

FINAL REPORT

Project: Environmental Health Studies in Escambia and Santa Rosa Counties

Project Period: September 29, 2002 to September 29, 2004

Project Director: Dr. K. Ranga Rao, Professor and Director
Center for Environmental Diagnostics and Bioremediation (CEDB),
Bldg 58, Room 70, University of West Florida, Pensacola, FL 32514

Co-Project Director: Dr. John J. Lanza, Director
Escambia County Health Department
1295 West Fairfield Dr,
Pensacola, FL 32501

As described in the IRB application, the above project was conducted by UWF-CEDB in collaboration with the Escambia County Health Department (ECHD; Dr. John J. Lanza, Co-Project Director). Prior to the initiation of this project, the ECHD--working with a community organization, CATE (Citizens Against Toxic Exposure)--began identifying individuals who live or lived near Escambia Wood Treatment Company (ETC) site, and those who worked at the ETC or nearby industrial sites, and collecting information on their environmental history as well as performing initial health screenings. The CDC grant enabled us to carry out follow-up clinical evaluations, including biomonitoring for contaminants of concern--e.g., arsenic, pentachlorophenol (PCP), polycyclic aromatic hydrocarbons (PAHs), chlorinated pesticides, polychlorinated dibenzodioxins and furans (PCDD/PCDF), and PCBs for some of the individuals in the community around ETC. The opportunity for voluntary participation was communicated to the study subjects by the ECHD and via CATE (which received separate funding from CDC to coordinate the participation and to provide travel assistance for individuals who volunteered to participate in our clinical evaluations).

Our initial goal was to perform clinical evaluations for 320 to 400 individuals, but we were able to examine only 228 individuals because of budget limitations in covering the costs of relatively expensive analyses for serum dioxins and furans and dioxin-like PCBs. Participant age in our study group ranged from 14 to 88 years (mean: 57 years), with the following characteristics: 202 African Americans (88.6%), 26 Caucasians (11.4%); 137 females (60.1%), 91 males (39.9%); 27 workers (11.8%), 201 residents and family members of workers (88.2%). This demographic profile is similar to that derived from census data for the community around the ETC site, and our study group is representative of the target community in its inclusiveness with regard to age, race, and gender of the participants.

The IRB-approved protocols were followed to obtain informed consent from the voluntary participants. The results from clinical evaluations and laboratory analyses were kept confidential to protect privacy to the full extent of the law, as practiced by the clinic of the Escambia County Health Department. Physicians and nurses involved with clinical evaluations were able to see the collected information in the medical records, and the consulting physicians in concert with

physical examinations shared the results of any analyses performed with the individual participants. The individual identity-redacted data from health evaluations and laboratory analyses were entered into a database made available to the project director and co-project director to facilitate appropriate statistical analyses and to identify any apparent association between chemical exposure/residues and disease incidence.

Summary of Findings and Conclusions

In the 228-person ETC cohort, we found elevated prevalence of diabetes, hypertension, and hepatitis (A, B, and C), relative to national levels. The National Center for Chronic Disease Prevention and Health promotion at the CDC found that, in 2003, 7.2% of adults nationwide and 8.5% of adult Floridians reported being diagnosed with diabetes. In the ETC cohort, 21.1% reported a previous diagnosis of diabetes. Whereas the prevalence of hypertension in Florida was 26.5% in 2002, with 27.9% of Caucasians and 33% African Americans reporting a diagnosis of hypertension (CDC 2003), the prevalence of hypertension in the ETC cohort was 50% for Caucasians and 58.4% for African Americans. CDC (2004) reports that 33%, 4.9%, and 1.8% of the US population has been infected with hepatitis A, B, and C, respectively. In the ETC cohort, the prevalence of hepatitis A, B, and C was much higher (67.1%, 18.4%, and 13%, respectively). Prevalence of cancer in the ETC cohort was 14%. The proportion of most cancer types in the ETC cohort was similar to that reported nationally, with the exception of prostate and uterine/cervical cancers. Among the reported cancers, 31.3% were skin cancers, but such comparative information could not be found for the U.S. population. Florida-specific prevalence data are not available for the cancers. Since several of the contaminants of concern at the ETC are carcinogenic, additional studies and long-term follow-up would be needed to identify any potential links between exposure to contaminants and incidence of cancers.

Although ETC's operations ceased in 1982, the areas surrounding the facility continue to have elevated levels of contaminants attributable to ETC operations. Initial screening tests for arsenic in urine, and for PCP, PAHs, PCBs (Aroclor 1254 and Aroclor 1260), and 16 pesticides in serum indicated that these contaminants were typically either below detection limits or within reference range for the general population.

Dioxins and furans (PCDDs and PCDFs) are major contaminants of commercial-grade PCP used as a wood preservative at the ETC. Depending on the congener, the half-life of these contaminants can be between 7 to 20 years. PCBs are also known to be present as contaminants at the ETC site, although not at levels considered to be a health risk. Nevertheless, since some of the PCB congeners are known to exert dioxin-like actions we included 12 dioxin-like PCBs in our analytical panel that also determines the concentrations of 17 dioxin/furan congeners. We found that the ETC cohort exhibited elevated levels of serum dioxins/furans relative to the general population, and the congener profiles in the participants appeared to reflect patterns that are commonly observed in persons exposed to PCP. Workers were found to have higher dioxin/furan concentrations and cancer prevalence than residents, although the number of workers in the study group is relatively small. The levels of dioxin-like PCBs in the ETC cohort were not abnormal and were similar to those reported nationally as background levels. Nevertheless, within the ETC cohort, diabetes appeared to be correlated with elevated levels of dioxin-like PCBs. Hypertension, but not diabetes, appeared to be correlatable to dioxin/furan

levels. The significance of the apparent associations noted above remain unclear, as the prevalence of diabetes and hypertension in the ETC cohort may be confounded by other risk factors--especially the relatively high rate of obesity (47.8%) noted among our study participants. The relatively higher prevalence of Hepatitis A, B, and C in the ETC cohort may be attributable to increased exposure opportunity of the population for these viruses due to life styles, or to a decrease in cellular/humoral immunity.

We tried to recruit voluntary participants from a control population with similar demographics as the ETC group from the northern part of Escambia County without success. In order to gain a clear understanding of the link between contaminant exposure at or from the ETC site, future studies should include individuals near similar sites (American Creosote Company site, Pensacola) and a comparison group from an area in Northwest Florida lacking similar industrial or Superfund sites.

Participant Responses to Project Quality of Services Questionnaire

At the end of participation in the health evaluation, following the completion of physical examination and consultations with the physicians, the participants were given a brief questionnaire to be completed anonymously--so we can gauge their perceptions on the quality of clinical evaluation services and identify areas of concern for consideration in future studies. Out of the 228 participants, 219 completed all aspects of the evaluation, including the final physical examination and consultation with physicians, and all of these individuals were surveyed. As can be seen in the attached summary, a substantial majority of the participants (84 to 92%) were very satisfied with the clinical evaluations carried out during our studies.

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References

- CDC (2003). Behavioral risk factor surveillance system on-line prevalence data, 1995-2003. Division of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.
- CDC (2004). Disease burden from Hepatitis A, B, and C in the United States. Division of Viral Hepatitis, National Center for Infectious Diseases, Centers for Disease Control and Prevention.

SUMMARY OF RESULTS

CATE/Community Environmental Health Project Quality of Services Questionnaire

219 Clients completed the PERCH project and all 219 were surveyed. Some questions, as with many surveys, were left blank.

1. Was the location of this clinic convenient for you?
 - 185 – Very satisfied
 - 7 – Somewhat satisfied
 - 20 – Satisfied
 - 1 - Less than satisfied
 - 3 – Unsatisfied
2. How did you feel about the waiting time in the clinic?
 - 192 – Very satisfied
 - 7 – Somewhat satisfied
 - 17- Satisfied
 - 1 – Less than satisfied
 - 4 – Unsatisfied
3. Were you satisfied with the treatment you received by the staff during your visit?
 - 192 – Very satisfied
 - 2 – Somewhat satisfied
 - 18 – Satisfied
 - 0 – Less than satisfied
 - 0 – Unsatisfied

Clerical:

 - 171 – Very satisfied
 - 6 – Somewhat satisfied
 - 18 – Satisfied
 - 1 – Less than satisfied
 - 0 – Unsatisfied

Nursing Staff:

 - 199 – Very satisfied
 - 1 – Somewhat satisfied
 - 15 – Satisfied
 - 0 – Less than satisfied
 - 0 – Unsatisfied
 - 2

Physician:

 - 201 – Very satisfied
 - 1 – Somewhat satisfied
 - 15 – Satisfied
 - 0 – Less than satisfied
 - 0 – Unsatisfied

4. How did you feel about the services you received during your visit?
 - 196 – Very satisfied
 - 4 – Somewhat satisfied
 - 15 – Satisfied
 - 1 – Less than satisfied
 - 4 – Unsatisfied

5. Were you satisfied with the privacy provided for the interview?
 - 202 – Very satisfied
 - 2 – Somewhat satisfied
 - 15 – Satisfied
 - 0 – Less than satisfied
 - 0 – Unsatisfied

6. Did you feel satisfied that the information shared would be remain confidential?
 - 197 – Very satisfied
 - 2 – Somewhat satisfied
 - 18 – Satisfied
 - 0 – Less than satisfied
 - 1 – Unsatisfied

Please give us any comments or suggestions that you feel will help us to improve this process. (Many people left blank or wrote “N/A”. The following comments were submitted.)

1. Feels that test results were falsified and that there was a conspiracy between the Agrico lawyers and the doctors, since the tests did not show anything.
2. (same as above)
3. Everything AOK.
4. Please to have normal test results but disappointed that he did not know if the chemicals were the cause of his bad health problems.
5. (same as above)
6. Everything was very satisfying.
7. Love visit with the doctor.
8. Very happy with visit.
9. I really do appreciate the concern. Thanks.
10. Very well done.
11. Very comfortable with the process.
12. (same as above)
13. No comment
14. Feels this is a phase for doctors and lawyers to make money. Thinks Scarborough did this. Feels that later research is unnecessary because nothing has been found so far. Thinks 30 million should go to “us.” Lost money with the move and knows that government engineers are stealing those homes.
15. We should be very fortunate to have people as Rhonda O’Brien and Deeya Davis. Ms. O’Brien has always had time to answer any questions, take phone calls, and be there for everyone. A truly dedicated nurse in my opinion.
16. This is an excellent program. Thank you for allowing me to participate.

17. No comments
18. Pleased with what has been done for me.
19. My visit with the health department was very pleasing.
20. Everything was nice. I enjoyed speaking with everyone. I enjoyed coming up there.
21. Would have liked a little more time spent with her by the doctor.
22. Service was great. Everything was great.
23. Things went well, no comments at this time.
24. The visit was very satisfactory.
25. Keep up the good work.
26. Y'all are the finest and most patient with us!
27. The physician was very informative.
28. What you are doing for the community is good.
29. Visit was very nice.
30. Very happy with your services I received.
31. Glad that they didn't find anything wrong.
32. Did not like that it took so long to start testing people.
33. Treated well and received good service.
34. (same as above)
35. Very concerned with kidney problems.
36. Feels that "tissue and hair follicles" should have been tested.
37. No comments.
38. Very professional and didn't try to baffle me with superlative terminology.
39. I can see no suggestions of improvement for the process.
40. Keep doing what you are doing.
41. Doctors were very sensitive to my words.
42. No suggestions, everything was very nice.
43. This is a good project. There should be more outreach for people who are skeptical about what you are doing.
44. No complaints; everyone was so very nice to me.
45. I feel that the process cannot be improved, it was very satisfying. Thanks.
46. Dissatisfying with having to move and does "not believe the land was toxic."
47. Good job.
48. Everything went so well, no problems at all.
49. Has an itch that the "doctors could not or did not diagnose" – very disappointing.
50. Thankful for what's been done so far.
51. (same as above)
52. Everything went fine.
53. It was a very nice program and very polite staff.
54. Feel that the project was really needed and it was done very well. Everyone did a good job.
55. All these years he's "put up with toxic waste". Feels that he should be getting some money out of this.
56. Wonderful.
57. I have no complaint.
58. Deeya Davis super lady. Rhonda O'Brien super lady also. Very nice, made me feel very comfortable and willing to answer any questions.

59. Everything was very good.
60. I am very satisfied and wish there were some primary doctors here for me as those I have seen. Keep up the good work.
61. Dr. Francois was just wonderful. Very pleasant and helpful. Mrs. O'Brien was very gentle, helpful, and informative. The staff is wonderful. Thanks to all.
62. Everything was done very well.
63. Never ask for anything better. Truly wonderful.
64. (same as above)
65. (same as above)
66. (same as above)
67. My visit today was very nice. The doctor was very nice and concerned about my problems. Over all, it was a great visit. Everything was explained.
68. I think everything couldn't be any better.