



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 7 1994

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

Mr. Leigh Peques
Director
Environmental Management Department
1751 Congressman W.L. Dickinson Drive
Montgomery, Alabama 36130

Mr. Peques:

Within two months, the Environmental Protection Agency's (EPA) Office of Pollution Prevention and Toxics will initiate an outreach activity to warn communities, including the Hispanic and Caribbean communities, about unsafe practices involving mercury use in the home. Information from many sources, reveals that mercury may be used for medicinal, cosmetic and religious purposes. The purpose of this letter is to transmit existing information on this subject quickly to all state health and environmental officials who may receive inquiries from the public. These materials may be of use to those states planning community education programs in the future. Also, if state officials would like to provide EPA with additional information, we would be interested in receiving these contributions in order to improve our outreach program.

We have been sharing information with the State Health Departments of California and Connecticut which have prepared materials pertaining to the health issues associated with the personal and ritual uses of mercury in their states. California and Connecticut officials have given us permission to share these materials with you. In addition, I have enclosed risk management review packages generated by EPA.

EPA is concerned that mercury use may be hazardous to the health of people engaged in a number of practices some of which include the burning or sprinkling of elemental mercury in the home or automobile. Prolonged or acute exposure to mercury may cause damaging health effects to all concerned, and, in particular, to young children and fetuses. Also, there is concern for the health of future occupants of dwellings where these practices have occurred.



Recycled/Recyclable
Printed with Soy/Canola Ink on paper that
contains at least 50% recycled fiber

EPA became aware of mercury use in the home when the California Department of Health Services reported a consumer complaint involving elemental mercury sold at folk pharmacies or botanicas in Los Angeles. Connecticut has also been concerned about similar uses in its state and has researched the personal use of mercury in Hartford, Connecticut.

EPA's emphasis will be on the prevention of certain practices through education. After discussing potential options with Hispanic groups, EPA's staff concluded that an approach centered on educating the community would be the most effective plan to adopt. Cultural sensitivity is important in the delivery and implementation of this program in order for it to be effective.

Since it is difficult to determine the prevalence of these practices in communities, it is difficult for EPA to assess the effect that this outreach program could have on state services. State Health Departments may receive inquiries on health matters, and other state offices may receive inquiries pertaining to the clean-up of mercury in the home. For many areas of the United States these issues may be of little concern while others may experience a greater number of requests for assistance.

EPA's community outreach program will involve two routes: distribution of written materials by local groups and the radio broadcast of a series of special feature announcements on the subject. We are recruiting Hispanic community-based organizations to help deliver the message. If you would like to inform us of any such groups in your state which might have an interest in such an activity and if you would like to share this information with us, we would appreciate receiving the following information for each: organization's name, address, phone number, and if known, a contact person.

In designing EPA's outreach materials, we plan to borrow heavily from the information prepared by California and Connecticut. At this time, we are in the process of designing materials for distribution. Hopefully, we will develop one, all-purpose, factsheet for distribution within the community. In addition, a more detailed factsheet or information guide is planned which contains information useful to state agencies and community groups fielding questions from the public. Both versions will be available in Spanish. A copy of EPA's outreach materials will be sent to you and to local community groups when they have been completed.

Since our distribution will be nationwide, it will be necessary for us to refer people to additional sources of information in a general way. The factsheets will suggest that concerned individuals consult their doctors, community or state agencies, and local poison control centers for health-related

information. For information concerning the proper clean-up of mercury contaminated homes we plan to refer people to county or state agencies, local sanitation or integrated waste management authorities and the telephone directory's yellow pages in order to identify qualified professionals. In order to assist the local community groups which choose to participate in this program, we would like to provide them with a list of contacts for providing assistance with questions about health or clean-up issues. If you choose to provide us with the appropriate contacts and phone numbers for your state, we will transmit this list to the community groups. Representatives of the community groups may refer people directly to the contact numbers you submit or act as intermediaries, if necessary.

We are looking at issues concerning the safe clean-up of mercury, including clean-up cost and methodology available to the public. In particular, we would like to provide the best and most appropriate information with regard to the remediation of a mercury contaminated home in our factsheet. If you have any information which you would like us to have on this subject please feel free to provide this information to us. We would welcome receiving any information which you would like to share with us and information received before March 23, 1994 will be considered in developing additional outreach materials. Our plan is to complete the distribution of all EPA materials by the end of April. Hopefully, the radio features will be completed soon thereafter. An informal and brief response may be sent by FAX to Andrea Blaschka at (202) 260-8168; or by telephone at (202) 260-8156.

We hope that the enclosed materials will be useful to you in the event that similar use scenarios are discovered in your state. As previously stated in the letter, we would appreciate any information that you would like to provide us concerning: possible contacts within the Hispanic and Caribbean communities in your state, the appropriate government contacts for responding to public inquiries, and any other information that you would consider useful. Again, you may provide that information to Andrea Blaschka at the numbers listed above.

Sincerely,

Charles M. Auer, Director
Chemical Control Division

enclosures:

1. California Dept. of Health Services Outreach Bulletin
2. State of Connecticut Department of Health and Addiction Services (Outreach and Misc.)
3. EPA documents for Risk Management (Level 1 & 2)

CALIFORNIA DEPARTMENT OF HEALTH SERVICES,
FOOD AND DRUG BRANCH

OUTREACH BULLETIN (FINAL)

Food and Drug News . . .

Important Information for California Consumers

California Department of Health Services
Food and Drug Branch (916) 445-2263

January 11, 1994

Warning: Personal Use of Mercury is Dangerous

Mercury (also known as Azogue, Hg, or quicksilver) can be extremely toxic, especially to infants and children. Mercury is the only common metal that is a silvery liquid at room temperature. Mercury poisoning causes brain, nerve, kidney, and lung damage, but symptoms may be absent or non-specific complicating the diagnosis. When symptoms are present, they frequently include skin rashes, particularly redness and peeling of the hands and feet in children, tremors, muscular weakness, personality changes, memory loss, and in extreme cases, death. It is not known how many cases occur in California because of the difficulty in diagnosing mercury poisoning.

The Los Angeles County Department of Health Services learned that some botanicas and other specialty stores in the Los Angeles area are selling mercury for personal use, often in

capsules or small bottles. Further investigation by the California Department of Health Services (DHS) revealed that this practice is statewide. Personal uses of mercury include 1) heating it on a stove to purify gold or silver, 2) sprinkling it around homes or automobiles for good luck, 3) burning it in candles for good luck or fortune ("white magic"), 4) swallowing it as a folk remedy (Azogue) to treat constipation, colic, or stomach ache (empacho), especially in infants and children, 5) playing with it as a novelty, and 6) carrying it as a charm.

Breathing the vapor that is continuously released from liquid mercury poses the greatest health risk. Mercury can also be absorbed through the skin and a small amount is absorbed when swallowed. Mercury vapor has no taste or odor. Exposure to low concentrations of mercury vapor for weeks to months causes the buildup of mercury

in the body until levels are reached that produce obvious symptoms. In September 1989, two girls were hospitalized in Michigan because of difficulty walking. Tests showed neurologic damage along with elevated mercury levels. Mercury exposure came from between one and two tablespoons of liquid mercury spilled in the house earlier that summer.

Heating mercury or compounds containing mercury creates high concentrations of vapor sufficient to produce serious lung damage and death. When heated mercury vapor cools, it condenses on household items like rugs and furniture. This condensed mercury will continue to release potentially toxic levels of vapor.

Anyone using mercury in their home or car should stop. If you feel that you or someone in your household is ill from using mercury, contact your physician or

other health care provider, the county health department, or your local poison control center. Your health care provider can perform tests to determine if you have been exposed to mercury. If your mercury level is too high, you can be treated to speed mercury elimination from your body. Physicians are asked to report any cases of mercury poisoning to their county health departments.

Once mercury gets into household items it cannot be removed by ordinary cleaning methods. Vacuuming actually spreads mercury around the house by creating tiny droplets that pass through the vacuum cleaner bag. Ventilating a home or car with fresh air helps, but does not eliminate all the mercury.

If you have used mercury in your home or car, you can contact private testing and decontamination services, frequently listed under "Environmental and Ecological Services" in the yellow pages of your local telephone directory. Tests will show if your home or car contains unsafe levels of mercury vapor. County sanitation or integrated waste management authorities can be contacted to arrange for disposal of mercury or mercury contaminated materials. Mercury or mercury contaminated materials must be disposed of separately and not poured down the sink or mixed with household trash.

Mercury offered for sale must be labelled to indicate the

hazards of exposure according to California and federal hazardous substances laws. Mercury sold without required warnings is a misbranded hazardous substance, and subject to legal action.

Consumers who want more information about mercury and its hazards, can call their local poison control center or a National Institute for Occupational Safety and Health hotline (1-800-356-4674). DHS is working with county health departments and federal agencies to explore better ways to educate the public about the hazards of mercury exposure.

MERCURY - SUPPLEMENTARY INFORMATION

The following may be helpful in responding to or referring questions concerning mercury:

Health Information Persons with questions regarding adverse health effects or symptoms of mercury poisoning should call their family physician or other health care provider, or the nearest Regional Poison Control Center (RPCC):

San Diego County RPCC	(619) 543-6000 or (800) 876-4766
Orange County/Irvine RPCC	(714) 634-5988 or (800) 544-4404
Los Angeles County RPCC	(213) 222-3212 or (800) 825-2722
Fresno County RPCC	(209) 445-1222 or (209) 442-6408
Santa Clara/San Jose RPCC	(408) 299-5112 or (800) 662-9886
San Francisco RPCC	(415) 206-8058 or (800) 523-2222
Sacramento County RPCC	(916) 734-3692 or (800) 342-9293

In addition, the National Institutes of Occupational Safety & Health (NIOSH) has a toll-free hotline: (800) 356-4674.

Disposal: Information regarding the disposal of mercury and mercury contaminated materials may be obtained by calling local sanitation or integrated waste management authorities for information on hazardous waste disposal including household hazardous waste/toxic materials pick-up days.

Reporting Sale of Mercury: Persons who are aware of stores or shops selling mercury without warning labeling; for use as a drug or "folk remedy" for treatment of "empacho" or colic, constipation, or gastrointestinal distress; as a toy or other article intended for use by children; for burning as an "incense" or for adding to candles are encouraged to contact the Department of Health Services (DHS), Food and Drug Branch (FDB) office (listed in the "government" section of telephone directories) or phone FDB's Sacramento Headquarters at:(916) 445-2263.

Reporting Cases of Contamination or Poisoning: DHS requests that physicians and county health officials report suspected or confirmed cases of mercury contamination or poisoning from household mercury use to the Epidemiological Investigations Section of DHS: (510) 540-3657.

Testing for Exposure: Kits to test for mercury vapor can be purchased from businesses that sell laboratory and industrial safety equipment. DHS is aware that kits are available from:

SKC	(714) 992-2780
3M	(800) 666-6477
Lab Safety Supply	(800) 356-0783

CONNECTICUT DEPARTMENT OF HEALTH AND ADDICTION SERVICES
ENVIRONMENTAL EPIDEMIOLOGY AND OCCUPATIONAL HEALTH

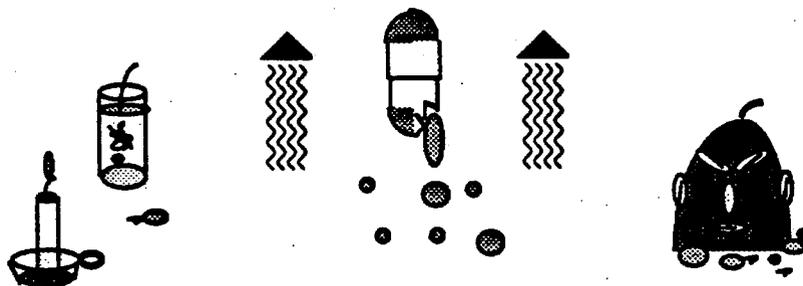
INFORMATION BOOKLET 1 & 2 (DRAFT)

MISCELLANEOUS INFORMATION *

* Because of the volume of material, several items were removed from the packet that was transmitted to EPA. The following items were removed: Spanish versions of booklets 1 & 2; Table 2. Metallic Mercury Ritualistic Uses (describes ritual and procedure and identifies culture; information from books and publications); V. Azogue Users Demographic Survey.

HISPANIC HEALTH COUNCIL
ENVIRONMENTAL HEALTH UNIT
INFORMATION BOOKLET NO. ①

METALLIC MERCURY (AZOGUE)



AND THE HEALTH

AN EDUCATIONAL GUIDE FOR
HEALTH CARE PROVIDERS
AND AZOGUE DISTRIBUTORS

Hartford, CT
November, 1993

PURPOSE

To create awareness on the health risks of using metallic mercury (azogue).

The Hispanic Health Council (HHC) is a nonprofit organization, dedicated to improving the living conditions and the health of the Hispanic population and other low income groups.

The main purpose of this booklet is to inform the health professionals that some of their Hispanic and West Indians patients may be using metallic mercury in rituals that may be affecting their health. Health professionals should be prepared to inform their patients about azogue poisoning, and where to get more technical assistance.

Another objective of this booklet is to create awareness among the traditional healers and the azogue distributors about the harmful effects the use of azogue can bring to their clientele. A less technical, shorter brochure on azogue is also available to the general public.

The ultimate goal of this booklet is to inform and to protect the public's health. The HHC respects and defends the traditions and religious beliefs of the Hispanic community and other ethnic groups, but is also conscious that some of these traditional practices may be hazardous to their health. In this booklet the HHC lists other safe botánica products that may be used instead of azogue.

SPECIAL THANKS

This booklet is the product of numerous consultations with the Hispanic population of Hartford, particularly *espiritistas*, *santeros*, *santiguadores*, and botánica owners. The Environmental Epidemiology and Occupational Health (EEOH) section of the State of Connecticut Department of Public Health and Addiction Services provided technical assistance in support of this educational project. This project was funded by the DPHAS through a grant from the Agency for Toxic Substances and Disease Registry. Special thanks goes to Dr. Merrill Singer (HHC), Chris Lopez (HHC), Brian Toal (EEOH), and the rest of the staff of both agencies for their assistance in the editing of this document.

INTRODUCTION: WHAT IS THE PROBLEM WITH AZOGUE?

The use of azogue may be affecting the health of your patients or clients.

This booklet may be used to respond to the most common questions that your patients or clients may have about metallic mercury. These questions are: 1) What is metallic mercury?; 2) What is this substance used for?; 3) Is there a safe way to use this type of mercury?; 4) How can this metal affect the health?; 5) How can we measure the amount of metallic mercury in the body or home?; 6) What can be used in place of this toxic substance?; 7) How can I find out more information about this liquid metal?

① WHAT IS AZOGUE?

Metallic mercury (azogue) is a very toxic, silvery liquid metal.

In the English and Spanish languages quicksilver and azogue are popular names for metallic mercury. The Hispanic botánicas are stores that sell azogue and other popular religious and healing products. Azogue is not the only type of mercury. The information provided in this booklet is limited to the use of azogue by the Hispanic population of Connecticut but may be useful in other areas of the country.

Azogue can easily be identified when seen because it is a shiny, silver-white liquid metal. This heavy and slippery metal easily breaks up into many small drops, which can join again with equal ease. Azogue has other less obvious characteristics: 1) it does not dissolve in water or alcohol; 2) it has no smell but has a metallic taste; 3) it is liquid under normal room temperature; 4) it evaporates when coming into contact with air, and evaporation increases with temperature; 5) its vapors are invisible to the eye. When azogue gets into the environment (air, home, store, etc.), it stays there for a long time.

There are other types of mercury besides azogue. All types of mercury are toxic. Some people confuse the silvery metallic mercury with the red mercury (Spanish mercurio) used to heal wounds and sold in drug stores, of which Mercurochrome is one brand.

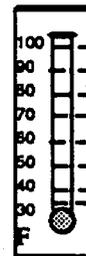
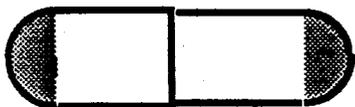
Azogue is sold in botánicas in three to five ounce capsules for spiritual "works" (trabajos). Azogue is also found in most thermometers used to measure body temperature, but in much smaller amounts than in the capsules sold at the botánicas.

Azogue Vapors

Azogue does not need to be heated to start its evaporation. Azogue starts to evaporate as soon as it enters in contact with air. However, heat helps to make the azogue evaporation quicker and to spread wider. The azogue capsules are not sealed, therefore this liquid metal is always escaping from this type of container. Azogue will stick to almost anything: gold, carpets, draperies, clothing, washer, drier and cracks in floors or furniture.

Azogue evaporates and slowly spreads, staying in the room for many months. More azogue vapors will enter the lungs during the cold season as people heat their homes and close their windows, so the heat (and the azogue) does not escape. Is important to remember that people can not see or smell the azogue vapors.

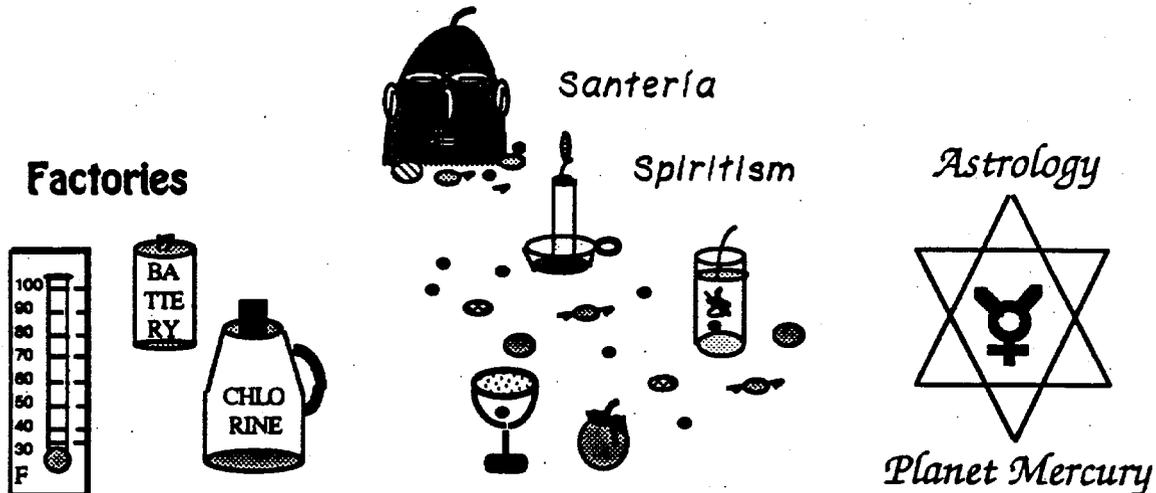
The azogue that escapes from a broken thermometer is enough to make individuals sick. Children have been poisoned after breaking a thermometer and breathing azogue vapors.



THE AZOGUE CAPSULES HAVE UP TO 10 TIMES (3 TO 5 OUNCES) MORE AZOGUE THAN ONE THERMOMETER.

② WHAT IS AZOGUE USED FOR?

Azogue is used for industrial and spiritual works.



INDUSTRIAL USES

Metallic mercury was used in the past as medicine for venereal diseases and to coat mirrors. This liquid metal is now used in electrical equipment (e.g., batteries), weather instruments (e.g., thermometers), paints, and dental works. It is also used in factories to produce chlorine.

SPIRITUAL USES

Why it is used

Azogue is used according to the faith and traditions of each person. It is believed that azogue has spiritual powers similar to its characteristics as a metal. Just as azogue moves quickly, likewise it "speeds" the "works" of santeros and espiritistas.

In Santería or Lucumí religion, azogue "works" for Elegguá, an African Yoruba god and one of the Siete Potencias Africanas (The Seven African Powers). Elegguá helps to open paths and remove obstacles. Azogue is also one of the seven basic metals of Santería.

Like Elegguá, it is believed that the metal azogue can give protection (*resguardo*) or it may give *cantazo* (strike the person), bring harm and illness. After all, azogue is believed to be like Elegguá, "a spoiled, playful child always quick to change his mind".

Manner of Use

Spiritually, azogue is: 1) swallowed; 2) applied to the skin (e.g., rubbed, in baths, perfumes); 3) placed in oil lamps or glass-encased candles; 4) floor washes.

Some Uses

There are various reasons for using azogue spiritually: 1) protections or amulets; 2) love spells; 3) petitions (*ebos*) to the Yoruba gods; 4) spiritual cleansing (*despojos*).

In astrology, azogue is said to be under the influence of the planet Mercury, and is used for protection and to speed good luck. Azogue is also used to cure *empachos* (gastrointestinal disorders).

③ IS THERE A SAFE WAY TO USE AZOGUE?

NO! It is very dangerous to use azogue and breath its vapors.

A small amount of azogue evaporates into the air when it is used in baths, rubbed on the skin, and passed inside *resguardos* or perfumes that when applied directly on floors. There is always a risk of breathing azogue vapors when is used it in any way.

Breathing Azogue Vapors

Azogue actually does more harm to the health when breathed than when ingested, although neither use is recommended. This metal evaporates, enters the lungs, passes quickly to the kidneys and central nervous system through the blood stream, and only a small amount leaves the body.

Some of the inhaled azogue is released through the urine, the excrement, and when the person exhales. However, azogue will remain in the nervous system for a long time.

Drinking Azogue

If someone ingests azogue, most of it goes through the intestines and does not enter the blood stream easily. Most of the ingested azogue is expelled as body waste through the urine and the excrement. Of the ingested azogue, around half will exit the body after 35 to 90 days. On the other hand, the same amount of ingested azogue can make a child sick because the maturing organs are very sensitive.

Applying Azogue to the Skin

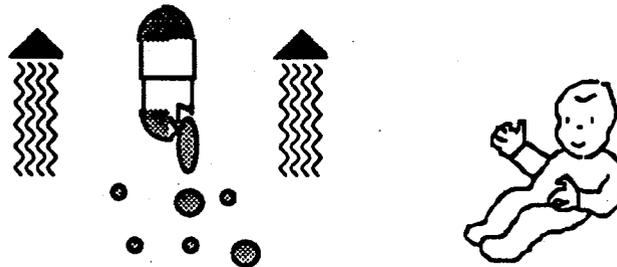
Azogue that is rubbed on the skin or used in spiritual baths may evaporate and enter the body as the person breaths. Azogue will also enter the blood stream directly through the skin and will end up in the kidneys and the central nervous system.

Azogue and Children

Azogue has the greatest effect on the fetus and small children, and their developing central nervous systems.

AZOGUE WILL REACH THE FETUS OF A PREGNANT WOMAN.

It is important to protect pregnant women and small children from azogue. This toxic substance will enter the fetus through the circulatory system of the mother and may produce permanent damage to the child's developing organs (e.g., brain, kidneys, lungs, and liver).



④ HOW CAN AZOGUE AFFECT THE HEALTH?

Azogue may cause brain damage and even death.

The type of damage to the body caused by azogue is determined by how much and how long the person breaths it. Azogue vapors may be fatal if inhaled in large amounts for even a brief period of time.

The most affected part of the body is the nervous system. The harm done by azogue is similar to lead poisoning, as both metals affect the brain. When the individual is exposed to azogue vapors for a long period of time (such as vapors from spilled azogue on floors), he or she starts to loose memory and develop tremors in the hands. Others signs of chronic azogue poisoning are: headaches, reduced sexual desire, depression, fatigue, insomnia, and even hallucinations. Inhaled azogue may affect the lungs, kidneys, eyes, and skin irritation.

⑤ HOW CAN WE MEASURE THE AMOUNT OF AZOGUE IN THE BODY OR HOME?

There are laboratory tests and equipment for its detection.

How to Test

You can not smell or see azogue vapors. The only way to know if there are azogue vapors in the home is with a small machine (mercury vapor sniffer) that measures the level of azogue in the air in the home. This test takes a few minutes and the results are immediate.

There are laboratory tests that measure the level of azogue in the body: blood, urine, hair, breath, and skin. The urine test is the most effective for cases of contamination with azogue vapors. On the other hand, blood and hair tests are better in cases where the azogue enters the body through the food. Health clinics in Connecticut regularly test for lead levels in the blood of small children but not for azogue poisoning. Tests to detect azogue in the body are done only when the symptoms described in Section ④ of this booklet appear.

Treatment

There are various ways of lowering the azogue level in the body. The most effective method is the use of chemicals (chelation) that have the power of attracting and holding azogue, forming a new chemical from the union that is not poisonous and eventually exits the body. Call the **Connecticut Poison Control Center (679-3456 or 1-800-343-2722)** to receive information about treatment for metallic mercury poisoning.

How to Clean Up Azogue

Common household tools should not be used to collect spilled azogue (e.g., vacuum cleaner, broom, mop). This metallic liquid will warm up from the vacuum cleaner motor heat and will produce dangerous vapors. The azogue spilled on the floor will divide itself into many drops that will stick to any broom or mop. Throwing azogue down sinks or any drainage should be avoided, as it will get trapped there until it evaporates and enters the home again. There are special cleaning agents that will clean up the spilled mercury. These are readily available at industrial safety supplies outlets.

⑥ WHAT CAN BE USED IN PLACE OF AZOGUE?

Botánicas have other products as effective as azogue.



Spiritual Guides Recommend

You can suggest to your patient or client alternatives for azogue by using the following information as a guide. Many santeros and espiritistas prefer to work with things closer to the original African and Caribbean Indian traditions. Ingredients that come from places like mountains and forests (el monte) are always the healer's first choice for spiritual "works". These natural ingredients are considered more powerful than industrialized synthetics such as the bottled and canned baths and perfumes sold in the botánicas.

Other Sources of Information

Alternatives for azogue can be found in the books sold in the botánicas. Among the most popular and informative are El Monte by Lydia Cabrera and Santería by Migene González-Wippler (this one is published in Spanish and English).

Some Substitutes for Azogue

Some espiritistas and santeros suggest other things that may be used in place of azogue. If the azogue user wants to speed ("precipitate") or give strength to a spiritual work, he or she may use stronger things than azogue such as Precipitado Rojo or Sangre de Dragón. Some spiritual workers recommend the use of gloves to avoid touching the Precipitado Rojo because of the great spiritual power of this substance.

For personal baths, herbs like rompe zaragüey can be used. For spiritual washes (riegos) and fumigation (sahumerios) of the home and business, there are many products considered equal to or better than azogue. To cleanse (despojar) evil influences from the home, the individual may also use pasote and other plants combined with Agua de Florida. However, if he or she prefers things already prepared, the Bomba Santera and other similar products sold at the botánicas may be used.

Bottled botanica products such as kreso, aguarras or ammoniac may be used for house washes but they are as **poisonous** as many commonly used household cleaners bought at supermarkets.

For petitions to Elegguá and the other Siete Potencias Africanas, the person may use the Precipitado Rojo and those ingredients preferred by each orisha.

Other Substitutes for Azogue

For personal protection, there are also many substitutes for azogue. To protect the stomach from evil works, a person can may drink a glass of water with three drops of Agua de Florida.

Botanica clients may also use holy water to protect the stomach from "works". Spiritual workers say that Agua de Florida is good for the nerves and also lowers blood pressure, when combined with a medical treatment. For empachos, the person may combine the use of oil rubbings on the stomach with medical treatment. An empacho may be a sign of a serious illness.

Instead of preparing a personal protection (resguardo) with azogue, other things can be used. One type of resguardo is prepared with a San Miguel Arcángel prayer card (oración), a Santa Cruz de Caravaca prayer card, a San Miguel sword (espada), incense (incienso), myrrh (mirra), and other things according to particular traditions. These things may be carried in a small red bag in the purse or tied to the body. For resguardo, the faithful may carry with him or her a Las Siete Potencias Africanas medallion.

There are many spiritual substitutes for azogue that we can not include here, not just because of lack of space, but mainly because we are not spiritual workers but community health educators. The azogue substitutes presented here are only general examples.

FOR MORE INFORMATION



Environmental Health Unit, Hispanic Health Council

96 Cedar St., Hartford, CT 06106. (203) 527-0856 (9 A.M.-5 P.M.)



Environmental Epidemiology and Occupational Health, State of Connecticut Department of Public Health and Addiction Services

150 Washington St., Hartford, CT 06106. (203) 240-9022 (8 A.M.-4 P.M.)



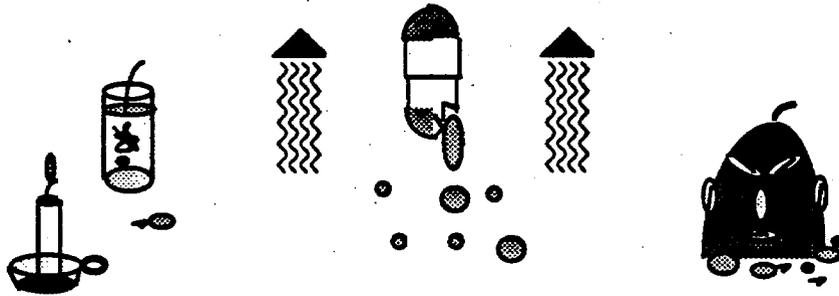
Connecticut Poison Control Center, University of Connecticut

Farminston, CT 06030. (203) 679-3456 or 1-800-343-2722 (24 Hours)

Text and Design: *Luis R. Marxuach*

HISPANIC HEALTH COUNCIL
ENVIRONMENTAL HEALTH UNIT
INFORMATION BROCHURE NO. ②

AZOGUE AND YOUR HEALTH



HOW TO PREVENT METALLIC MERCURY POISONING

(free distribution)

Hartford, CT
November, 1993

WHAT IS AZOGUE?

Azogue is a very toxic, silver white liquid metal.

- does not dissolve in water or alcohol
- it is liquid at room temperature
- its vapors are invisible to the eye
- It has no smell but has a metallic taste
- it evaporates when in contact with air
- it stays where spilled for a long time

▲ In English and Spanish *quicksilver* and *azogue* are popular names for *metallic mercury*. There are other types of mercury besides *azogue*. All types of mercury are toxic.

▲ *Azogue* is sold in *botánicas* in three to five ounce capsules for spiritual "works" (*trabajos*).

▲ *Azogue* is found in most thermometers used to measure body temperature, but in much smaller amounts than in the capsules sold at the *botánicas*.



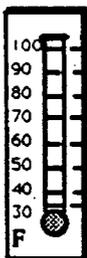
THE AZOGUE CAPSULES HAVE UP TO 10 TIMES (3 TO 5 OUNCES) MORE AZOGUE THAN ONE THERMOMETER.

▲ The *azogue* that escapes from a broken thermometer is enough to make individuals sick. Children have been poisoned after breaking a thermometer and breathing *azogue* vapors.

WHAT IS AZOGUE USED FOR?

Azogue is used for industrial and spiritual works.

Factories

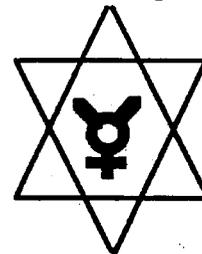


Santería

Spiritism



Astrology



Planet Mercury

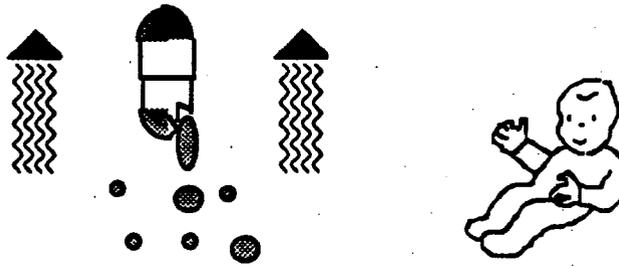
Spiritual Uses

- ingested, applied to skin
- in oil lamps or candles
- protections (*resguardos*)
- on floor washes
- spiritual cleansing (*despojo*)
- love spells

IS THERE A SAFE WAY TO USE AZOGUE?

NO! It is very dangerous to use *azogue* and breath its vapors.

- ▲ There is always a risk of breathing *azogue* vapors when is used it in any way.
- ▲ *Azogue* actually does more harm to the health when breathed than when ingested, although neither use is recommended.
- ▲ *Azogue* has the greatest effect on the fetus and small children.
- ▲ Health officials recommend that *azogue* not be used in any way, for these reasons.



HOW CAN AZOGUE AFFECT THE HEALTH?

Azogue may cause brain damage and even death.

- ▲ The most affected part of the body is the nervous system.
- ▲ The harm done by *azogue* is similar to lead poisoning, as both metals affect the brain.

Azogue Poisoning Signs

- memory loss
- hand tremors
- headache
- depression
- fatigue, insomnia
- hallucinations
- also affected are: lungs, kidneys, eyes, skin

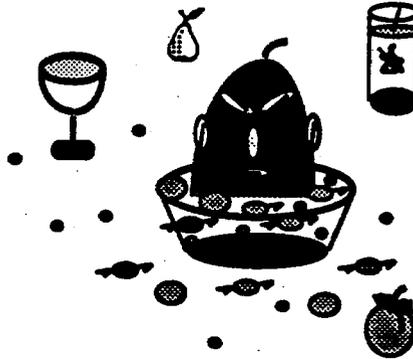
HOW CAN WE MEASURE THE AMOUNT OF AZOGUE IN THE BODY OR HOME?

There are laboratory tests and equipment for its detection.

- ▲ The only way to know if there are *azogue* vapors in the home is with a small machine (mercury vapor sniffer) that measures the level of *azogue* in the air in the home.
- ▲ There are laboratory tests that measure the level of *azogue* in the blood and urine.
- ▲ Common household tools should not be used to collect spilled *azogue* (e.g., vacuum cleaner, broom, mop).

WHAT CAN BE USED IN PLACE OF AZOGUE?

Botánicas have other products as effective as *azogue*.



- ▲ There are many spiritual substitutes for *azogue*. Alternatives for *azogue* can be found in the books sold in the *botánicas*. *Espiritistas* and *santeros* will suggest other things that may be used in place of *azogue*.
- ▲ For personal protection, there are also many substitutes for *azogue*. Instead of preparing a personal protection (*resguardo*) with *azogue*, other things can be used.

FOR MORE INFORMATION



Environmental Health Unit, Hispanic Health Council

96 Cedar St., Hartford, CT 06106. (203) 527-0856 (9 A.M.-5 P.M.)



Environmental Epidemiology and Occupational Health, State of Connecticut Department of Public Health and Addiction Services

150 Washington St., Hartford, CT 06106. (203) 240-9022 (8 A.M.-4 P.M.)



Connecticut Poison Control Center, University of Connecticut

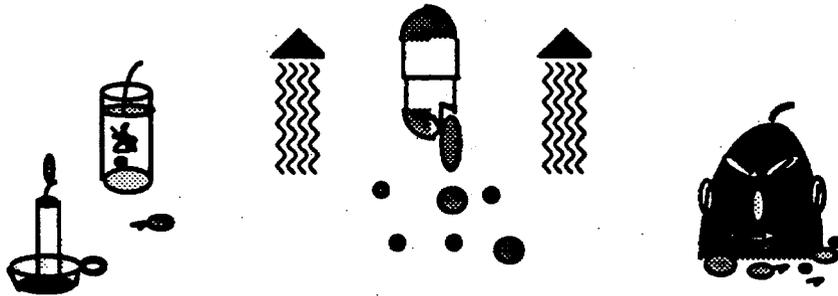
Farmington, CT 06030. (203) 679-3456 or 1-800-343-2722 (24 Hours)

Text and Design: *Luis R. Marxuach*

HISPANIC HEALTH COUNCIL
ENVIRONMENTAL HEALTH UNIT

-- FINAL REPORT --

LIMITING
AZOGUE (METALLIC MERCURY)
POISONING RISK



THROUGH
COMMUNITY EDUCATION

Prepared for:
Connecticut Department of Public Health Services and Addiction Services
Environmental Epidemiology and Occupational Health Section

November, 1993

**HISPANIC HEALTH COUNCIL
ENVIRONMENTAL HEALTH UNIT**

**LIMITING AZOGUE (METALLIC MERCURY)
POISONING RISK THROUGH COMMUNITY EDUCATION**

I. INTRODUCTION

The work described in this report was undertaken in response to the growing concern of the Environmental Epidemiology and Occupational Health (EEOH) section of the State of Connecticut Department of Public Health and Addiction Services about the potential micro-environmental hazard produced through the use of metallic mercury in folk healing and related practices in Connecticut. This report includes the findings of the Hispanic Health Council from its Azogue Project (1991-1993). Supported through a contract from the Department of Public Health Services and Addiction Services, the Azogue Project was designed to investigate the popular use of metallic mercury (Hg) in folk healing and to develop a community education program to prevent environmental pollution and poisoning. Central to the work of this project has been the principle that it is the right of indigenous religions to maintain and foster their beliefs and practices without interference from government or other sources. Further, the Hispanic Health Council is committed to supporting Hispanic and other cultural traditions. However, as a community-based agency dedicated to promoting the health and well being of Hispanic and other low income communities, it is our responsibility to educate the community about potentially hazardous or risky behaviors. Efforts to force communities to give up culturally constituted practices will only force these behaviors underground and beyond the influence of public health education efforts. Consequently, with the support of the Department of Public Health and Addiction Service, the Azogue Project has attempted to gain a clear understanding of the nature and level of mercury risk in folk practices and to develop a nonthreatening educational program to diminish potential risks to health.

The magical use of mercury (*azogue* in Spanish) is embraced in several historically related circum-Caribbean syncretic religious systems, including *Espiritismo* and *Santeria*. These religious systems emerged in the New World among poor and working class creole populations. Products of an amalgamation of Catholicism, various African and Native American religions, and other diverse sources, a central feature of the cosmologies of systems like *Espiritismo* and *Santeria* is the belief that human fortune and misfortune, including health and illness, often are influenced by the actions of disembodied spirits (hence these systems often are referred to as spiritist religions). With the migration to Connecticut of large numbers of individuals from a

number of countries in the circum-Caribbean area, including Puerto Rico, Cuba, and Jamaica, spiritist religions are now found throughout the state.

In several spiritist systems, metallic mercury has come to be used as a home remedy, in traditional healing rituals, and in protective rituals. The general public, including practitioners of spiritism, are largely unaware of metallic mercury's toxic nature and some ritualistic practices likely result in unintentional contamination of homes with metallic mercury vapor. *Azogue* is sold most commonly at *botánicas* that dispense an array of folk religious and magical paraphernalia. A survey conducted by the Hispanic Health Council in Hartford, CT in 1991 as part of the Azogue Project indicates that 80% of the Hispanic and West Indian spiritist folk healers interviewed use mercury for magico-religious practices. Among the magical uses of *azogue* are: 1) sprinkling it on the floor to drive away evil spirits or attract positive influences; 2) adding it to spiritual baths; and 3) mixing it with wax to make spiritual candles.

Most of Hartford's low income population, which is composed primarily of Hispanics, African Americans, and West Indians, lives in older, poorly ventilated, small and crowded apartments, conditions that may (if metallic mercury is present) increase the level of mercury exposure among residents. Many cases of mercury poisoning may go undiagnosed as the medical profession often is unaware of the potential for exposure from this newly reported ritualistic use and unfamiliar with the symptoms of metallic mercury exposure.

B. AZOGUE USERS: TRADITIONAL RELIGIOUS HEALING SYSTEMS

1.0 Cuban Santería

1.1 Theory of illness

From the Black spiritual churches of the American South to Candomble, Batuque, Umbanda, and Macumba of Brazil, and from Mexican Espiritualismo to Vodun in Haiti, Espiritismo in Puerto Rico, and Santería in Cuba, the circum-Caribbean region supports a rich diversity of spiritist cults. These religio-therapeutic traditions share a common belief in communication with and possession by incorporeal spirits. Generally found in these popular folk systems is a set of rituals designed to either protect participants from harm and misfortune or to heal them after they have been menaced by a wayward spirit or through an act of sorcery. Of particular importance with reference to the use of mercury is the folk system of Santería. According to González-Wippler (1984:9), who has studied circum-Caribbean ritual for many years, "Santería is an earth religion. That is, it is a magical-religious system that has its roots in nature and natural forces".

1.2 Treatment

González-Wippler (1984: 72) notes that "All santeros are botanical experts". Santeros have a developed knowledge in the use of natural ingredients such as plants for healing and protective purposes. Santeros prefer to use fresh plants for their most important rituals. These natural ingredients are imported to the U. S., mostly from the Dominican Republic and Puerto Rico, but some may be collected in Florida. Botánicas, stores that sell ritual paraphernalia for spiritist rituals, such as those found in a number of Connecticut cities, often sell industrially produced, artificially processed products. A few dehydrated herbs can be found in Connecticut botánicas, but fresh plants are not regularly available and must be specially ordered from botánicas in New York City .

The lack of natural ingredients for spiritist rituals must be taken into account when discussing the use of azogue and in the development of preventive education on mercury use. Most of the santeros interviewed through the Hispanic Health Council's Azoque Project criticized the use of industrialized botánica products targeted to a "do it yourself", "ready made", "amateur" market. Santería, a traditional healing system, has been integrated with the market economy. The result is the industrial production of botánica paraphernalia targeted to consumers. This is the case of the Puerto Rican botánica, which, in spite of its name ("botanical"), is as much modeled after the modern pharmacy as the Latin American "yerberia" (herb store).

Folk experts (e.g., botánica owners, santeros, spiritists) recommend that people not purchase or use botánica products without consulting traditional practitioners. When our researchers attempted to purchase the ingredients that are used with azogue as described in various Santería booklets, a common reaction from botánica owners was a sarcastic remark about the researchers trying to prepare their own *resguardo* (protection) or *trabajo* (evil work). They recommended consulting folk practitioners who would provide a list of items needed to prepare *trabajos* or *resguardos*. However, botánica employees did not hesitate in selling Hispanic Health Council researchers mercury capsules.

Santería magic consists of either ebbós or spells. The latter may be performed by anybody and often includes use of the more industrialized ingredients, of which the botánica have many types. According to González-Wippler (1984: 128):

[Most spells] do not enlist the aid of a specific spiritual entity.

Nevertheless, santeros believe that there are spirits who take charge of these spells, even though they are not mentioned by name. That is why very often the spells call for the use of a candle or a glass of water to accompany the spell. These are the kind of silent offering to the forces carrying out the spells, which derive much energy from fire and water.

2.0 Puerto Rican Curanderismo

2.1 Theory of Illness

Under the Puerto Rican traditional medical system, as in other Latin American countries, the causes of illnesses are basically two: a) naturalistic: the hot-cold theory of illness and minor diseases and accidents; and b) preternatural or socially caused illness: major unexplained diseases, accidents, and changes in fortune caused by the evil works (e.g., *brujeria*, *fufu*, *hechizo*, *trabajos*, *mal de ojo*, *espíritus malignos*) performed by those who envy the fortunes and status of other people. Many Puerto Rican *brujeria* (sorcery) cases are related to infidelity, envy, and various romantic problems.

Brujeria continues to be practiced in Hartford. However, folk practitioners in Connecticut have responded to the current needs of the younger generation. These "traditional" practitioners offer services for repairing damaged social relations, personal protection, and increase of social and material wealth. *Santería* and *Espiritismo* also offer spiritual counseling and religious services that may benefit the psychological integrity of the individual in a unstable, and dangerous environment such as in the inner city.

Santería and *Espiritismo* services are frequently requested for protection from the police or to influence judicial court cases. *Santería* necklaces are used by inner city youth gangs for identification and protection. Within the new environment of the inner city street mercury is being used in the preparation of *trabajos* (magical works) that address issues related to risks and dangers of inner city life.

2.2 Treatment

Use of household remedies (*purgas*, *cataplasmas*, *sobos*, *guarapos*) made with ingredients found in the house was the approach of first resort in the traditional Puerto Rican folk medical system. The *boticario* and medical doctor were the ideal second recourse, if available. Access to biomedical services often was limited for the rural inhabitant of Puerto Rico before the industrialization of the island in the 1940's. Instead, local healers always were available to do *trabajitos*..

Female and male *santiguadores* treated mostly small children of *mal de ojo* (evil eye) and *empacho* (intestinal blockage). *Santiguadores* are considered minor healers.

The *curandera*'s job is to give *consultas* (consultations), cleanse and protect the house with holy water and *ramas benditas*, prepare amulets, and find and destroy buried *hechizos* (evil works) hidden in jars around the house at midnight. Acevedo González (1989:171) reports that a traditional Puerto Rican *curandera* offered many services:

Ella sacaba empachos, hechizos, mal de ojos, pasmos; santiguaba; expulsaba los demonios y los espíritus malos, incineraba [sahumaba] las

casas y sus alrededores para que nada malo se acercara. Desunía y unía matrimonios, según fuera el deseo de su cliente...hacia milagros...era muy experta en preparar guardacuerpos..

In Espiritismo, herbalism is mixed with mystic activities through Catholic saints and Yoruba orishas like Elegguá. Espiritistas have the ability to synthesize the old traditions with nontraditional activities to respond to changing social circumstances.

B. MERCURIAL IDEOLOGY

1.0 Mercury, Azogue or Quicksilver: What is in a Name?

Metallic mercury was used by ancient Egyptians, Chinese, and Hindus. Mercury is the Roman god of merchandise and merchants, derived from the Greek Hermes (messenger of the gods).

1.1 Is Azogue Good or Evil?

The problem of describing the ritualistic use of mercury begins when we try to classify its function under the Judeo-Christian duality of good and evil. Such simplistic dichotomy is not present in complex Western African cosmology and its Cuban Santería (e.g., Lucumí religion, Regla de Ocha, Palo Monte, Ifá, Regla de Palo), Black American Hoodoo, Haiti Voodoo, Brazilian (Candomble, Macumba) derivatives.

In Santería and spiritism generally the same ingredient can be used for good (self protection) or evil (causing harm to others). For example, the plant pazote is used to cause harm to others when used alone, however, when its flowers are combined with holy water, it provides protection to women with marital problems. In a similar vein, in order to understand the folk use of azogue our research indicates that it must be examined in terms of its specific ritual deployment in any context.

C. PHASE I: PRELIMINARY ETHNOGRAPHIC SURVEY

During Phase I (1991) of the Azogue Project, the Hispanic Health Council (HHC) employed a Hispanic research assistant to collect data on the popular use of *azogue* in the the Hispanic and West Indian populations of Hartford. The purpose of Phase I was to collect basic data on the ritualistic use of *azogue* and to use these data in recommending policies and programs to deal with *azogue* and other toxic substances sold at botanicas in Connecticut. Conclusions reached during Phase I are the following: 1) metallic mercury is regularly sold and used among spiritist participants in Connecticut; 2) a public education program on the potential hazards of *azogue* is

urgently needed since most interviewed individuals were unaware of the potential hazards of metallic mercury; 3) future work should involve research into the differences between *Espiritismo* and *Santeria* regarding *azogue* use; and 4) it would be useful to study other materials being sold by *botánicas* for popular medical substances that also may be harmful to human health.

Following completion of Phase I, the HHC proposed a second phase of the project that would cover the following:

1) development of bilingual/bicultural educational materials concerning *azogue* poisoning risk among the Hispanic and West Indian populations of Hartford; 2) distribution of materials to increase public awareness of *azogue* risk in the target populations; and 3) initiation of orientation talks among key community members and through the mass media to create awareness of the potential health risk of mercury.

D. PHASE II: LIMITING AZOGUE POISONING RISK THROUGH COMMUNITY EDUCATION

1.0 Goals and Objectives

The main goal of Phase II was to create awareness among the Hispanic and West Indian populations of Hartford concerning the health risks involved in the use of *azogue* for magico-religious activities. The overarching goal of this phase of the project was not to criticize or significantly change folk ritual practices, but rather to create an awareness of the health risk involved in some of these popular spiritual activities. Consequently, through interviews with folk practitioners, the project explored available and culturally acceptable non-toxic alternatives that were seen as having similar ritualistic functions as *azogue*, and then reinforced their use through educational efforts with *botánica* clerks and folk healers. This approach, as noted earlier, developed from the shared recognition of both the Hispanic Health Council and the Department of Public Health and Addiction Services that perceived criticism of spiritist practices would not lead to a reduction in potentially risky behavior but might only drive such practices into hiding (and beyond the impact of educational efforts).

The specific objectives of Phase II included: 1) conducting a survey among the affected communities to detect the level of awareness of *azogue* as a potential health hazard; 2) developing and widely distributing bilingual/bicultural educational material on *azogue* risk; and 3) exploring other potentially risky substances sold in *botánicas* and other similar commercial establishments.

2.0 Target Population

Targeted by the educational project on metallic mercury were those sectors of the population of Hartford that were identified as patrons of the *botánicas* located in Hispanic and West Indian neighborhoods. The project focused especially on botánica owners, botánica employees, folk healers and their clientele.

Efforts also were extended to other areas of the state, and included an inventory of botánicas located in several other Connecticut cities (e.g., New Haven, Bridgeport) with large Hispanic and West Indian communities, as well as distribution of project educational materials on toxic substances sold by botánicas in these cities.

3.0 Planned Activities

An educational initiative targeted toward the reduction of the *azogue* poisoning risk is a delicate and difficult operation. It involves to some degree modifying elements of the magico-religious ideology held by some members of a subordinate population that is already a victim of discrimination and repression by major social institutions and the dominant Anglo culture. Many individuals in Hispanic and West Indian communities are suspicious of intervention by dominant groups, even if the intention is to intended to reduce a health risk. Resistance might be expected to be especially strong when the issue of concern is seen by the community as a relatively minor one when compared to the poverty-related health problems they face, such as hunger, hazardous and inadequate housing conditions, lack of adequate access to medical services, rampant substance abuse, AIDS, and domestic and street violence. Indeed, under these circumstances, the use of *azogue* and other magico-religious practices should be seen as serving positive social functions in that they help generate hope and a feeling of protection against unpredictable social and economic forces that regularly injure individuals and families in the community.

This point merits emphasis. As earlier research on Puerto Rican spiritism by the Hispanic Health Council has shown (Singer 1984, Singer and Borerro 1984, Singer and Garcia 1989), the popularity of folk healing has not diminished with migration from Puerto Rico (or elsewhere) to the United States. Rather, folk healing systems like spiritism have evolved (by absorbing new elements) to provide participants with a culturally familiar system for coping (with varying degrees of individual success) with the often harsh vagaries and punishments of urban poverty. Spiritism offers participants a system of cultural and religious meaning, social and emotional support, and a set of activities that confer the sense that one is taking action to address life's problems. Consequently, in the face of enormous threats to physical and psychological wellbeing in the inner city, and with a lack of other accessible alternatives, spiritism remains a viable (and probably growing) force among Puerto Ricans, other Hispanics, and other circum-Caribbean populations.

3.1 Organization and Planning

The first phase of the educational effort involved organizational/planning, assessment/testing, and design components. The first activity of the effort was to organize a working team that would provide administrative and technical support to achieve the goals and objectives of the project. This group discussed intervention strategies and methods. They identified additional material and human resources as required through the course of the project.

TEAM MEMBERS

CDHS: Brian Toal (Environmental Epidemiology and Occupational Health)

HHC: 1) Merrill Singer, Ph.D. (Project Director)
2) Luis R. Marxuach (Project Coordinator)
3) Chris Lopez (Project Assistant)
4) Graduate student assistant

HHD: Mark A. Mitchell, M.D. (Director of Health)

St. Francis Hospital: Lee Patcher, M.D. (Medical Staff)

Bryan Toal of the Environmental Epidemiology and Occupational Health office served as liaison between the Connecticut Department of Health Services and the project's coordinators at the Hispanic Health Council. Dr. Merrill Singer supervised project activities. Luis Marxuach served as coordinator of the project throughout all its phases. A bilingual university student provided valuable assistance in the intervention and evaluation phases of the project, particularly in the educational, data gathering and processing activities. The Hartford Health Department provided general support throughout the project. Dr. Lee Patcher provided technical assistance as a medical doctor and as an anthropologist.

3.2 Hispanic/West Indian *Azogue* Toxicity Awareness Survey

While the main goal of this phase of the project was the reduction of risk behavior through community health education, to effectively carry out this work, a basic awareness of the relevant cultural practices of the target populations was required. A survey instrument was developed, based on the previously collected ethnographic data on *azogue*, and administered to the target population to detect levels of use of mercury and awareness of its potential toxicity. Once this information obtained, a series of basic criteria were established to guide the production of educational materials and the implementation of educational activities.

The survey consisted of interviews conducted at homes in targeted neighborhoods and at service provider agencies used by the Hispanic and West Indian populations of Hartford. Survey questionnaires were developed in both Spanish and English and were pretested and modified.

The final household instrument consisted of basic questions on the demographics of the household of the respondent , knowledge of *azogue*, and household use of *azogue* . The provider instrument focused on awareness of *azogue* among clients.

3.3 Educational Materials Development

A series of risk reduction bilingual/bicultural educational materials were developed for public distribution. These materials include: a detailed provider book on *azogue*, an accessible community education brochure, posters, flyers, and public media announcements. The educational materials include useful information on *azogue* , including its: magico-religious and other uses, elemental characteristics, toxicity, routes of ingestion, potential health hazards associated with exposure, identified magico-religious alternatives and recommendations, and sources for more information.

E. IMPLEMENTATION PHASE

1.0 Plans for the Use of Project Educational Materials

The main channels of distribution of the bilingual/bicultural materials developed in the Azogue Project are the places where *azogue* is sold or its use is recommended, including *botánicas* and the working sites of the folk medical practitioners. The Connecticut Department of Health Services will require all commercial establishments where *azogue* is being sold to the general public (e.g., *botánicas*) to provide an educational brochure to every client buying mercury if the *botánica's* owner decides to continue selling *azogue* . The CDHS will request the commercial establishment owner to display in a highly visible location of the store a poster warning users about the possible health hazards of *azogue* and recommended handling procedures. The *azogue* distributors and folk healers will be asked to keep a sufficient number of the required public education materials on hand and to ask the HHC or the CDHS for replacements. The HHC will conduct periodic visits to commercial establishments and healers in order to: a) be certain that instructions are being carried out; b) supplying educational materials; c) providing additional information if requested; d) recording any additional information regarding the use of *azogue* ; and e) integrating any suggestions provided by the participants and clients in the improvement of the educational materials. .

Other participating health and community institutions will assist in the previous process, particularly in the distribution and posting of educational materials.

The azogue educational campaign also will include the distribution of bilingual printed information at local establishments selling thermometers to the target population. Thermometers

containing metallic mercury may become a health hazard if broken, as the person may be unaware of the health risk involved when small quantities of mercury contaminate the environment. This fragile instrument may be broken by accident or by children in order to use the mercury for fun or out of curiosity. Also, there are reports that thermometers have been used as an alternative source of *azogue* when *botánicas* are not found locally. Thermometers are easily available at numerous commercial establishments.

A series of bilingual public service announcements will be produced for those newspapers with the greatest readership in the target populations. Others announcements will be produced for Spanish language radio (Latino 1230) and television (Channel 13-Hartford) audiences.

F. EXPLORATORY PHASE: OTHER FOLK PARAPHERNALIA

Work of the Azogue Project included the identification of other potentially hazardous products being sold at local *botánicas* for ritualistic purposes and as home remedies. A number of toxic products have been identified by other health departments throughout the U. S. (e.g., California, New York, Texas) and in Puerto Rico. An example is the ingestion of *greta* and *azarcón* compounds for *empacho* healing among Mexican-Americans that have been found to contain lead and arsenic.

We have found that among spiritist participants knowledge of the ingredients in commercially produced botanica products is quite limited. Containers do not provide information on the contents and the names of the products are not revealing (e.g., *Bomba Santera*). Some of the product names refer to the main ingredient, as in the case of the *amansaguapo* powder, which is also sold as an unprocessed plant and as liquid. It is common to find the same product (e.g., *amansaguapo*) in various presentations such as natural raw material, oil, water, perfume or powder. The word "alleged" is commonly added before the name of these products in order to avoid complaints by the purchasers regarding its nature or physical or magical effects.

The term *precipitado* is commonly found on the labels of healing products. This term is interpreted by the spiritist participants as something "that speeds or gives strength" to the *trabajos* (works).

In Latin America, according to various Spanish dictionaries, the word *precipitado* commonly means crazy or unreflective. The term *precipitar* has several meanings: 1) to speed things; 2) to expose yourself to a spiritual or physical ruin; 3) imprudence in actions or communication; and 4) slippery.

A similar interpretation is given to the word *azogue*. In Spanish speaking countries, "ser un azogue" means "being restless, agitated, confused", while "azogadamente" translates as "with great speed and agitation". The word "azogar" means to "cover something" with quicksilver, like

a mirror, or to develop tremors as the result of inhaling quicksilver vapors. Hartford participants mention that azogue (mercury) is used to "speeds things up".

The term *azogue* is associated with the term *azote* (to whip, lash, scourge, hit). Spiritists mention that azogue is used to magically "*azotar*" one's victims. According to Delmau (N. D.:32), the name of the plant *pazote* (*chenopodium ambrosioides*) is interpreted in a similar manner, as in the word azogue, "para azotar":

Muchos usan la planta en ciertos ritos para golpear imagenes de personas encarnadas a quienes desean hacer mal, pero en contraste, junto al agua bendita, sus pequeñas florecitas despejan malos ambientes y dan facilidad y proteccion a mujeres con dificultades en sus matrimonios

According to most Hartford specialists and botánica personnel, *precipitado rojo* is one of the most powerful and dangerous substances sold at the botánicas, with the possible exception of the *sangre de dragón* (dragon's blood). González-Wippler (1992:177) mentions that *precipitado rojo* is an "extremely powerful powder used to harm an enemy".

The precipitates are dusts of different colors (e.g., red, white, black, yellow), "and like mercury they are highly toxic, and must not be ingested or placed on skin" (Blanco, 1992:394).

The precipitates are used to dominate someone; in "love magic" when attraction methods do not work, domination methods are used (Blanco 1992:127). However, the most important ingredient is said by folk healers to be sincere love or affection towards the desired person. There is a high demand for this type of work. We have witnessed many individuals seeking help of this sort from spiritist practitioners. The precipitates are combined with other ingredients (e.g., something sweet like *Balsamo Tranquilo*) and these mixtures are customized to fit individual needs and situations. The precipitates literally "precipitates" the desired person to the client, as the ingredient names have power to do what the word means; you say "that this precipitate precipitates (the desired person) to (the client)" while doing the ritual (Blanco 1992:127).

The precipitates (mostly red or white, but also other colors), combined with the other ingredients, are sprinkled over a candle or rubbed on the candle which is said to represent the person who is the object of desire (some candles have the shape of a man or woman), or the ingredients may be placed on a dish to attract or separate people.

Red precipitate is used very commonly in spells to speed the desired results in love or businesses, depending on the other ingredients being combined (Blanco, 1992:394). Red (most common) or white precipitates are also used to dominate a person. Attractive pleasant sweet smelling essences are also used in the love rituals. White precipitate is used to make someone pay loaned money. Red Precipitate is also used to separate two lovers, combined with other ingredients to destroy a relationship (to create hatred) (Blanco, 1992:412). Red precipitate also is used to force a difficult neighbor to move.

1.1 Chemical Contents

According to the Webster Dictionary (1979:1416) a precipitate is "in chemistry a substance that is separated out from a solution as a solid by the action of chemical reagents, temperature, etc.". Chemically speaking (Sax and Lewis 1988:743-74), the mercurials sold at the botánicas in capsules are the following :

- 1) ***Azogue* (quicksilver):** mercury (Hg).
Properties: silvery, extremely heavy liquid, insoluble in hydrochloric acid; soluble in sulfuric acid upon boiling, insoluble in water, alcohol, and ether, noncombustible.
Derivation: by heating cinnabar in air or with lime and condensing the vapor. **Hazard:** Mercury, metallic: highly toxic by skin absorption and inhalation of fume or vapor, absorbed by respiratory and intestinal tract. Spillage may be a toxic hazard due to droplet proliferation. Clean-up requires special care.
Use: amalgams, electrical apparatus, instruments (thermometers, barometers, etc.), mercury vapor lamps, mirror coating, arc lamps.
- 2) ***Precipitado Rojo* (red precipitate):** red mercuric oxide (HgO).
Properties: heavy, bright orange-red powder; soluble in dilute hydrochloric acid and nitric acid; insoluble in water, alcohol, and ether.
Derivation: by heating mercurous nitrate.
Hazard: fire risk in contact with organic materials, highly toxic.
Use: chemicals, paint pigment, perfumery and cosmetics, topical disinfection, fungicide, antiseptic.
Other: Also mercury sulfide (red or black), the red form occurs in the mineral cinnabar, the primary source of quicksilver.
- 3) ***Precipitado Amarillo* (yellow precipitate):** yellow mercuric oxide (HgO). **Properties:** Light, orange-yellow powder, odorless, stable in air but turns dark on exposure to light, finer powder than the red form, slightly soluble in cold water, more so after boiling, soluble in dilute hydrochloric acid and nitric acid; insoluble in alcohol.
Derivation: by the action of sodium carbonate upon mercuric nitrate solution. **Hazard:** fire risk in contact with organic materials, highly toxic.
Use: chemicals, paint pigment, perfumery and cosmetics, topical disinfection, fungicide, antiseptic.
- 4) ***Precipitado Blanco* (white precipitate):** mercurous chloride (Hg₂Cl₂)
Properties: white, rhombic crystals or crystalline powder, odorless, stable in air but darkens on exposure to light, insoluble in water, ether, alcohol, and cold dilute acids.
Derivation: by heating mercuric chloride and mercury with subsequent sublimation.
Hazard: toxic dose in uncertain.
Use: fungicide, electrodes, pharmaceuticals, pyrotechnics, maggot control in agriculture.
Other: mercurammonium chloride, a colorless powdery substance, NH₂HgCl, obtained by the action of ammonia on mercuric chloride in solution. Mercury I chloride or calomel, a extremely toxic, odorless, white powder, toxic to inhale dust or fumes, used also in housepaint.
- 5) ***Precipitado Verde* (green precipitate).** No chemical data available.
- 6) ***Precipitado Azul* (blue precipitate).** No chemical data available.

1.2 Sangre de Dragon

The substance *sangre de dragón* is being sold at the botánicas in a red powder form, which may not be the medicinal dragon's blood plant derivative or it may be a toxic substance.

According to the New Encyclopaedia Britannica (1988, vol. 4, p. 210), dragon's blood is a:

red resin obtained from the fruit of several palms of the genus daemonorops and used in colouring varnishes and lacquers. Once valued as a medicine in Europe because of its astringent properties...[in Mexico] it is used locally to heal wounds and as an astringent.

Riva (1992:58-59), a voodoo writer, recommends the use of dragon's blood:

When properly formulated to include some actual powdered Dragon's Blood Reed, this a powerful protective bath which lends a helping hand toward success in all matters. It is particularly well thought of in connection with the favorable solution to legal entanglements, and is used always the night before a court appearance.

Haskins (1990: 64) mentions that in New Orleans voodoo practices dragon's blood is carried mixed with other ingredients in the pockets or shoes "for luck". The same author (Haskins 1990:168) describes how this herb is used "to guarantee peace and happiness" buried in the ground in a bottle or box. Haskins (1990:177) also recommends the use of this herb for legal court cases through a complex domestic ritual.

While Hartford specialists classified the *sangre de dragón* as as one of the most powerful ingredients used for "works," we were unable to find this ingredient in most of the santería literature purchased at the botánicas. We did find powdered dragon's blood for sale in every botánica visited however.

The Sangre (Roja) de Dragón powder is used combined with other ingredients to brake evil works, eliminate the evil eye, *despojar*, *descruzar* a person, to dominate your enemies, and for love spells to attract the desired person (Blanco 1992:51, 394).

Sangre de Dragón is said to have the power of neutralizing the home against bad influences and "maldiciones". Sangre de Dragón is considered an incense is burned. A common use of Sangre de Dragón, combined as a powder with cinnamon and pure incense, is to dust every part of the house. It is said to keep the evil or negative spirits out of the home if dusted on windows and doors. The prepared Sangre de Dragón powder is mixed with cinnamon to "deshaumar" a house.

The Sangre de Dragón is mixed with other incenses burned on home altars and in spiritist ceremonies to attract spirits (Blanco 1992:394).

1.3. Conclusions

The tentative conclusion is that quicksilver is being used in Santería rituals in conjunction with other mercurial substances, thereby increasing the danger of exposure. If we include these other mercurials in our bibliographic and field research the inventory of Santería spells will increase greatly, particularly for *precipitado rojo*, one of the most dangerous substances, according to chemistry, botánica, Santería and spiritism specialists.

On the other hand, *sangre de dragón* is considered a very dangerous substance by the popular practitioners but the dragon's blood powder is not considered toxic by scientific experts.

The following botanica products have been sent to the Connecticut Department of Health Services laboratories for chemical composition analysis: 1) *precipitado* (powder in gelatin capsule); 2) *sangre de dragón* (powder); 3) *amansa guapo* (powder); 4) *Bomba Santera* (liquid); 5) *intranquilo oil*; 6) *creso* (liquid).

There is a possibility that the *precipitados* powders being sold at the botánicas are not, in fact, mercurial compounds. We are awaiting laboratory results.

II. BIBLIOGRAPHIC RESEARCH RITUALISTIC USES OF METALLIC MERCURY

A. BOTANICA PUBLICATIONS

0.0 INTRODUCTION

Excellent places to search for information on the ritualistic uses of mercury are botánicas. In such places you will find books on Santería, spiritism, magical "works", herbal medicine, witchcraft and many other topics. Most of these publications are very crude produced, many are stapled, photocopied inexpensive booklets costing less than five dollars. The booklets are mostly practical guides to the use of the products found in the botánicas. Many of these publications do not include the names of authors, publication dates, place of publication, or the name of the publisher. None of the publications purchased in Hartford botánicas as part of the project contain an introduction or any reference to the writer's cultural or national background. Many of the botánica publications are written in Spanish. Judging from the Spanish vocabulary used in the booklets, the ingredients, particularly plants, we infer that most of the writers are of Spanish Caribbean origin or descent, others may be Venezuelan or Mexican. Most of these pamphlets and books may have been written by Hispanic writers from New York, Miami, or other U. S. cities.

After a detail examination of over 100 different publications being sold in the botánicas of Hartford, New Haven, Bridgeport, and New Britain, only eleven publications were found to contain reference to the use of mercury (see Table 1.). The botánica publications that deal with mercury fall in four major categories:

- 1) anthropological treatises on Santería practices (e.g., González-Wippler);
- 2) astrology;
- 3) eclectic lists of recipes for magic spells or other rituals associated with specific belief systems (e.g., santería, espiritismo, astrology, European witchcraft, Catholicism, Hoodoo, Voodoo, archemy); and
- 4) specialized practical guides (e.g., charms, amulets, candle use, oneiromancy, prayers, plants).

In this report we will concentrate on the most relevant publications, as defined by the goals and objectives of the Azogue Project.

1.0 SANTERIA PUBLICATIONS

The most reference to azogue in botanica publications is in sources associated with magico-religious practices of a African Caribbean heritage, such as Cuban santería.

1.1 BOTANICA SCHOLARLY PUBLICATIONS

González-Wippler's (1984, 1992) scholar publications are the product of serious research by an academic anthropologist "gone native". González-Wippler's books on santería have become "best sellers" in the botánicas, so much so that many of the spiritists and santeros we visited have a copy of her book *Santería: African Magic in Latin America* (1992) in the original 1973 Spanish version and use it regularly as a reference (i.e., spells) and as a source enlightenment on the santería religion. Part of her success may be due to the fact that her books are written like a practical manual for Santería but at the same time are professionally written with reference to other academic studies, with accurate historical and ethnological information, all supported by a bibliography. González-Wippler warns both the scholar and the botánica client that the information provided does not include the most secret practices of santería. She adds (1992:IX) that :

I have been researching and studying Santería for nearly twenty years, and I feel as if I were still scratching the surface. Many of the hundreds of sources I have tapped in my work are at odds with each other. Many of the priests and priestesses of the religion...do not agree on all practices and beliefs of Santería. ... To add to the problem, the elders are loth to part with many of the secrets of the religion. They even keep their own initiates-ahijados- in the dark about some of the rituals and ebbós.

1.2 ASTROLOGY PUBLICATIONS

A quite distinctive tradition that integrates mecury use in its belief system is Euro-American astrology and archemy. These "sciences" of the occult have their roots in Greek-Roman mythology. Elements of these traditions have diffused and been absorbed into Caribbean folk traditions.

1.3 OTHER BOTANICA PUBLICATIONS

Underrepresented at the Connecticut botánicas are other strong popular magical-religious practices found elsewhere in the U. S., such as Voodoo and "root" medicine from the American South and the Mexican curanderismo tradition from the South West.

No identifiable Puerto Rican publications were found at any of the botánicas visited (which are mostly owned by Cubans or Dominicans). The researchers were also unable to locate relevant information on mercury use in Dominican magico-religious practices, although other azogue researchers and one Dominican botánica owner mention that azogue is being used by Dominican practitioners and spiritist participants.

The bibliographical research on the uses of azogue is summarized in Table 2.

TABLE 2.1
METALLIC MERCURY RITUALISTIC USE
SOURCE-BOTANICA PUBLICATIONS

No. Sources	No. Recipes	Cultural Heritage	Ritual Type
4	10	Cuban santería (U. S.)	spells (love)
1	2	Cuban santería (Cuba, 1990) (keep police away or to	protective offerings save) (Echu Agganiká or Egbayilá) figures.
5	5	European astrology (Mercury) enterprises: gambling,	amulets (intellectual trips, evil
1	1	European general folklore (eclectic publication: European, Voodoo, Mexican. No santería)	amulets (against evil eye, gambling luck)
1	1	Spanish oneiromancy (dreams interpretation)	dream analysis (luck

2.0 GENERAL BOOKSTORES AND THE NEW AGE

Azogue is being used in the U. S. in both Voodoo as well as in Anglo New Age practices. Interestingly, publications that describe magical uses of mercury (in a more professional and luxurious presentation) can be found in bookstores such as Barnes and Noble in the suburbs around Hartford.

Magic and witchcraft have become popular among white middle class New Age participants. Magical and occult publications on topics such as witchcraft, gypsies, medicinal plants, astrology, card reading, amulets, are now located in the New Age section of chain bookstores. In these publications mercury is described as being used to prepare amulets following the "Hebrew tradition." Currently, botánicas and occult stores are being "discovered" by the New Age groups.

TABLE 2.2
METALLIC MERCURY RITUALISTIC USE
SOURCE-GENERAL BOOKSTORES

No. Sources	No. Recipes	Cultural Heritage	Ritual Type
1	2	Haitian Voodoo (U. S.) to turn a trick)	spells (to make fight,
2 <i>(hechizos)</i>	4	Curanderismo (P. R., < 1940) neutralize evil drink), amulets (<i>guardapelos</i>) (against evils, illness),	ingestion (<i>toma</i>) (to spells
1	1	European Astrology	amulet (god Mercury)

3.0 SCHOLARLY LITERATURE

According to Goldwater (1972), the use of azogue in rituals has been quite common historically throughout the world (e.g., China, India, Middle East, Europe, Americas). Some of the uses of metallic mercury in popular practices can hardly be explained in terms of the specific pharmacological activity of the substance. Quicksilver (as metallic mercury is also known) has figured prominently in folklore, with applications for both good and evil purposes. The most popular medicinal use of mercury has mostly been in prevention and protection (e.g., quicksilver amulets) against the evil eye, evil spirits, and bewitchment. Quicksilver also has been used in medicine to ward off specific ailments (e.g., rheumatism).

Quicksilver is known as *asoque* [sic] by Mexican-Americans in New Mexico and other states bordering Mexico, where it is used for empacho (a culture bound gastrointestinal disorder) as a home remedy. Mercury and añil (laundry bluing), which is another potentially toxic substance, are taken internally but are not among the most commonly used empacho remedies among Mexican-Americans.

The magico-religious use of azogue in Puerto Rican culture is practically undocumented, but the available literature helps to trace it back at least to the last quarter of the nineteenth century when it was used as a protective measurement against evil influences.

The only known bibliographic sources on azogue use in Puerto Rico are Andino Acevedo González's (1989) *¡Que Tiempos Aquellos!* and Teodoro Vidal's (1989) *Tradiciones en la Brujería Puertorriqueña*.

There is one quite distinctive use of azogue in Puerto Rican culture, independent from its role in santería love spells. This is creation of protective or evil works and involves oral ingestion or skin applications, as well as use of azogue amulets. These azogue uses are equally described in the native scholarly publications and by the Hartford research participants. However, in the U.S. the Puerto Rican magico-religious tradition has come under the influence of the Cuban santería tradition and is absorbing many elements of the latter.

TABLE 2.3
METALLIC MERCURY RITUALISTIC USE
SOURCE-SCHOLARLY PUBLICATIONS

No.	Sources	No. Recipes	Cultural Heritage	Ritual Type
1	Sardinia, Spain, Germany, Russia, England, Syria, Algiers, Tunis, Turkey)	18	Western Folklore (Estonia, Hebrew, human, animal illness),	1) amulets (against evil eye, spirits, spells,
1	England		offerings to deities	2) archemy, medicine
2	India		1) poison, 2) archemy	
7	China		1) alchemy (gold	(elixir to
	making), 2) prolong life)		3) spells (against	evil)
2		6	N. Y. Hispanic botánicas get rid of evil spirits),	1) house washes (to 2)

perfumes, body		washes.
1 Cuban santería (U. S.) N.A. Colombia, Dominican Republic, Peru, Haiti, Mexico, P.R.		spells (love) non described
1 Mexican-American (New Mexico) curanderismo		gastrointestinal disorder (empacho)

B. CONCLUSION

The most commonly available printed sources on azogue use in Connecticut are santería books by Cuban immigrants. These references, which are found easily in Hispanic botánicas, contain descriptions of the use of mercury in the preparation of love spells. However, the only Santería book published in Cuba that we identified described azogue use in the preparation of protective offerings for the Yoruban god Elegguá to keep the police away.

The second most common botánica publication describing the use of quicksilver are those dedicated to the production of amulets based on European astrology. Finally, only one botánica oneiromancy book was found that described quicksilver symbolism. No Puerto Rican publications were found in Connecticut botánicas that made reference to mercury.

Several scholarly works on folk use of mercury were found in local libraries. Most relevant scholarly studies concentrate on the god Mercury and astrology. However, Goldwater's (1972) *Mercury: A History of Quicksilver* mentions the folk use of metallic mercury in various parts of the world.

A search through regular local bookstores in the New Age, religion, sociology/anthropology, and African-American sections (there are no Hispanic studies sections) only produced two New Age publications describing the use of quicksilver for astrology and voodoo.

Only two Puerto Rican curanderismo publications purchased in island's bookstores described the use of azogue.

Of the dozens of magical formulas included in Table 2 that include use of azogue, none mention its use for household washes and only one a Puerto Rican publication mentions drinking the substance. The source of most of these formulas are botánica and santería

books written by santería practitioners of Cuban, Mexican-American, Puerto Rican and Venezuelan origin. Researchers were unable to find a botánica book in Connecticut published in Puerto Rico or describing the Puerto Rican spiritist tradition. González-Wippler is a Puerto Rican anthropologist studying the Cuban Santería tradition. The printed material survey shows that the practices of sprinkling or drinking azogue may be more a Puerto Rican tradition more than Cuban one. However, on the other hand, in the bibliographic research it was found that most of national traditions have being syncretized in an pan-spiritist milieu that is dominated by santería. It would not be incorrect to say that the predominant religious ideology among inner city Hispanics is "spiritism" in the general sense of the word. To understand azogue use we must understand spiritist ideology.

III. ETHNOGRAPHIC FIELD RESEARCH

A. EXPLORATORY PHASE CONCLUSIONS

A familiarization with the two main forms of popular religious belief (Espiritismo and Santería) in the Hispanic community of Hartford is essential to the understanding of the cultural context of azogue use. Those who are especially gifted and act as mediums in Espiritismo or Santería are called espiritistas and santeros, both practitioners having the capability for producing either good or evil. The use of espiritismo or santería for evil or harm is often referred to as brujeria (witchcraft) or magia negra (black magic). Although all ten of the espiritistas and santeros interviewed by the Hispanic Health Council as part of this project knew of its existence, none claimed to be associated with brujeria or magia negra. Instead, they claimed that the powers they have are a gift from God that they use in order to help other people. Prior research by the HHC affirms that this is the most commonly held attitude among spiritism's participants.

During a client visit, the espiritista or santero generally contacts the spirit world to seek information on the problem(s) presented by the client and, in addition, may give the client instructions including a "prescription" or a list of materials to use to overcome the problem at hand (e.g., herbs, candles, baths, perfumes). Usually, these can be obtained at a botánica, a store that sells folk remedies along with other supplies associated with popular religious practices. It is at these botánicas where azogue is sold, usually in gelatin capsules costing between one and two dollars a piece and each having between 1.5 and 31 grams of mercury. In Hartford, there currently are five botánicas, three of which sell or have sold azogue. Botánica Changó (the largest botánica in Hartford) reports selling approximately twenty capsules a week.

According to the information gathered by the HHC, azogue is used for a variety of purposes and is known for its forceful and protective properties in both Espiritismo and Santería. Azogue has been defined in context as a substance "que da cantazo" (that delivers a blow) and hence is used as a "booster" or a "catalyst" to enhance *trabajos* (spiritual works/spells). Although azogue can be used for either causing good and evil outcomes, based on interviews with spirit participants, it appears to be mainly used for protection against evil or harmful influences and for achieving good luck.

One common way azogue is used for magical purposes is in protective *resguardos* (magical shields) which usually involves putting a drop of azogue in a leather pouch along with a variety of herbs such as yerba buena and/or onion. This resguardo usually is worn around the neck or elsewhere on the body and is thought to bring good luck and keep away any daños (evil spells) directed against you. A simple capsule of azogue by itself may be carried in one's pocket as a protective talisman.

The practice of drinking azogue, either mixed with holy water or by itself, is explained as a protection against daños directed towards the stomach. Of the ten healers interviewed, one admitted to drinking azogue in the past and another said she would prescribe drinking it if presented with someone with a heavy daño done to his/her stomach. Jamaicans and those practicing Santería were often described as drinking azogue to protect their stomach. Some individuals are said to have been drinking it for years with no apparent ill effects. These observations could not be verified however.

Azogue also can be used for the spiritual cleansing of the home, a practice often referred to as *despojo*. This is usually done when there is a suspected evil presence in the house or on a regular basis in order to keep away evil influences. The methodology of a despojo varies from individual to individual, but usually involves the use of plants and herbs such as yerba buena, pazóte, and coconut along with perfume, incense and sprays such as San Miguel, Siete Potencias Africanas, and Santa Barbara. These are spread throughout the home with the door usually left open so that the spirits may depart. Also the floor is sometimes cleansed with special floor washes sold at botánicas made solely for this purpose.

Azogue may be mixed with these floor washes or blessed water and used to cleanse the floor, but sprinkling this mixture in the corners of the home may be done as well. Another method is to put the azogue into a cup of water and set it near the entrance to the home, to keep evil influences from entering. This cup may be left indefinitely or for three days, after which the mixture is sprinkled throughout the home. The frequency of performing despojos varies and can range from two or three times a week to two or three times a month. Despojos can also be performed for businesses establishments when the slowing of business is thought to be caused by evil influences.

Other forms of azogue use include adding it to the bath and rubbing it on the body for a personal despojo, putting it in candles to "magnify" their power (e.g., Love Candle), and applying it to an íman (lodestone) in order to bring about good luck/fortune. One espiritista even mentioned its use by drug addicts who inject it intravenously, presumably

to enhance the effect of the drug. He added that it drives them "crazy". Interviews by the HHC with substance abuse treatment professionals and injection drug users did not produce any confirmation of this practice, however.

In assessing *azogue* use, it should be noted that since espiritistas/santeros may come from different ethnic backgrounds, it is difficult to determine how common each method of *azogue* use is, especially in a preliminary study. However, at least for the ten individuals interviewed, drinking *azogue*, using it for resguardos, and using it for despojos of the home were the most frequently cited methods of use.

Possibly, because of secrecy and fear of ridicule by non-users, only two out of the ten individuals interviewed claimed to have used *azogue*. One stated that he used it mainly for resguardos and occasionally for despojos of the home as well. However, it cannot be denied that *azogue* is being used and in ways that may be harmful to human health. It should also be noted that *azogue* is mentioned to be frequently employed by those who practice *brujeria* (witchcraft). Since none of the individuals interviewed claimed to associate with this aspect of espiritismo/santería, we were unable to record any details of how *azogue* is used in this context.

B. PHASE II. SUMMARY

1.0 HOUSEHOLD SURVEY

1.1 Informant's Reaction to *Azogue* Questions

A notable number of individuals interviewed in the household survey became nervous or uncomfortable when asked about *azogue* use, but they responded negatively concerning having knowledge on the topic. The most interesting case was a santero called El Padrino. El Padrino denied use of *asogue*. However, during a visit to his home it was noticed that he had a white candle sitting on a living room coffee table along with a picture of his diseased mother. This large white candle was in a plain (no printing) glass and the wax contained numerous drops of *azogue*. However, when asked about it, El Padrino responded that the candle came *preparada* (already prepared) with the *azogue*. Like other spiritists and santeros interviewed, he indicated that *azogue* was used for both good (resguardos) and evil (trabajos). When used alone *azogue* was used for good, and when used with other ingredients was used for malevolent purposes.

VI. QUICKSILVER USE AS A HEALTH RISK ALTERNATIVE INTERVENTION APPROACHES

The following is description of possible actions that may be taken in order to reduce the health risk created by the exposure to metallic mercury. We have also included some of the positive and negative effects of each alternative intervention approaches.

A. LEGAL INTERVENTION.

1.0 Total prohibition of metallic mercury production, distribution and use.

We are not going to discuss the prohibition of industrial use of metallic mercury, in spite of the fact that this activity poses a serious health hazard. Environmental groups have been unable to ban toxic mercury use in industry spite the fact that it is a major water pollutant. Mercury is found in fish and seafood, but none of these products come with warnings labels.

Quicksilver is also used in household products. Quicksilver containing thermometers are still been sold in spite of the fact that this product is a major cause of mercury poisoning (acrodynia).

2.0 Selective prohibition of quicksilver commercial distribution.

The current approach by public health authorities in the U. S. (e.g., California, Puerto Rico) to the use of azogue is to prohibit its sale at the botanicas and other similar establishments. This approach have been justified supposedly because the spiritual use of mercury is a health hazard. Results have been mostly negative in Puerto Rico as the government lacks the human resources (i.e., DACCO inspectors) to enforce regulations and azogue continues to be sold in at least one hundred botanicas in Puerto Rico. The sale of azogue is becoming a more profitable business as the prohibition have created an azogue cost inflation. The researcher even bought azogue at a higher price at a botanica in New Britain, Connecticut, because according to the Dominican owner azogue sales are prohibited in Connecticut and New York "because is used to produce explosives".

How serious a health risk is the folk use of azogue has not been determined by the health authorities. There have not been any ethnographic or medical study on the ritualistic use of azogue that would justify the resent legal action taken by health authorities. Basically their actions have been based on the fact that azogue is being sold at botanicas and by the public awareness created by a few "scholars" (i.e., medical doctor, psychologist, public health official)

none of which has the special academic training to conduct anthropological research on the topic. These dominant group authorities purpose is basically medical, to find hard evidence of how unhealthy is the folk use of azogue in order to force medical authorities to act legally against this menace.

Interviews conducted by the researcher with this group of azogue experts produced several conclusions. First, none of the interviewed have conducted intensive ethnographic research on azogue use.

Second, none of the azogue researchers have even conducted serious bibliographic research on the cultural use of mercury. These scholars declared not even read such basic mercury scientific literature as Goldwater (1972) *Mercury: A History of Quicksilver*. The lack of knowledge of the basic ethnological literature on azogue was equally impressive. None of the "researchers" knew of the existence of such basic Puerto Rican folklore literature as Andino Acevedo González (1989) *¡Que Tiempos Aquellos!* and Teodoro Vidal (1989) *Tradiciones en la Brujería Puertorriqueña*. Not even the Puerto Rican University of Puerto Rico psychology professor knew about these publication that include a discussion on the folk use of azogue by the people of Puerto Rico.

Third, the azogue use researchers lack of knowledge of Santeria and its in depth relation with azogue was equally absent. The main azogue researcher and most devoted crusader against the folk use of azogue among Hispanics is a New York City medical doctor who is seriously limited in his studies by his lack of the Spanish language. He have been able to read some Santeria books written in English such as Gonzalez-Wippler publications, but even his references to her books are incorrect. In conclusion medically oriented researchers main interest is to find scientific proof that the ritualistic use of azogue is a health risk. However, none have been able to find evidence (e.g, laboratory urine or blood test , home mercury vapor tests) that ritualistic use of azogue is a health hazard.

The ideal goal, according to health authorities in California and Puerto Rico, is the total prohibition of quicksilver sales through botanicas and similar stores to the general public, which happens to be minority groups (e.g. Hispanics, West Indians, African-Americans, Asians. This simplistic, direct , hasty cohesive approach is really ethnocentric and may even be anti-constitutional when azogue is used by minority religious groups.

The justification that mercury is a health risk, particularly when inhaled have been scientifically proven, but so are many other products sold on the legal market today. Tobacco is a health hazard, particularly when inhaled, such does are all the petroleum oil derivatives (e.g., gasoline, thinner). The list of household products sold at any supermarket (Lynn 1992) which are capable of producing toxic fumes is quite impressive: gas, kerosene, spot remover, tobacco smoke, ammonia cleaners, drain cleaners, insecticides, oven cleaners, carpet shampoo, air

fresheners, glass cleaner, nail polish remover, dry cleaning products, mothballs, chlorine bleach. Is true that many of these toxic products have warning levels, but people continue to use them in a way that exposes them to their toxic effects.

The banning of azogue has a very distinct ethnocentric and racist tint. It follows the same logic of prohibition of animal sacrifices in Santeria and the banning of Santeria meetings in the inner cities by police because is connected to the demonic cults. Occult practices are becoming popular among White middle class suburbans, including demonic cults.

3.0 Public Awareness

What is recommended here follows the same logic as other educational programs targeted to minority groups in the inner cities. Many of the activities practiced by the subordinate classes in the U. S. are seen as a threat to the dominant establishment and are classified as "illegal". Such is the case of psychotropic substances sold by the informal sector and these services provided by sex workers. Current HIV/AIDS prevention programs have rejected the moralistic or judiciary approaches. These prevention programs distribute condoms, bleach bottles, hypodermic needles among the inner high risk population. The approach is not to prohibit but how to do it "safely". These same programs demonstrate how to wash needles among "shooting galleries" heroin users. The prohibition of commercial distribution of "illegal" or "controlled" substances in the U. S. have not been quite successful. On the other hand the educational approaches such as the use of clean needles have reduced the cases of HIV infection.

Multiple public awareness approaches may be used regarding the toxic nature of metallic mercury and other botanica products. This educational campaign must be targeted toward both the health services personnel and the general public. The list include: 1) product warning labeling through legislation; 2) bilingual educational literature; 3) mass media announcements; 4) public presentations; 5) outreach efforts among azogue distributors and users, including spiritual specialists and botanica owners.

The Hartford Azogue project includes research on azogue use and the production of educational material based on the research results.

The production of two basic type of educational brochures are required. The first type of bilingual educational material (see annexed *Guide to the Spiritual Use of Azogue*) must be targeted toward the botanica clients, particularly potential or current azogue users. The objective is to: 1) recommend how to use azogue safely; 2) to discourage the use of azogue by providing information on mercury poisoning; 3) to provide alternative modes and ingredients that have the same function as azogue. The educational material have been produced based on the ethnographic and bibliographic research on azogue. Great care have been taken to use the terminology of Santeria and Spiritism employed by botanica clients.

VII. BIBLIOGRAPHY

METALLIC MERCURY RITUALISTIC USE

A. BOTANICAS AND GENERAL BOOKSTORES

1.0 BOTANICA

Blanco, Celia. *Manual Esoterico*. Baruta, Venezuela: Corprensa, S. A.; 1992.

Bolívar Aróstegui, Natalia. *Los Orishas en Cuba*. La Habana: Ediciones Unión, Unión de Escritores y Artistas de Cuba; 1990.

González-Wippler, Migene. *Powers of the Orishas: Santería and the Worship of Saints*. New York: Original Publications; 1992.

González-Wippler, Migene. *Rituals and Spells of Santería*. New York: Original Publications; 1984.

González-Wippler, Migene. *Santería: African Magic in Latin America*. New York: Original Publications; 1992.

Külzner, Dr. *Filtros Magicos: Maravillosos Secretos para Alcanzarlo Todo*. Barcelona: Extasis Corp. [New York]; 1973.

N. A. *Despojos, Baños, Limpiezas, Riegos y Hechizos*. N. P. P.: N. P.; N. D.

N. A. *El Libro de Los Sueños*. Mexico, D.F.: El Libro Español; N. D.

N. A. *Magia Sideral: el Arte de Trabajar con los Genios Mediante los Talismanes Planetarios*. N. P. P.: N. P.; N. D.

N. A. *Talismanes y Amuletos...o el Secreto de los Secretos. La Clavícula de Salomón*. Miami Springs, FL: Language Research Press; N. D.

Riva, Anna. *Spellcraft, Hexcraft and Witchcraft: a Handbook of Do-it-Yourself Enchantments for Good and Evil*. Los Angeles: International Imports; 1992.

Rizzo, Diurny. *Magia Hecha en Casa*. N. P. P.: N. P.; 1991.

2.0 GENERAL BOOKSTORES

Acevedo González, Andino. *¡Qué Tiempos Aquellos!* Río Piedras, P. R.: Editorial de la Universidad de Puerto Rico; 1989.

Haskins, James. *Voodoo and Hoodoo: Their Tradition and Craft as Revealed by Actual Practitioners*. Chelsea, MI: Scarborough House/Publishers; 1990.

Núñez, Luis Manuel. *Santería: A Practical Guide to Afro-Caribbean Magic*. Dallas: Spring Publications, Inc.; 1992.

Pompa, Gerónimo. *Medicamentos Indígenas*. Madrid: Editorial America, S.A. [Miami]; 1977.

Vidal, Teodoro. *Tradiciones en la Brujería Puertorriqueña*. San Juan, PR: Ediciones Alba; 1989.

B. SCHOLARLY PUBLICATIONS

Borrello, Mary Ann. "Botanicas": *Puerto Rican Folk Pharmacies*. NH; 1977; 86(7): 64-73.

Clarson, T. W. *Mercury: An Element of Mystery*. New England Journal of Medicine; 1990: 323:1137.

Clement International Corporation. *Toxicological Profile for Mercury*. Atlanta: U. S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, Division of Toxicology; 1993.

Consumer Reports. The Mercury in your Mouth; 1991; (May): 316-319.

Curtis, H. A.; Ferguson, S.D.; Kell, R. L. ; Samuel A. H. Mercury as a Health Hazard. *Archives of Disease in Childhood*; 1987; 62: 293-294.

Fogarty, Colleen T. Folk Religious Beliefs in The Hispanic Community: some Implications for Primary care; June 21, 1991; M. S.; Primary Care Clerkship, School of Medicine, University of Connecticut, Farmington, CT.

Geffner, Mitchell E.; Sandler, Alan. Oral Metallic Mercury: A Folk Medicine Remedy for Gastroenteritis. *Clinical Pediatrics*; 1980; 19(6): 435-437.

Goldwater, Leonard J. *Mercury: A History of Quicksilver*. Baltimore: York Press, Inc.; 1972.

N. A. Elemental Mercury Poisoning in a Household-Ohio, 1989. *Morbidity and Mortality Weekly Report*; 1990; 39(25): 424.

New York City Department of Health. Health Department Warns People who Use Mercury of Potential Mercury Poisoning [Press Release]; June 18, 1991.

Novello, Antonia C. (Surgeon General of the Public Health Service). [Letter to Arnold Wendroff, Ph. D.]. Department of Health and Human Services, Public Health Service; October 16, 1990. 1 page; HHC.

Otto, Mary; Spencer-Molloy, Frank. Folk Remedy Raises Concerns. *The Hartford Courant*. Hartford, CT; Monday, September 30, 1991; A(CLIV:273): A-1, A-8.

Peyser A. Ritualistic Poisoning. *New York Post*; September 12, 1991: 5.

Singer, Merrill and Maria Borrero *Indigenous Treatment for Alcoholism: The Case for Puerto Rican Spiritism*. *Medical Anthropology* 8(4):246-272, 1984.

Singer, Merrill *Spiritual Healing and Family Therapy: Common Approaches to the Treatment of Alcoholism*. *Family Therapy* 9(2):155-162, 1984.

Singer, Merrill and Roberto Garcia *Becoming A Puerto Rican Espiritista: Life History of a Female Healer*. In: Women as Healers. Edited by Carol Shephard McClain, pp.157-185 New Brunswick, NJ: Rutgers University Press, 1989.

- Trotter, Robert T. II. Greta and Azarcon: A Survey of Episodic Lead Poisoning from a Folk Remedy. *Human Organization*; 1985; 44(1): 64-72.
- Von Mühlendahl, Karl Ernst. Intoxication from Mercury Spilled on Carpets. *The Lancet*, 1990; 336(December): 1579.
- Wendroff, A. P. El Envenenamiento con Mercurio. *Medico Interamericano*; 1991; 10(11): 64-68.
- Wendroff, Arnold P. Bringing Attention to Mercury Threat. *Society for Applied Anthropology Newsletter*; 1991; 2(1): 3-5.
- Wendroff, Arnold P. Domestic Mercury Pollution. *Nature*; 1990; 347(October 18): 623.