task Force for the case

The Wakayama Municipal Task Force had a press briefing on the situation at 12:00 midnight on Sunday, July 26 five hours after the incidence. At that time, the head of the municipal health care center announced that food poisoning was the most likely cause. However, at 6:30 in the morning, cyanide was found in victims' vomit, and the prefectural police established the Investigation Team on the Sonobe Poisoning Case.

Later at 10:00 that morning, the Task Force obtained a memo from the police on the death of three victims and the fact of finding cyanide in the vomit of several victims.

Actions taken by the Municipal Task Force on the day of the incident and the following day

Saturday, July 25

- (6:00 PM Start of the community festival and serving curry and Japanese hotchpotch
→ **occurrence of the abnormal incidence**)
- 7:45 PM Phone communications from the municipal firefighting emergency center to the leader of the food sanitation group within the environmental health section of the health care center that patients having symptoms of food poisoning were hospitalized
- 8:30 PM On site investigation on how the curry was cooked and samples specimens including the curry and rice were taken
- 8:50 PM Hearing of patients' symptoms from relevant medical institutions

Sunday, July 26

- 00:00 AM Press briefing (in a conference room on the second floor of the health care center building)
Announcement by the director of the municipal health care center that the case resembled food poisoning
- (3:03 AM Death of a hospitalized victim, the chairman of the residents' association)
- (6:30 AM **Detection of cyanide in vomit of victims** → establishment of the Investigation Team on Sonobe Poisoning Case)
- 7:00 AM The police department gave instructions to the director of the local institute of public health to keep the sampled specimens as they were.
- 8:30 AM Began gathering information concerning the condition of hospitalized victims.
- 9:30 AM A task force was set up to cope with quasi-food-poisoning symptoms among the Sonobe Residents' Association No. 14 members.
- 10:00 AM The police reported that
- * Three of the hospitalized victims had died.
 - * Reaction specific to a cyanide compound was detected from vomit of several victims.
 - * An investigation team was organized for the case.
 - * A memo was obtained that investigation was under way concerning the route through which any cyanide compound could be mixed in the curry.

- 10:55 AM Information was immediately delivered to medical institutions concerning the reported finding of a cyanide compound.
- 11:00 AM The first meeting of the task force was held (briefing)
- 11:26 AM Information on cyanide compounds was obtained from the Japan Poison Information Center, which was faxed to the medical institutions involved.
- 2:00 PM A second meeting of the task force was held.
- 5:00 PM A third meeting of the task force was held (reporting on the condition)
- 5:15 PM Press briefing

2. Problems and challenges brought to light through this case

(1) Confusion at the site

Initially, medical institutions and the police suspected food poisoning probably because of severe diarrhea commonly experienced by the victims. In addition, it is assumed that the strong flavor of curry made it difficult to identify odors specific to poisonous substances. Furthermore, there had been a series of mass food poisoning cases caused by the enterohemorrhagic *Escherichia coli* O157 including a case that had occurred only one month previously in Kanagawa Prefecture in which six people were infected via salmon roe.

However, food-poisoning bacteria are not likely to survive in cooked food like curry. Besides the poisoning developed far more quickly after the suspect food was eaten, compared to any known cases of food poisoning. It was also noted that the symptoms included excessively low blood pressure as well as extremely severe symptoms in general. Because of those facts, some parties suspected that some poisonous substance was the cause of the poisoning, including some health care professionals and news reporters. A physician even conducted volunteer investigations on the assumption that the cause was an agrichemical.

In the press briefing starting at 3:00 PM on the 26th, the director of the municipal health care center disclosed a fact that there had been a report from one medical institution to the health care center that "a child sent to the institution had constricted pupils and a high phosphorous concentration in the blood" (Source: The Mainichi Shimbun dated July 27, 1998). The reported symptoms are typical to drug poisoning, and constricted pupils are typically observed in cases of poisoning caused by organic phosphorous compounds such as sarin or morphine.

In hearings conducted on 27th by the Ministry of Health and Welfare, one medical institution reportedly commented on the symptom of constricted pupils. However, the task force "concluded that it was not a drug poisoning case since there were no such

reports from other medical institutions."

At this point, the police and the public health care center continued their actions on the assumption that it was a case of food poisoning. As the conditions of the victims declined further, clinical treatment was provided at several hospitals in the city, including intravenous drip used for treating food poisoning.

The first death in this case (the chairman of the residents' association died) at 3:03 AM in the morning on July 26 caused strong suspicion to arise that this was a case of drug poisoning case. The blood pressure of the victim dropped very low and never recovered, leading eventually to cardiac arrest even after the victim was administered ten times the normal dose of dopamine, a vasopressor.

Three hours later, at around 6:00 in the morning, the Wakayama Prefectural Police Crime Laboratory reported to the Wakayama police department that they had detected cyanide compounds in vomit of several victims, finally proving that it was a case of drug poisoning. It was at this point that the Wakayama police department established the Investigation Team on Sonobe Poisoning Case under the eastern branch of the police, headed by the chief of criminal investigations.

Subsequently, the vice chairman of the residents' association died at 7:35 in the morning, a fourth grade school child at 7:54, and a freshman high school student at 10:16.

Now that the case was apparently an indiscriminate murder case using a poisonous substance, it aroused tremendous public interest. Thus mass media focused heavily on the case, and the incident was reported on TV and in the Monday morning papers.

Commenting on the change of assessment from food poisoning to drug poisoning, the health center director observed to the press in a briefing at 7:15 in the evening on 26th as follows:

"I learned that the chemical in question was cyanide only when I saw it on TV around 9:30 this morning. I don't see why the police could not tell us sooner that they had detected some cyanide compound." (Source: The Mainichi Shimbun dated July 27, 1998).

Medical professionals were left with resentment that it might have been possible to save those victims if the cause had been determined to be cyanide earlier since they could have provided more appropriate measures such as use of antidotes.

On the other hand, some argued that a cyanide compound was not very likely to be the true cause. Masanori Kan, the chief physician at the critical care center attached to the Osaka City General Hospital said, "as for the poisoning process of cyanide compounds, it takes five minutes when inhaled, and thirty minutes when taken orally. That is, it "works" in seconds, and if a victim could survive for one hour after taking it

in, there should be no threat to life. However, in the current case, the victims died one day after symptoms were observed." (Source: The Yomiuri Shimbun dated October 27, 1998) Thus, some experts questioned the possibility of cyanide compounds to be the cause.

Moreover, victims were having symptoms of diarrhea and vomiting. Although vomiting accompanies cyanide poisoning, diarrhea is not a typical symptom of cyanide poisoning. Therefore, once it was determined that some poisonous substance was involved, such actual conditions of victims should have pointed to a possibility that some substance other than cyanide might have been used.

There was a sudden new development in this case on August 2, 1998.

The Investigation Team under the Wakayama Police Department announced that they had found virulent arsenic in the contents left in the deceased victims' stomachs and leftover curry.

The detection of the arsenic was triggered by a report dated July 31 from a distribution center of Amagasaki Branch of the Tonami Transport Company. This company located in the city of Amagasaki, Hyogo, reported to the Amagasaki Police Headquarters that they had become aware that a shipment of potassium gold cyanide was missing on July 25.

The prefectural police investigation team started testing at the crime laboratory around 1:00 in the morning of the 26th, and detected a cyanide compound around 5:30 in the morning, followed by additional findings of the same in vomit of victims. No other substances such as organic phosphorous compounds were found only cyanide based agricultural chemicals. Based on this fact, they concluded that the poisonous substance mixed in the curry was a "pure cyanide compound" and did not test further for other poisonous substances.

Since a report had been filed concerning the missing potassium gold cyanide, they concluded that potassium gold cyanide had been used in the Wakayama case. Based on that assumption, the police requested the National Research Institute of Police Science under the National Police Agency (also called "Kakei-ken") to examine leftover curry and the pots used for cooking curry. The research institute analyzed on 29 contents of curry that the victim school child had eaten and curry still left in the pots out of 20 specimens turned over to them for analysis.

As a result, an arsenic compound was unexpectedly found on August 2 although gold should have been present if potassium gold cyanide had been used.

On August 6, the prefectural investigation team announced that the arsenic compound detected was identified as arsenic trioxide, which is a white powder without any taste or smell, and is the most toxic among the arsenic compounds. Thus the substance was finally identified more than ten days after the incident occurred.

According to the Wakayama municipal public health care center, they learned the fact that an arsenic compound had been used only by hearing it on TV news. They sent personnel to the eastern branch of the Wakayama police department that carried out the briefing. However, there were no direct communications from the police side to the center through the end of the incident. After detecting the arsenic compound, the prefectural police department communicated the fact to the hospitals where victims were hospitalized and the Wakayama municipal firefighting department. However, they failed to contact the municipal administration or the public health center directly. Furthermore, though some hospitals advised the police early that the actual conditions of victims did not fall in line with those of common food poisoning, the police did not initiate investigation of that possibility until much later.

If coordination had been better from the beginning between the crime laboratory of the Wakayama police department and the National Police Agency's Research Institute of Police Science the arsenic compound might have been detected earlier. This would have helped obtain accurate information on the poisonous substance, treat patients more effectively, and assist investigation of the case.

Furthermore, both police and medical institutions of Japan in those days were unfamiliar with handling of poisoning cases and the harm caused. It was pointed out that the police, medical institutions, and administrative organizations lacked adequate systems of cooperation and communications that would allow them to work together.

Additionally, many medium and small hospitals in the city that accepted victims when this incident occurred did not have a stock of antidotes for cyanide compounds. They obtained antidotes from other hospitals/medical suppliers or transferred victims to larger hospitals having such antidotes, which was more time-consuming than otherwise. Moreover, even large hospitals did not have much experience in handling arsenic poisoning. Generally, they were not adequately prepared for emergency poisoning cases since many past cases involving cyanide or arsenic poisoning were suicides and typical antidotes only have short periods of time before the expiration date for use. These factors led to a condition where "amyl nitrate suitable for initial emergency treatment was totally out of stock" or "the hospitals only had antidotes for a couple of patients".

Given this situation, requests were made for studies on establishment of a supply center and networks that can distribute drugs to hospitals for various cases including rare cases of epidemic diseases and arsenic poisoning. As for poisonous substances, there was a call for a system that would allow the administration to conduct inspections 24 hours a day. Also, people demanded better information that would help them understand better what was going on.

After the incident, it was determined that the national government, prefectural/

municipal governments, police departments, medical institutions and other organizations concerned should develop systems that would enable emergency operations for cases involving poisonous or deleterious substances. This would include setup of liaison conferences attended by personnel from the National Police Agency, the Ministry of Welfare and Fire Defense Agency and the emergency operation systems at local levels

(2) Loose poisonous and deleterious substance management

As described in Chapter 1, various poisoning cases preceded the Wakayama case. After the Wakayama case, however, a series of similar incidents occurred in the same year 1998. This indicates the abundance and availability of such poisonous and deleterious substances in our society.

In modern society, poisonous and deleterious substances are essential for industrial or agricultural production and medical services. Arsenic has a long history of use as a rat poison since the Edo era. Its usage has spread to areas ranging from paper manufacturing, glassworks, dyeing, agriculture, extermination of termites and treatment of syphilis.

The problem here is that such poisonous substances were not always maintained under sufficiently strict control, allowing them to be purchased or even stolen easily.

After this incident occurred, the Wakayama Police Department investigation team surveyed the condition of distribution of cyanide compounds around the city of Wakayama. In one case, about 500 grams of cyanide, or an equivalent of the lethal amounts for 2,500 persons or more, was sold to a customer after an inquiry of the purpose but without authentication. In another case, a similar substance was sold without even checking the purpose simply because the customer used to have chemical-related business transactions with that store.

Between 1985 and early August 1998, there were seventeen reports filed related to theft or loss of cyanide compounds around the country with a majority occurring in the Kanto district. The investigation team uncovered the fact that only a part of these missing substances has ever been recovered.

According to a survey conducted by the Wakayama prefectural board of education, 22 out of 47 prefectural high schools and schools for the disabled stored cyanide or arsenic compounds at school. Such poisonous and deleterious substances without specific purposes were collected before the beginning of September. Each of the schools concerned kept the substances in a safe manner by storing them in a chemical storage that could be locked and there were no reports of loss or theft. The Yomiuri Shimbun reported, however, that most of them had been kept needlessly for nearly twenty years and some schools had bookkeeping and accounting errors, causing public concern.

After the Wakayama case, in order to promote all-out efforts for appropriate storage and management of poisonous and deleterious substances, a series of measures for theft prevention and handling of poisonous and deleterious substances were proposed. These measures included educating business operators concerning proper practices for storing and managing toxic substances by developing theft prevention manuals for businesses, stringent enforcement of theft prevention measures under the Poisonous and Deleterious Substances Control Law, and legal requirement of MSDS issuance upon transfer or offering of specified chemical substances.

Chapter 3 Social Phenomena Accompanying the Wakayama Case

1. Public response

(1) Implication on social events

This incident had a great impact not only within the borders of the city and prefecture of Wakayama but also all over the country. For example, events were cancelled, food stands were withdrawn and whether certain social activities should or should not be cancelled were debated.

In the city of Wakayama, giving considerations to the public climate and to the fact that all information surrounding the incident had not been clarified, a decision was made on July 27 to cancel the summer festival called "Dancing Wakayama! A Castle Site Festival." This festival is the largest one in the prefecture attracting 200,000 or more visitors every year (scheduled on August 1 and 2) based on the conclusion that it would be difficult to guarantee the safety of the visitors. This cancellation also caused cancellation of a major dance event "Kishu Odori", which had been planned to have dancers perform around the Wakayama Castle simultaneously with the festival.

Many of the fourteen elementary schools in the city of Wakayama cancelled the summer festival sponsored by parents' associations and some of those that went ahead as planned slightly modified their planned event, by prohibiting food stands for example.

Miyakita Elementary School near the site of the incident, was preparing for the summer festival when the incident occurred. After considering the pros and cons of going ahead with the school event, they decided to hold their festival as planned in order to develop a cooperative relationship with the community. Food stands were not allowed in the evening and items handled were switched to packaged bread, sweets, juice, etc. as it would not be easy to tamper with the food. They also increased their level of alertness, including having the PTA chairman and other authorized persons wear a distinctive red arm badge for identification and nobody without that arm badge was allowed to enter food tents.

Outside of Wakayama, a food stand for serving curry and rice was withdrawn at the Eighth West Lake Biwa Pailong Rally (on August 2). The number of guards was increased and police patrol was enhanced at the Toyonaka Festival '98 in the city of Toyonaka, Osaka (on August 1 and 2). In Kakogawa, Hyogo Prefecture, the Kakogawa Matsuri festivals were held at various areas in the city (from July 31 to August 2) with personnel stationed to watch at areas for cooking and other preparatory work for food stands. The Tokushima public health care center conducted a walk-through inspection of kitchen facilities for the Awa-odori folk dance event (from August 12 to 15) as they

always had in the past, but with stricter measures for preventing food-poisoning crimes. These measures included prohibiting unauthorized persons from entering kitchen areas.=

The situation is similar for university festivals. For example, Doshisha University had taken out an insurance policy specifically for the festival even before the Wakayama case, covering food-poisoning incidents and accidents such as collapse of food stands. After the incident, they started an around the clock patrol by the festival committee staff. Prior to the start of the festival, the local public health center and fire department inspect for safety as well as for space management in case an ambulance needs to enter the premises.

Around that time, Ritsumeikan University increased the frequency of patrols to improve vigilance. Subsequently, they developed an around the clock patrolling to check that no shop is unattended, and for preventing intrusion of suspicious individuals and fires. The secretary keeps mobile phone numbers and Student IDs of students responsible for food stands. If any shop was found unattended, the owner of the shop was called, thus maintaining strict control.

In Osaka, the prefectural and municipal boards of education were divided over handling of cultural festivals. The municipal board of education requested on September 8 that all high school principals prohibit food/drink from being served at cultural festivals, considering that students might over-react. An example of this type of over-reaction was a September incident at a municipal high school where two girl students and a male teacher were sent to hospital due to nausea after having food/drink served at the school festival even though no foreign matter was found in the food or drink. In contrast, the prefectural board of education refrained from issuing any guidelines since a school cultural festival is one of a few occasions where students have opportunity to think and make decision on their own. They did not think it was good idea for the board of education to make a unilateral decision.

The Fukuyama municipal health care center in Hiroshima prepared and distributed leaflets entitled "Food Sanitation Measures for Summer Festival" to all neighborhood associations and elementary/junior high schools. Meanwhile, in Kobe, the administration made telephone calls to 35 organizations having events scheduled before the end of August to draw their attention to careful food management. Also the Fukui and Kagawa prefectural governments gave advice to local health care centers to alert sponsors of summer festivals.

On the other hand, some municipalities and prefectural governments including Kyoto, Hiroshima, Okayama, and Tottori did not take any extra measures for festivals and other local events, regarding the Wakayama case as an unusual incident of a nature different from that of common food poisoning. They based their decision on the following reasons: (1) they should not overly react to the incident; (2) government memorandums

on food management, etc. might not be effective against crimes; (3) even the prefectural government cannot control criminals of lacing food with poison; (4) interference by the government would have negative effect on fun events and children's volunteer activities.

Some community leaders considered the attitude of self-restraint, even though regarding community events as positive. Their thinking was that although a festival is an opportunity for improving bonds in a local community, we must recognize that there are times when self-restraint is necessary, considering the risks involved and the fact that some people died in that incident. Others called for a calmer response, saying that we should find a creative solution that would not hamper the fun. One suggestion was for participants to bring their own food and drink. They considered that canceling the festival completely would worry the children unless a good reason could be given.

(2) Impact on the food industry

Immediately after the incident, sales of curry-related food products such as roux and meat dropped at large supermarkets around Sonobe, Wakayama, as well as the number of customers. Also, some shops discontinued sampling corners or sale of self-serve food products and switched to sale of pre-packaged amounts. Other shops stepped up in-store patrols. The volume of business at restaurants near the incident was cut in half as residents refrained from going out at night.

Considering the sentiments of victims, House Food Corporation, a major food processor, replaced their TV commercials promoting five curry roux items with other ads from the 29th to the 31st after the incident. A major food manufacturer based in Osaka also changed the content of their commercials after the 29th.

A specialty curry franchise operator based in Aichi Prefecture delivered a memorandum dated July 28 to 549 franchised shops nationwide encouraging stringent management of food material, giving instructions to deliver food products to customers in person and not to leave them unattended in a corridor or the like.

Additionally, 32 out of 52 municipal elementary schools in Wakayama reported to the board of education of their decision to eliminate curry and rice from their school lunch menu for September, considering the potential psychological impact on the children. Other schools had curry and rice for lunch one week behind the schedule, and some childcare centers in the city removed curry and rice from their lunch menu.

(3) Other impact

After the incident, the municipal health care center received an increasing number of inquiries, including an inquiry concerning a single patient having diarrhea being hospitalized, checking if there were more similar cases. There were also a numerous

calls from local residents asking for reassurance when they had diarrhea. Public health care centers in other areas also received reports and advice concerning food that had been left unattended or food products in shops that might be better managed if covered with plastic wrap. This would indicate an over-reaction to a mood of crisis.

On August 5, as the media reported that rat poison contained arsenic, the Wakayama municipal health care center discussed discontinuation of free distribution of rat poison for the time being. The rat poison the center had been using was a product from a manufacturer based in the city of Amagasaki, Hyogo Prefecture, containing a chemical called Warfarin instead of arsenic. It is also toxic to the human body, but the toxicity is not strong. Nevertheless there were concerns that residents might be worried since the media had used rat poison as an example of the use of arsenic.

Shocked by the death of a girl student about her own age, Maki Miyoshi, a third-year junior high school student living in Shinjuku-ku, Tokyo, studied this case as homework research assigned in her science class for summer vacation. She used the Internet, newspaper articles, TV programs, and technical books for extensive analysis and research to clarify problems in actions taken by the organizations involved. This report was published in *Bungei Shunju* (November 1998 issue), and won the 60th *Bungei Shunju* Award for Readers as the youngest winner in the history of the award. Later, in July 1999, it was published by *Bungei Shunju* as a book entitled "Why the Four Died."

In addition to the effects discussed above, a series of visits to agricultural manufacturers and distributors were prompted by the incident. Investigators and journalists gathered material to study the distribution channels of poisonous substances. This activity led to a rise of concern for damage to the image of the industry as a whole. Another effect was that some non-life insurance products such as recreation insurance covering propane gas explosion at a festival as well as injuries in sporting events and insurance covering injuries in community events received greater attention as possible industry safeguards.

2. A series of cases involving poisonous and deleterious substances

Immediately after the Wakayama poisoning case, during the five months from August 1999 to the end of that year, a series of more than thirty cases involving poisonous and deleterious substances occurred.

In August 1998, at the Niigata branch of Xyence, a wood processing company located in Kamomejima-cho in the city of Niigata, a male employee in charge of accounting

(aged 43 at the time) added sodium azide to hot water in a pot used in the office. Ten people including the branch manager who had tea or coffee using the hot water had symptoms of drug poisoning and were transferred to a hospital in the city. This incident is referred to as the "Niigata Sodium Azide Lacing Case." The branch had purchased three cylinders of sodium azide between 1972 and 1982 for use as a reagent chemical to detect hazardous chrome.

In August of the same year, the "Minato Ninth-Grader Cresol Case" occurred in which a boy student suffered severe damage to his throat when he drank cresol and some toilet detergent disguised as weight-loss medicine. The mixture had been sent by a female third-year junior high school student (aged 15 at the time) of Minato Junior High School in Minato-ku, Tokyo, to her homeroom teacher. The girl who sent the liquid, confessed that she felt depressed thinking of going back to school in September and committed the act as a prank, imitating the case that was given broad media coverage.

On August 31, at Obuse-machi in Nagano Prefecture, a male house painter (aged 58) died from drinking oolong tea taken from his refrigerator. This incident is referred to as the "Nagano Cyanide-Laced Oolong Tea Murder Case." He was first alleged to have died of acute heart failure. On September 1, however, the fact was uncovered that a can of oolong tea tainted with cyanide compound was placed in a supermarket in the city of Suzaka where the man used to shop regularly. Meanwhile, his wife had kept the can of oolong he drank from since she felt suspicious about his sudden death. This enabled the police to discover that the oolong contained a cyanide compound.

In September, a series of incidents occurred in which pesticides were mixed in bottled drinks. Also in October, a total of six persons, including university faculty members and students suffered symptoms such as nausea and dizziness after having coffee using hot water in a pot in a certain research laboratory of Mie University's Biomass Science Department. This incident is called the "Mie University Sodium Azide-Lacing Case."

Furthermore, in December, an unemployed woman (aged 24) obtained potassium cyanide from a man she had become acquainted with on an Internet message board and both of them committed suicide. This incident is called "Dr. Kiriko Case".

Every year, MAP (a foundation that certifies the competence in using Chinese characters) publicly collects Chinese characters that reflect the time. Among those, the one selected as the character of the year for 1998, announced on December 12 at Kiyomizu Temple in Kyoto, was the one meaning poison.

Chapter 4 The National Government's Response to the Case

1. Field investigation by the Ministry of Health and Welfare

The field investigation by personnel dispatched from the Ministry of Health and Welfare aimed to understand the facts in the poisoning case and to identify assistance and any other actions that needed to be taken. This investigation was conducted from Monday, July 27 through Tuesday, July 28, immediately after the incident, by visiting the organizations concerned and conducting interviews.

The delegation was composed of five officials including the director of the Health Service Bureau, the head of the Guidance Division of the Health Policy Bureau, and an official in charge of research and planning for the Health Sciences Division under the Minister's Secretariat. They investigated the Wakayama municipal task force for the case, the teaching hospital attached to Wakayama Medical College, the Wakayama branch of the Japanese Red Cross Medical Center, the Wakayama Prefectural government, and the Wakayama Health Care Center.

According to this investigation, the Wakayama task force had doubts about the report they received that the incident was a simple case of food poisoning, judging from the symptoms reported. However, as they had to provide some statement to the press packed in the room for the briefing at 00:00 AM on the 25th, they announced that it was a "food-poisoning case."

For that matter, they had one report from Koyo Hospital of a case of a child having constricted pupils. However, they found no other cases like that when they checked with other medical institutions, and so ignored the possibility that it might be a case of poisoning by an organic phosphorous-based chemical (agricultural). That was how they decided on the instructions to perform first-aid operations for food poisoning, including gastric irrigation and intravenous drip.

Later, around 9:30 on the 26th, NHK reported that a cyanide compound had been detected. This compelled the task force to attempt to detect cyanide on their own. However, according to their retrospection, the information on cyanide compounds they received by fax from the Osaka Poison Information Center via the local health care center was not easy to process in a clinical environment.

After NHK reported a fourth death due to sudden blood pressure drop, they faxed instructions to be alert against symptoms of cyanide poisoning and sudden drop of blood pressure, based on their independent judgment, to twelve medical institutions where victims were hospitalized.

The Wakayama Medical University Hospital received at around 6:30 on the 26th

information from the police that cyanide was detected in the gastric liquid of a victim. The transferred medical chart for the younger of the two children admitted to their pediatric department included a note pointing to the fact of constricted pupils.

From the symptoms of their patients, they assumed that it could not be a common case of bacterial food poisoning. Since agrichemical poisoning was one possibility, they administered gastric irrigation. However, the results of tests on urine of the victims to check for paraquat were negative. In addition, their symptoms did not point to poisoning by organic phosphorus-based chemicals. As a result they requested that the police investigate further.

When asked about inquiring of the Poison Information Center, they answered that they could not make any inquiries since no chemicals had been identified at that time.

The Wakayama Red Cross Medical Center was extremely busy that day with additional casualties from the local Danjiri festival in Naka-gun.

They were influenced by the presupposition that it was a case of food poisoning. Also, information from other medical institutions and symptoms of the first ten victims admitted to the hospital corroborated that assumption. This was one reason why they concentrated on treatment for food poisoning.

Additionally, according to their answer to the interviewer, around the time when one of their patients had a sudden drop of blood pressure that led to heart failure after being sent to the ICU, a TV news program reported that a cyanide compound had been detected. They requested information from the East Wakayama section of the Wakayama Police Department but did not receive a clear response.

The above events revealed areas that needed improvement including development of a communications system between the police and medical institutions and creation of a framework for studying/comparing all information and promptly providing information required for treatment to medical institutions in charge of administering first-aid.

2. Actions taken by the respective government agencies leading to the Report of the Task Force against Poisonous and Deleterious Substances

As described in Chapter 3, in the section on social phenomena, a series of cases involving poisonous and deleterious substances followed the Wakayama case.

The national government considered this situation and set up a task force under the Cabinet against poisonous and deleterious substances. This task force would compile a report to improve the poisonous and deleterious substances control system and systems of inter-departmental communications and collaboration for addressing actual incidents,

looking to ease public apprehension over measures against poisonous and deleterious substances.

After the incident, aiming to compile such a report, the Ministry of Health and Welfare and other ministries and departments concerned spent about two months studying various measures concerning poisonous and deleterious substances before holding the task force conference.

(1) Ministry of Health and Welfare

Before the incident, the Ministry of Health and Welfare had been conducting 60,000 - 70,000 on-the-spot inspections annually by 3,000 supervisors nationwide for surveillance and guidance concerning poisonous and deleterious substances. Also, the Ministry had requested prefectural governors to advise business operators concerned by sending a notice to governors entitled "Notice on Enforcement of Appropriate Storage and Management of Poisonous and Deleterious Substances" (issued on April 7, 1995).

Also, the issue of HIV infection via blood derivatives had forced the Ministry to review the systems for protecting the life and health of the public. As part of such efforts, in January 1997, or the year preceding the Wakayama case, they set out the "Ministry of Health and Welfare Guidelines for Health-related Risk Management" and launched the "Ministry of Health and Welfare Coordination Conference for Health Crisis Management" comprising officials from the departments concerned, aiming to exchange information on preventive measures against health hazards such as infection and food poisoning.

The term "health crisis management" refers to taking measures for preventing occurrence/spread of health hazard and measures for treatment in case life or health of the people is threatened. The "Guidelines for Health Crisis Management" sets out basic systems for gathering information promptly and development and execution of appropriate measures. In March 1997, based on those guidelines, the "Execution Procedure for Health Crisis Management" was developed giving detailed procedures for a health crisis management system in each of the following four areas: drugs, food poisoning, infection, and drinking water. In October of that same year, they developed the "Execution Procedure for Health Crisis Management" for the National Institute of Infectious Disease, and in January 1998 developed the "Execution Procedure for Health Crisis Management" for national hospitals and other medical institutions, aiming to fully develop the risk management systems

Immediately after the incident, the Ministry issued "Notice on Promotion of Appropriate Storage and Management of Poisonous and Deleterious Substances" (dated July 28, 1998). This was addressed to prefectural governors, requesting them to stringently check that manufacturers of poisonous and deleterious substances were complying with the Poisonous and Deleterious Substances Control Law in their storage

and management practices and to check that poisonous and deleterious substances were sold, transferred, or handled otherwise according to legal requirements.

(2) National Police Agency

The National Police Agency gave instructions to prefectural police departments to advise distributors of poisonous substances concerning storage and management of such substances. They also requested supermarkets and food-related organizations to take measures for crime prevention and early detection of suspicious matters and persons.

The Police Agency also rigorously promoted measures to prevent recurrence of poisoning cases, including giving instructions to prefectural police departments to provide advice on crime prevention to local communities and to improve anticrime patrols in areas where vending machines were installed.

(3) Ministry of Education

Before the incident, the Ministry of Education had been advising universities and high schools to manage poisonous and deleterious substances according to the Poisonous and Deleterious Substances Control Law. After the incident, the Ministry gave instructions in July and August 1998 to universities, high schools and teaching hospitals attached to national hospitals to manage poisonous and deleterious substances more strictly.

On July 31, 1998, the Ministry issued the "Notice on Promotion of Appropriate Storage and Management of Poisonous and Deleterious Substances" to national universities and the Inter-University Research Institute in an effort to promote secure storage and management of poisonous and deleterious substances. This notice included suggestions for use of dedicated storage areas and locking systems, and to help faculty members and students fully understand the need of checking and improving the management system.

(4) Ministry of Agriculture, Forestry and Fisheries

Under the Agricultural Chemicals Regulation Law, it had been required to register only those agricultural chemicals that were verified as hazardous with the Minister of Agriculture, Forestry and Fisheries. Also, every June had been designated as the "Agrichemical Hazard Prevention Month" as part of the campaign for agrichemical-related accident prevention and for establishing proper storage and management practices in cooperation with the Ministry of Health and Welfare.

After the incident, the Ministry issued instructions (dated August 14) to prefectural administrations, calling for stricter compliance with storage and management requirements for agrichemicals. It also provided advice (on September 17) to the organizations concerned in order to establish proper storage and management of poisonous and deleterious substances.

Additionally, based on the "Special Law regarding the prevention of poisonous substance from contaminating food in circulation", the Ministry took measures including:

- [1] Issuing instructions (dated September 4) to the food manufacturers, distributors, and prefectural governments to take all measures possible for establishing food safety and strict management of food,
- [2] Enforcing emergency on-site inspections by personnel of Regional Agricultural Administration Offices and Local Food Agency Offices (from September 11), targeting food retailers,
- [3] Alerting consumers via a government bulletin (dated September 21),

(5) Ministry of International Trade and Industry

In the wake of the Tokyo Subway Sarin Incident and others, the Japan Chemical Industry Association had been promoting a voluntary management movement inside the industrial world. Referring to the results of the Survey on Distribution Management for Chemical Products conducted by the Association in 1995, the MITI issued a notice "Concerning Promotion of Voluntary Distribution Management for Preventing Abuse of Chemical Substances" (dated September 1996). In accordance with those instructions, the Association compiled guidelines into a document "Guidelines for Distribution and Management of Chemical Substances subject to Control for Abuse Prevention" (publicized in March 1997), followed by development of a distribution/management manual to help distribute the guidelines.

As mixing of cyanide was suspected initially in the Wakayama case, the plating industry handling cyanide compounds was affected. On July 27, 1998, the chairman of the Japan Electroplating Associations issued a letter requesting the director of each prefectural electroplating association, advising the member companies to check how they were handling poisonous and deleterious substances and to audit the register as well.

(6) Ministry of Posts and Telecommunications

Under the Mail Law, poisonous and deleterious substances are prohibited from being sent through the mail. Mail users other than qualified entities such as government/public offices or physicians are not allowed to send such substances through the mail. Under this Law, when a post office accepts mail from a user, it may check the item for acceptability. If any prohibited substance is detected, that post office may dispose of the mail as required.

(7) Ministry of Labour

Before the incident, the Industrial Safety and Health Law (enforced in 1972) had prohibited manufacturing, import, and use of substances that might produce severe

health hazards to workers among those listed in Cabinet orders. Otherwise, manufacturing had been required to obtain permission from the Ministry of Labour. For transfer or offering of hazardous chemical substances for sale, the Ministry had required labeling of the components, effects on the human body, and cautions for storage or handling on the container or package of the subject hazardous chemical substances. Additionally, the Ministry had given instructions to issue MSDS (Material Safety Data Sheet) documents carrying information on characteristics and handling based on the guidelines concerning labeling of hazardous materials.

(8) Fire Defense Agency

On September 17, 1998, the Fire Defense Agency issued "Notice on Actions concerning Poisoning Cases" addressed to Lead Office managers of prefectural fire departments, ensuring communications of instructions concerning storage and management of hazardous substances to owners of facilities using these substances. This would improve understanding of the situation at the first-aid site (in cases where patients with medical conditions caused by poisoning of food or drink had been transferred to the site), and submission of information to medical institutions concerned.

3. Report of the Task Force against Poisonous and Deleterious Substances

In conjunction with the activities described above, the Prime Minister ordered the Task Force on Poisonous and Deleterious Substances to be set up under the Cabinet on September 18, 1998. Considering the problems revealed from studies of actions taken in handling the Wakayama case and the subsequent series of poisoning cases, the Task Force discussed the following: (1) improvement of the poisonous and deleterious substances control systems, (2) promotion of safety measures for retail food products, and (3) improvement of communications and cooperation systems among departments involved for handling incidents or accidents.

Later, on November 27, the Task Force issued a report on specific measures to be taken, including those for the future.

(1) Improvement of the poisonous and deleterious substances control systems

The report proposed the following measures for improving poisonous and deleterious substances control systems: development of a theft prevention manual that would encourage business operators to take preventive measures against theft of poisonous and deleterious substances, designation of sodium azide as a poisonous and deleterious substance, which had not been designated under the Poisonous and Deleterious Substances Control Law, rapid deployment of the poisonous and deleterious-handling business registration system already operated by the national government and 19

prefectures to all the remaining prefectures.

As for sale of poisonous and deleterious substances, the report pointed out the need for rigorous enforcement of measures against illegal acquisition of such items for criminal purposes, and for storing, managing and disposing of such substances from distributors to users. In addition, it covered issues such as expansion of the range of items designated as poisonous and deleterious substances and the need of further reduction of poisonous and deleterious substances through development of agrichemicals with lower toxicity.

(2) Promotion of safety measures for retail food products

The report proposed plans to designate November as "Food Safety Promotion Month," promotion of self-management among food retailers and vending machine operators, public service announcements and warnings aimed at consumers, and enforcing guidelines for individual business operators via respective industry associations in the manufacturing, distribution, retail and catering industries.

(3) Improvement of actions for handling incidents

The report included recommendations for setting up liaison meetings among the Police Agency, the Ministry of Health and Welfare, and the Fire Agency. It also recommended establishment of communications systems between the national and prefectural governments for holidays, development of local-level emergency communications systems, improvements in the operation of the Advanced Medical Emergency and Critical Care Centers certified at eight medical institutions in the country, assistance for 142 emergency care centers nationwide in securing antidotes by providing a list of drugs for treating poisoning symptoms and treatment manuals, improvements in the investigative capacity of the crime laboratory, establishment of regional health care institutes, emergency care centers and other measures for improving local readiness for incidence occurrences.

Moreover, the report covered issues of improvements in the operation of facilities playing key roles in anti-poisoning measures such as building up databases for helping identify poisoning substances, improvements in the operation of the Japan Poison Information Center through registration of experts in the poisoning-related areas, and improvements in the operation of the National Research Institute of Police Science by installation of high-performance test equipment.

As described above, by including specific measures concerning poisonous and deleterious substances management systems and development of communications systems among organizations involved in handling incidents, the Report of the Task Force against Poisonous and Deleterious Substances made a significant step toward

improvement of problems revealed through the Wakayama Curry-Poisoning Case and subsequent poisoning cases.

4. Specific measures taken by Ministry of Health and Welfare

The Ministry of Health and Welfare adopted various specific measures based on the Report of the Task Force against Poisonous and Deleterious Substances.

(1) Development of the Poisonous and Deleterious Substances-Related Theft Prevention Manual

Using the third supplemental budget for FY 1998, the Ministry of Health and Welfare developed a "Manual" for manufacturers/distributors and a "Guide" for occupational users including descriptions of the regulations under the Poisonous and Deleterious Substances Control Law as well as instructions for managing such substances. Those documents were distributed in April 1999 for educational purposes concerning management of poisonous and deleterious substances.

Copies of the Poisonous and Deleterious Substances-Related Theft Prevention Manual targeting manufacturing companies, import companies, and distributors were sent to 100,000 registered operators nationwide.

Targeted at occupational users of poisonous and deleterious substances and edited in a style for easier understanding, 260,000 copies of the Poisonous and Deleterious Substances Theft Prevention Guide were printed; 100,000 copies were distributed through departments concerned, and 160,000 copies were distributed to medical institutions, hospitals and clinics around the country by the Ministry of Health and Welfare.

The Manual includes introduction to storage and management of poisonous and deleterious substances such as instructions for storing/managing and transporting such substances that help prevent theft, leakage and spilling as well as standards applicable to facilities for manufacturing poisonous and deleterious substances. It also covers cautions for selling them such as requirements of registration as a distributor and delivery of specific information that they are poisonous and deleterious substances.

The Ministry also produced material for prefecture-level seminars targeted at personnel handling poisonous and deleterious substances. This educational video is based on a scenario in which a newly-appointed administrator of poisonous and deleterious substances studies the contents of the Poisonous and Deleterious Substances Control Law entitled, "Your Awareness Protects Our Society" and distributes it to all prefectures and cities designated by cabinet order.

(2) Requirement for mandatory issuance of MSDS (Material Safety Data Sheet)

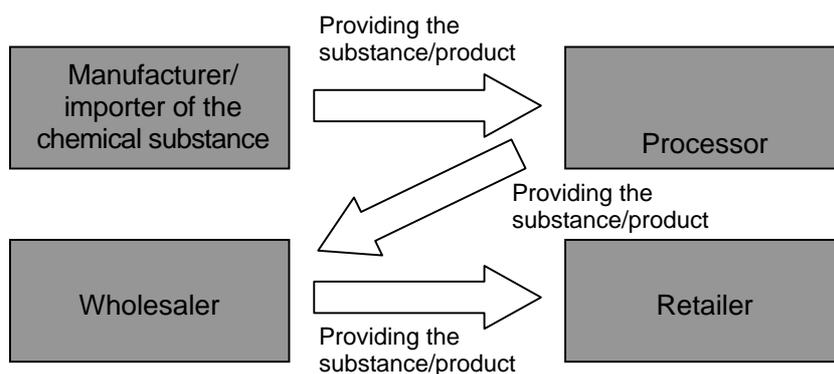
a) Law for Amending Part of the Industrial Safety and Health Law and the Working Environment Measurement Law.

Before the incident, the Ministry of Labour had recommended that MSDS documents be issued. In addition, the Law for Amending the Industrial Safety and Health Law and the Working Environment Measurement Law was proclaimed on May 21, 1999, requiring employers to protect the health of employees engaged in night work. Under this law, employers were required to take measures necessary for maintaining employee health based on voluntary health examinations as well as requiring issuance of MSDS documents by transporters/providers of chemical substances that may be detrimental to workers' health.

An MSDS (Material Safety Data Sheet) is a sheet of data for providing information on a chemical substance/product when a business operator delivers such substance/product to another business operator. MSDS information includes the name of the substance (or the product name for a mixture of chemicals), the company name and address of the provider, the composition and components of the substance, and a summary of hazards involved.

By receiving MSDS information from another business, an operator can ensure that the correct information is available for the chemical substance that will be used, and utilize that information for proper management of the chemical substance.

The following illustrates how MSDS documents should be provided through the manufacturing, processing, and distributing processes.



b) Law concerning Reporting of Emission of Specific Chemical Substances and Improvements in Their Management

Furthermore, in response to the increasing public interest in prevention of environmental pollution by chemical substances, Law concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (the PRTR Law) was proclaimed on July 13, 1999,

aiming to improve management activities by business operators concerning chemical substances whose hazards are identified.

The PRTR Law lists far more chemical substances as specified substances than the Industrial Safety and Health Law (provisions under Article 57, paragraph 2). Article 14 of the PRTR Law requires operators that handle Classes I and II Designated Chemical Substances defined by Cabinet Orders and certain products that contain such substances (listed as "specified chemical substances, etc.") to provide MSDS information.

The PRTR (Pollutant Release and Transfer Register) system requires emission and transfer volumes of substances used by enterprises that have environmental impact to be registered with a national registry and also requires the government to compile that information to make it available to the public. This system went into effect in April 2001.

The specified substances subject to the control are classified into the following two groups:

(Class I Designated Chemical Substances)

This class includes 354 substances such as benzene and trichloroethylene. For this class, highly hazardous substances that are widely used and widely found in the environment are selected. When selling or purchasing products containing any of these substances, MSDSs (Material Safety Data Sheets) are required to be attached to the products. MSDS information serves as the base data for calculating emission volumes.

(Class II Designated Chemical Substances)

Chemical substances in this class subject to control. There are 81 substances in this category. MSDS issuance is also required for this class.

This system is roughly divided into three parts.

The first is the provision for "estimation and report of emission volumes by businesses." Businesses must estimate the quantities of chemical substances emitted to the environment or quantities transferred and report to the government (the Minister responsible for the business) via prefectural governors. (Information related to business secrets may be reported directly to the Minister responsible for the business.)

The second is the provision for "acceptance, collection, and notification of reported information by the government." The Minister responsible for the business must notify the reported information to the Minister of the Environment and the Minister of Economy, Trade and Industry. Then, these two ministries must jointly convert the information into electronic files, collect and publicize the information by industry and by region. At the same time, these ministries must notify to the Ministers responsible and prefectural governors. The Minister responsible and prefectural governors may collect/publicize information according to the needs of the businesses concerned and local communities based on the information by business establishment. Furthermore, the

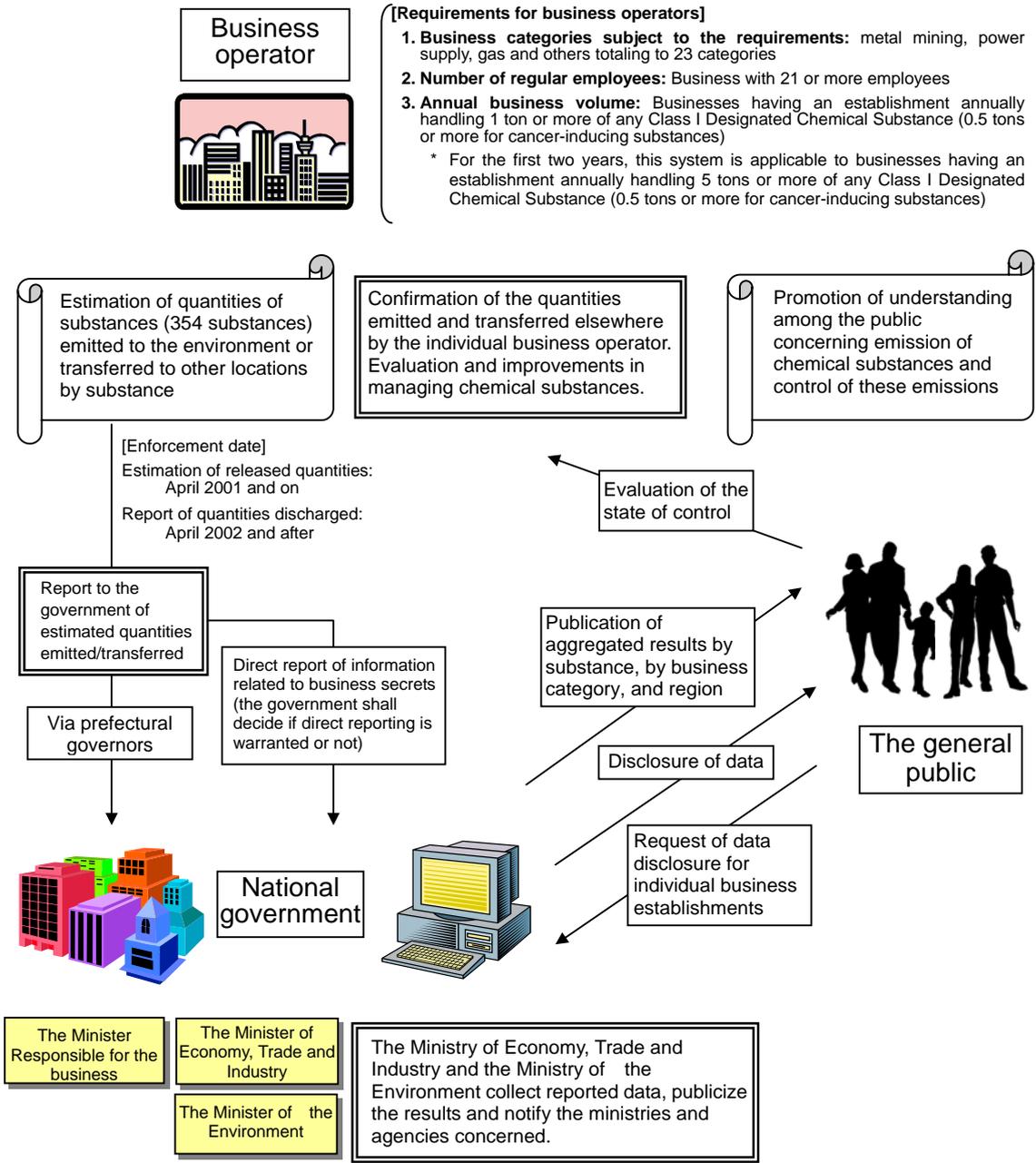
Ministry of the Environment and the Ministry of Economy, Trade and Industry shall jointly collect and publicize estimated quantities released from emission sources (home, agricultural lands, automobiles, etc.) outside the scope subject to reporting under this law.

The third is "the right of request for disclosure and use of data." The government (the Ministers of Economy, Trade and Industry, the Minister of the Environment, and the Minister responsible for the business) shall disclose the reported data for individual establishments upon request. Also, the government is to conduct environmental monitoring surveys and surveys on impact on human health based on the aggregated data.

This system is expected to provide the following benefits:

- (1) Promotes improvement of voluntary chemical substance management by businesses
- (2) Provides material for making decisions that may help the government determine the priority of measures related to chemical substances
- (3) Increases public awareness of emissions and control of chemical substances through providing information to the public

How the PRTR System Works



(3) Rigorous enforcement of theft prevention measures under Article 11 of the Poisonous and Deleterious Substances Control Law

The Poisonous and Deleterious Substances Control Law provides in Article 11 that businesses handling poisonous and deleterious substances must take measures against theft and loss. It also requires measures for preventing substances containing

poisonous and deleterious substances that are designated by Cabinet Orders from discharge outside their premises, leakage, effusion or permeation into ground beneath their premises. Based on this provision, minimal measures were documented in the "Poisonous and Deleterious Substances-Related Theft Prevention Manual (Guide)." These measures included considerations for the location, material and locking system of the storage as well as how stock should be checked and other standard procedures, aiming to ensure strict enforcement.

(4) Review of the poisonous and deleterious substances supervision procedures

Despite efforts made by the respective ministries and agencies after the Wakayama case to improve management security for poisonous and deleterious substances, a series of incidents involving theft, loss, misplacing and leakage of such substances occurred. To cope with the situation, the poisonous and deleterious substances surveillance procedures developed in 1975 were reviewed. In August 1999, those procedures were renewed as the "Guidelines for Supervision of Poisonous and Deleterious Substances." In addition; standards were presented for determining penalties in case a violation is discovered.

On April 4, 2003, the Ministry of Health, Labour and Welfare issued a notice "For rigorous enforcement of preventive measures against theft, loss, discharge, and leakage of poisonous or deleterious substances," requesting regulation through on-site inspections of businesses and organizations concerned to ensure rigorous enforcement of accident prevention measures. With regard to on-site inspections, this notice advised that business operators that were not subject to registration might also be inspected depending on the category. If supervision was considered necessary for a business, based on the "Notice on the establishment of the Guidelines for Poisonous and Deleterious Substances Surveillance" (a notice dated August 27, 1999 issued by the director of the Pharmaceutical and Medical Safety Bureau), this notice recommended structured inspections as well as holding seminars with assistance from the industrial associations involved.

(5) Designation of sodium azide as a poisonous substance

After the Wakayama case, a series of similar incidents occurred around the country. There were a number of cases using sodium azide such as the case in August at a wood processing business in Niigata and the cases in October involving a produce research laboratory of Mie University's Biomass Science Department and the Aichi Okazaki National Research Institute. Although sodium azide had been previously excluded from the list of designated poisonous substances under the Poisonous and Deleterious Substances Control Law based on the conclusion that it was distributed in small quantities, it was now determined to add it to the list of designated substances.

Sodium azide is used as raw material for medicines (antibiotic drugs), antiseptic

agents and agrichemicals. Previously, it was also used for generating gas for automotive air bags. If ingested in a solution or inhaled as vapor, it irritates the eyes, skin, and air passages, and may cause headaches, drop of blood pressure, bronchitis, impaired consciousness, and neurologic symptoms. However, because its use was limited, it had been excluded from the designated poisonous or deleterious substances under the Poisonous and Deleterious Substances Control Law.

However, considering the facts that sodium azide was used in the poisoning cases in Niigata and other areas, the Ministry of Health and Welfare designated sodium azide as a poisonous substance subject to stringent control.

Even before the designation, the Ministry issued "Notice on handling of sodium azide and drug products containing it" (dated October 28, 1998) for strict guidance. Then, the Ministry designated sodium azide and drug products containing it as poisonous and deleterious substances by enforcing on January 1st, 1999 the Cabinet Order for amending the Order for designation of poisonous and deleterious substances.

(6) Designation of the "Food Safety Promotion Month"

Following the instructions by the Task Force against Poisonous and Deleterious Substances, the Ministry of Health and Welfare and the Ministry of Agriculture, Forestry and Fisheries jointly designated the period from November 1 to November 30, 1998 as the "Food Safety Promotion Month," aiming to guarantee safety of retail food products.

The Report of the Task Force against Poisonous and Deleterious Substances includes the following statement, "All-out efforts are needed to ensure food safety by aggressively promoting key measures. One of these measures was special supervision by food sanitation supervisors and supervision of food sanitation at the prefectural level. Another measure was emergency inspections by personnel of the Local Food Agency responsible for inspection and checking for improvement of manufacturing and distribution of food products. Finally there were stipulations for public disclosure and thorough supervision of industries involved along with other safety measures." In response to this statement, the Ministry of Health and Welfare called for special supervision of food retailers in coordination with the Local Food Agency during this Food Safety Promotion Month, and also requested help to improve awareness of those businesses.

As for the manner of special supervision, it was determined to provide guidance to operators of establishments with a high risk of food poisoning in situations other than direct sale, according to the "Special Supervision Item List" that includes the following checkpoints: "Do they exclude third parties when receiving merchandise?"; "Do they check that no irregularities are found in packages when accepting merchandise?" and "Do they keep their merchandise locked?"

In addition, the Ministry decided to help shop operators not subject to this program

of supervision improve voluntary management by mailing and publicizing the listed checkpoints as items for self-check.

5. Requirement of illustrations for poisonous and deleterious substances

The Ministry of Health, Labour and Welfare held study meetings on chemical substance management for protecting employees' health in the workplace, starting in May 2003. At these meetings chemical substance management corresponding to the international trends of chemical substance control and changes in the manner of production and application of chemical substances were discussed.

The report compiled on May 27, 2004 on those study meetings pointed out the following actions were needed:

- * Further promotion of voluntary chemical substance management including risk assessment by the business operator based on the state of exposure at each establishment (exposure of workers to chemical substances)
- * Improved human resource development for chemical substance management at each establishment to encourage voluntary management of chemical substances (More flexible measures to prevent exposure based on special rules, and integration of these measures into performance requirements. These measures provide a wider range of options for each business operator according to the actual state of the establishment and within the given conditions)

The report also indicates the following needs in the area of hazardous chemical substances:

- * Promotion of proper management by business operators by making warning labels for hazardous substance more conspicuous, using illustrations on containers, for example, according to the hazard level of the substances handled
- * Preparation of labeling and the MSDS form under the Industrial Safety and Health Law so that they comply with the UN recommendations for GHS.

The UN recommendations for GHS (Globally Harmonized System of Classification and Labeling of Chemicals) calls for adoption of the globally unified classification and labeling system for chemical items, which was publicized in 2003 in a form of a UN recommendation. Complete implementation of the system is called for by 2008, and implementation within the APEC community by the end of 2006. This system aims to promote health and international transactions of chemical items and requires a unified way of creating MSDS documents for substances falling under certain hazard criteria. These criteria incorporate about 30 items such as inflammability and cancer-inducing

properties. It also includes requirement for attaching labels on containers used for supply to the work places.

The current Industrial Safety and Health Law covers both risk and hazards of chemical substances. However, the labeling and MSDS issuance systems under the Industrial Safety and Health Law only cover hazards of chemical substances. Furthermore, the contents of the labeling and MSDS requirements lack the requirement for illustrations such as an image of a skull specified in the UN recommendation for GHS. Another deviation from the UN recommendation is that the current labeling system has a limitation for labeling to about 100 designated substances, which must be provided by the person who puts the substance into a container, pack it, and ship it.

Therefore, the report states that the labeling and MSDS issuance systems under the Industrial Safety and Health Law should be modified in accordance with the UN recommendation. Meanwhile, the Ministry of Health, Labour and Welfare aims to amend the Industrial Safety and Health Law and other related laws in order to enforce labeling by the end of 2006.

6. Guidelines for Local Health Hazard Control

After the Wakayama case, a number of other poisoning cases occurred, calling in question the role of the health control departments of local governments in addressing health crisis. Thus, the Local Health Issue Study Group established in November 1998 under the Council on Public Health compiled a report in August 1999, providing recommendations on how local health crisis should be controlled.

Based on the recommendations, the Ministry of Health and Welfare revised the "Basic Guidelines concerning Promotion of Local Health Measures" (Ministry of Health and Welfare Announcement No. 374, dated December 1, 1994) in March 2000, adding sections on the "Establishment of Health Crisis Control System" and "Enhancement of Health Care Center as a Center of Health Crisis Control in the Local Communities".

Under these "Basic Guidelines," the Ministry of Health, Labour and Welfare issued the "Introduction to Health Crisis Control in Communities - Local Health Crisis Control Guidelines" in March 2001. This reference is useful for local governments to develop a "Handbook for Local Health Crisis Control" that would summarize the roles that a public health care center is expected to perform to control health crisis.

These Guidelines define the roles that a health care center is expected to fill to control health crisis. According to the statement, "Rather than providing direct health care or medical services, the center is expected to be a key element that can address health crisis while coordinating activities of local medical institutions and municipal health care centers. This will enable development of a strategy to provide necessary services to

local residents. Specifically, according to the Guidelines, public health care centers are expected to perform their roles actively in securing medical services for victims, investigation of causes, prevention of spread of health hazards, arrangement for diagnosis and psychological care. These measures include steps to prevent PTSD in affected victims as well as other activities for helping those who are more vulnerable to disasters such as the handicapped, children and the aged.

Based on these Guidelines, respective local governments are developing the health crisis control system, including development of handbooks for controlling health crisis.

Chapter 5 Response of the Prefectural and Municipal Governments to the incident

1. Wakayama Prefectural and Municipal Governments

(1) Health Crisis Control Manual

The incident revealed several problems with the Wakayama Prefectural Government. For example, overall information including the number and severity of casualties could not be obtained since there was no exchange of information among the government agencies, the fire station, the police and the medical institution. The drug analysis was delayed and patients failed to receive appropriate treatment because it was very difficult to diagnose arsenic poisoning merely on the basis of the symptoms at the acute stage. As a result, the delayed start of treatment caused extensive deterioration of patient condition. The government failed to take action against disaster though there were many patients.

Although prefectural governments are directly responsible for the emergency medical care system, the Wakayama Prefectural Government was not involved at the first stage because it was too concerned with the relationship between the prefecture and the city designated by ordinance. As a result, the Wakayama Municipal Government, (Wakayama City is a city designated by ordinance) played a leading role in the post-incident action. The prefectural government later received a notice from the Ministry of Health and Welfare, saying that prefectural governments are also responsible for the emergency medical care system.

In order to correct these circumstances, the prefectural government formulated a new risk management strategy that included utilization of helicopters for urgent transport of poisoning victims and introduction of advanced chemical substance analyzers. The strategy was announced under the name of “Health Crisis Control Manual” on October 19 and put into effect.

The Manual explains the method of drug examination and medical institutions that store antidotes. Also it prescribes that the prefectural medical university shall act as a key station to notify the hospitals to which patients are carried of the method of treatment. The manual also stipulates that the communication system between public health centers and the police should be improved, and that helicopters and patrol cars of the prefectural police should be used for carrying patients in the event of emergency and for carrying specimens for identifying the cause.

Furthermore, in order to increase the drug testing capacity, the Prefectural Research Center for Health and Pollution introduced an analyzer that is capable of detecting some 5,000 different organic chemical substances and five antidotes were introduced to eight local major hospitals in the prefecture.

The prefectural government also adopted the stance of strengthening the collaboration among different organizations to make it possible for medical institutions to interactively exchange information with other institutions and the fire department and for the police and public health centers to communicate with each other even at night.

(2) Toxic Testing Manual

Wakayama City Institute of Public Health produced the “Toxic Testing Manual” that covers the specific testing procedures and cautions in the inspection to be conducted by the institute itself to quickly identify the toxic chemicals in its investigation into the food poisoning incident.

(3) Stockpile of antidotes

In case of emergency, the Wakayama Prefectural Hospital Association created, at the end of August 1998, stockpiles of antidotes for five toxic substances at several emergency hospitals in the prefecture. The listed causes of acute poisoning are (1) cyanic acid, (2) arsenic, (3) organic phosphorus (agricultural chemical), (4) paraquat (agricultural chemical) and (5) coumarin (raticide). Fifteen antidotes including sodium thiosulfate and amyl nitrite were stockpiled in an emergency hospital in the city of Wakayama and at another emergency hospital in the southern part of the prefecture. The prefecture established a system under which the notified emergency hospital immediately delivers an antidote to the hospital where a victim of poisoning is being treated.

(4) Other Measures

The Wakayama Prefectural Government and the Wakayama Municipal Board of Education distributed an educational document to elementary schools and nursery schools that offer school lunch. The document advised them to take sanitary precautions for the kitchen, to make sure there are no unknown persons around while the lunch is conveyed to classrooms. The document also advised them to decide whether or not to serve curry as scheduled in consideration of the psychological impact on school children and to provide alternatives for children unwilling to eat.

The Wakayama Prefectural Board of Education gave the same instructions to municipal education boards. Given that drugstores deal with pesticides, toilet cleaners and chemicals for private gardens, the Wakayama Prefectural Pharmaceutical Association mailed instructions to 402 member drugstores. This document requested them to lock their shelves as well as to ask purchasers questions about the purpose and the amount of use and encouraged them to check the identification of anyone making a purchase.

2. Niigata Prefectural and Municipal Governments

(1) Niigata sodium azide mixing incident

An incident occurred in Niigata Prefecture that triggered a series of poisoning cases in the next month of the incident in Wakayama.

Several minutes past 8:00 AM on August 10, 1998, at the Niigata branch office of Xyence, a company dealing in corrosion proof treatment for wood, which was located in Kamomejima-cho in the city of Niigata, 10 employees including the branch manager became nauseous and felt numbness in their hands and feet after drinking tea or coffee. Five ambulances took seven of them to the Emergency Medical Center of the Niigata City General Hospital, two others to Kuwana Hospital, and the other to Rinko Hospital.

At 11:00 AM there was a press conference. Taku Honda, the head of the Emergency Medical Center with the seven of them hospitalized, acknowledged that the victims had been poisoned: "From a common sense standpoint, they are thought to have ingested some toxic or deleterious substance. We are administering treatment effective against any toxic substance." (He did not reveal the specific name of the substance when he commented that the police were investigating.)

At 11:30 AM, the Niigata Higashi Police Station and the First Investigation Division of the Niigata Prefectural Police established the "Headquarters for Investigation into the Toxic Substance Mixing Incident in Kamomejima-cho, Niigata City" as they suspected, judging from the situation at the scene, that the drinks were laced with some toxic substance.

This incident occurred just after the incident in Wakayama. The investigation headquarters concentrated their investigation on cyanic acid and arsenic and also compared the samples of 13 chemicals in the factory of the branch.

The Science Research Institute of the Prefectural Police analyzed the remaining tea and the pot with hot water. The preliminary test revealed that some of the specimens of the content of the stomachs of the employees produced a reaction that implies possible contamination of cyanic acid. But the subsequent research detected no cyanic acid in the stomach content or in the remaining tea.

Subsequently, the headquarters sent some of the specimens to the National Research Institute of Police Science, under the control of the National Police Agency, and asked for detailed analysis. The National Research Institute of Police Science (NRIPS) found out that approximately 7 grams of sodium azide per liter had been added.

In order to see how well toxic and deleterious substances were being managed, the Niigata Prefectural Government began inspections of dealers in September. The inspection also covered sodium azide, which is designated as a hazardous substance in

the Fire Service Law.

There were 2,400 establishments, including minor drugstores, registered to handle toxic and deleterious substances in Niigata Prefecture. Before the incident occurred, the Prefectural Government inspected the establishments every three years.

After the incident, it inspected approximately 400 establishments that handle a particularly large amount of toxic and deleterious substances, including manufacturers of such substances. Platers, metal thermal processors, industrial chemical and reagent dealers, were inspected earlier than scheduled to remove the anxiety among people in the prefecture. In this inspection, the prefectural government checked the management status and the types and the amount of toxic and deleterious substances.

The headquarters of the prefectural police held a meeting of the “Liaison Council on Countermeasures against Toxic Substances” on December 2, attended by representatives from the prefectural police, the prefectural government, the Niigata Municipal Government and Niigata University of Pharmacy and Applied Life Sciences. The Council discussed the system of immediate notification made by agencies responsible just after an incident and the measures for prevention of recurrence. Many from the governments remarked that they had no information when the incident took place and that they did not know even whom to contact. The prefectural police also requested that notification be given at an early stage if there is any abnormality in the food poisoning test. As in the Wakayama case, those concerned realized the importance of the inter-organizational communication system and of information exchange at normal times.

(2) Action taken in the wake of the incident

As part of the activities of the Liaison Council on Countermeasures against Toxic Substances, the Niigata Prefectural Police invited on March 23, 1999 Taizo Nagano, President of the NRIPS, and held a symposium entitled “Response to mass toxic poisoning.” Aimed at establishing a system for immediate lifesaving measures and investigation in the wake of toxic poisoning. There were 23 participants in the symposium, including researchers for the NRIPS, executives of the prefectural police and those concerned with medical practice from Niigata University of Pharmacy and Applied Life Sciences, Niigata University and the Emergency Medical Center of Niigata City General Hospital.

The Department Of Health And Social Welfare of the Niigata Prefectural Government formulated the “Niigata Prefectural Guidelines on Response to Health Hazards” in April 1999 to ensure that the prefectural police, the fire departments, the medical association and medical institutions coordinate their response to incidents and accidents relating to

toxic poisoning, food poisoning and infectious diseases.

For development of “Prefectural Guidelines on Response to Health Hazards,” the Ministry of Health and Welfare offered advice in a meeting joined by those concerned from across the country in September 1998. In view of confusion of information and awkward communications among organizations in the past, the Niigata Prefectural Government had proceeded with production of a manual that included improvement of the communication system.

The policy provided for headquarters to be set up by the Director of the Health And Social Welfare Department in accordance with the extent of the damage and the emergency level and for collaboration among public health centers, Niigata Prefectural Institute of Public Health and Environmental Sciences, both of which are under the control of the said Department, and the Science Research Institute of the Prefectural Police in the search for the causative agent.

It was also decided to launch the liaison conference concurrently to exchange information among relevant organizations. This conference would be chaired by the Director of the Health And Social Welfare Department of the Prefecture and composed of the heads of 16 different organizations including the chief of the Niigata Quarantine Station under the Ministry of Health and Welfare and the board member of Niigata Prefecture Medical Association responsible for emergency medical care. It would have a sound system of communications on holidays and at night and would hold meetings before and after the food poisoning season, at the turn of the fiscal year and on other occasions.

When the incident occurred, Niigata City General Hospital accepted seven of the victims. Initially, the hospital could not identify the substance that caused the poisoning. All they could do was provide medical treatment applicable to different kinds of toxic poisoning. In response to this problem, the Poisoning Analysis Office was established in April. It is equipped with devices for analyzing toxicological properties from the data of blood and other substances.

A staff convening manual was prepared, to provide effective medical treatment, and mass emergency training in the event poisoning has occurred, to ensure prompt action in the event of emergency.

(3) Action of Niigata City

In a nationwide meeting on September 7, 1998 attended by representatives of prefectural governments and cities designated by ordinance, the Ministry of Health and Welfare required the establishment of a system for prompt action in the event of a disaster, through collaboration between public health centers, police and fire stations. In response to this requirement, the public health center of Niigata City on September 8

began preparing a crisis management manual that describes measures to be taken when a disaster induced by a toxic substance occurs, and in tandem with the prefectural government, also included in the manual guidelines for communications and cooperation among the public health centers, police stations, fire stations, medical organizations and the prefectural government. In addition, the system for initial actions that the public health center should take in the case of disaster was established.

The Niigata City Liaison Conference of Actions for Health Hazards, started in 1999, held its first conference at the city hall, on April 21, 1999 attended by the chairman, Naofumi Tanaka, head of the public health center, and 17 members. This conference deliberated a draft of the Guidelines of Actions for Citizens' Health Hazards, as well as on the manual of specific actions against the damages due to toxic and deleterious substances which the public health center was preparing. Following the conference, the guidelines were approved officially during the month of April.

The draft, stipulates the obligation of setting an action headquarters according the details of the disaster which is almost the same as the prefecture guidelines already provided, but it defines additional policies of a specific manual for the Implementation of Damage Countermeasures against Toxic and Deleterious Substances. This policy specifies in writing the procedures of an inspection system as well as that city hospitals should supply technical support and information to private medical institutions receiving patients.

3. Other Areas

(1) Tokyo Metropolitan Government

In the same way, Tokyo Metropolitan Government has prepared a health manual for each type of health hazard to reduce health crisis from food poisoning to residents.

In 1995, several significant incidents occurred including the sarin gas attack in the subway and the Wakayama Curry-Poising Case. These incidents could not be dealt with using guidelines in conventional manuals, and in the initial phase, the causes could not be identified. Considering this situation, the Bureau of Public Health of the Tokyo Metropolitan Government, May 1999, established the "Basic Guidelines for Health Crisis Management" to describe basic policies regarding health hazards.

Based upon these basic guidelines, the "Manual on Health Crisis Management" was prepared in April 2000, which set up a system to determine how to collect information smoothly as well as how to take relevant steps in cooperation with related agencies, in case of incidents outside the scope of individual manuals.

(2) Mie prefecture

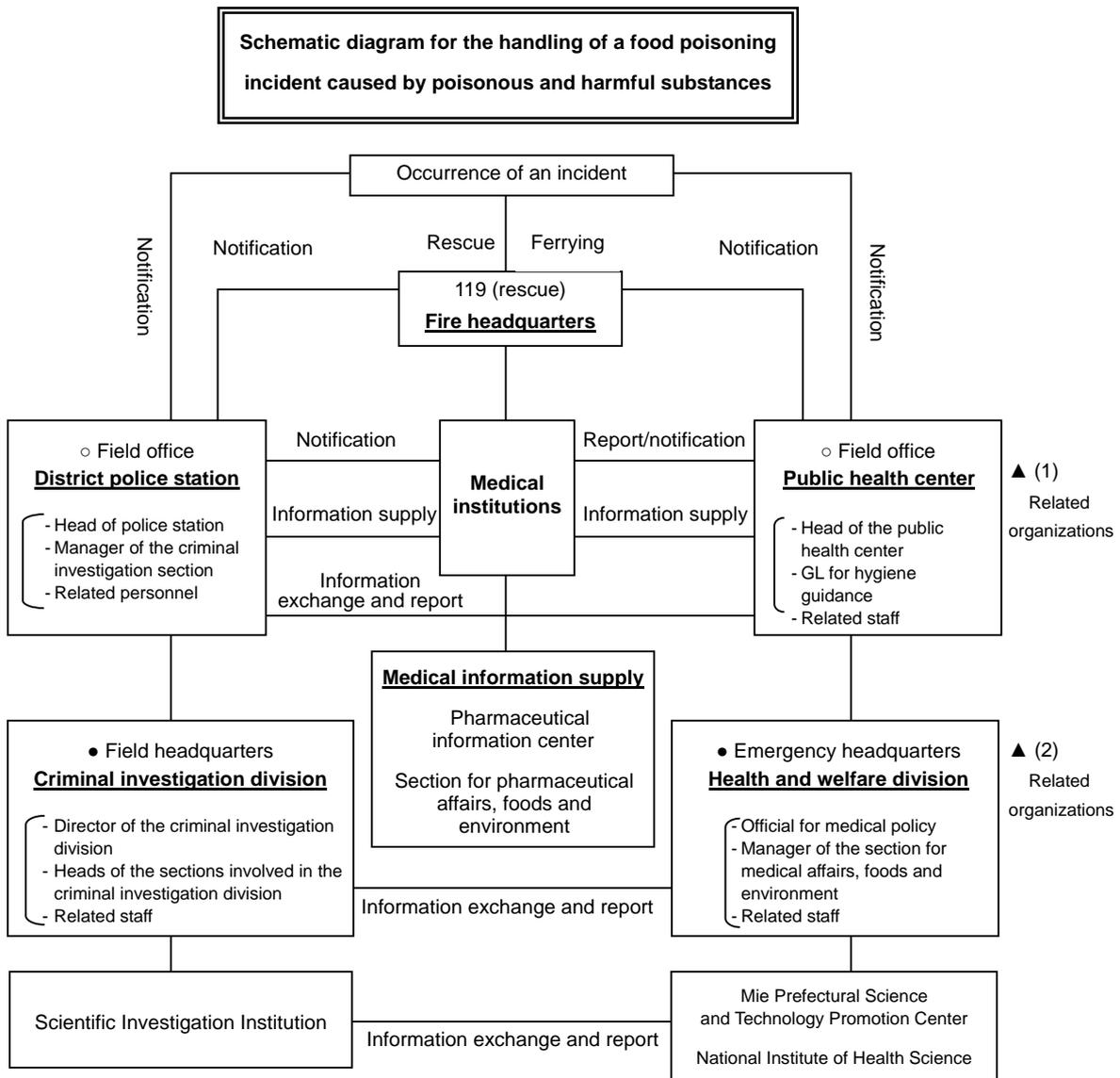
In November 1999, Mie prefecture provided the Manual for Handling Food Poisoning Caused by Poisonous and Deleterious Substances, so that with the manual, the prefectural government, prefecture police headquarters and medical institutes may be able to coordinate their efforts in lifesaving measures to prevent escalation of the disaster.

The manual outlines the steps that should be taken by the prefecture government and the prefecture police headquarters to permit prompt response in the event of a food poisoning resulting from poisonous and deleterious substances.

Field headquarters should be set up at the competent public health center, as well as at the district police station respectively. An emergency headquarters should be provided at the health and welfare department of the prefectural government and at the criminal investigation department of the police headquarters. The manual also stipulates that the incident should be handled as shown in the following diagram. The public health center and its branch offices should organize an emergency contact network composed of police stations, fire headquarters and medical institutes to cover districts where poisonous and deleterious substances are used.

In addition, the manual stipulates the steps to be taken in the initial phase by the public health center and the district police station: once they have been notified of an occurrence of a food poisoning with poisonous and deleterious substances. They should examine the symptoms in depth and exchange information among the different agencies to build a solid cooperation and collaboration system based on the diagram for handling incidents. If a report is received from a source other than a medical institution for a patient currently being diagnosed, they get information from the doctor in charge to understand the patient's condition.

The manual also covers identification of a possible cause of disease and the information on the inspection process of a specimen. The public health center and the district police station are required to immediately supply related information to medical institutions. This system should include a system to enable information sharing on a food poisoning incident with poisonous and deleterious substances among related organizations. It should also include the requirement that all organizations concerned should exhibit mutual respect, in terms of public hygiene, criminal investigation and rescue ferrying and medical treatment.



- * (1) Limitation to application: the category of food poisoning with poisonous and deleterious substance does not include ordinary bacterial food poisonings.
- * (2) The diagnosis whether any poisonous substance or deleterious substance (including susceptible substances) is identified as the cause or not, as a rule, is made by the medical institution (physician) in charge, except in cases where the public health center disagrees with the diagnosis, based upon other information.
- * (3) This flow is established assuming an incident similar to the Wakayama Curry-Poisoning Case.
- ▲ (1) Related organizations: fire headquarters, emergency hospitals, local medical associations, local emergency associations
- ▲ (2) Related organizations: Fire Fighting and Disaster Prevention Division, Medical Affairs and Welfare Division, Mie Prefecture Medical Association, Mie Prefecture Pharmacists Association

(3) Kyoto Prefecture

When there is mass poisoning caused by bacterial substances or poisonous chemicals, prompt, appropriate and coordinated countermeasures should be taken in order to prevent the disaster from getting worse by sharing information among concerned government organizations.

For this purpose, a high-speed large volume Internet connection is being constructed, which plans to link public health centers directly with residents, local research institutes of advanced analysis investigation and government organizations. On completion of the project, the people concerned will be able to discuss solutions in real time with three-dimensional and animated information. Sending images may remove the time loss inevitable when shipping specimens, and makes it possible to reach a prompt and correct conclusion. In this way, the creation of an “ advanced network system for the management of health crisis“ to provide a sense of security to residents being studied by the Kyoto Prefectural Institute of Hygienic and Environmental Sciences.

As the year 2002 began, the government of Kyoto Prefecture continued to be committed to the creation of a system for the management of health crisis in the district. Okinawa Prefecture, Kyoto Keihanna (Seika Town) and Sonobe Town in Kyoto are linked by a high-speed circuit. This will enable the heads of Kyoto and Okinawa public health centers to demonstrate long-distance conferencing using the topic of tuberculosis diagnosis by the use of X ray images. Other topics include distinguishing the cause of food poisoning and infection disease, especially distinguishing colonies of bacteria, by exchanging large a volume of information in real time.

The Prefectural Institute of Hygienic and Environmental Sciences has identified the following goals:

- Amid the concerns of numerous errors in managing health crisis, the following areas are expected to be promoted: uniformity of standards and standardization of nationwide networks of health crisis management, and development of a wide range system for risk management
- By introduction of IPv6 Technology *2 with priority control (formation in hierarchy), it is possible to construct a system with priority transmission in an emergency. This technology provide the ability to handle incidents and accidents promptly without resorting to the centralization of information from relevant organizations, but instead by selecting required information and required organizations.
- Along with the construction of nationwide networks and information sharing, groups of experts should be effectively organized with the possibility of identifying causes of incidents at an early stage, as well as to ensure the security and safety of residents.

- The same effect as expected in the management of health crisis should be achieved in other fields. For example, in the case of a wide area environmental pollution due to tanker oil leak, the image of a leak site can be shared in real time.
- With related organizations and residents sharing information, it is possible to prevent unfounded rumors from spreading and to increase the confidence in the government.

*1 DICOM : Abbreviation for Digital Imaging and Communication in Medicine. This standard of medicine imaging and communication was developed by the American College of Radiology (ACR) and the National Electrical Manufacturers Association (NEMA).

*2 IPv6 : Internet Protocol version 6, an advanced version of the IPv4 protocol currently used on the Internet, with a very wide address space of 128 bits and equipped with network-automatic setting and security as standard.

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**Report on the gathering and dissemination of information
relating to food safety incidents occurring within Japan**

(Report on the Wakayama Curry-Poisoning Case)

March 2004

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