



MINISTÉRIO DO TRABALHO E EMPREGO - MTE
Delegacia Regional do Trabalho e Emprego no Estado de São Paulo -DRTE/SP
SEÇÃO DE SEGURANÇA E SAÚDE DO TRABALHADOR - SSST/SP

São Paulo, 09 august 2006

To: Chemicals Branch

United Nations environment Programme

Dear Sirs,

We are hereby forwarding you a summary report on the activities we have been carrying out on how to abolish mercury out of the health sector.

Yours sincerely,

Cecília Zavariz

ABOLITION OF MERCURY IN THE HOSPITAL SECTOR OF SÃO PAULO, BRAZIL.

Dr Cecília Zavariz¹

The work presented herein reflects some of the activities and results of the work we have been carrying out in the health sector, with regards to the use of devices using mercury (Hg).

Since 2003 we have been carrying out a work with regards to the use of devices using Hg, with a view to abolishing its use in the health sector all over the national territory and preventing intoxication by mercury and contamination of the environment as a consequence. Such activities are part of Mercury National Program, which objective is to eliminate such extremely toxic metal in all situations that can be replaced by alternative technologies.

We noticed, at the beginning of this work in the hospital sector, the use of a pressure gauge with Hg, that was utilized to measure invasive mean blood pressure in surgery centers and intensive care unities/centers. That device put in risk the health of workers of that sector of activity, on top of possibly aggravating the condition of patients in hospital for surgical or clinical treatment for other pathologies as a consequence of inhalation of such toxic product. The pressure gauge (manometer) became known in the hospital sector as “tobacco-pipe” due to its shape. A doctor usually made the preparation of the device, by pouring liquid mercury in a glass ampoule. The aforementioned mercury-bearer device was opened on both ends, being one of which connected to a catheter introduced in the patient’s blood vessel whereas the other end remained open, and from where mercury steady evaporated. Besides those risks, the device underwent a sanitation and sterilization process after each proceeding. Manipulation of metallic mercury was direct. It was taken out of the ampoule, washed in water and chemical products many times and placed in a recipient, closed and sent to a greenhouse for sterilization. Furthermore, there was the risk of

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breaking the ampoule, thus spilling the contents during its use and manipulation. In these circumstances, mercury was partially recovered and partially lost in the washing process, being carried away by the sewage system, thus contaminating the environment. The problem is not restricted only to the professionals exposed to it, but is extended to the whole population, through the environment contamination that occurs as a result of the product being discarded thus polluting the waters. As this product is cumulative, metallic mercury remains in the environment, possibly undergoing chemical changes after contaminating the atmosphere and people as it evaporates in the air, also contaminating the flora and fauna and mainly fish, source of food for people.

Whereas the use of pressure gauge devices is highly risky and whereas there is a need for one to adopt effective measures to abolish any possibility of intoxication hitting either workers exposed to it at work or the population as a whole, as well as eliminate the risks related to the maintenance of such devices, we have forwarded the State Minister of Health a document requesting the adoption of measures so as it may determine a ban on the use of mercury pressure gauges on health departments all around the national territory, because the adoption of such measure is the responsibility of the Ministry of Health Sanitary Monitoring Agency (Agência de Vigilância Sanitária do Ministério da Saúde – ANVISA), which actually took place through Resolution – Re nº 16, published in the Federal Official Gazette on July 7th, 2004. In order to provide our request further grounds, we made a previous survey at hospitals in both the city of São Paulo (greater capital) and city of Vitória (small capital).

Figure 01 – Mercury Pressure Manometer abolished in Brazil in July 2004.



An article was published in July 2004 in São Paulo Medical Trade Union magazine "DR", in which we explained the health problems caused by mercury and the ban on the use of pressure gauges. As our intention was to call the attention to this issue, that publication was relevant because that magazine is very popular among doctors and the subject is directly linked to the use of that device in hospitals and the manipulation by physicians of a device so aggressive to health.

At the end of 2003 and beginning of 2004 we sent letters to hospitals in São Paulo city requesting them to complete an inquiry in which we asked questions on the use of mercury devices, among others. 40 closed letters and 98 answered letters were returned by post. Out of 62 answering agencies, 21 were hospitals having over one hundred (100) employees, 41 had less than one hundred (100) employees and 04 had no employees. Out of the 21 hospitals that had some kind of mercury device, 21 had pressure gauge (268 unities) and 12 had sphygmomanometers (875 unities). Out of the 21 hospitals 10 made no mention about the number of mercury equipment they used, just answering they did have this kind of device. Out of the other 41 health agencies clinics, doctor's offices etc), 12 had thermometers (76 unities) and 04 (9 unities) had sphygmomanometers.

As far as the sphygmomanometers and thermometers are concerned, besides clarifying the problems caused by mercury, the reasons why its use should be abolished and the guidance on giving preference to mercury-free equipment as the devices are replaced in the inspection visits we accomplished, we also had all these information entered in the Labor Inspection Book. The pedestal sphygmomanometers are very much used in hospitals. As the mercury column may be broken and contaminate the environment and people, we advised them to replace the Hg column. As to the thermometers, although the digital equipment is more expensive, they are more durable and cannot be broken, like the ones from glass with mercury.

We visited agencies that resale the equipment to the health sector and recommended them to preferably sell mercury-free devices and also guide and sensitizing clients, making them aware of the problem.

We also inspected a few companies that manufacture the equipment to check the risk mercury brings to the production, packing and disposal of the material, making specific recommendations, as well as put forward a work of awareness and sensitization, suggesting

the deferment of the production and commercialization of mercury devices, thus encouraging the use of mercury-free equipment.

The simultaneous effort of sensitization and awareness developed in person in our visits resulted in the ban of such devices on the part of several agencies in São Paulo, which gradually started due replacements, as is clear in the results hereinafter described.

We made changes to our previous Inquiry in order to make its completion and return easier, more objective and focused on specific questions to sphygmomanometers and thermometers and sent it to health agencies in the first months of 2006. We sent the new form also to new agencies, besides those that had answered the first time. 34 returned by post closed, among which 06 had been addressed to hospitals.

The answers were analyzed and hospitals that had agreed to replace their equipment for mercury-free ones were also included in this statistics.

Out of the 273 agencies, 141 had no mercury devices, 132 had some kind of mercury device, 98 of which having thermometers (9,682 unities) and 83 (3,351 unities) sphygmomanometers. Some agencies partially or fully replaced one of the equipment. The total number of employees in those agencies was 97,934.

Out of 80 agencies with over one hundred (100) employees each, (with a total of 96,526 employees), 77 were hospitals and 03 clinical laboratories. 62 had mercury thermometers (9,402 unities) and 65 had mercury sphygmomanometers (3,281 unities). 70 agencies had some kind of mercury equipment. 10 hospitals had no mercury equipment at all.

We found that out of 193 agencies with less than one hundreds (100) employees each, 11 were hospitals and 41 had no employees. Out of these 11 hospitals, 06 had thermometer (62 unities) and 04 had sphygmomanometers (23 unities). Currently, 04 of these hospitals have no mercury devices. Out of the 41 agencies with no employees, 34 had no mercury devices, 06 of which (8 unities) having Hg thermometers and 03 (5 unities) having Hg sphygmomanometers. Out of the remaining 141 agencies (920 employees), 93 had no mercury equipment and 48 had some kind of Hg device, 24 of which (210 unities) having Hg thermometers and 11 (42 unities) had Hg sphygmomanometers.

As one expected, most of mercury devices were concentrated in big agencies with higher number of employees.

Small-size agencies and those with few equipment replace their devices for mercury-free new ones as a result of the sensitization and information effort on the mercury risk alone.

We are concentrating our work in hospitals at the moment because of the number of equipment they have, number of employees and type of agency. However, our effort in this direction does not hinder our activities important to maintain the banning of mercury in the health sector as well as in other sectors of human endeavor.

In May 2006 we gave a Conference on the *“Risks of mercury on health and contamination of the environment as well as replacement of mercury equipment in the health sector”* at DRT/SP, with the participation of representatives of 38 hospitals of the city of São Paulo. We prepared and handed out two documents in the event. One of them was on guidelines on procedures to adopted in the event of mercury leakage and one recommending the replacement of sphygmomanometers and mercury column thermometers for mercury-free devices. This material is still being distributed in hospitals.

We also proffered talks in big hospitals to bring awareness on the risks and sensitize the public on the issue, where we also distributed the related material.

We visited the Hospital Fair, the biggest event of the kind in Latin America, which takes place annually in the month of June in São Paulo. The event is a world exhibition on the health equipment and device industry. The organizers of the event offered to spread out among the participants our recommendations on the replacement. We believe we need to take part in all events and places we can possibly spread this subject to introduce our proposals on the matter.

We also had the opportunity to spread the topic in the media.

NGO Association to Fight Organo-persistent Pollutants (ACPO - Associação de Combate aos Poluentes Organopersistentes) placed the recommendations and procedures for situations of mercury leakage we have prepared for the site with access through the following links:

PROCEDURES IN CASE OF MERCURY LEAKAGE

http://www.acpo.org.br/biblioteca/02_substancias_quimicas/mercurio/procedimentos%20hg.pdf

TECHNICAL RECOMMENTADION

http://www.acpo.org.br/biblioteca/02_substancias_quimicas/mercurio/recomendacao.pdf

ANVISA RESOLUTION

http://www.acpo.org.br/biblioteca/02_substancias_quimicas/mercurio/anvisa.jpg

A publication on this work is foreseen in a Brazilian magazine on Medicine, with distribution all over the country. With this initiative, we look forward to encouraging more colleagues to join us in this fight to ban mercury.

We have organized round tables in 04 hospitals at DRT/SP, which signed agreements to carry out the replacements. One of them shall make the replacements until August 1st, 2006, one until September 3rd, 2006 and the other two until October 31st, 2006.

Other hospitals are summoned to participate in several round tables to sign agreements with deadlines for the replacements. We are first notifying those hospitals that failed to answer the inquiry and then we shall notify those who did answer it. Our aim is to organize these round tables in all hospitals in the city of São Paulo in order to settle agreements defining deadlines for the overall replacement of mercury devices until the end of 2006 and also extend this work to other cities in Brazil.

We look forward to seeing our activity not hindered by the Ministry of Labor and Employment, and that this agency rather necessary conditions to the expansion of our work in other parts of Brazil, where we can have a significant impact, due to our long experience in the sector of mercury, thus collaborating to the transformation of reality.

We are aware that all those who worry with the health of the planet should put themselves into action so that contamination by mercury may be reduced, thus improving the quality of life.

We look forward to counting on the support of international organizations so that we may expand this work to other regions of the country and definitively eliminate the use of mercury as well as any mercury device in the overall health sector.