

MONSANTO

APR 06 1993

From: James J. Collins, Epidemiology, A2SL, 4-8811

Kevin

Date: April 2, 1993

cc: G. F. Fort
B. R. Friedlander
J. F. Acquavella
B. K. Ireland
Biohazards Committee

Subject: Communication to Employees on Monsanto Update of the 1949 Accident at Nitro

Reference:

TO: D. Herndon
T. Blank - Krummrich
P. Conner
T. Kokotovich - Queeny
M. Strauss
L. Wassell
R. Kaley
B. Vandenbeck
P. Conlon - Nitro
D. Snively

Kevin
4/4
Thats
If you want I will
retype in my file
K

Attached you will find a draft copy of a paper we will be submitting for publication. This paper describes your communication efforts at Krummrich, Queeny, and Nitro on the 1949 Nitro Accident Study. As you can see from this write up, we have received substantial positive feedback from our communication effort. I have also attached a recent article from Occupational Hazards which describes our efforts as well as those of Dow's in the area of worker communication.

If you have any comments on this paper, please return them to me prior to April 22.

J. J. Collins

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Communication to Workers of Epidemiology
Study Results: An Industry Approach

Draft (3/31/93)

James J. Collins
Patrick R. Conner

Abstract

Communication to workers of epidemiology study results is gaining increasing acceptance because of the need to notify study subjects and the responsibility to warn workers of potential workplace hazards. We argue that industry is in unique position to inform workers by presenting our recent efforts to notify 9,648 workers potentially impacted by the results of an epidemiology study reporting increased cancer rates. Because of payroll, medical and pension responsibilities, we were able to locate a substantial portion (71%) of employees working in processes operating between 1935 to 1969. We found that both study subjects and workers with exposure similar to study subjects were equally interested the findings. We conclude that most workers view the notification as evidence of the company's commitment to monitor their health, and are pleased that the company undertook the study and reported the results to them.

Acknowledgements: We would like to thank the management, union representatives, and medical staffs at the Nitro, Krummrich, and Queeny plants for assisting us in putting together the communication package.

Worker notification of epidemiologic study results is gaining increasing acceptance not only because of the need to notify study subjects, but also because of the responsibility to inform workers of potential hazards from exposure.^{1,2,3} Tepper has pointed out, that while the obligation to inform workers about potential hazards in the workplace is shared by industry, government, and labor organizations, "the primary responsibility must rest with the employer (434)."¹ We agree with Tepper and will argue that industry is in a unique position to inform workers or former workers about epidemiologic study results because of 1) knowledge of its plants, process and products, 2) information on who is or was exposed, and 3) access to current and former workers.

While attention has been given to the importance of worker notification of epidemiology study results, little has been written about how this can best be done by a company and how the workers being notified may react.³ We report on our attempt to notify 9,648 former and current workers potentially impacted by study results and the response of our workers to this communication. As far as we know, this is the largest worker communication on epidemiology study results ever reported.

Background

We recently completed an epidemiology study in which increased

mortality rates were reported for bladder cancer, respiratory cancer and soft tissue sarcoma among a subcohort of workers at one of our plants.⁴ This study examined 754 workers at the plant in 1949 present during the clean-up of an accidental release of a chemical mixture later recognized as containing 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). Some workers in this study also had potential exposure to 4-aminobiphenyl, a bladder carcinogen.

Currently, all epidemiology study results on Monsanto plants are reported to current workers. These communication efforts may include plant presentations, bulletin board announcements, or articles in plant newsletters. However, for the current study we decided to supplement our usual methods with a mailing to all persons working when exposure to either TCDD or 4-aminobiphenyl occurred at the plant. This additional communication effort was undertaken because the processes at the Nitro plant where increased cancer rates were reported were discontinued long ago. We also notified workers at two additional plants (i.e., Queeny and Krummrich) who had potential for similar exposures even though they were not included in the present study.

There is long history of communicating study results at these three plants. Notification and medical surveillance of workers with exposure to 4-aminobiphenyl began in the early 1950's at the

Nitro, Krummrich and Queeny plants.^{5,6} The medical surveillance continues today. Results of studies of potential TCDD exposure have also been reported to workers during the 1980's.^{7,8,9,10}

Material and Methods

As shown in Table 1, we identified 9,648 workers or former workers who worked 1 or more days during the time when there was potential exposure to either 4-aminobiphenyl or TCDD at each of the three plants and were currently alive. We decided to mail information to all employees who worked at the plant during the times when either substance was present rather than just employees with a high probability of exposure. We obtained 4,432 addresses from the company pension and payroll files, and 2,399 addresses from the Health Care Finance Administration (HCFA). HCFA has information on persons receiving Medicare and Medicaid, and will provide addresses of persons to researchers if called for in the study protocol and if specific confidentiality guidelines are agreed to.

As shown in Table 1, there was a wide variation in the percentage of addresses obtained from payroll and pension files ranging from 87% at the Nitro plant to 52% at the Queeny plant. We obtained 2,399 additional addresses from HCFA a considerable portion of the total addresses (35%). Combining information from our own sources and HCFA's, we were able to obtain mailing address for 71% of the workers--75% at Queeny, 67% at Krummrich and 77% at

Nitro.

We composed a letter describing the motivation for the study, the results, the uncertainties inherent in interpreting those results, and the investigators interpretation of the findings.¹¹ The results of another study on dioxin thought to be relevant were also discussed.¹² A list of departments and time periods where and when dioxin or 4-aminobiphenyl exposure was possible was included in the mailing to allow workers to evaluate their potential for exposure. This letter mentioned previous studies on dioxin and 4-aminobiphenyl which had been conducted at these three plants. It was also explained that a follow-up study was planned to further evaluate the findings of the latest study. Future communication of the follow-up study was also promised.

We also enclosed a brief questionnaire and a return envelop for mailing. The questionnaire was included to gauge the effectiveness of the communication, to determine if the workers wanted more information, and to enlist the help of workers for future communication. The letter and questionnaire were reviewed and revised by groups of employees, including union representatives and management, at each of the three plants. We mailed 6,831 letters. Only 287 (4%) were returned with either "address unknown" or "person deceased." We assumed 6544 letters were delivered.

To help reduce undue anxiety and to answer questions, we also provided a toll-free phone number of a company physician who was knowledgeable of the study. Sixty-eight calls were received (44 from workers, 23 from workers relatives, and 1 from a workers physician) by this physician.

Our Institutional Review Board, composed of academics from outside the company, reviewed all documents before mailing. Confidentiality of respondents to the questionnaire was assured in the mailings. Because of the confidentiality considerations, no follow up with non respondents to the questionnaire was undertaken. Respondents were asked to provide a mailing address if they wanted to receive more information on the study. A reprint of the journal article was provided these respondents.

Results

Of the 6544 letters delivered, we received 1960 questionnaire responses (30%). Responses by plant of the workers are reported in Table 2. The category labeled "other" includes workers who reported working at more than one plant or failed to report a plant at all. Because salary workers would be more likely to work at multiple plants than hourly workers, the category "other" most likely has a high proportion of salary workers.

Most respondents (96%) felt the correspondence was easy to read.

There was little variation in this response by plant. When asked if they received enough information about dioxin a little more than half of the respondents (55%) felt they did. Only the category "other" differed markedly (66%) from Nitro (55%), Krummrich (54%), and Queeny (53%) on this response. More than two-thirds (69%) wanted more information on the study mailed to them. Eighty percent of the Nitro plant respondents wanted a copy of the published report. Smaller percentages of respondents from Krummrich (69%), Queeny (71%), and the other category (53%) wanted a copy of report.

When asked how important it was to report future study results, 93% of the respondents thought it was important. Almost all respondents at the Nitro plant (99%) thought it was important with slightly smaller percentage of respondents feeling it was important at Krummrich (93%), Queeny (93%) and the other category (92%).

As mentioned previously, 68 phone calls were received on the communication. Not surprisingly, callers to the physician indicated more difficulty in interpreting the letter. Most of the questions from the phone calls concerned confusion over what to do with the questionnaire. Several former workers, however, had serious health problems and wanted clarification of the meaning of the study to their personal diagnosis and treatment. A few callers asked if the company intended to provide additional

medical benefits and some wanted to know if the communication was in response to litigation.

Discussion

Since we were able to deliver letters to only 6,544 of 9,648 workers identified (68%), and since only 1960 response to the 6,544 delivered letters were returned (30%), the findings of our survey must be interpreted with caution. It is possible a more complete survey would yield different results.

Keeping in mind the limitations of this survey, however, three findings seem clear. First, workers are very interested being informed of epidemiologic study results. Ninety-three percent of the respondents felt that it was important to inform them of future study results and 69 percent of the respondents wanted additional information. Other notification efforts which surveyed workers report similar high support for this sort of communication.^{13,14} While virtually all respondents from the Nitro plant, the plant where the epidemiology study was conducted, thought the communication was important, large portions of workers at Krummrich and Queeny also thought the communication was important even though the study was conducted at another plant. In the past worker communication of epidemiology study results have been mostly directed to study subjects. Our findings indicate non-study subjects also have great interest in study findings of workers with similar exposures.

Industry is in a unique position to undertake epidemiology studies and communicate findings to workers. Much of industry maintains detailed documentation of manufacturing procedures, industrial hygiene monitoring, toxicity testing, medical outcome information and demographic and workhistory information on each employee. No one has more information on potential hazards in the workplace or is in a better position to evaluate this information as it may relate to worker health than the company involved. At the Nitro plant seven studies have been done over a forty year period by the company.^{4-9,15} The communication of single study does tend to freeze evolving scientific knowledge and workers opinion at one point in time.¹¹ An ongoing series of studies allows the incorporation of new information in the ongoing evaluation of potential hazard of a substance and can help to convince workers of the company's interest in their health. In addition, the communication of the study results is often accompanied with the announcement of a follow-up study. Study communication can be seen as the first step in a multistage process of surveillance and further study.¹⁶ The communication of study combined with the announcement of the follow-up study helps assure employees that while we may not have all the answers currently we will report new information as it becomes available.

The employer because of payroll, medical and pension responsibilities also stays in contact with a large portion of

its total workforce. In the present communication effort we were able to obtain current addresses on 71% of our former employees. We had current address information from our payroll and pension files on 46% (4432 of 9648) of our former workers, and because of our detailed demographic information were able to obtain an additional 25% (2399 of 9648) from HCFA. Our ability to obtain addresses on so many former employees is remarkable given many of them terminated employment decades earlier. Other communication efforts of epidemiology studies which involved companies report percentages of current addresses of 91,¹⁷ 79,¹⁸ 76,¹⁸ and 66,¹⁹ while communication efforts in which companies for various reasons were not involved report percentages of current addresses of 25¹⁴ and 45.²⁰ Company participation improves access to worker populations facilitating comprehensive communication.

There are also lessons we learned from our phone contacts and written comments on our survey. Individuals with active serious medical conditions will likely want more in depth personalized communication about the implications of the findings to their own diagnosis, treatment and prognosis. Access to personalized follow-up such as through a toll-free number should be a feature of any employee communication effort.

The questionnaire included in the mailing produce valuable feedback to us on the effectiveness and the importance of our communication effort. This questionnaire also helped us locate

former employees to help us with future communication and provided former employees a means to get more information on the study. However, the questionnaires themselves were a source of confusion to some employees. The advantages of including a questionnaire in mailings should be weighted against the possible confusion caused in asking someone to fill out and mail a form.

Good communication of epidemiology study results is resource intensive. The development and the delivery of a communication package involved many meeting for several persons from four different locations. In addition, we were surprised at both how many requests we got for follow-up information and how many calls were received by our company physician. While it can be argued that employee communication increases study duration and takes scare resources from other important projects, we consider employee communication to be an essential feature of each epidemiology study.^{11,21}

While some employees will be suspicious of a Company's motive behind communication, most will welcome it. Employees were pleased that the company not only undertook several studies of their health, but also took the time to communicate the findings to them. Our letter was viewed as tangible evidence of our commitment to monitor their health. One worker writes that, "keeping employees or former employees informed on all potential

hazards shows you are interested in their well being. Thank
you."

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Table 1.

<u>Description</u>	<u>Queeny</u>	<u>Krummrich</u>	<u>Nitro</u>	<u>Total</u>
Workers Identified	3536	5122	990	9648
Letters Mailed	?	?	?	?
Letters Delivered (% of identified)	2636 (75%)	3428 (67%)	767 (77%)	6831 (71%)
Address from company files (% of mailed)	1383 (52%)	2378 (69%)	671 (87%)	4432 (65%)
Address from HCFA (% of mailed)	1253 (48%)	1050 (31%)	96 (13%)	2399 (35%)
Letters Returned (% of letters mailed)				287 (?)

Table 2.

<u>Question and Response</u>	<u>Nitro</u>	<u>Krummrich</u>	<u>Queeny</u>	<u>Other¹</u>	<u>Total</u>
Was the letter easy to read?					
Number Yes (%)	157 (95%)	844 (95%)	618 (97%)	207 (95%)	1826 (96%)
Did you receive enough information on dioxin?					
Number Yes (%)	88 (55%)	447 (54%)	314 (53%)	133 (66%)	982 (55%)
Would you like a complete copy of the published report mailed to you?					
Number Yes (%)	123 (80%)	586 (69%)	435 (71%)	112 (53%)	1256 (69%)
How important is it to inform you of future study results?					
Number Important(%)	162 (99%)	818 (93%)	592 (93%)	194 (92%)	1766 (93%)
Total Questionnaires Received	166	900	647	247	1960