THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

convenes the

FOURTH MEETING

CAMP LEJEUNE COMMUNITY ASSISTANCE PANEL (CAP) MEETING

SEPT. 26, 2006

The verbatim transcript of the Meeting of the Camp Lejeune Community Assistance Panel held at the ATSDR, 1825 Century Boulevard, Atlanta, Georgia, on Sept. 26, 2006.

C O N T E N T S

Sept. 26, 2006

WELCOME, ANNOUNCEMENTS, RECAP OF JULY 2006 TELECONFERENCE — 5
CHRISTOPHER STALLARD

WATER MODELING UPDATE — 46
MORRIS MASLIA

PROGRESS ON FEASIBILITY ASSESSMENT: COMPUTERIZING HOUSING RECORDS AND ACCESSING SCHOOL RECORDS — 78
PERRI RUCKART

PROGRESS ON FEASIBILITY ASSESSMENT: AVAILABLE DATASETS — 91
FRANK BOVE

BEGIN DISCUSSION ON CRITERIA AND ISSUES INVOLVED IN PLANNING A CREDIBLE SCIENTIFIC STUDY — 149
FRANK BOVE, RICHARD CLAPP, CHRIS RENNIX

WRAP UP AND PLAN NEXT MEETING — 230
CHRISTOPHER STALLARD

COURT REPORTER'S CERTIFICATE — 244

TRANSCRIPT LEGEND

The following transcript contains quoted material. Such material is reproduced as read or spoken.

In the following transcript: a dash (--) indicates an unintentional or purposeful interruption of a sentence. An ellipsis (. . .) indicates halting speech or an unfinished sentence in dialogue or omission(s) of word(s) when reading written material.

-- (sic) denotes an incorrect usage or pronunciation of a word which is transcribed in its original form as reported.

-- (phonetically) indicates a phonetic spelling of the word if no confirmation of the correct spelling is available.

-- "uh-huh" represents an affirmative response, and "uh-uh" represents a negative response.

-- "*" denotes a spelling based on phonetics, without reference available.

-- “^” represents inaudible or unintelligible speech or speaker failure, usually failure to use a microphone or multiple speakers speaking simultaneously.

P A R T I C I P A N T S

(alphabetically)

BOVE, FRANK, ATSDR
BRIDGES, SANDRA, CAP, CLNC
BYRON, JEFF, COMMUNITY MEMBER
CLAPP, RICHARD, SCD, MPH, PROFESSOR
DYER, TERRY, COMMUNITY MEMBER
ENSMINGER, JERRY, COMMUNITY MEMBER
FISHER, JEFFREY, PH.D., SCIENTIFIC EXPERT
MARTIN, DAVE, COMMUNITY MEMBER
MASLIA, MORRIS, ATSDR
MCCALL, DENITA, COMMUNITY MEMBER
RENNIX, CHRIS, DOD
RUCKART, PERRI, ATSDR
STALLARD, CHRISTOPHER, CDC, FACILITATOR
TENCATE, MIKE, U.S. MARINE CORPS

1

P R O C E E D I N G S

(9:00 a.m.)

WELCOME, ANNOUNCEMENTS, RECAP OF JULY 2006 TELECONFERENCE

2 **MR. STALLARD:** Good morning, folks, welcome.
3 It's nine o'clock. We're going to start on
4 time. We're going to end on time. That is
5 our commitment to you. The court reporter
6 will be ready in just a moment. We're on.
7 Okay, let me just briefly, we're going
8 to do introductions here in a moment, but
9 first of all after the welcome there are two
10 important notes of administrivia for today,
11 and I will talk about it again here later.
12 But your travel vouchers are due for whatever
13 you have spent by the end of today's meeting,
14 and then we're going to get anything else you
15 might have spent tomorrow getting home, we're
16 going to get that information from you. We're
17 a bureaucracy, and the paperwork is due. It's
18 the end of the fiscal year, okay? And
19 hopefully you placed your lunch orders when
20 you signed in.
21 So I want to recap what have been our

1 operating guidelines and ask if there are any
2 others that need to be added, and then we'll
3 go around and do introductions. And you all
4 have an agenda. I'll do a recap of our
5 telephonic meeting. This is much preferable
6 live because I don't have say over every time
7 somebody speaks. That didn't work necessarily
8 too good, too well.
9 So guiding principles: cell phones
10 and Blackberries on stun, that includes the
11 audience. Welcome audience, please be sure to
12 turn off your electronic devices that would
13 interrupt this event. The audience is here to
14 observe unless called upon by a CAP member to
15 speak on a particular topic. If you know that
16 there's someone in the audience who has
17 something to contribute, let me know and we'll
18 ask that person to speak.
19 One speaker at a time, I would prefer
20 that we listen actively and allow the person
21 to finish their train of thought before
22 someone else has an opportunity to express,
23 and no personal attacks. We're here to
24 continue to move this process forward with
25 every intention and commitment to action.

1 Anything else that I haven't, that is
2 not out there that needs to be out there?
3 **MS. RUCKART:** All members of the audience
4 also need to register for the meeting. I see
5 some people who have not registered, and we
6 need to do that for the physical security.
7 That includes everyone who is external to the
8 Agency.
9 **MR. STALLARD:** Including the audience
10 people.
11 **MR. BYRON:** Is that something that has to be
12 done like --
13 **MS. RUCKART:** Way in advance. It's on the
14 website with closed ^.
15 **MR. STALLARD:** I'd like just for a matter of
16 the record we're going to go around and state
17 your name, introduction, who you represent,
18 and then I'll do a recap. We're going to ask
19 actually what -- after introductions we're
20 going to go to achieves and avoids, what it is
21 we hope to achieve this meeting and/or avoid.
22 I'll do a recap of our telephonic meeting and
23 give you some updates that have occurred since
24 then. And then we will proceed with the
25 agenda.

1 So I'm Christopher Stallard. I'm glad
2 to be back. Your facilitator for today.
3 Thank you for listening to me when I ask for
4 you to indulge in keeping things moving along
5 productively. Please use the microphone and
6 state your name when you speak so the court
7 reporter knows who to attribute the comments
8 to.
9 **MS. McCALL:** Good morning. My name is
10 Denita McCall.
11 **MR. MARTIN:** David Martin. I'm with CAP.
12 **MS. DYER:** Terry Dyer. I'm with CAP.
13 **DR. RENNIX:** Chris Rennix, Navy
14 Environmental Health Center.
15 **LT. COL. TENCATE:** Lieutenant Colonel Mike
16 Tencate, Marine Corps.
17 **DR. BOVE:** Frank Bove, ATSDR.
18 **DR. CLAPP:** Dick Clapp.
19 **MS. BRIDGES:** Sandra Bridges, on the CAP.
20 **MR. FISHER:** Jeff Fisher, on the CAP.
21 **MR. ENSMINGER:** Jerry Ensminger, CAP member.
22 **MR. BYRON:** Jeff Byron, on the CAP.
23 **MS. RUCKART:** Perri Ruckart, ATSDR.
24 **MR. STALLARD:** Thank you.
25 What is it we wish to achieve during

1 today's meeting?
2 **DR. CLAPP:** We need to find out the status
3 of the water model.
4 **MR. STALLARD:** Right. Status of the water
5 model, thank you. Anything else?
6 **MR. ENSMINGER:** Debate these databases.
7 **MR. STALLARD:** The databases? What was the
8 word you used first?
9 **MR. ENSMINGER:** Debate.
10 **MR. STALLARD:** Debate?
11 **MR. ENSMINGER:** Yes.
12 **MR. STALLARD:** Okay, debate or discuss, I
13 guess, the databases. What's been found so
14 far. What's viable or potentially not. Good,
15 thank you.
16 What else? This will help us to
17 clarify what the expectations of the CAP
18 members are, folks, so whatever it is you came
19 here with, express it now so we know if we're
20 on track at this meeting.
21 **MS. RUCKART:** We hope to be able to provide
22 the CAP with a better understanding of what's
23 needed for a good credible epi study.
24 **MR. STALLARD:** Provide CAP with better
25 understanding of what is needed for a credible

1 epi study. Is that what you said, Perri?
2 **MS. RUCKART:** Yes.
3 **MR. STALLARD:** Okay, thank you.
4 Anything else?
5 **MS. BRIDGES:** Housing records.
6 **MR. STALLARD:** You want to know what's going
7 on with the housing records.
8 **MS. BRIDGES:** Right. Assessing school
9 records.
10 **MR. STALLARD:** Okay, what's going on with
11 housing and school records. Good.
12 Anything else on achieves?
13 **MR. MARTIN:** Modes of notification.
14 **MR. STALLARD:** Modes of notification. We
15 may ask for clarity, Dave, on what that is?
16 **MR. MARTIN:** How we plan to notify the
17 public, the media blitz.
18 **MR. STALLARD:** So what is the plan for
19 notification?
20 **MR. MARTIN:** Right.
21 **MR. STALLARD:** Any avoids?
22 **MS. BRIDGES:** What each of us have done to
23 contribute from the last meeting. I mean, I
24 haven't done. I wouldn't have anything
25 gigantic to tell you, but a lot of us have

1 done different things since --
2 **MR. STALLARD:** So updates from the
3 individual members on things that they have
4 done. That’s something we want to hear.
5 Okay.
6 Individual updates.
7 **MS. BRIDGES:** Including the ATSDR and the
8 other gentlemen, too.
9 **MR. STALLARD:** Everybody who has something
10 to contribute in terms of updating the CAP on
11 what has, what they have done and what has
12 transpired since our last meeting.
13 Anything else?
14 (no response)
15 **MR. STALLARD:** All right, from what I
16 understand of the agenda it appears that we’re
17 on track to address what it is we’re, you have
18 listed under achieve. I don’t know, we will
19 have to bring it back up onto the table what
20 is the plan for notification.
21 I would like to briefly just give you
22 a recap of the last conference call that we
23 had. It was a very different environment
24 working telephonically. In the end, I think,
25 we were able to continue the dialogue and

1 advance our communications together. You
2 briefly discussed the Matel-Tyco site and were
3 encouraged to contact Michael Heumann from the
4 Oregon Health Department and Dan Wartenberg,
5 the University of University of Medicine and
6 Dentistry of New Jersey. Did anybody do that?
7 **DR. BOVE:** I have the report here. I
8 haven't had a chance to talk to him.
9 **MR. STALLARD:** Okay. Kidney biomarkers, I
10 think that came up, kidney biomarkers, TCE
11 metabolites and the relationship between
12 consuming alcohol and TCE exposure. Jeff
13 brought that up, and I believe after the call
14 you all got the NAS TCE report e-mailed to
15 you, correct?
16 **DR. BOVE:** Yes.
17 **MR. STALLARD:** Morris Maslia described the
18 process of a peer review of the water modeling
19 report, data discovery of historic water
20 documents and the progress on developing a
21 searchable website where former Camp Lejeune
22 residents can enter when and where they lived
23 and find if they received contaminated
24 drinking water and levels of contamination.
25 After the call you received an e-mail

1 from ATSDR, updated information on the water
2 modeling reports. Because of new information
3 about locations for historical water supply
4 wells serving Tarawa Terrace obtained during
5 ATSDR's data discovery in July, the calibrated
6 water models for the Tarawa Terrace need to be
7 recalibrated using the corrected water supply
8 well location. I suspect that Morris will
9 probably go over that to a degree.
10 This will create somewhat of a delay,
11 evidently three-to-six months in producing the
12 reports for Tarawa Terrace. This new
13 information should only result in very minor
14 changes to simulation of results that were
15 presented at the April 2006 meeting. And the
16 revised results should be ready to present
17 back to the CAP by January 2007. In addition,
18 the ATSDR does not expect this delay to impact
19 the completion date of the current study.
20 During the last call Frank, Chris and
21 Dr. Clapp discussed their visit with the DMDC
22 and CHAMPS staff. The question came up from
23 the CAP about wanting to know about accessing
24 the data personnel records in St. Louis. I
25 believe that Frank is going to provide some

1 additional information on that.
2 A separate meeting is needed to talk
3 about notification. Once again this has come
4 up and we will define what that means in terms
5 of what you want to achieve, what's the plan
6 for notification.
7 The CAP members and ATSDR briefly
8 discussed budget and personnel issues. I did
9 a pulse check. I thank you all for your
10 honesty about trust, communication and
11 transparency of CAP members. The low was on
12 communication. The goal in asking that kind
13 of non-scientific gut response is to see over
14 time if we improve our perception of how we're
15 interacting together on levels of trust and
16 transparency. Clearly, there were some issues
17 around communication.
18 **MR. BYRON:** And trust.
19 **MR. STALLARD:** And trust.
20 **MR. ENSMINGER:** And transparency.
21 **MR. STALLARD:** Okay, let me rephrase that.
22 On a scale of one to ten, let me just give it
23 to you for the record. Trust was at 6.34,
24 communication at 2.69, and transparency at
25 5.15.

1 **MR. ENSMINGER:** That's because it was
2 fudged.
3 **MR. STALLARD:** For the September 2006
4 meeting ATSDR has prepared a chart, detailing
5 what datasets are available to identify the
6 cohorts and health problems. As part of the
7 feasibility assessment ATSDR will determine
8 the usefulness of the VA data, VA records and
9 explore accessing dependant data in St. Louis.
10 Frank will talk about that.
11 After the call Chris e-mailed the CAP
12 members about how to obtain their own
13 personnel records from St. Louis and then
14 Lieutenant Colonel Tencate said that he would
15 follow up with CAP about whether it's possible
16 for a representative -- I believe that has all
17 come out into the light through e-mail
18 communication since then, correct, accessing
19 the document? There was a big discussion
20 about whether or not a member of the CAP Panel
21 could participate with the Booze Allen
22 Hamilton folks in the review of the records,
23 correct?
24 **LT. COL. TENCATE:** Right. We solicited
25 suggestions. I haven't received any, but --

1 **MR. STALLARD:** So that is a recap of the
2 last meeting that we had telephonically.
3 There are just a few things I need to bring
4 you up to date, changes and things that may
5 have transpired since that meeting. You will
6 notice that Shannon is not here with us.
7 Shannon has moved on --
8 **LT. COL. TENCATE:** Law school.
9 **MR. STALLARD:** -- to Denver for law school,
10 and we're actively looking, ATSDR is actively
11 looking for a replacement, and actually
12 they're looking to see if they can contract
13 with Shannon to keep the continuity of
14 experience. So they're actively looking on
15 that.
16 Travel vouchers, here it is once
17 again, folks, as promised. The year ends
18 September 30th. We need all members to submit
19 travel voucher forms and all available
20 receipts as of today before they leave this
21 meeting. On Wednesday, September 27th, they
22 need to Fed Ex any remaining receipts so we
23 can close out travel by the end of FY.
24 The modeling discussions for Hadnot
25 Point and Holcomb Boulevard, you can see will

1 be addressed by Morris. The Defense Manpower
2 Data Center, Naval health Research Center and
3 DOD Education Activity reminded ATSDR that
4 they cannot release, I repeat, cannot release
5 any data to us until the DOD, POC authorizes
6 ATSDR to receive the data. To date this
7 crucial authorization has not yet occurred.
8 So I'd like to add to the achieve, who
9 is the responsible point of contact at DOD?
10 Achieve: Who is the DOD POC who can authorize
11 these numerous requests? And perhaps we could
12 get someone who could articulate when we could
13 expect that. When can this authorization be
14 expected? And then I think barring that what
15 are our CAP members' course of action,
16 alternatives, lacking this?
17 Are you okay with, is that all right?
18 (no response)
19 **MR. STALLARD:** ATSDR received feedback from
20 Chris on April 18th and ATSDR revised and sent
21 the proposal to Chris a few weeks later for
22 additional comment, addenda, refinement or
23 revisions. I'm not sure what all that means.
24 You all can talk about that if needed.
25 This is background. On June 30th Mike

1 White, I guess he’s from DOD, submitted
2 official comments on the proposal. What we
3 don’t have yet to my understanding is some
4 sort of authorization to proceed from DOD.
5 So that is a recap, and the talking
6 points of things that have happened since the
7 meeting. At this time are there any questions
8 or comments or does anyone have something to
9 share before we move on to the formal agenda?
10 **MS. RUCKART:** I just wanted to clarify that
11 Chris Rennix feasibility assessment ^.
12 **MR. STALLARD:** Okay.
13 **MS. RUCKART:** No, that’s fine, that’s
14 something else that when you’re getting on the
15 feasibility assessment.
16 **MR. STALLARD:** Okay, thank you.
17 **MR. ENSMINGER:** I have an item I want to
18 cover.
19 **MR. STALLARD**: Yes.
20 **MR. ENSMINGER:** Colonel Tencate, I got your
21 e-mail and --
22 **LT. COL. TENCATE:** The e-mail about the
23 member of participating with Booze Allen
24 Hamilton on the search?
25 **MR. ENSMINGER:** That was part of it. But

1 the other part is the one where you said you
2 needed to clarify whether any CAP members are
3 represented by counsel.
4 **LT. COL. TENCATE:** Right.
5 **MR. ENSMINGER:** You never asked that
6 question. I went through the transcript. You
7 asked us if we filed a claim, but you never
8 asked us if we were represented.
9 **LT. COL. TENCATE:** And that's why I wanted
10 to clarify in the e-mail, to make sure that it
11 was very clear.
12 **MR. ENSMINGER:** There's one thing I don't
13 understand. This CAP, if I'm not mistaken,
14 was created to research the feasibility of
15 doing studies on populations that were exposed
16 in Camp Lejeune on whether or not we could do
17 studies. Why would the Marine Corps put a
18 lawyer in this forum? I don't understand it.
19 You've got somebody that comes to every one of
20 these meetings sitting right out there in the
21 audience, Kelly Dreyer, who has all, all of
22 the inside information on this thing. Why is
23 she not here sitting in your seat? Because
24 you've only been up there how long?
25 **LT. COL. TENCATE:** I've been here a little

1 more than a year in this job, yeah.

2 **MR. ENSMINGER:** She was the project officer
3 for Camp Lejeune water contamination back in
4 the early- to mid-1990s.

5 **LT. COL. TENCATE:** She's been doing this a
6 lot longer than I have.

7 **MR. ENSMINGER:** Yeah, and she knows all this
8 information. And a matter of fact, the
9 budgeting for this thing comes through I & L.

10 **LT. COL. TENCATE:** Some of it does, and some
11 of it comes through DOD, yeah.

12 **MR. ENSMINGER:** But this forum is not for
13 the Marine Corps to put a lawyer on here to
14 protect their interest. This is to help their
15 service members.

16 **LT. COL. TENCATE:** Absolutely.

17 **MR. ENSMINGER:** And you're here in the
18 interest of protecting the Marine Corps'
19 interest. Now I --

20 **LT. COL. TENCATE:** I was elected to
21 represent the Marine Corps by the folks
22 involved.

23 **MR. ENSMINGER:** Folks involved. What, you
24 talking about us?

25 **LT. COL. TENCATE:** No, I'm talking about the

1 Marine Corps.

2 **MR. ENSMINGER:** Well, I say that, you know,
3 this thing you sent to us talking about your
4 ethics prohibit you from having conversations
5 with people who are represented, I am
6 represented.

7 **LT. COL. TENCATE:** Okay. That's, as I said
8 --

9 **MR. ENSMINGER:** I look at your membership on
10 the CAP as an ethical conflict. I don't have
11 a lawyer on this CAP representing me, so why
12 does the PRP have a lawyer on it?

13 **LT. COL. TENCATE:** The PRP?

14 **MR. ENSMINGER:** The primary responsible
15 party.

16 **LT. COL. TENCATE:** Oh, mixing our statutes
17 here. No, you don't have a lawyer here. This
18 is the first that anyone's indicated to me
19 that they're represented by counsel. And as I
20 said in the e-mail, it's something that's
21 easily taken care of as long as your lawyer
22 authorizes you to speak to me. The rule is
23 there to protect the client, you.

24 **MR. ENSMINGER:** I still don't understand why
25 you're sitting in that seat and not Kelly

1 Dreyer. She's the one that has all the
2 knowledge about this. She can give us more
3 input than you can. So I really question --
4 **LT. COL. TENCATE:** What can I tell you?
5 It's a team effort, and the team wanted me to
6 sit here. So that's why I'm sitting here.
7 **MR. ENSMINGER:** So the Marine Corps once
8 again, rather than doing what's right by their
9 people, is doing what's right by them. Sempre
10 fidelis, huh?
11 **LT. COL. TENCATE:** I can sit here at the
12 table or I can sit in the audience.
13 **MR. ENSMINGER:** Well, I'd prefer you sit in
14 the audience.
15 **MR. STALLARD:** Are you making a motion? If
16 you're going to make a suggestion, it's a
17 motion. It would be languaged by: I motion
18 that X based on ethical considerations in e-
19 mail.
20 **MR. ENSMINGER:** Well, I make a motion that
21 this attorney be removed from this CAP,
22 Lieutenant Colonel Tencate.
23 **MR. BYRON:** I'll second it. And I have my
24 reasons for seconding it. And the reason I'm
25 seconding it is because for two meetings

1 nobody asked me if I was represented by
2 counsel. So I don't know why all of a sudden
3 this has come down. I guess because of the
4 legal issues involved in it. But I really
5 don't see any problem with whether you're
6 sitting here or out there. We can still ask
7 you questions. But I guess the reason we want
8 you to sit out there is because we don't have
9 legal representation at the table even though
10 we do have legal representation here. I don't
11 understand why it became an issue between the
12 meetings.
13 **LT. COL. TENCATE:** It hasn't become an issue
14 between the meetings. It has always --
15 **MR. BYRON:** I mean that was the first time -
16 -
17 **LT. COL. TENCATE:** -- it has always been
18 there, and the folks in charge --
19 **MR. BYRON:** You mean in the background
20 because it wasn't up front. Nobody said to me
21 that I needed to be represented by, not that I
22 need to be represented, if I am represented by
23 counsel that you can't speak to me unless we
24 hash this out. It wasn't said until the,
25 what, this is now the third meeting you're

1 involved in? So it wasn't for two meetings.
2 **LT. COL. TENCATE:** Nobody indicated that
3 they were represented by counsel.
4 **MR. BYRON:** What difference does that make?
5 **LT. COL. TENCATE:** It should have been
6 clarified.
7 **MR. BYRON:** Well, then you guys should have
8 asked before you stepped into that chair.
9 **LT. COL. TENCATE:** Up front.
10 **MR. BYRON:** So I mean what it looks like for
11 the victims, to the people that are involved,
12 is that the Marine Corps once again is trying
13 to cover their butt, just like the fact that
14 they didn't tell us where the wells were,
15 correctly. So now it's another six months
16 before the report comes out.
17 So what we're really aggravated with,
18 first off, how many years it took you all to
19 sit there and tell us what happened. And now
20 when we're trying to find out the information,
21 or trying to get the documents, we have to
22 play ring around the rosey for some reason. I
23 mean, this has gone on for how many years?
24 I'd like to invite you guys to my home to meet
25 my daughters and the people that are affected

1 by this. Okay, no, we can’t afford to bring
2 them all here and put them in front of you,
3 and that would waste a lot of time.
4 But I’d love for you guys to come to
5 my house and meet my daughter, and now my
6 grandson and my granddaughter. My
7 granddaughter was born nine weeks premature.
8 My grandson was born to my daughter who’s part
9 of this study. And now the granddaughter who
10 was premature is passing the child who is full
11 term. I think there’s a problem there, too.
12 We’ll address that down the road.
13 But this has gone on for how many
14 years? That’s why it’s an issue. And now
15 it’s an issue because in the third meeting you
16 come up and said, well, if you’re represented
17 by counsel, you need to let us know. We can
18 hash it out. I know you can hash it out.
19 It’s just the fact that now it becomes an
20 issue.
21 I’ve been represented probably off an
22 on by different law firms for the last six
23 years. The only letter I’ve ever gotten from
24 the Marine Corps on anything -- they never
25 asked how my family was or how I was. They

1 asked me do you have your original medical
2 records, and if you do, we want them back.
3 That's the only letter I've received from the
4 Marine Corps. And by God I have the right to
5 wear that emblem as much as you or any Marine
6 that served. Because right now I feel like
7 I've given my whole life to the Marine Corps,
8 and I only served four years active duty.
9 But I've been putting up with this for
10 25 years now financially, emotionally, and I
11 know quite a bit more information now than I
12 knew six years ago. I don't want to hear this
13 you need permission to talk to me. If you do,
14 then you do need to sit where my lawyer's at.
15 You guys can sit next to each other and hash
16 it out all you want. That's why there's an
17 issue here. Because you came up three
18 meetings later, now you tell me you need to
19 know if I'm represented.
20 I'm represented the whole time. If
21 you looked at my Claim 95, you'll see that I
22 was represented when it was filed. You guys
23 know, you should know there's only, what, six
24 or seven of us. I'm sorry. I get emotional.
25 That's why.

1 **LT. COL. TENCATE:** No, I understand you're
2 emotional about this. The reason it came up
3 is, yes, I had a conversation with the claims
4 attorneys who have been asking people who
5 represented --
6 **MR. BYRON:** Absolutely not. They have never
7 asked me anything.
8 **LT. COL. TENCATE:** If you'd let me finish.
9 **MR. BYRON:** Sorry.
10 **LT. COL. TENCATE:** They said to me no one
11 has indicated yet that they are represented.
12 That some law firms have called them, and
13 they've asked, the claims folks have asked
14 those law firms, we need to know who your
15 clients are because of these ethical
16 constrictions. And in a conversation with the
17 claims attorney, he said to me have any of the
18 members indicated to you that they're
19 represented by counsel. And I said no. He
20 said, well, you need to clarify whether they
21 are or not to protect them, protect yourselves
22 and their attorneys according to these rules.
23 That's why I put out the e-mail just to be
24 sure that everybody was protected.
25 **MR. ENSMINGER:** Now you said you asked us.

1 You never asked us. You said that you had
2 asked us. That's a misrepresentation of
3 facts.
4 **MR. STALLARD:** Okay, but we are here right
5 now, and Lieutenant Colonel Tencate has
6 disclosed that based on the legal advice he
7 received, and based on the perceived conflict
8 of interest to CAP members, the motion is that
9 Lieutenant Colonel Tencate be recused and that
10 --
11 **LT. COL. TENCATE:** DOD provide a different
12 representative.
13 **MR. STALLARD:** -- DOD provide a different
14 representative, and you have -- can you name
15 somebody?
16 **MR. ENSMINGER:** The subject matter expert in
17 this thing, representing the Marine Corps is
18 Ms. Kelly Dreyer. So she's been involved in
19 this thing for -- when Kelly, in '95, '94?
20 **MR. STALLARD:** So clearly, Kelly, we have to
21 get authority and approval from higher up the
22 chain I imagine, but it's a matter of record
23 that you have requested that a subject matter
24 expert familiar with this entire Camp Lejeune
25 experience represent DOD on this Board.

1 Okay, so are there any folks who are
2 vehemently against this proposal or against
3 this proposal?
4 Are you?
5 **LT. COL. TENCATE:** No. Our position here
6 has always been to have someone to provide
7 information for the Marine Corps. And whoever
8 that person is that the CAP is most
9 comfortable with, that's fine.
10 **MR. BYRON:** Jeff Byron again. First off,
11 that's a mistake for the Marine Corps. You're
12 supposed to represent the CAP if you're
13 sitting on the CAP. Whether you go back and
14 tell the Marine Corps what's transpired,
15 that's your business. But when you come up
16 here to this table, you're supposed to be
17 helping us, not, what does the Marine Corps
18 have to do with getting the documents and
19 studies going on and other than try and keep
20 it from happening. I don't understand.
21 **LT. COL. TENCATE:** My understanding is that
22 CAPs don't normally don't have a member of the
23 Agency sitting on them other than ATSDR. Is
24 that right?
25 **DR. BOVE:** It varies.

1 **LT. COL. TENCATE:** Yeah, we originally --
2 **DR. BOVE:** I was at Otis Air Force Base, for
3 example, at the table. They weren't official
4 members of the CAP, but at the table were
5 members of the base.
6 **LT. COL. TENCATE:** Yeah, absolutely. And
7 the way this CAP started out the Marine Corps
8 and DOD didn't have a seat at the table. I
9 mean, neither Dr. Rennix or I were here. We
10 were sitting in the audience --
11 **MR. ENSMINGER:** Yeah, and if you remember
12 the end of that first meeting --
13 **LT. COL. TENCATE:** Yes.
14 **MR. ENSMINGER:** -- I said there were subject
15 matter experts in this thing and we were going
16 to have to go to them anyhow so they might as
17 well be up here. I don't consider you a
18 subject matter expert, Colonel.
19 **MR. STALLARD:** Okay, please stop this
20 discussion. We have a motion on the table,
21 and we have asked and the decision has been
22 made, the CAP has expressed their discomfort
23 with the current arrangement. And so I ask
24 that then we get a representative, because the
25 purpose of representative on this CAP as I

1 understand it was to make everyone who
2 participates part of the solution. And that's
3 why we can, the CAP extended the invitation to
4 people who might traditionally not be
5 considered as on the CAP.
6 **LT. COL. TENCATE:** That was our
7 understanding as well. After that first
8 meeting the CAP folks recognized that the
9 Marine Corps had a lot of information to
10 provide that we're headed towards the same
11 goal, and that's why they invited us to the
12 table, to help disseminate information about
13 what was going on, our activities, those kinds
14 of things. We're happy to sit at that table.
15 But if the CAP doesn't want us to sit at the
16 table, or they want somebody else to sit at
17 the table than the folks that DOD has
18 provided, we're happy to entertain that as
19 well.
20 **MR. STALLARD:** Good, thank you, sir.
21 Yes, ma'am.
22 **MS. DYER:** We did ask for someone. We were
23 the ones that asked for someone. Why were you
24 chosen above Kelly?
25 **MR. STALLARD:** That's not relevant right

1 now. That’s not relevant.

2 **MS. DYER:** It is if he wants to continue --

3 You don’t care if you stay on the CAP?

4 Is that the -- I mean, I’d just like to know

5 what you think your qualifications are to be

6 on a CAP, I guess.

7 **LT. COL. TENCATE:** At this point it’s not

8 about me.

9 **DR. RENNIX:** As I recall the reason I’m on

10 it and Mike was put on it was to provide a

11 conduit --

12 **MR. ENSMINGER:** I understand you’re --

13 **DR. RENNIX:** Right, and I’m working with

14 Frank and everybody else from ATSDR in order

15 to facilitate movement of information, give

16 them a passageway into the DOD databases that

17 they didn’t normally have.

18 I believe Mike was asked, DOD was

19 asked to provide a person because you guys

20 were supposed to provide questions before the

21 meeting, and then we would have answers

22 prepared for those specific questions because

23 we would have to go back and get permission

24 each time.

25 So the reason that Mike was put on was

1 to be more, save time, more efficient in
2 providing information. But we still haven't
3 received specific questions. Not not, it's
4 rare that specific questions come up that
5 would require a decision to be made by DOD
6 that Mike would then bring that data
7 information to the CAP directly.
8 **MR. ENSMINGER:** I've asked about budgeting,
9 we haven't covered that yet.
10 **MR. BYRON:** Jeff Byron again. I don't
11 understand where a JAG officer --
12 **LT. COL. TENCATE:** That was a DOD decision,
13 it's, it could have been anybody in that
14 office.
15 **MR. BYRON:** -- represents DOD. We asked for
16 a representative, and we were asking for a
17 year. When the Lieutenant Colonel sat down, I
18 nudged Jerry, why is there a lawyer here.
19 Well, I didn't make too much of an issue of it
20 because my lawyer's sitting in the front.
21 See, it really to me it's semantics whether
22 you sit here or you sit there. I thought you
23 were here to advise the DOD, and that's it.
24 But I guess you're really here to
25 represent the Marine Corps or and the DOD, but

1 I don't understand what's the relationship
2 between the Marine Corps and DOD other than
3 actually DOD's your boss. They're the
4 civilians that are in charge of the military
5 if I'm not mistaken in how this works. Donald
6 Rumsfeld is head of the armed forces under the
7 President.
8 **DR. RENNIX:** Two separate entities here,
9 Marine Corps one agency --
10 **MR. BYRON:** That's why I don't understand
11 why you're representing DOD. You're
12 representing the Marine Corps, not DOD.
13 **LT. COL. TENCATE:** I, that's right, I'm
14 representing --
15 **MR. BYRON:** We only asked for the DOD.
16 **MR. STALLARD:** Okay, folks, we can go back
17 and forth. Is there a window of opportunity
18 to retain Lieutenant Colonel Tencate? If not,
19 the motion stands and you have asked for him
20 to recuse himself and that a suitable
21 replacement with subject matter expertise be
22 found. Is that what is before the --
23 **MR. BYRON:** That or put the other person on
24 the CAP along with him.
25 **LT. COL. TENCATE:** Well, let me clarify.

1 Jerry wants a subject matter expert with
2 historical Marine Corps specific. But you
3 said you want DOD.
4 **MR. BYRON:** Well, what I want is someone
5 who's, we already have someone with DOD. I
6 don't know --
7 **MR. ENSMINGER:** ^
8 **MR. BYRON:** You're not contracted by the
9 DOD?
10 **LT. COL. TENCATE:** No, I'm a civilian.
11 **MR. ENSMINGER:** It's an alphabet soup of
12 different agencies here.
13 **MR. BYRON:** So you're the only
14 representative of DOD?
15 **LT. COL. TENCATE:** Marine Corps. Marine
16 Corps specifically.
17 **MR. BYRON:** Where does the DOD
18 representative (sic)?
19 **LT. COL. TENCATE:** They're an agency. Mike
20 White is the DOD liaison. He's not here, all
21 right? He's not even in the audience. He
22 used to come to the meetings.
23 **MR. BYRON:** See, that's part of the problem.
24 They're not even here to hear what our issues
25 are when they're the people that are deciding

1 everything, the funding, what information they
2 give us.
3 **MS. DYER:** Are you here as a lawyer for the
4 Marine Corps?
5 **LT. COL. TENCATE:** Sure.
6 **MR. STALLARD:** Hold on just a moment. I
7 have a question here.
8 **MS. McCALL:** I didn't get your e-mail. I
9 didn't get your e-mail about whatever he's
10 talking about whether I'm represented by an
11 attorney, and so I have no idea what's going
12 on here, and I can see that your e-mail has a
13 lot of implications here. And I feel like,
14 well, actually I know. We are, the citizens
15 here are actual victims of this water
16 contamination.
17 And it really strikes a personal chord
18 when we're sitting here trying to solve this
19 problem, and we have an attorney sending e-
20 mails saying we need to know certain
21 information before we can answer certain
22 questions. I don't have an attorney as of
23 yet. You're kind of making me believe that I
24 really, really need one, and I don't know what
25 to think about the e-mail he's really upset

1 about since I didn't get it.

2 **MR. STALLARD:** Okay, let me read it for the
3 record and it will be given to you. This is
4 dated Thursday, July 27 from Lieutenant
5 Colonel Tencate. "I need to clarify whether
6 any CAP members are represented by counsel,
7 i.e., have retained an attorney. Nobody
8 indicated that this was the case when I asked
9 during the conference call, but I need to be
10 absolutely clear on this."

11 "Because I represent the Marine Corps,
12 professional rules prohibit me from
13 communicating with people represented by
14 counsel without having their lawyer present.
15 This rule is standard practice for attorneys
16 communicating with those represented by
17 counsel. It is for the protection of
18 represented parties and is not necessarily
19 eliminated by having a non-attorney take my
20 place as USMC representative for the CAP."

21 Folks, we have a lot of work to do.
22 We need to end this discussion right now.
23 This is a self-disclosure sharing for
24 clarity's sake, the legal situation that
25 Lieutenant Colonel Tencate is in, and there's

1 a motion on the, for the Board, for the Panel
2 that he be recused. So let's vote.
3 **LT. COL. TENCATE:** Please vote, but as you
4 were just about to read there, somebody else
5 from the Marine Corps can come up here and sit
6 in this seat and provide information, but
7 again, that doesn't eliminate the need that if
8 you are represented, you have to let the
9 Marine Corps know because that representative,
10 even if they're not a lawyer, the same sort of
11 issue is still there if someone is represented
12 by an attorney. I can't talk to you if you're
13 represented by an attorney without your
14 attorney there. Same deal.
15 **DR. RENNIX:** I'm under the same rules.
16 **MR. STALLARD:** Is -- just a moment.
17 However, we can eliminate this issue
18 by getting any represented parties and their
19 attorneys written permission to carry on with
20 CAP communications and activities.
21 **MS. DYER:** You're saying if Kelly was up
22 here she couldn't talk to us either?
23 **LT. COL. TENCATE:** If you were represented
24 by an attorney, your attorney would have to be
25 here just for us to talk with you guys.

1 **MR. BYRON:** Or you'd have to have --
2 **MS. DYER:** We have an attorney in the
3 hearing --
4 **MR. STALLARD:** We do have an attorney in the
5 audience.
6 **LT. COL. TENCATE:** It's very simple to
7 eliminate if your attorney says "I don't need
8 to be there. You can go ahead and talk to
9 them," and you said, you tell your attorney I
10 want to talk to them, the issue is eliminated.
11 It just, it prevents people, it prevents --
12 **MS. DYER:** Is that a statute that you're
13 talking about? Is this the statute so that
14 this attorney would know and --
15 **LT. COL. TENCATE:** It's standard ethical
16 procedure for folks who have representatives
17 or in this case agencies who are represented.
18 **MR. ENSMINGER:** Well, no, the point is I
19 don't understand why an attorney was put here
20 by the Marine Corps anyhow when we have
21 somebody that's more knowledgeable on this
22 thing sitting out here.
23 **LT. COL. TENCATE:** We can change faces at
24 the table.
25 **MR. MARTIN:** It doesn't change the fact

1 though that there are two different issues.
2 **LT. COL. TENCATE:** And that’s fine. We can
3 have some --
4 **MR. BYRON:** Suggestion?
5 **LT. COL. TENCATE:** Please.
6 **MR. BYRON:** We can vote on Jerry’s initial
7 one, but I’d like to make a motion myself that
8 the Lieutenant Colonel be left on the CAP and
9 Kelly Dreyer be asked to be on the CAP along
10 with him if that’s acceptable. Is it?
11 Because let’s face it. I want the
12 Marine Corps involved, okay? They need to be
13 involved, but they don’t need to be
14 obstructionists. When the letter came through
15 -- I’ll be quite honest with you -- because it
16 came through later after we’ve been discussing
17 this it felt kind of like a way to put a crack
18 between our group.
19 But you don’t have to defend it. I
20 understand legally it has to be done. Whether
21 or not you’re on CAP or not, I’m making a
22 suggestion that we ask Kelly Dreyer to be on
23 the CAP, and that you stay to be
24 representative of the Marine Corps. But it
25 needs to be clarified that that’s what you’re

1 representing. You also represent the DOD.
2 You're the DOD representative, because he's
3 not in DOD.
4 **DR. RENNIX:** I'm as much as DOD as he is.
5 We're both under the DOD. We don't speak for
6 DOD. He can only speak for the Marine Corps.
7 I can only speak for Navy.
8 **LT. COL. TENCATE:** If we could analogize,
9 ATSDR is part of the CDC, but they're also
10 ATSDR. They're not necessarily representing
11 CDC. So there are two entities even though
12 one is a subset of the other.
13 **MR. BYRON:** May I ask my counsel what his
14 opinion on this matter would be?
15 **MR. STALLARD:** Sure, let him think about it,
16 but I need clarity, too. I need clarity. As
17 a member of the uniformed services
18 representing the United States Marine Corps or
19 the Navy, will you be the conduit then to work
20 through your official channels to get a
21 response from DOD which to my understanding
22 has been not forthcoming on these issues about
23 feasibility studies and data access? Can we
24 use, as a member of this CAP will you be an
25 effective conduit to get to move the inertia

1 in a different direction?

2 **LT. COL. TENCATE:** We are integrally

3 involved with DOD in those issues. And yes,

4 we can provide information to the CAP on those

5 issues.

6 **MR. BYRON:** Let's go with our motions.

7 **MR. STALLARD:** Okay, I need to know where

8 you stand on this because we have two

9 different motions, and I don't want to have

10 competing votes here. And we've got to act on

11 one.

12 **MS. DYER:** I have a question though that is

13 along with it because you need to know. With

14 him being a lawyer for the Marine Corps, if

15 there is a case eventually, are the things

16 that he's got, information, can he use that

17 against us?

18 **MR. ENSMINGER:** Sure.

19 **DR. RENNIX:** It's in the public record.

20 **MS. DYER:** See, I think that's why --

21 **DR. RENNIX:** This is a public forum.

22 **MS. DYER:** Then why do you care if he's on

23 it?

24 **MR. ENSMINGER:** It just comes down to the,

25 what I said. Why was he selected over

1 somebody that has all the historical
2 knowledge?
3 **DR. RENNIX:** So he could have been anybody
4 else, whatever. You just want to know why
5 Kelly wasn't selected.
6 **MR. ENSMINGER:** And the fact that he's an
7 attorney. I mean, that just, I mean just
8 lends to the lack of credibility that the
9 Marine Corps has had in this whole damn thing.
10 **LT. COL. TENCATE:** It's a perception thing
11 just like --
12 **MR. ENSMINGER:** Perception, no, there's no
13 perception when I got that FOIA request back
14 the other day, denied. That all these
15 documents are now considered attorney/client
16 work product, and they won't release them,
17 public documents. That's a crock. You want
18 to talk about transparency. There is none.
19 **MR. STALLARD:** All right, folks, we have to
20 move beyond this right now in order to achieve
21 what we have set before us for today's agenda.
22 The motion on the floor was that
23 Lieutenant Colonel Tencate be recused and
24 replaced by another subject matter expert
25 representing, I guess, the Marine Corps.

1 **MR. ENSMINGER:** Well, you know, he just said
2 that he can be a conduit to fast tracking this
3 cooperation from DOD on the access to this
4 data. Can you?
5 **LT. COL. TENCATE:** We have been working with
6 DOD on these issues. Yes, I'm part of the
7 team that works on this stuff.
8 **MR. ENSMINGER:** What's the hold up?
9 **MR. STALLARD:** Wait a minute --
10 **MS. DYER:** Is it that Kelly would come on if
11 he goes off?
12 **MR. STALLARD:** That's the second motion.
13 **MR. MARTIN:** I think there is kind of with
14 the Lieutenant Colonel there is an opening to
15 DOD. All the information we disclose here is
16 public record anyway. They're listening to it
17 now. It's being taped or whatever, so there's
18 really nothing that can be hidden from them.
19 I think if we obtain our own counsel that we
20 would follow his suggestion. If he says not
21 to talk to him then that would be the best
22 advice on a personal basis.
23 I do agree that we did ask for a DOD
24 representative, someone who could answer the
25 questions so we didn't have to wait for them

1 to go back and get permission to come back and
2 answer our questions. Therefore, for the
3 first motion I would say no to remove Mike,
4 but I would also like to second, yes, and ask
5 that Kelly Dreyer be part of the Panel.
6 **MS. DYER:** We can't count on Kelly being the
7 one. They just said we'd --
8 **DR. RENNIX:** You'd have to ask the Marine
9 Corps to provide a representative, and they
10 would pick somebody.
11 **MR. MARTIN:** What we'd like to do a formal
12 request that she become part of this CAP.
13 **DR. RENNIX:** You guys name-selected me, and
14 obviously I'm the only one so there's not a
15 problem there, but I think that the Marine
16 Corps, you've asked the Marine Corps to
17 provide a representative. He's what they
18 decided to provide. You can go back and
19 recommend a specific person. They can still
20 say yes or no. It's a possibility.
21 **DR. BOVE:** Well, you may want to just say a
22 subject matter expert. That might help.
23 **MR. STALLARD:** Okay, we're going to put this
24 to a vote. The motion that was put on the
25 table was for Lieutenant Colonel Tencate to be

1 recused and be replaced with another subject
2 matter expert. All those in favor raise your
3 hand.
4 One, two, three, four, five. Again,
5 high.
6 One, two, three, four, five, six,
7 seven.
8 Opposed?
9 One, two.
10 Okay, well, the majority rules.
11 So I thank you for your service on the
12 CAP. You will be privy to everything that
13 goes on sitting over there and hopefully
14 continue to be an advocate for the CAP.
15 **LT. COL. TENCATE:** I will be here.
16 **MR. STALLARD:** And the CAP is requesting
17 then to have a subject matter expert familiar
18 with the Camp Lejeune history and activities
19 to be a member of the CAP. And they have
20 specifically name requested Ms. Kelly Dreyer.
21 **WATER MODELING UPDATE**
22 Okay, thank you. We are going to not
23 take a break. We are going to continue on and
24 now move on to the agenda and have Morris give
25 us an update on the water modeling.

1 **MR. MASLIA:** I've got a two-part
2 presentation. In the first part I've got
3 about eight slides that might provide just an
4 overview of the entire status update of the
5 entire water modeling effort, and then a
6 second part of the presentation which involves
7 these poster boards. And so let me get the,
8 hopefully the computer's on. Let me get it
9 running here.
10 As I said I've got a two-part
11 presentation. First I'll give you a complete
12 overview, and then I'll turn my attention to
13 the poster boards there. But before I begin I
14 would like to introduce the staff that are
15 working on the water modeling activities. And
16 I've got Jason Sautner here who has been with
17 ATSDR for a number of years and assisted in
18 conducting the field studies for the water
19 distribution system, and working with those
20 models and writing those series of reports
21 that had to do with the distribution system.
22 I've got Rene Suarez, who originally
23 joined us as a graduate student and is now a
24 full-time employee of ATSDR. And Rene is
25 doing the transport modeling, the uncertainty

1 analyses and data-type analyses.
2 And then just joining us is Amy
3 Krueger, who received her masters in public
4 health from Emory University, and we have her
5 as an ORISE Fellow. And she is working with
6 our GIS and our databases and also assisting
7 in information that we need to convey from
8 actual numbers to figures, illustrations and
9 that sort of thing.
10 I've got a couple other folks that are
11 not here. Robert Faye, who's also doing our
12 modeling ^ contractor as well as our
13 corroborators at Georgia Tech.
14 With that let me begin this morning's
15 presentation, and of course, we've got the
16 Agency's disclaimers. The information I'm
17 presenting has been cleared but has not gone
18 through official Agency clearance so it's
19 subject to change.
20 We have resolved the well
21 discrepancies, and I will get to that with the
22 poster boards after that, and we have
23 corrected them in the model. The models are
24 recalibrated, and we're proceeding on that
25 basis. As a consequence of the correcting of

1 information, the summary of findings report
2 which I will detail all of the analyses after
3 we have done it in summary format, we're
4 anticipating to send to the printers and to be
5 available on the web in January of 2007. And
6 chapters B through J, this is for the Tarawa
7 Terrace area, which represent the individual
8 technical aspects of the summary of findings
9 will be out in June of 2007.
10 Last week we had held a meeting here
11 at ATSDR, I guess, a subject matter expert
12 meeting, with Frank, myself, the division
13 management representative as well as the water
14 modelers to discuss how we should approach the
15 Hadnot Point and Holcomb Boulevard areas.
16 They present a much more complex and unique
17 situation than does Tarawa Terrace. And the
18 premise is how can we complete the analyses of
19 these areas and still meet the time frame for
20 the epidemiology part of the current health
21 study?
22 And so, and it's particularly because
23 of the complexity of not having a single
24 source at Hadnot Point. There's a series of
25 sites, multiple sites, multiple contaminants,

1 and so we came up with the following approach.
2 We basically have decided to take the top
3 three, or in rank the three highest sources in
4 terms of contamination and as far as area.
5 And those would be Area 21, which is primarily
6 contaminated with TCE, Building 25 in Site 88.
7 Building 25, the old on-base dry
8 cleaners, Jason and I and some of our
9 colleagues stayed there when we were
10 conducting the field studies a couple years
11 ago, and that has PCE and some BTEX. The BTEX
12 originating from a, or part of a compound
13 known as Barsol which was used prior to PCE.
14 And then the industrial area which would be
15 BTEX compounds.
16 And again, it is our conclusion based
17 not only on just developing a single flow
18 model of the transport, but all the associated
19 analyses that we have to do, uncertainty
20 analyses, sensitivity analyses, going through
21 peer review, that we needed to reduce down and
22 concentrate on the areas that would be of
23 primary interest in terms of the
24 concentrations.
25 And so these are the three areas that

1 we will be looking at. In the Hadnot Point
2 area we will develop a calibrated flow model
3 for the area as well as conduct flow and
4 transport simulations for the selected three
5 source areas.
6 You need to be aware that because of
7 the size of the Hadnot Point and the way it
8 lies physically, and we can just look at this
9 map right here. This is the Hadnot Point area
10 as well as Holcomb Boulevard. It'll be a
11 substantially larger in terms of the numerical
12 requirements compared to Tarawa Terrace. And
13 Tarawa Terrace is not a small model in terms
14 of modeling effort. So that's the rationale
15 behind ranking these three sites, and going to
16 these three sites.
17 That's really the end, that's an
18 overview of where we are. Frank, you want to
19 --
20 **DR. BOVE:** I just want to add something.
21 Those three sites we feel are driving most of
22 the contamination. So even though the model
23 will probably underestimate the contamination
24 levels, we'll get most of it by focusing on
25 three sites. If we added more sites, it would

1 be very difficult, if not impossible, to
2 model, and you wouldn't get much more out of
3 it anyway. So we figured that these three
4 sites are the driving force for the
5 contamination. If we model these well, we
6 pretty much --
7 **MR. MASLIA:** And also by focusing on these
8 three sites which we acknowledge are primarily
9 the driving force, it will help to reduce some
10 of the uncertainty. If we go after a dozen or
11 two dozen sites there the uncertainty would be
12 so large that, again, it would call into
13 question the entire analysis because your
14 uncertainty gets very large. Or we would have
15 to spend so much effort that we could not even
16 hope to meet the deadline that the
17 epidemiologists promise, so that's our
18 rationale for that.
19 At this point I will be happy to
20 answer any questions relative to the overall
21 process of time or anything like that.
22 **MR. ENSMINGER:** What was the problem with
23 the well location?
24 **MR. MASLIA:** I'm getting to that in detail
25 next. So I've got a detailed presentation

1 about that, and I can hopefully answer
2 specific questions.
3 **MR. ENSMINGER:** Well, on the Hadnot Point
4 system, with the knowledge that I've got from
5 sitting on the Restoration Advisory Board for
6 Camp Lejeune, Building 25, that contamination
7 plume is moving toward New River. I mean it's
8 in close proximity to the New River, only a
9 few blocks. There was a good confining layer
10 under that plume that -- basically, what I'm
11 saying is I don't believe that plume continued
12 to contribute to the drinking water
13 contamination on the base because there
14 weren't any, you know, wells close to it.
15 **MR. MASLIA:** Right, but what we have to do
16 is, we need to let the model tell us or our
17 analyses tell us that. That's a large, in
18 terms of concentration and the number of years
19 that they were using Barsol long before they
20 used PCE. So in other words our modeling will
21 tell us that, in fact the flow modeling will
22 tell us that.
23 We don't need to necessarily get to
24 the flow -- transport model. The flow model
25 telling what direction the ground water flow

1 will go in would tell us that. And again,
2 this is a work in progress. As we look at
3 each of these sites or as we calibrate the
4 flow model from the Hadnot Point area, and we
5 determine that one side should not be included
6 or may not have a large effect, we may switch
7 it out with another site.
8 But I wanted to just tell you that is,
9 in fact, that's really the only approach left
10 for us at this point seeing if we're to meet
11 the time schedule and commitments for the epi
12 part of the study, is to try to narrow it and
13 focus on what we feel, and again, this is
14 based on no modeling. It's based on just
15 reading the information, looking at
16 concentrations that have been provided,
17 consulting reports or IFS reports, and up
18 front making some initial estimates.
19 **DR. BOVE:** Well, we also want to capture the
20 key contaminants. The key contaminants are
21 TCE, right? There's PCE there as well, and
22 there's BTEX. And the DCE we think are ^.
23 And so those three sites correspond to those
24 three major contaminants. Now we may find, as
25 Morris said, that one site kicks out and we'll

1 have to figure out where the PCE is coming
2 from or where the BTEX is coming, but tank
3 farms is probably where the BTEX is coming
4 from.
5 **DR. RENNIX:** Morris, when do you think --
6 it's Chris Rennix -- when do you think you'll
7 have your values ready to hand over to the
8 epidemiologists? What's your deadline to
9 deliver the number --
10 **MR. MASLIA:** We're shooting for spring,
11 spring of 2007.
12 **DR. BOVE:** We have a tight turnaround. We
13 really have a tight turnaround.
14 **MR. MASLIA:** We've got a very tight
15 turnaround, and we've made some internal
16 adjustments as far as far as work efforts to
17 try to meet that deadline.
18 **DR. FISHER:** With the BTEX did you come
19 across datasets for the benzene portion of the
20 BTEX? Is that's what's driving --
21 **MR. MASLIA:** I really can't answer that,
22 Robert Faye is looking at that, and actually,
23 he has just begun to look at that. And we've
24 also asked him at the same time to finish up
25 rewriting the Tarawa Terrace analyses, the

1 well location issues so we're trying to go
2 between both. But I do not believe he's got
3 any detailed analysis because I really can't
4 answer that at this point.
5 **DR. FISHER:** So the second question, benzene
6 and vinyl chloride are known human carcinogens
7 and vinyl chloride as you know is a breakdown
8 product. You haven't mentioned that. Is that
9 historically measured and is that a recognized
10 contaminant?
11 **MR. MASLIA:** We've got, I know in well, in
12 Tarawa Terrace well 26 in -- was it '85?
13 Somewhere in '85 we got one measurement with
14 breakdown products or degradation products
15 where we've had PCE, TCE, DCE. I can't think
16 about vinyl chloride. However, part of ^
17 place his efforts, Barry Challenging (ph) is
18 our cooperator at Georgia Tech, is doing
19 multi-spacings model. They're taking our
20 calibrated flow model for Tarawa Terrace as
21 well as when we develop the one for the Hadnot
22 Point area.
23 And while we just model PCE in Tarawa
24 Terrace as the surrogate, they will actually
25 be looking at the degradation products. And

1 there's a chapter, I forget which chapter in
2 the series of ten for Tarawa Terrace, but one
3 of them will be the three-dimensional multi--
4 spacings modeling at Tarawa Terrace. So the
5 answer is, yes, we will be looking. It won't
6 be providing information as to the degradation
7 concentrations.
8 **DR. FISHER:** Thank you.
9 **MR. MASLIA:** At this point I want to go over
10 in some detail about the location of wells
11 taken through what we went through. And I had
12 a decision to make -- these are about as large
13 as I can get the maps. If I try to put them
14 up electronically, they take so much memory
15 and such huge computers to do that, that the
16 ones we have here will not run.
17 And with all the security these days
18 of moving computers back and forth, I've
19 decided the posters would be better where you
20 can take them down and move them around or I
21 can put them on the wall later on. I don't
22 know if that might help or not.
23 But first of all let me just start
24 with this one. These are the what we call the
25 final or the final well locations that we're

1 going with. I'm just starting with this as a
2 reference point. We went up in July as part
3 of our data discovery activities in
4 cooperation with the Marine Corps' consultant
5 on base, once they had organized information
6 that we could look through in a timely manner,
7 and we found historical maps.
8 When I say we found them, as we were
9 going through different sources, we found
10 historical maps, and we noticed some wells on
11 those maps that we had in different locations
12 in our model and in the maps that we had. Now
13 before I get to that issue there's a question
14 that comes up -- and I apologize to the
15 audience for turning my back to you.
16 Why can't we just locate the wells
17 correctly the first go around? You know, just
18 go out to, for example, one of the wells was
19 TT30 and another one was TT45. Why is there a
20 question about where they were located to
21 start with? What I'd like to go through is
22 give you an example here on this map. And I'm
23 using two wells from the Hadnot Point area or
24 Holcomb Boulevard area and one well from
25 Tarawa Terrace.

1 So the two wells are HP 652 and 632
2 which are located, 652 is right here, and 632
3 is a bit down here. Those are existing wells.
4 When we have an operating or existing well,
5 they're typically, whether this is a Marine
6 Corps base or a municipal distribution system,
7 they'll have a well house around it. You can
8 go in. You can four-quarter survey or you can
9 pull in a GPS, and I can sit right on top of
10 the well, or sit on top of the well house, and
11 I can get a coordinate from it. And I know
12 exactly where that well is.
13 What happens with abandoned wells,
14 typically what they will do is they will
15 cement up the whole ^ and then gravel over it.
16 And that's represented by these three
17 illustrations here. That's actually our best
18 guess as to where well TT30 is.
19 And if you come up and look at the
20 pictures, all you will see is there's some
21 gravel there. There's a clump of trees, and
22 there's the road. There's Tarawa Boulevard
23 coming into right over here. And we sort of
24 have to measure either using a wheel and then
25 say well, we think the well house, the well,

1 would have been located X feet from the
2 street, X feet from the trees. But we have no
3 well casing or no physical location.
4 With that said that gives us one set
5 of coordinates that's a possibility. So then
6 we need to get some -- and I'll just put this
7 over here. What we then need to do is go to
8 some other means of verifying this information
9 because again, we have no physical well there.
10 One way of doing this is through some aerial
11 photographs that we've obtained from the
12 Marine Corps. These are from 1962 I believe.
13 And we start looking at all the wells
14 that were -- that's the red areas right here,
15 and you have to mosaic these together, and
16 again see, based on this map -- for example,
17 right there or right there -- here's ABC
18 Cleaners. We went to see where well TT30
19 would have been located based on the aerial
20 photographs. And that's going to give you a
21 different set of coordinates.
22 Then you may have somebody, you may
23 have had some survey data, either through GPS-
24 ing or rectifying some paper maps, there may
25 have been historical paper maps, and that will

1 give you a third set of coordinates. And
2 that's what's represented in the orange. Some
3 of them are fairly close. They're right on
4 top of each other.
5 Some of them may have some difference
6 between them. And so the question then
7 becomes how big of a difference can you
8 tolerate. If you look at this scale, this is
9 our model grid for Tarawa Terrace. This is a
10 complete active grid here. This grid here is
11 a drain in there. ABC Cleaners right over
12 there. And you see TT30, and you see the two
13 sets of coordinates up here to the right, you
14 know, give you a, are very consistent. On
15 some of them they're slightly different. I've
16 over-sized the well symbols. This grid is 15-
17 by-15 feet.
18 So our goal was to basically get wells
19 from these different sources of information
20 within plus or minus 50 feet of each other.
21 What that meant would be is that they would be
22 within one cell of each other. That's the
23 best we can do absent having a physical
24 location from being there for the well.
25 So if we blow this grid up, I just

1 want to show you a blow-up of this in a more
2 real scale. This is the same grid. As you
3 can see TT25 all recorded from the various,
4 the four different ways of obtaining
5 coordinates, resulted in nearly identical
6 coordinates. TT26, there's about a 30 foot
7 difference. That's acceptable.
8 When we originally did the model, and
9 then we came back in July, we, of course, we
10 had located well 30 over here, and we had well
11 TT45 was actually in the model which it no
12 longer is. And that is the process we have
13 had to go through this summer rectifying well
14 locations because there is not a physical well
15 facing left any more, or a well house to get.
16 As far as its impact on the model, it
17 has had very little impact. However, for us
18 to put out a report with known incorrect data
19 would be wrong. So we had to go back. And
20 again, the changes are in the eye of the
21 beholder so to speak. If I get a one decimal
22 place change in concentration, to me that's
23 the same number. However, with a scientific
24 process everyone has to be able, when we
25 release the models and the report, you have to

1 be able to reproduce exactly the numbers that
2 I've put out there.
3 And so that's the process we went
4 through this summer. They have been
5 rectified, and the, I wanted to show you,
6 going back to our exposure chart that we
7 previously had shown, we have basically come
8 up with basically nearly the same
9 concentrations. Some slight differences.
10 Blue line is a well. The ground water
11 concentration of PCE over time in well, ^ well
12 26.
13 The red line is the water being
14 delivered from the treatment plant which
15 includes mixing of water from wells that are
16 not in the model like old wells six and seven,
17 well 45, as well as well 25 and some of the
18 others. So this is the total concentration of
19 PCE that was delivered from the treatment
20 plant into the distribution system.
21 And as you can see we actually, from
22 what originally we said, we hit the five part
23 per billion concentration a little bit earlier
24 under the recalibrated. It's between May and
25 June. In May it's at 4.72, and June it's 5.5.

1 So right as per modeling in a 30-day period
2 right in between May and June which is a few
3 months earlier than we had previously
4 indicated.
5 From this point we have gone back as
6 we, gone back and rerun the entire flow and
7 transport model and we've done, redoing our
8 sensitivity analyses, our uncertainty
9 analyses, and a cooperator, of course, on
10 previous graphs I've shown you an envelope of
11 early/late arrival; they are regenerating data
12 based on the collective well (inaudible).
13 So that's where we are with Tarawa
14 Terrace, and of course, because of the
15 corrected well locations which were replete
16 through many, many, many, many tables and
17 graphs that is why we are delaying the Tarawa
18 Terrace reports.
19 I'll answer any questions that I can
20 at this point.
21 **MR. ENSMINGER:** Which well did you find?
22 **MR. MASLIA:** Well TT30 and well TT45. Let
23 me put this back up. Well TT30 is located at
24 Tarawa Boulevard, right there.
25 **MR. ENSMINGER:** You're pointing to TT2.

1 **MR. MASLIA:** Yeah, let me get my, I've got a
2 laser pointer here so everybody else can see.
3 There's well TT30. We originally had
4 it in a model right over here. I actually am
5 the one that GPSed it in with a GPS right
6 there. Again, the question may be, well,
7 didn't you know you were in the wrong place.
8 The answer is no because if there's not a well
9 casing, there's not a well house, there's
10 nothing there other than gravel where they
11 cemented up the well when they pulled it. So
12 we had it here. So that was nearly a mile
13 off.
14 **MR. ENSMINGER:** Do you have the closure
15 reports of other wells?
16 **MR. MASLIA:** Not that I'm aware of.
17 **MR. ENSMINGER:** Where are they?
18 Scott, you guys got closure reports
19 for this?
20 **MR. WILLIAMS (off microphone):** Yes, the
21 State (inaudible).
22 **MR. MASLIA:** The closure reports are not
23 going to provide you, in fact, they'll
24 probably provide you with even less accurate
25 information than we have because we went back

1 through the data discovery process, and we
2 were able to get what we call site files. The
3 original site telling us how many thousands or
4 a thousand feet off this corner or that corner
5 when they went to locate the well or drill the
6 well originally. That's what we consider our
7 first order accuracy were those hand notes
8 from the site location of the well.
9 **MR. ENSMINGER:** Well, another point I was
10 getting at, I know that these wells were
11 being, they were still in operation in the
12 '80s, late '80s. When were they closed?
13 That's one of the things I was asking about,
14 the closure reports on the wells. When were
15 they closed? Were they closed after the time
16 that we came out with GPS? I believe they
17 were. So why weren't these locations not
18 GPSed?
19 **MR. WILLIAMS:** This particular well was, and
20 most (unintelligible).
21 **MR. MASLIA:** Well, by '87 all the wells were
22 closed.
23 **MR. ENSMINGER:** You're getting completely
24 out of the -- By '87 they took them off line,
25 but they did not destruct them. But they

1 weren't destroyed until the late '80s, early
2 '90s.
3 **MR. MASLIA:** What we are tasked with doing,
4 and what we need to be able to do is from a
5 modeling water standpoint is when they're not
6 providing water anymore.
7 **MR. ENSMINGER:** I'm trying to get you the
8 exact locations of these things.
9 **MR. MASLIA:** We have the exact locations.
10 **MR. ENSMINGER:** You do?
11 **MR. MASLIA:** Yes.
12 **MR. ENSMINGER:** You're sure?
13 **MR. MASLIA:** I'm positive. Because we've
14 gone through four different sets of
15 coordinates now. And we've got that document,
16 and that's what I was, again, in this brief,
17 again, we spent weeks on this resolving with,
18 and I know Camp Lejeune went back to their GIS
19 folks and also pulled the aerial photographs
20 on them. And so between the aerial
21 photographs and the site records as well as
22 GPS information, we went through and when we
23 had discrepancies, we would call Scott up and
24 discuss it.
25 **MR. STALLARD:** And for the record, Scott is?

1 **MR. MASLIA:** Scott Williams. Scott Williams
2 works with the Environmental Management
3 Division at Camp Lejeune and has provided us a
4 wealth of information, really helped with
5 their effort to resolve the different well
6 discrepancies.
7 **MR. MARTIN:** Morris, I have one question
8 regarding the graph that you had up before you
9 put that graph back up.
10 **MR. MASLIA:** Okay, let me put it back up.
11 **MR. MARTIN:** You said the red line was the
12 treated water that was being supplied.
13 **MR. MASLIA:** That's correct.
14 **MR. MARTIN:** So is that saying from January
15 of 1961 through January of 1971 that was
16 above, what is that, 58.27 parts per billion?
17 **MR. MASLIA:** That's the average. That's the
18 average concentration. Let me explain this a
19 little bit more.
20 By May and June of '57 we go above the
21 five parts per billion line which is the MCL
22 for PCE. The average here, when we compute an
23 average and we put that mainly as a reference
24 point. That takes into account when wells are
25 shut down. Because of the way they operate,

1 they will not be providing any contaminated
2 water to the distribution system.
3 So we take that, and we take an
4 average for this whole period down in here.
5 So that's the average. It's above 58 parts
6 per billion from about, it looks like, this
7 looks like about '59 or '60 in here, dips down
8 a little bit at probably around '45 to '50 in
9 there and then comes back up a little bit
10 higher.
11 **MR. MARTIN:** So within that ten year period
12 of time if a person lived there in base
13 housing and was receiving that amount of
14 contamination over a period of, say, three
15 years on two different occasions for a total
16 of six years, would you consider that a high
17 level of contamination that that person
18 ingested or --
19 **MR. MASLIA:** Are you asking from a health or
20 an epidemiology standpoint?
21 **MR. MARTIN:** From a layman's standpoint. It
22 sounded like a lot to me.
23 **DR. BOVE:** It's ten times above the MCL.
24 **MR. MASLIA:** It's ten times above the
25 current ^ in MCL. And what I will tell you

1 that is our efforts in understanding the
2 sensitivity of our model and uncertainty is to
3 be able to tell you what confidence we have in
4 that number. In other words, is it 58? Does
5 that really mean it could be 38 or 108 or are
6 our results there plus or minus a few percent?
7 And basically, based on the work our
8 cooperator had previously done, we had a very
9 narrow window of operation. So there was only
10 a very narrow range in which they could
11 operate these wells. And by the time we got
12 up to about right in here, in the early '60s,
13 there really is no difference no matter how
14 you operated the wells. So we are confident -
15 -
16 **MR. MARTIN:** And that's only for PCE
17 contamination?
18 **MR. MASLIA:** That's for PCE. That's
19 strictly PCE. No degradation in this
20 analysis.
21 Yes.
22 **MR. BYRON:** Jeff Byron. So you said there's
23 no degradation shown in this chart. Are you
24 going to have charts in the study that show
25 the degradation in graph form?

1 **MR. MASLIA:** In the final reports there will
2 be a series of TCE/PCE/DCE.
3 **MR. BYRON:** And vinyl chloride?
4 **MR. MASLIA:** Vinyl chloride, yes, vinyl
5 chloride.
6 We've got, in fact, we have a report
7 coming out. One of the issues we ran into in
8 reviewing this voluminous amount of
9 information is for example in with DCE, it's
10 got many conjoiners, and it has been referred
11 to and called, correctly and incorrectly, by
12 every different name in the various reports.
13 We have, and I believe it's chapter D,
14 that, and I actually have one that's written
15 and it's going through peer review, that does
16 nothing but talks about and describe the
17 various volatile organic compounds, the DCE,
18 their nomenclature, where they're found
19 throughout the U.S. There's reference
20 materials, things like that. We felt that
21 would be helpful for everyone so we're all
22 using the same terminology. If you're telling
23 me you've got one one DCE, and somebody else
24 says one two or whatever, we can try to figure
25 out what exactly they're talking about.

1 It is very confusing when you're
2 talking about the same compound in different
3 concentrations or different concentrations
4 because it's two different conjoiners of the
5 same compound. So that's in a separate
6 chapter that we've had written up, and we're
7 using that terminology throughout. You'll be
8 able to have the chapter along with the
9 definitions of volatile organic compounds
10 (inaudible).
11 Any other questions?
12 **DR. RENNIX:** Chris Rennix here. The 58.27,
13 that's the average concentration for what
14 period?
15 **MR. MASLIA:** I'm sorry, could you repeat
16 that?
17 **DR. RENNIX:** The 58.27, that second dotted
18 line, it is, what period of time does that
19 represent the average --
20 **MR. MASLIA:** It basically represents from
21 here because obviously we're in a log scale so
22 it's not zero here, but it represents through
23 when the wells were shut down.
24 **DR. RENNIX:** So from 19 --
25 **MR. MASLIA:** -- but it does not include zero

1 values. In other words, when the well was not
2 operating, it was not in the model. If the
3 well is not operating, then it's going to
4 contribute zero concentration because there's
5 no water coming into the well.
6 **DR. RENNIX:** So the start for this average
7 concentration is when? The start.
8 **MR. MASLIA:** We start the model in '51, and
9 I believe the actual concentrations, we start
10 seeing them in like January of '52, you know,
11 it's out to the eleventh decimal place.
12 And that will be as an appendix in the
13 reports that we will release. You will have
14 the public domain model code, which they,
15 well, I believe it's 96 or 2000. We've tested
16 it against both, and because the USGS code
17 remained a model that you can download that
18 will provide you with the executable and the
19 code as well as the input datasets that we
20 calibrated input data sets. That will be made
21 available with the reports, as part of the
22 reports.
23 Any other? Yes, Jeff.
24 **MR. BYRON:** Yeah, Jeff Byron again. I
25 notice that the head rises PCE concentration

1 to deliver water to the water treatment plant,
2 51 to 94. I don't see that at about 90 even
3 then. Is that because it's at zero, and you
4 closed all of the wells?
5 **MR. MASLIA:** The treatment plant was closed
6 after '87? Eighty-seven, and that's why we
7 always put a graph on here so... This is our
8 simulation period was out to '94. In terms of
9 flow we went from one period of steady water
10 levels which were '51, which was '51 before
11 any pumping started, and through '94 when the
12 water levels re-equalibrated.
13 Even though there was no pumping going
14 on at Tarawa Terrace past about '85 or six, it
15 takes time for the water levels to re-
16 equalibrate. This is another of what we refer
17 to as steady-stable periods. However, the PCE
18 contamination plume is still moving past here.
19 But what we're showing here, and in fact, if
20 we just took arbitrary points in our model
21 here, you would see concentrations of PCE past
22 here because it's still in the water.
23 Basically, the wells were an
24 unintentional pump and treat system of PCE.
25 When you shut them down the PCE's got to go

1 some place to where the natural gradient goes.
2 However, the purposes of our analysis of the
3 health study is the gray area is what we're
4 looking at. And that is the information that
5 we will be providing to Frank Bove and his
6 group, and it's the same type of information
7 in this area for the Hadnot Point area that we
8 need to provide to them.
9 So the modeling is done independently,
10 both because we're blinded to the cases and
11 control as well as from a modeling standpoint
12 independently of the epidemiology. The model
13 should be robust and should be calibrated for
14 any period of time in here that was set forth
15 under these conditions, and it is. Tarawa
16 Terrace has completed that.
17 Yes.
18 **MR. ENSMINGER:** Have you got all the closure
19 data on the wells over on Hadnot Point
20 already?
21 **MR. MASLIA:** We've got a voluminous amount
22 of information. I have not gone through it in
23 detail, but I believe we do have the closure
24 information on this.
25 **MR. ENSMINGER:** Just to head off having to

1 go back and redo something --

2 **MR. MASLIA:** No, no, actually, when we went
3 up in July, we mentioned we will be coming
4 back up again hopefully, I can't tell you
5 when, but I would say within the next probably
6 six months or so to look at information
7 specifically for Hadnot Point and Holcomb
8 Boulevard as part of that data. At the time
9 those data were not ready yet, and we were not
10 ready to gather the data. We really wanted to
11 concentrate on just on Tarawa Terrace.

12 Any other questions?

13 (no response)

14 **MR. STALLARD:** All right, no other questions
15 --

16 **MR. MASLIA:** I will leave these posters here
17 today, put them up against the wall here and
18 if people have questions or whatever, I just
19 need to keep them here at ATSDR since they
20 have not been cleared for dissemination, and
21 I've got seven.

22 **MR. STALLARD:** Do you have copies of the
23 procedures that we might be able to --

24 **MR. MASLIA:** I would have to put copies
25 through clearance. I can make copies, page-

1 sized copies, but I would have to put them
2 through clearance and I guess we could make
3 that request of Frank or whatever, copies of
4 the posters.
5 **DR. BOVE:** How can I make copies of --
6 **MR. MASLIA:** No, no, no, no, can we get
7 copies?
8 Did you mean today or --
9 **MR. STALLARD:** Prior to the next meeting.
10 **MR. MASLIA:** Prior to the next meeting we
11 will have to put it through --
12 **DR. BOVE:** It's up to you, right, not, yeah.
13 **MR. MASLIA:** If that's an official request,
14 I'll...
15 **DR. BOVE:** Just get them cleared.
16 **MR. MASLIA:** I'll get them cleared.
17 **MR. STALLARD:** Okay, so action for next
18 meeting, action is Morris gets photos cleared
19 for release, correct?
20 **DR. CLAPP:** Chris, I'd just like to for the
21 record commend Morris and his staff for this.
22 This is amazing stuff. I mean it's been a
23 long time coming but it's worth the wait.
24 **MR. STALLARD:** Thank you.
25 **MR. MASLIA:** Thank you.

1 **MR. ENSMINGER:** And there's no more delays.
2 No more delays.
3 **MR. MASLIA:** No anticipated delays.
4 **MR. STALLARD:** Okay, we're going to, we have
5 about 12 minutes before our break. We will
6 stop promptly at quarter to 12. Perri's going
7 to pick up for about a half hour on the
8 scheduled agenda, but that's the way it is.
9 Go ahead.

PROGRESS ON FEASIBILITY ASSESSMENT: COMPUTERIZING HOUSING RECORDS AND ACCESSING SCHOOL RECORDS

10 **MS. RUCKART:** Just to give a brief update on
11 where we are computerizing the hardcopy
12 records and accessing school records. And I
13 also wanted to mention that since we met last,
14 we have confirmed one additional cancer as not
15 being a leukemia. So that leaves us still
16 with the 57 confirmed cases. This number is
17 not likely to change. We are not likely to
18 confirm any of the remaining pendings for
19 reasons that we've discussed previously.
20 **DR. RENNIX:** So that's 57 total cases?
21 **MS. RUCKART:** Right.
22 **DR. RENNIX:** So how many leukemias and how
23 many --
24 **MS. RUCKART:** Seventeen neural tube defects,

1 24 oral cleft defects and 16 hematopoietic
2 cancers. So those numbers, the 57 confirmed,
3 it's been that number for a while. The change
4 was that we had one pending cancer confirmed
5 as not having the cancer. So these are, we
6 feel pretty confident these will be our final
7 numbers.
8 So computerizing the housing records,
9 this is in process.
10 **MR. ENSMINGER:** Who's doing it?
11 **MS. RUCKART:** I am doing it along with some
12 staff in our division, and it has been slower
13 than we would have liked because it is a lot
14 of work and we all have other work. We have
15 wanted to hire a contractor to do this so they
16 could do this exclusively, and earlier this
17 year when we wanted to do that, we were told
18 by our agency that there was a cap, you know,
19 we couldn't hire a contractor, a freeze, there
20 was a freeze. We couldn't hire a contractor.
21 So at that point we had to kind of regroup and
22 then decide that we would have to do this in-
23 house.
24 And now that we see how it's going,
25 we're not as well as we hoped because it is a

1 large effort, and we do have other things that
2 we all need to be doing. We are in the
3 process of asking our management if it is
4 possible to get a contractor, if they could
5 revisit that and lift the freeze for this
6 project.
7 **MR. MARTIN:** Perri, how far back, I've read
8 this information and it's a little confusing,
9 how far back are you going with the housing
10 records?
11 **MS. RUCKART:** Whatever Camp Lejeune gave us.
12 I have seen some records from the very early
13 '60s, '61, but it's whatever they provided to
14 us with the Nancy Sonnenfeld studies.
15 **DR. BOVE:** Yeah, we have at least to the
16 early '60s, but we may go further back because
17 for Nancy's study, for Sonnenfeld's study they
18 only fully computerized 12,000 of the 90,000
19 records, just the ones that are relevant for
20 that study. So I can see when they moved in
21 those 12,000 or so records that they did
22 computerize fully, I could see when they moved
23 in, and they go back to the early '60s some of
24 them. But I have a feeling that it probably
25 goes further back than that. This is all the

1 records they had.
2 **MS. RUCKART:** I don't think that's very
3 likely because if they were interested for
4 Nancy's study in looking at '68 to '85, they'd
5 be pulling certain sheets, and it would only
6 be wherever 1968 fell on that sheet, wherever
7 the first one was. They weren't specifically
8 looking for --
9 **DR. BOVE:** I think these are all the housing
10 records. These are all the housing records
11 so, that they had on base, and so that's why I
12 think they may go back further than that.
13 **MS. RUCKART:** I guess we have to continue on
14 and see, but the earliest I've seen are maybe
15 1961, maybe 1960.
16 **DR. BOVE:** These are all the paper, these
17 are paper records, cards that were xeroxed by
18 a contractor, our contractor, way back in
19 whatever, mid-'90s I guess.
20 **MR. MARTIN:** This is for all the areas or
21 are we just talking Tarawa Terrace?
22 **MS. RUCKART:** Family housing.
23 **DR. BOVE:** This is all family housing, all
24 family housing on base.
25 **MS. RUCKART:** And then it was brought up at

1 one of our meetings that we tried to see about
2 accessing school records, so I did talk with
3 somebody in the superintendent's office at the
4 Camp Lejeune School System, and they put me in
5 contact with some legal staff from the DOD
6 Education Activity who are in the process of
7 determining what data are available.
8 From our preliminary discussions it
9 seems like high school grade transcripts may
10 be available for high school graduates. They
11 keep these records for about 50 years. So
12 right now we could get them from some time in
13 the late '50s or early 1960s. The data that
14 they think may be available would include
15 social security number for some students, name
16 of the sponsor, where they lived at Camp
17 Lejeune, and the military service of some of
18 the sponsors. And then we can use the names
19 and addresses of the students and link that
20 with the database on the sponsors of the
21 family housing to try to identify the
22 dependents who may have been exposed.
23 Now as Christopher mentioned, we have
24 not been able to get more information or see
25 these housing records because the DOD

1 Education Activity can't do this until the DOD
2 authorizes, as a point of contact, authorizes
3 us to receive this data. And as we have said
4 this has not happened to this point, so I've
5 actually called my contact over at the DOD
6 Education Activity, and I've not heard back
7 from them. And I can only suppose it's
8 because they're waiting for the authorization
9 before they even talk to me again.
10 **DR. CLAPP:** Do you have a lawyer?
11 **MS. McCALL:** When we're talking about
12 housing records, you said family housing. I
13 know that I was at Camp Johnson which was a
14 school directly next to Tarawa Terrace. Are
15 you doing anything to find the military
16 personnel that were just there for a couple
17 months to go to school?
18 **MS. RUCKART:** Frank has been talking about
19 what other databases we have looked into. I
20 was just going to be reporting on the school
21 records and the family housing records.
22 **MR. ENSMINGER:** How much money are you
23 talking about for a contractor to do the
24 computerization of these records?
25 **DR. RENNIX:** Was it 35,000 you had it

1 estimated before?
2 **DR. BOVE:** I can't --
3 **MS. RUCKART:** That might have been for the
4 in-house though. It's different --
5 **DR. RENNIX:** No, the original feasibility
6 was between 30 and 60 I think or somewhere in
7 there you were asking for.
8 **DR. BOVE:** Yeah, we were asking something
9 around there, yes.
10 **DR. RENNIX:** Three-quarters of an FTE.
11 **DR. BOVE:** The issue isn't the money so
12 much.
13 **DR. RENNIX:** It's a policy issue, not the
14 money.
15 **MR. ENSMINGER:** What do you mean?
16 **DR. BOVE:** That's not much money, let's be
17 honest.
18 **MS. RUCKART:** It's not an issue of the
19 money. What he's saying it's a policy issue.
20 The policy being that our agency froze our
21 ability to hire contractors. So that's not an
22 issue with the DOD. It's an ATSDR barrier.
23 **MR. ENSMINGER:** Who in your chain of command
24 is making this decision and why?
25 **MS. RUCKART:** Well, it's not actually – I'd

1 say it's probably a CDC decision that ATSDR
2 has to abide by. So that comes from very high
3 up if they say there's a freeze. We can't
4 hire contractor personnel. That is many
5 levels above us.
6 **DR. BOVE:** We're trying to figure out a way
7 to get, to deal with this. Because we realize
8 first of all we need the housing records to
9 verify some of the information we got in the
10 interviews of the cases and controls, because
11 a good portion of the cases and controls
12 during that interview were either confused or
13 gave us garbled information, and we just don't
14 have full information. We need to see if we
15 can resolve some of those discrepancies by
16 looking at the housing records. So we really
17 do have to computerize this even for the
18 current study, let alone for a future study.
19 So we have to resolve this quickly. We
20 understand that.
21 **MR. ENSMINGER:** Who, what do you need?
22 **MS. RUCKART:** We had decided that we would
23 try to do this effort in-house, and then we
24 have four people from our division plus myself
25 working on entering the records. And then we

1 met a few days ago just to see where we were
2 all at at this point, and then when we
3 realized it was going slower than we would
4 have liked, that's when we decided this is not
5 the best way to go.
6 We didn't know that. We said let's
7 give everybody about two months, see how much
8 we can get done in, and then we can use that
9 to project out if this is a viable method to
10 get this work done. And then we realized this
11 is not. So then someone in our division, a
12 very high-level person, we wanted to speak
13 with her about lifting the freeze for this
14 effort, and she was out of the country. And
15 she just got back yesterday, and we did talk
16 with her. We let her know we wanted to talk
17 with her about this further.
18 **MR. ENSMINGER:** I mean, this is never-
19 ending. I mean if we're not fighting against
20 the Marine Corps or the Department of the Navy
21 or Department of Defense, we're fighting some
22 other government agency that's holding the
23 works up. Why? What the hell -- What's going
24 on?
25 **DR. BOVE:** It's bureaucracy, but we're going

1 to deal with it. We're going to deal with it.
2 We have to deal with it in order to finish the
3 current study. And so we'll deal with it.
4 It'll get done. It's got to get done
5 certainly before spring for the current study.
6 And that database will be useful for future
7 studies, and we'll get into that. We'll get
8 into that and the pros and cons and
9 limitations of it, but still I think it's a
10 useful database.
11 **MR. STALLARD:** So for the purposes of action
12 items there will be a concerted effort to get
13 authority and approval to get a contractor. I
14 know that's possible because there are
15 contract people still doing stuff.
16 **DR. BOVE:** I think it was new contracts, and
17 that was, I think it was an interpretation
18 issue, and I think we'll resolve it.
19 **MR. STALLARD:** And within a relatively short
20 period of time, some sort of interim feedback
21 for the CAP on what the status of that is.
22 **MR. ENSMINGER:** It probably all depends on
23 if your last name is Bush or Kennedy you get
24 what, you know...
25 **MR. STALLARD:** One minute.

1 **MS. RUCKART:** There were no records kept for
2 the elementary. Those were kept for maybe
3 seven years and then they're destroyed. So
4 the only permanent records that they would
5 have that would be long lasting would be high
6 school transcripts. So I'm not sure if that
7 would include just graduates or if it would be
8 transcripts from the end of the year or for
9 ninth through eleventh --
10 **DR. RENNIX:** All the grades, you've got to
11 prove you had all credits to get into college,
12 so they had to keep all your high school
13 years.
14 **MS. RUCKART:** So even if you didn't
15 graduate, if you move before then, if you were
16 there in ninth grade they'd have to --
17 **DR. RENNIX:** Having a military child, yes.
18 We have to go back and get transcripts from
19 the high schools for them to apply to college.
20 **MS. RUCKART:** So they only have the high
21 school transcripts. The other records were
22 kept for a maximum of seven years and then
23 destroyed.
24 **MR. MARTIN:** The only frustration for me so
25 far has been trying to get any records from

1 anybody ^ shipped all over the world. But if
2 I went to Camp Lejeune High School for two
3 years then I moved off base and graduated from
4 Jacksonville Senior High School...
5 **MS. RUCKART:** Chris Rennix just said that
6 they would keep them for every grade that you
7 were there, not just for the graduates.
8 **DR. RENNIX:** And I'm not sure when high
9 school started at Camp Lejeune, if it was
10 eighth grade or ninth grade.
11 **MS. DYER:** It was ninth grade.
12 **DR. BOVE:** We need to see what these records
13 look like. I mean, we were told what was in
14 them, but I'm not, it's not clear to me that
15 these people who talked to us have actually
16 looked through this.
17 **MS. RUCKART:** We were told that they think
18 maybe --
19 **DR. BOVE:** Yeah, that's the first thing. So
20 that's why we need to get access to this data,
21 this information, to see what's there. But if
22 we can get that information, we can link it
23 with the family housing records so we'll have
24 some dependents at least identified this way.
25 They do not have yearbooks for elementary

1 school. There's really nothing we can get on
2 elementary schools, far as they have told us.
3 **MS. DYER:** They have the alumni and a lot of
4 the alumni people weren't, didn't even
5 graduate. Some of them didn't even go
6 actually to the high school but just went to
7 the junior high but kept up with people. So
8 you've got that alumni which is pretty large.
9 **DR. BOVE:** They didn't have any information
10 on the alumni, did they?
11 No.
12 **MR. STALLARD:** That's an informal network?
13 **MS. DYER:** Uh-huh.
14 **MR. STALLARD:** The alumni?
15 **MS. DYER:** Just look it up. The website is
16 lejeunealumni.com, and you can get in touch
17 with Lisa Beavers is the one that runs it, and
18 she is in touch with all of them.
19 **MS. RUCKART:** Well, we have to investigate
20 that if that's --
21 **DR. BOVE:** Is that one word,
22 lejeunealumni.com?
23 **MS. DYER:** Lejeunealumni.com.
24 **MR. STALLARD:** Ray, you got that?
25 **COURT REPORTER:** Yeah.

1 **MR. STALLARD:** Folks, it's time for a break
2 right now, and we have other people who may be
3 watching via this elaborate technological
4 wonder here. So we're going to take a 15
5 minute break and come back and start promptly
6 at 11 o'clock. Thank you.
7 (Whereupon, a break was taken, 10:45 a.m. to
8 11:00 a.m.)
9 **MR. STALLARD:** I'd like to welcome you back
10 and invite you to take your seats, please.
11 Just before break we concluded with Perri
12 providing an update of the records. So now
13 we're going to move on, and Frank, Dr. Bove.

PROGRESS ON FEASIBILITY ASSESSMENT:
AVAILABLE DATASETS

14 **DR. BOVE:** I e-mailed this out, kind of
15 Chris didn't get it for some reason, but I e-
16 mailed this packet out with the details on the
17 different databases. And then yesterday I
18 tried to put it in sort of a tabular format as
19 best I could.
20 So let's start with the VA databases
21 because we're asked to look into the VA
22 databases, and I didn't find much useful
23 there, but we can discuss that. And part of
24 the reason is that very few veterans actually

1 use the VA system. I saw one in the survey
2 that was done a couple years ago. They found
3 about eight percent actually use it solely,
4 and another few percent use it with other
5 health systems. So it's a tiny, it's like 15
6 to 20 percent use it. In the Gulf War data
7 that are listed there, a few more, a higher
8 percentage for some reason used it to receive
9 outpatient care at least, and about six
10 percent were hospitalized in VA medical
11 centers.
12 So I was just trying to get a handle
13 on how often people use the VA system and what
14 we could do with this data. And for the most
15 part I thought that we could at best the DMDC
16 data is probably what we really need, and this
17 data might be useful as a supplementary thing,
18 but I couldn't really see a use for it. And I
19 know that when they had the breach of security
20 with the lost, stolen laptop that they were
21 able to notify people, so they do have current
22 addresses and that might be a use.
23 If there are no other routes
24 available, we might be able to go to the VA
25 and see if we can get current addresses or

1 contact information. So it's not totally out,
2 but I just thought that for completeness sake,
3 DMDC database is going to be the best bet to
4 identify people as well as other data we've
5 been talking about.
6 So any comments or disagreements on
7 the VA, why don't you bring it up now?
8 (no response)
9 **DR. BOVE:** So that's the VA. What we did,
10 we visited the Naval Health Research Center.
11 We talked about that before. What I did was I
12 sent them a list of ICD-9 codes, and I didn't
13 print this out for people, but as you can see
14 it's quite a number of kidney and liver
15 disease codes. These are diseases, I went
16 through the literature for any health effects
17 of solvents, not just TCE or PCE but just
18 plain solvents from the occupational
19 literature because that's where almost all
20 this information is, and came up with ones
21 that have been mentioned at least, you know,
22 possibly associated with solvents or suspected
23 and listed them all and sent them off to the
24 Naval Health Research Center to look at the
25 CHAMPS database to see how frequently these

1 diseases are in their database from 1980 to
2 2000. I gave them a period of time.
3 That's all I wanted to do. I didn't
4 want to know how many were Marines with that
5 disease. I just wanted to know just, in
6 general, how often do we see these diseases in
7 your database so we can get a sense of how
8 many numbers of cases we could have if we
9 decided to do a study using this database, and
10 I did that, that was August. They were
11 excited about doing it, but then there was
12 silence. I recontacted them a few days ago,
13 got the reply that they, at first they thought
14 they didn't have to go through an IRB process,
15 but now they claim they do. I'm not sure
16 exactly why, but, because all we were asking
17 for were frequencies, but they still had to go
18 through an IRB process. So that's where that
19 stands.
20 The idea here would be, and again,
21 what I'm trying to get at diseases besides
22 cancer and mortality. That was the idea of
23 trying to use the CHAMPS database for that
24 purpose. And what we would do is this
25 database is for hospitalization. You had to

1 be active when you're hospitalized, so it's a
2 very select population we're talking about.
3 You have to be active. You have to be
4 hospitalized. Remember that these diseases
5 have a latency period from the time of
6 exposure till the time they occur so it's a
7 small group of people relatively speaking from
8 the population that went through Lejeune.
9 And it's all military. It's not just
10 Lejeune. But you still can use this database,
11 again, depending on the numbers of cases of
12 the particular diseases or if we lump some of
13 them together and the percent of the people in
14 this database that were through Lejeune, I
15 mean, it is possible to do a case-control
16 sample of this and get some useful information
17 out of it. At least that's the hope.
18 So that's why it's here. But I won't
19 know until I have some sense of how frequently
20 these diseases are showing up in the database.
21 So I'm waiting for that. So I think it's
22 useful. It's a different design. It's more
23 like the design we're using in the current
24 study, a case-control sample of a large
25 population relatively speaking, but we don't

1 have to enumerate that large population in
2 order to do this study. So that's the nice
3 thing about it.
4 We know that, we can assume that these
5 cases are ascertained with a completeness in
6 this hypothetical population -- and Dick and
7 Chris, you can help me with this. And so we
8 don't have to know everybody in that
9 population that this would provide the useful
10 information from that larger population, just
11 getting the cases and a sample of some other
12 diseases from this database. So it's a
13 possible study. It's a way of looking at
14 other diseases besides cancers that are
15 verified. These are verified cases.
16 And the limitations are the
17 hospitalizations and they have to be active
18 when they're hospitalized. So that it's
19 limited in that sense. And it's back to the
20 point we can talk about later. We don't have
21 to study everybody at the base in order to get
22 useful information on the effects of these
23 contaminants on particular diseases. And so
24 this is a strategy of getting at the useful
25 information on this. If, again, we have some

1 numbers here that give us some statistical
2 power. So that's CHAMPS. Any question about
3 that database?
4 **MR. BYRON:** This is Jeff Byron. No
5 question, but you say you have a list of the
6 diseases there?
7 **DR. BOVE:** Yeah, I can --
8 **MR. ENSMINGER:** And you ^ than to run these
9 samples?
10 **DR. BOVE:** Yeah.
11 **MR. ENSMINGER:** When?
12 **DR. BOVE:** I've been doing a lot of
13 traveling lately. I think it was some time in
14 August. Right, it was before I took my kids
15 to the beach.
16 **DR. RENNIX:** You had sent it before August
17 23rd.
18 **MR. BYRON:** And did they tell you, I mean,
19 this is being run off of a mainframe computer,
20 right?
21 **DR. RENNIX:** Yes, but they need, they
22 determined that they need Institutional Review
23 Board approval which means they have to
24 protect, they have to protect the individual
25 patients.

1 **MR. ENSMINGER:** We're not asking for
2 individual patients.
3 **DR. RENNIX:** Well, you're accessing their
4 records, and their records were not, were
5 designed for public health surveillance and
6 review, not for long-term cancer studies. And
7 I do this on a daily basis. I have to get
8 permission to do anything beyond what happened
9 today or what happened recently because of all
10 the rules on privacy.
11 **DR. BOVE:** The IRBs have been getting a lot
12 stricter. I've sat on IRBs at the CDC, and
13 I've seen it get stricter. But we thought we
14 could do this without it. They decided that
15 we can't, so fine. I don't think there will
16 be any problem. There'll just be a delay in
17 getting this information. There shouldn't be
18 any IRB problem with this.
19 **MR. ENSMINGER:** When's the last time
20 anybody's heard from these people?
21 **DR. BOVE:** I just heard from them a couple
22 days ago.
23 **MR. BYRON:** That's from the ^ or the IRB?
24 **DR. BOVE:** I got a quick reply when I sent
25 the ICD-9 code saying that they were looking

1 forward to doing this and so on, so I think
2 they thought that they could do it without an
3 IRB issue, and then they found out otherwise.
4 And when I contacted them a week ago, they e-
5 mailed me back saying they had to go through
6 an IRB process. I don't think it's going to
7 take that long. I just was hoping to get --
8 **DR. RENNIX:** IRBs meet every month so
9 they've got to get the paperwork in.
10 **DR. BOVE:** If it becomes a problem, I'll
11 definitely let you know, but we should know
12 hopefully in a month or so what the
13 frequencies of these are. I don't think it's
14 a point of contact problem. That's the next
15 databases. That's a point of, there will be
16 though probably for them, too, if we ask for
17 more detailed information. Not only will we
18 have to go through an IRB process, but they
19 would probably want a point of contact.
20 **DR. RENNIX:** They would want a data use
21 agreement.
22 **DR. BOVE:** A data use agreement, yeah.
23 **MR. MARTIN:** And again, Frank, these are all
24 on active duty military personnel during this
25 period of time, right?

1 **MS. BRIDGES**: And dependents.
2 **DR. BOVE**: No dependents, no.
3 **MR. ENSMINGER**: No dependents.
4 **DR. RENNIX**: Looking down in the third
5 column it tells you who's in the database.
6 **DR. BOVE**: Active duty when hospitalized.
7 **DR. RENNIX**: You're looking at the wrong
8 sheet there.
9 **MS. DYER**: We don't have it.
10 **DR. RENNIX**: You didn't get this one?
11 **MS. DYER**: I didn't get it.
12 **MR. ENSMINGER**: Let me see what you've got.
13 **DR. BOVE**: It's one of the three things I
14 handed out this morning.
15 It starts computerization of this in
16 1980 for the Marines. It's unfortunate that
17 they have data going back much further for the
18 Navy but not for the Marines. We talked about
19 that last time. And the way I'm trying, it's
20 difficult to conceptualize, but you would have
21 to be active when you're hospitalized. And
22 yet to be hospitalized for these diseases
23 there's some latency period, maybe ten years
24 or more. So that's why I'm saying it's a
25 smaller, a limited population. But that

1 doesn't mean you can't get the information out
2 of this limited population to make a
3 determination of whether TCE could cause these
4 diseases. It just means that it's a smaller
5 population to start with.
6 **DR. RENNIX:** What's good about this is that
7 our retirement system is 15 to 20 years, so
8 generally, if a person is exposed early in
9 their career, they would have had sufficient
10 time to develop disease. Whereas, if we're
11 just looking at people who get admitted and
12 they're 23 years old, they haven't been
13 exposed long enough to get the diseases that
14 we're really interested in looking at.
15 **MR. ENSMINGER:** Yeah, but what's your ratio
16 of people who join the service and make a
17 career out of it? I mean, it's very --
18 **DR. RENNIX:** But, and the Marine Corps is
19 even smaller. But you're going to have 20, 30
20 years of data we can aggregate up because they
21 may or may not have been through Lejeune. So
22 it's possible we could get enough.
23 **DR. BOVE:** Again, it's one way of getting at
24 diseases like these that you don't have to go
25 search for their medical records. We have it

1 in this database.
2 **DR. RENNIX:** Yeah, that's why --
3 **DR. BOVE:** Yeah, we've had trouble in our
4 current study getting medical records so this
5 is just one way of getting at these other
6 diseases. For cancer there are two different
7 ways, the mortality data and using cancer
8 registry, which we haven't talked about at all
9 yet. But just using this database I thought
10 we could try to reach some of these chronic
11 diseases, particularly liver and kidney
12 diseases. That's why I gave them those ICD-9
13 codes first to take a look at that.
14 **MR. ENSMINGER:** Let me ask a question. Now
15 that we see what the possibilities are because
16 of what happened at Lejeune, I mean, I know
17 this has nothing to do with what we're trying
18 to do right now, but what steps has the Navy
19 taken to alleviate this from happening again
20 as far as trying to locate people's dependents
21 and keep track of their dependents?
22 **DR. RENNIX:** In the future? Once they leave
23 the service it's up to the sponsor to keep the
24 Navy or the Marine Corps informed of their
25 location. It generally doesn't happen.

1 There's no way to force them to, but there's
2 other ways to find people now that didn't
3 exist 30, 40 years ago. The Navy in the last
4 year has established an epidemiology data
5 center and we're looking at -- and I run it.
6 We're looking at all this data, family members
7 and active duty, looking for disease trends.
8 And we're going back as far as the
9 data will take us and then following those
10 groups forward. So it's going to take awhile
11 to get us up to speed with all the diseases,
12 but we're focusing on the things that are
13 important, ALL in children. So we're looking
14 at all the ALL, leukemia in children, see
15 where they were, is there any geographic
16 commonality? Is it an age commonality? And
17 so we're trying to find trends in that data to
18 see if we need to go back and look at
19 environmental issues to go along with it. But
20 the first place you look is the data that you
21 have that's available.
22 And so the Navy went from one person
23 doing that. I now have 19 people, that's how
24 important it is to the military to understand
25 what diseases they're seeing now. We have no

1 history so we're going back to reconstruct
2 that history as far back as we can go.
3 **DR. BOVE:** So how far back are you right
4 now?
5 **DR. RENNIX:** We've requested, we're going
6 back six years right now because that's the
7 full data for family members and active duty.
8 We'll have to go back once we get that model
9 understood, and we're going to keep adding
10 years into that until we run out of data.
11 **MR. ENSMINGER:** Well, you know, we were
12 talking about leukemia. I had a buddy of mine
13 telling me that back in, when was it? The
14 '70s? They had a cluster of leukemia break
15 out over in Tannayala Bay^, and ^. Now when
16 you find these clusters at a certain duty
17 station, are you also checking back to see
18 where those parents came from?
19 **DR. RENNIX:** Let me give you an example. I
20 just finished a study, and we're re-doing it
21 where we looked at all the children who ever
22 lived in Guam, and we tracked to see if they
23 ever got leukemia. So we were able to track,
24 as long as the parent was still on active
25 duty, we know that children must be admitted

1 to a hospital or to a clinic to get identified
2 as having that disease. It's very easy to
3 track cancer. It's one of the things that
4 people really document well. So we're
5 tracking them through their careers.
6 **MR. ENSMINGER:** ^ radioactivity?
7 **DR. RENNIX:** Actually, we haven't found any
8 environmental cause because the problems we're
9 having with Guam is that if you look at the
10 people who live in Guam that don't move, their
11 cancer rates are what we would expect them to
12 be. And so we're trying to figure out is
13 there something else, and there are different
14 theories of what may cause leukemia in
15 children. I don't want to get into it. It's
16 not part of this, but we do have the ability
17 to track people over time through the system
18 and find out where they lived, where they ever
19 lived, and then look five years later and see
20 if they got a disease. So we can look back
21 and look forward.
22 **MR. BYRON:** Jeff Byron, real quick.
23 Assuming you get the IRB that's required and
24 you start writing the data use agreement now
25 so we don't have a wait on that, too, and I

1 guess my next question would be when will we
2 get the results. I hope to hear by next
3 meeting. That's two months away. So that's
4 something that can be compiled almost
5 immediately, so we're actually on the road to
6 accomplishing something now, right?
7 **DR. BOVE:** Uh-huh.
8 **MS. DYER:** Frank, Terry Dyer, and I've got a
9 question. You might have said this. I
10 apologize ahead of time if you did. These
11 databases, are you planning on using all of
12 them or are you deciding which ones to use?
13 You're going to use all of these?
14 **DR. BOVE:** Well, no, I don't think I'm, I
15 don't think the VA databases are that useful.
16 We might --
17 **DR. RENNIX:** You might be able to find more
18 case information.
19 **DR. BOVE:** -- All I'm trying to do is see
20 what's out there and we'll use as many as we
21 need to use to do a study if we decide to do a
22 study and the diseases that we decide to
23 study. So, yeah.
24 **MS. DYER:** Who is it that gives the final
25 decision on what databases are used, you?

1 **MS. RUCKART:** Terry, let me explain what I
2 think might help you understand. Frank is
3 going to present to you all the databases that
4 we've identified that may have potential
5 useful data. And then we're going to have a
6 discussion about steps and things we need to
7 do to have a credible epi study. And when we
8 get to that point it may be clearer to you how
9 we can take the information that we have
10 available and put it into the epi study, how
11 we may not need all of the information or what
12 pieces may be necessary. That might help you
13 if we just go through the list and then talk
14 about what we need for a study.
15 **DR. BOVE:** The answer to your question is we
16 will decide.
17 **MS. DYER:** Is there a date?
18 **DR. BOVE:** Of course, I have to run it
19 through my higher-ups and get their approval,
20 and I'm sure DOD's going to weigh in as well,
21 but that's what the CAP is here for is to try
22 to make these decisions as to what makes sense
23 to study next, if anything.
24 **MS. DYER:** Have we got a date that we're
25 going to count on for saying which databases

1 we're using so that we can move on with it?
2 Are we doing that today?
3 **DR. BOVE**: I don't think we're going to be
4 able to do that today because there's some
5 information that's missing. As I said we
6 don't have, I can't say if the CHAMPS dataset
7 is going to be useful or not, at least for the
8 liver and kidney disease until I get those
9 frequencies found. So that's holding that up.
10 We have to get a point of contact, I'm
11 going to get to that with the DMDC stuff. The
12 VA, I mean, I'm just telling you what's out
13 there today. I'm really telling you what's
14 out there based on our trip out there and some
15 additional stuff, and what the roadblocks are
16 right now. So that's what I'm telling you
17 right now.
18 **MR. STALLARD**: But the question is, is are
19 we going, for planning purposes in CAP
20 meetings is it feasible to suggest that by the
21 next meeting we will be able to make firm
22 recommendations in terms of what datasets can
23 be used and what study would be conducted. Is
24 that your question?
25 **MS. DYER**: Yeah, I mean, we've already

1 looked at all of these and I'm just wondering.
2 You're the expert. Why don't you just run
3 through them and say, okay, we're going to use
4 this one, this one and this one, and let's use
5 it and go with it.
6 **DR. BOVE:** I have to, we have to finish this
7 feasibility assessment. I have to write up a
8 report. So by the next CAP meeting, I'll have
9 a draft of that report, depending on when the
10 next CAP meeting is. But we, as I said, there
11 are some issues here. I need to see what the
12 frequencies are at the CHAMPS database. I
13 can't say anything yet. We may find out that
14 there are too few liver and kidney diseases in
15 their database to make any, to make this work.
16 And so I'll know that when I get that. And as
17 for DMDC, I might as -- if there's no other
18 questions about CHAMPS...
19 **MR. MARTIN:** I've got one.
20 **DR. BOVE:** Then I'll tell you about the
21 DMDC.
22 **MR. MARTIN:** I don't want to throw a wrench
23 in the spokes or whatever y'all want to call
24 it, but --
25 **DR. BOVE:** Go ahead.

1 **MR. MARTIN:** -- in the way I'm seeing
2 everything, every database that you've
3 recognized here is dealing with active duty --
4 **DR. BOVE:** Not yet, no, no.
5 **MR. MARTIN:** -- personnel.
6 **DR. BOVE:** Let me continue this.
7 Do you have this chart now? Everyone
8 on the same chart? Okay. DMDC, the issue
9 here, what I did between the last CAP meeting
10 and our trip actually in July, was to send
11 DMDC the 12,000 or so housing records that
12 were used in Nancy's study, Nancy Sonnenfeld's
13 study, and we asked them to match it with
14 their database. And then they came back and
15 said it would be important if you had any
16 additional information so we can help with the
17 match.
18 And so from the survey data that was
19 part of the current study, we had date of
20 birth and some social security numbers, not
21 for everybody but for a percentage of them.
22 So I sent that along with, to DMDC. They will
23 not do anything until a point of contact is
24 established. So that's what's holding that up
25 as far as I know. And so that has to happen.

1 So I wanted to get a sense of that.
2 And the reason is that with the DMDC
3 active duty personnel file, as you see from
4 the chart and also from the handout, too, that
5 I sent a couple weeks ago, the data is
6 computerized as we said to, back to 1971 for
7 active duty personnel. So at least from '71
8 on we have social security number, and from
9 '77 or so we have full name. Now full name is
10 important because with full name we can link
11 with the housing records.
12 Without full name we're going to have
13 problems because all we have in the housing
14 records is the full name and the time they
15 were there. And so that's one limitation of
16 this situation. If we want to match the
17 family housing records with the DMDC data,
18 that's a drawback.
19 On the other hand we can identify
20 everyone who ever stepped foot on the base, at
21 least active duty, with this database going
22 back to 1971. So that's the good news about
23 that database.
24 **MR. ENSMINGER:** And you're identifying them
25 how?

1 **DR. BOVE:** Well, you can identify --

2 **MR. ENSMINGER:** You said that they didn't

3 start using the full name until '77. What was

4 the identifier in in 1971?

5 **DR. BOVE:** Social security number and

6 partial name would be good enough for the

7 National Death Index.

8 **MR. ENSMINGER:** We didn't use social

9 security numbers prior to 1976, '77. We had

10 service numbers.

11 **DR. BOVE:** Yeah, well, the service number

12 oftentimes was the social security number,

13 right?

14 **MR. ENSMINGER:** No.

15 **MS. BRIDGES:** Two different things.

16 **DR. BOVE:** There's a way of linking the two

17 because --

18 **MR. ENSMINGER:** I had seven numbers that

19 changed my life, 2-6-33-9-2-8.

20 **DR. BOVE:** There's a way, what I've been

21 told is that the social security number

22 information going back to '71, and that's what

23 we were told.

24 **DR. RENNIX:** DMDC may have done a crosswalk

25 between the service number and social security

1 number on their own. So they're saying that
2 they can link the two.
3 **DR. BOVE:** That's what they, again, this is
4 something we'll have to find out as we go, but
5 that's what they said. The unit ID code is
6 not included until '75. I think there's some
7 other way we can identify them as being at
8 Camp Lejeune though.
9 **MR. ENSMINGER:** Well, and that's another
10 thing, and I wrote some notes on this after I
11 printed this e-mail you sent on this
12 enclosure. You sent it on that e-mail. The
13 Marine Corps had what is known as a R.U.C.,
14 which is a Reporting Unit Code, and they also
15 had an M.C.C., the Marine Corps Code. First
16 you have your M.C.C. which would be Second
17 Marine Division, and then you'd have a
18 Reporting Unit Code within that M.C.C., such
19 as First Battalion, Second Marines.
20 **DR. BOVE:** Right, no, I know. And I think
21 that this information comes into the database
22 at various times. I'm trying to find my notes
23 because I -- it's certainly from the mid-'70s.
24 **MR. ENSMINGER:** Do you have R.U.C. and
25 M.C.C.?

1 **DR. RENNIX:** That is in the Death Index?
2 **MR. ENSMINGER:** Excuse me?
3 **DR. RENNIX:** In the Death Index they have
4 the R.U.C. So if they died on active duty,
5 that's the R.U.C. is captured on there. I'm
6 looking through this now.
7 **MR. ENSMINGER:** Where do you see the Death
8 Index?
9 **DR. RENNIX:** I'm sorry, this is my notes
10 from the DMDC visit.
11 **DR. BOVE:** We're looking through our notes
12 here to find exactly when R.U.C. and --
13 **MS. RUCKART:** Christopher, are you talking
14 about the National Death Index or the Military
15 --
16 **DR. RENNIX:** Yeah, the military keeps a
17 death index, yes.
18 **DR. BOVE:** I think that, I think --
19 **DR. RENNIX:** R.U.C., active duty files early
20 '70s, UIC is 1975, zip code 1979, and they
21 were going to find out if they had the M.U.C.
22 or the R.U.C. in there and they said --
23 **DR. BOVE:** That was the --
24 **DR. RENNIX:** -- they're supposed to get back
25 to us on that one.

1 There's a UIC address file that goes
2 back, one that goes back to 1980. They have
3 reserves back to 1974. It's a quarterly
4 census. Civilians --
5 **MR. ENSMINGER:** Civilians, do you have there
6 on your table.
7 **DR. RENNIX:** What they were waiting for is a
8 letter from Headquarters Marine Corps
9 authorizing ATSDR to obtain ^ information for
10 all sources aboard Camp Lejeune because
11 there's Navy and Marine Corps that would be in
12 that. So the Marine Corps would have to write
13 a letter authorizing ATSDR to have access to
14 that.
15 **MR. ENSMINGER:** And then what you're going
16 to have to do then is discern through
17 historical data, you know, the units that were
18 stationed over on the main part of the base as
19 to whether these people were exposed to this.
20 **DR. RENNIX:** That's correct, that's correct.
21 There'd have to be a review of the schools
22 that they went to and location that those
23 schools were located to see if they were in
24 the zones or not. It's not going to be very
25 easy, but there are, according to what we

1 heard from DMDC, there are some files that
2 will tell us things like schools.
3 **MR. ENSMINGER:** Have Command chronologies
4 been computerized?
5 **DR. RENNIX:** Someone would have to actually
6 go and look at the historical file for Camp
7 Lejeune, actually go year-by-year in the
8 Command history.
9 **MR. ENSMINGER:** We have what is known as
10 Command chronology, and we've got to input
11 data to that every so often.
12 **DR. RENNIX:** DMDC won't have it. We'd have
13 to go to the Marine Corps for that.
14 **MR. ENSMINGER:** Does the Marine Corps have
15 that computerized?
16 **DR. RENNIX:** Captain Otte who went on that
17 was supposed to find out about that. He's not
18 here at this meeting.
19 For training they have the
20 occupational history back to 1975, but actual
21 training courses by SSM was not collected till
22 1993.
23 **MR. ENSMINGER:** What's that?
24 **DR. RENNIX:** If you attended a training
25 course, 1993 is when they actually collected

1 that at DMDC. This is what DMDC holds in
2 their thing. It may be some place else, but
3 nobody's given it to DMDC. DMDC is just a
4 repository. They don't set the rules. They
5 just collect the data, and then they guard it
6 from other people getting it.
7 (laughter)
8 **DR. RENNIX:** Well, it's your privacy.
9 **MR. ENSMINGER:** I know, but what the hell
10 are they getting it for?
11 **DR. RENNIX:** Because they don't trust the
12 Marine Corps or any other service to keep
13 those records for a period of time. Plus, if
14 there's a massive fire somewhere, there's
15 another copy some place else. And they have a
16 redundant system. It's at Monterrey and some
17 place else.
18 **DR. BOVE:** It's useful, but again, it goes
19 back reliably to the mid-'70s, maybe to the
20 early '70s. That's the key point here. And
21 there's some data items that are missing, and
22 we're going to have to live with some of that
23 exposure misclassification is what it's going
24 to be with that.
25 **MR. ENSMINGER:** In this attachment you said

1 other data includes social security number,
2 duty location, duty occupation, pay rate, date
3 of birth, race slash ethnicity, sex, marital
4 status, number of dependents --
5 **DR. RENNIX:** That's a personnel file.
6 **MR. ENSMINGER:** -- when did, there's no date
7 by this. Everything else had a date.
8 **DR. BOVE:** This information I think is from
9 --
10 **MR. ENSMINGER:** When's that date go, when
11 does this information go back to?
12 **DR. RENNIX:** Early '70s. They started
13 keeping it and they would add fields as time
14 went on.
15 **DR. BOVE:** And one field they added was full
16 name.
17 **MR. ENSMINGER:** That's one of the things I
18 asked Dr. Rennix last evening was that should
19 have a housing entry.
20 **DR. RENNIX:** And the pay record would have
21 whether or not they received BHA or didn't
22 have BHA. If they didn't get BHA it means
23 they were in housing.
24 So was the pay person there at our
25 meeting? Yes, pay person was there, and it

1 would have had whether or not they had a
2 stop/start date for housing.
3 **DR. BOVE:** But not, right. The problem will
4 be in the early years. If you have a common
5 name, you'll get several hits though. That's
6 the problem, and especially if it's a partial
7 name. That'll be, that's the problem. So it
8 gets resolved, and I'm waiting to see, this
9 experiment was to see how many they could
10 match of these 12,000.
11 And again, I'm waiting to hear when we
12 get a point of contact and we get that back
13 just how difficult or easy it was for them to
14 match just on the information I gave them
15 first off, and how many more they got by me
16 giving them the other information, the date of
17 birth for some of them, and actually social
18 security number they shouldn't have any
19 problem at all.
20 **MS. DYER:** Why are you, is the reason you're
21 going as far as a database through the active,
22 the guys that were active military? Is that
23 to get to their families?
24 **MR. ENSMINGER:** Sure.
25 **MS. DYER:** You're not, is that why you're

1 doing it?

2 **DR. BOVE:** First, I'm trying to, we have
3 housing records on the 66,000 or so people,
4 but what we don't, so we have the full name of
5 the person --

6 **MS. RUCKART:** No, no, some of the family
7 base housing records are only partial names.

8 **DR. BOVE:** Great, well, we'll deal with
9 that, but we have name, partial or full, we
10 don't have first names you mean?

11 **MS. RUCKART:** Correct, we have initials.

12 **DR. BOVE:** Okay, all right, well, that may
13 be what their name is, but that's --

14 **MS. RUCKART:** Not that, I doubt that for
15 this number of people that that's the case.

16 **DR. BOVE:** Okay, all right, more problems.
17 This is what you have to work with, right? I
18 mean these were, you should see these cards.
19 Some of them are very difficult to read.

20 **MR. ENSMINGER:** I'm telling you the military
21 don't give a damn what your first name is.

22 **DR. BOVE:** Well, in the old days --

23 **DR. RENNIX:** And you didn't care as long as
24 you got paid. You didn't care.

25 **MR. ENSMINGER:** My name was Ensminger, J.M.

1 --

2 **DR. BOVE:** This is a difficulty so we'll --

3 **MR. ENSMINGER:** -- lance corporal, corporal

4 or sergeant or whatever.

5 **DR. BOVE:** -- well, we have the full name,

6 or we have name, when they were in the housing

7 and the housing address. And we have ^ and

8 that's about it in the housing records. We

9 can't go to the National Death Index with

10 that. We need either the full name and date

11 of birth. Social security number would be

12 fine, that's all you need. To get the social

13 security number or date of birth you have to

14 go somewhere else. And somewhere else is the

15 DMDC active personnel data, and merge the two.

16 That's why we have to do that.

17 **MR. ENSMINGER:** Well, why don't you use the

18 VA database, too, because the VA keeps track

19 of everybody that was in service that's been

20 discharged?

21 **DR. BOVE:** The separation records. Yeah,

22 that starts in --

23 **MR. ENSMINGER:** And they have the name and

24 social security number --

25 **DR. BOVE:** -- '76.

1 **MR. ENSMINGER:** -- you could cross them.
2 **DR. BOVE:** See, again, they're all around
3 the same time. You know, if you want to go
4 back to the late '60s, there is one database
5 that I saw in an article, this Vietnam
6 Experience Database. It goes from '67 to '69
7 for all Marines, and I don't know where that
8 database is. It's mentioned in an article and
9 that's as far as I know. We weren't able to
10 get any more information when I went out to
11 DMDC. I don't think they know either.
12 **DR. RENNIX:** Well, they said that there was
13 -- this is Chris Rennix. They said that there
14 was some tapes available that they would have
15 to hire somebody who knew how to run the tapes
16 because it's such old technology, and they
17 would search for specific names with its text.
18 So they can't do a printout of everything
19 that's in there.
20 So you say I want these people, and
21 they would find those people in the tapes, and
22 then give you very scant information on them,
23 the name, occupation, start and stop times and
24 dates. So at least you knew they were in the
25 service and what they were doing, but they

1 didn't have a location. They have a Command
2 there but not a location.
3 **MR. ENSMINGER:** Well, and then we have
4 another problem with this, and I'm talking
5 about Hadnot Point specifically. Hadnot Point
6 housing areas, with the exception of Hospital
7 Point, were replaced from Hadnot Point
8 drinking water in 1972, '73 time frame. And
9 these databases only start right around that
10 time. So anybody that lived in Midway Park or
11 Humana, Paradise Point, officers' housing
12 after the cut-off time when they were put on
13 Holcomb Boulevard water, weren't being exposed
14 supposedly at that time.
15 **DR. BOVE:** After '72, yeah. I know, and --
16 **MR. ENSMINGER:** So how are you going to find
17 the ones before that?
18 **MS. RUCKART:** There are some of the base
19 family housing records.
20 **DR. BOVE:** That's the only way we'd find is
21 the base housing records, again, and we'll
22 have to figure out what to do. I mean we'll
23 have name, and what we can do with just name
24 is a problem.
25 **MR. ENSMINGER:** Like we discussed before the

1 dependents were more than likely the highest
2 exposure people except the --
3 **MR. MARTIN:** Korea, Thailand, Vietnam.
4 **MR. ENSMINGER:** -- with the exception of
5 certain MOSes such as cooks.
6 **DR. BOVE:** What we have, let's focus on
7 those for a second, okay? What we have, the
8 ATSDR has in hand is birth certificate
9 information and survey information on some of
10 those people and housing records. That's what
11 we have. DMDC doesn't have anything. The VA
12 doesn't have anything unless you want to go
13 back to hard records, you know, it's manual.
14 So that's what we have. I mean, that's what
15 we have so maybe we could do something trying
16 to get whatever information we have from the
17 survey or the birth certificate to try to get
18 more information on those people. I mean,
19 that's the only thing I can think of.
20 **MS. RUCKART:** Well, the Education Activity
21 records.
22 **DR. BOVE:** The what?
23 **MS. RUCKART:** The high school transcripts.
24 **DR. RENNIX:** You don't have them yet though.
25 **MS. RUCKART:** No, I mean that's a potential

1 for us, and we're hoping to --

2 **DR. BOVE:** Well, that won't give, that'll
3 give information on dependents in the content,
4 but it won't give, again, I'm trying to find
5 some information I could go to the National
6 Death Index or a cancer registry with. It
7 would have to have name and date of birth or
8 social security number.

9 **DR. RENNIX:** No, not name and date of birth.
10 The date of birth's on your high school
11 transcript.

12 **DR. BOVE:** So for the student. So we have
13 that.

14 **DR. RENNIX:** But we won't have it for the
15 contact, the sponsor, him or herself. That's
16 what I'm thinking of right now, the sponsor.

17 **DR. BOVE:** But these are things we'll,
18 that's well taken, that's an important
19 population to study, and the barracks, of
20 course, are exposed to Hadnot Point the whole
21 time. And so that's why I thought the DMDC
22 database would be useful. Again, I wish we
23 could go back further, but I think we have
24 plenty of numbers to study even if we start in
25 the early '70s.

1 **MR. ENSMINGER:** And your Command
2 chronologies will tell you when that unit was
3 deployed, and when they were back at home
4 base.
5 **DR. BOVE:** Because you're getting a sense
6 that there are limitations, that it's not a
7 perfect world out there. We don't have data
8 that we'd like to have.
9 **DR. RENNIX:** Are there any building records
10 for the barracks?
11 **DR. BOVE:** I have no idea.
12 **DR. RENNIX:** Check in-check out, got to pay
13 a bill.
14 **DR. BOVE:** For the barracks. Where would
15 that data be?
16 **DR. RENNIX:** It would be over by the
17 bachelor quarters' people. I'm not sure how
18 far back they go, but if you go discussing
19 beyond housing and family member. We've never
20 really discussed the barracks situation other
21 than it's another group to look at.
22 **MR. ENSMINGER:** You're not going to have any
23 barracks records per se other than what
24 barracks were assigned to that battalion or
25 that unit.

1 **DR. RENNIX:** Didn't do room assignments?
2 **MR. ENSMINGER:** Yeah, within the companies,
3 but that's nothing that's going to be any
4 official record that's going to be maintained
5 anywhere.
6 **MS. DYER:** But there were a couple of
7 schools there that people went to.
8 **DR. BOVE:** Yeah, that's where the training
9 information comes in.
10 **DR. RENNIX:** I think if we're going to try
11 and look at populations, we ought to find out
12 what's out there and what's not there. So
13 we've done family members. We've done the
14 active duty that could have been in housing.
15 Now we've got to look at are there other,
16 we're trying to find special populations to
17 study.
18 **MR. ENSMINGER:** I hate to keep going back to
19 this, but your Command chronology will tell
20 you what buildings and what areas were
21 assigned to that battalion or regiment or --
22 **MR. MARTIN:** I have another comment here to
23 raise a couple points, or I may just be the
24 only person that conceives this in their mind
25 this way. I thought the whole purpose of this

1 CAP was to recognize the dependents, the
2 children above and beyond the in utero study,
3 which we're talking people that were born in
4 1950s through the 1970s. And those are the
5 records that we don't have available.
6 Now we're recognizing sponsors, and
7 we're recognizing active duty military people,
8 but they were not, the majority of their time
9 was not spent in Tarawa Terrace housing,
10 Berkley Manor, Midway Park. They were gone.
11 So the real, the meat of the records that we
12 need are the records that you're saying they
13 do not have except for housing possibly and
14 except for some high school transcripts.
15 **MR. ENSMINGER:** Well, you've got your
16 dependents on here, too.
17 **MR. MARTIN:** Which is based under the
18 housing, the base housing.
19 **MR. ENSMINGER:** No, it's on the DMDC,
20 marital status, number of dependents --
21 **DR. BOVE:** Yeah, number but not the people
22 themselves.
23 **MS. DYER:** There's CHAMPS, too.
24 **DR. BOVE:** And you want to be able to
25 identify all the dependents that lived in

1 family housing, and I doubt we'll be able to
2 do that with databases, with the databases.
3 There are other ways to do that.
4 **MR. MARTIN:** The other way you can do it is
5 through notification.
6 **DR. BOVE:** Well, through a survey, yeah.
7 That's one way to get it, and we'd have to
8 make sure that if we did a survey, it would
9 deal with all the issues that we're supposed
10 to talk about later which is the bias issues.
11 Because it would have to be a defensible
12 survey; otherwise it's not worth doing.
13 **MR. MARTIN:** And I know, I want to recognize
14 that you guys have done a tremendous amount of
15 work, but I really feel like we're barking up
16 the wrong tree here by trying to identify
17 sources but this brings us right back to
18 February, our meeting in February, when we
19 said we need to notify these people. What are
20 we going to do about getting the word out that
21 these people have been exposed to --
22 **DR. BOVE:** That's another issue, yeah,
23 notification's another issue. Right now we're
24 trying to figure out, we can notify people but
25 maybe not study them. We're talking about who

1 we can try to study in a study that has some
2 credibility. That's a different issue than
3 who we can notify.
4 I mean, as you saw, the VA was able to
5 notify a whole bunch of those people who were
6 on that laptop, but we can't study probably
7 most of them. That's all, so right now we're
8 just focused on what we can do a study on. If
9 you want to talk about notification, that's
10 another issue entirely. There are different
11 ways to notify people.
12 **MR. MARTIN:** If we proceed with a study that
13 does not involve the people that were exposed
14 or --
15 **DR. BOVE:** No, it has to involve the people
16 that were exposed or we've --
17 **MR. MARTIN:** I'm talking about the main
18 concentration of the population. Is the study
19 not going to be flawed? I mean, we've got a
20 major population here that does not fall into
21 the main category.
22 **MR. ENSMINGER:** We got them for the active
23 duty people. There's got to be an active duty
24 cohort for them to study because they were
25 exposed.

1 **DR. BOVE:** It goes back to the point --
2 **MR. BYRON:** Does it have to be at Hadnot
3 Point?
4 **DR. BOVE:** There's a couple points here.
5 One is you don't have to study everybody.
6 That's the first point. The second point is
7 this may not be the population to study
8 children's exposure. We may have to find
9 another population to find out what the
10 effects of TCE or PCE are, but this
11 population, because we cannot identify them
12 all, may not be the best one. There could be
13 a survey. If we can design a survey properly
14 to get at some of this, we could try to do
15 that.
16 So that there, I'm not closing off
17 anything. I'm just telling you what's out
18 there. You need to know what's out there
19 first. You can't make any judgments about
20 stuff until you do. I'm not, no one is saying
21 we're not going to study a population off
22 hand. We're waiting to see what data are
23 available, and then if the data are available,
24 if a survey makes sense, how that would be
25 done to get the data or to find tapes, you

1 know, that people don't know about and so on
2 and so forth.
3 There are, at the end of the day we're
4 going to have to make a decision. This is all
5 that's out there. We can't do anything more,
6 and these are the groups we can study and
7 these are the groups we can't study. And
8 we're going to have to live with that because
9 you just can't study everybody and do it well.
10 That's all there is to it.
11 **MR. BYRON:** I think the point being made --
12 this is Jeff Byron -- is you're asking about
13 adults and children.
14 **MR. MARTIN:** Right.
15 **MR. BYRON:** Marines are adults. So we're
16 talking about the same thing. We're trying to
17 get --
18 **MR. MARTIN:** Well, I'm referencing this, we
19 were the children.
20 **MR. BYRON:** I understand, but what I'm
21 saying is I think they're looking at the
22 feasibility of doing a study based on the
23 information that they get back whether it be
24 civilian adults or Marine adults. I mean,
25 we're looking at all of these databases. They

1 include civilian and marines and their family
2 members where we can find them. It's looking
3 like that the children are going to be a
4 little tougher.
5 **DR. BOVE:** Well, yeah, and we were able to
6 study in utero --
7 **MR. BYRON:** -- the sponsors obviously, but
8 we can still conduct a survey to see what
9 results you're coming up with, and then take
10 it further into studies that include everyone,
11 right? You know what I'm saying? As long as
12 it adds up.
13 **DR. BOVE:** Yeah.
14 **MS. DYER:** Are we wanting to study the
15 highest risk exposure?
16 **DR. BOVE:** The highest risk is the in utero.
17 We're studying them. That's the highest,
18 that's the population which is most vulnerable
19 to these exposures.
20 **MS. BRIDGES:** Then why aren't we studying
21 more other than cancer, spina bifida,
22 leukemia, all the other things to go along
23 with it if you're studying in utero?
24 **DR. BOVE:** We studied the diseases that have
25 been suspected, associated with these

1 solvents. That's why we focused on these.
2 **MR. BYRON:** Based on documentation of
3 previous --
4 **DR. BOVE:** Yeah, that gets, again, some of
5 this discussion we'll have later, you know.
6 Some of the things, you can't look at
7 everything. And in this survey we couldn't
8 even look at heart disease. The problem with,
9 when I like to do a birth defects study or a
10 childhood cancer study, I like to use a
11 registry. We had to get it through a survey.
12 I think I've been through this before, and
13 we'll talk about it again later. A survey's
14 not the best way to do this. It was the only
15 way to do it unfortunately because you go back
16 in time and registries don't go that far back
17 in time.
18 We wanted to look at heart defects
19 because heart defects there's some question in
20 the literature. It's certainly not short. I
21 didn't see it in my study, but there's the
22 Tucson study, right? So we wanted to look at,
23 we asked about them. We found out that we
24 were totally missing the boat on that because
25 most of the, there were far fewer heart

1 defects than should have been there, and that
2 doesn't make any sense. TCE and PCE does not
3 protect you from heart disease, and so we knew
4 that, that that doesn't work.
5 The ones we did focus on we still have
6 difficulty verifying some of them. So this is
7 the situation when you deal with a survey.
8 And these are, again, we're bumping up against
9 a problem of going far back in time when
10 databases, when people didn't collect data in
11 a systematic fashion. And they certainly
12 didn't computerize it. And that's what we're
13 running up against.
14 **MS. BRIDGES:** How about the honorable
15 discharges and people that were discharged?
16 Armed services that were discharged.
17 **MR. ENSMINGER:** That's the VA.
18 **DR. RENNIX:** That's VA and personnel
19 database will have that.
20 **DR. BOVE:** Okay, are there any questions
21 about the chart at least because I think we've
22 been through everything including at the last,
23 on the other database in the last block is the
24 ATSDR survey itself and the issues there with
25 the fact that there isn't current data on

1 contact. But when I looked through the
2 database once again to refresh my memory, we
3 did have social security numbers for most of
4 the respondents. And most of the respondents
5 are parents, and they do have addresses and
6 phone numbers. So there is still that survey
7 database that might be of use as well as the
8 other data. So that's the universe right now.
9 We need to find out, at least on the
10 discussion -- R.U.C. and M.C.C. when that
11 started, and it would be good to find out
12 about any data on the bachelors' quarters and
13 the Command chronology you were mentioning
14 where that lies. These are things that
15 everyone should be thinking about, here and
16 people in the audience. And we will check out
17 lejeunealumni.com. And we still need a data
18 use agreement with NHRC. We need a letter
19 from the Marines authorizing us to get the
20 DMDC data, and we need a point of contact.
21 **DR. RENNIX:** You would need the data use
22 agreement if you wanted the data here to do
23 what you wanted to do with it. If you're
24 going to have them do all the work, that's
25 just an IRB.

1 **DR. BOVE:** Right, well, we have to work that
2 out. And I would work with Dr. Gorham on what
3 the best approach is on that.
4 Okay, any other questions about the --
5 and also, you know, I'll ask you to think
6 about yourselves. If you know or think of any
7 other possibilities here, bring them to the
8 table.
9 **MR. BYRON:** I've brought them to the table
10 for the past two meetings. Like I said,
11 iserve.com, 40,000 Marines are on that
12 website. I've heard nobody speak about the
13 websites that are out there that the military
14 surf on. Has anybody looked into that? I
15 know I asked if the DOD would be willing to
16 contact those websites and ask for that
17 information. We need to put a notice up for
18 notification (unintelligible).
19 **MS. RUCKART:** I did look at one of the
20 websites you had mentioned. Or I'll say I
21 tried to look at the website. The address you
22 mentioned wasn't correct. You know, because -
23 -
24 **MR. BYRON:** Maybe I gave it to you wrong.
25 **DR. BOVE:** Well, what's in these databases?

1 **MR. BYRON:** Where they served, just personal
2 information of people who served in the Marine
3 Corps. I don't know if that could be gleaned
4 for this study --
5 **DR. BOVE:** Who are these 40,000? These are
6 people that --
7 **MR. BYRON:** All Marines, just Marines that
8 served.
9 **DR. BOVE:** But why are they on this website?
10 That's what I'm trying to figure out.
11 **MR. BYRON:** To talk to one another and find
12 each other.
13 **DR. BOVE:** Okay, it's not connected to
14 Lejeune.
15 **MR. BYRON:** No, no.
16 **MR. MARTIN:** No, this is military.com and
17 several --
18 **MS. RUCKART:** There's a website that I came
19 across; now I can't remember it exactly, but
20 you have to have a log-in, and I think you
21 have to be a military member so I was not able
22 to log on because it was asking for
23 information that I can't provide because I
24 haven't --
25 **MR. BYRON:** I also logged on to one several

1 years ago, and told my story and the response
2 was just really horrible because I should have
3 probably talked to the website administrator
4 before putting my story on. But because my
5 story is true, I didn't feel like that I had
6 to. Military man, and boy, I got a response
7 from them right back. They didn't believe my
8 story, blah, blah, blah, blah, blah. What are
9 you trying to do? That's why I'm asking DOD
10 to do this versus one veteran.
11 **MS. DYER:** Well, we did it, too. We went on
12 a website that was military and then --
13 **MR. BYRON:** They'll shoot you down.
14 **MS. DYER:** -- they chewed us up and spit us
15 out. They didn't want to hear it.
16 **DR. BOVE:** Well, again, if you go to these
17 websites, and you have access to them and can
18 tell us what's in them, that would be helpful.
19 **MR. MARTIN:** They have the links to, you
20 know, the Fleet Reserves Association and
21 military dependents services and all kinds of
22 --
23 **DR. BOVE:** Remember, we do have DMDC data,
24 so it would have to be, the reason we would
25 look at this is because there's something

1 there that the DMDC doesn't have like before
2 1971 or family dependent data --
3 **DR. RENNIX:** Current addresses we don't
4 have.
5 **DR. BOVE:** -- or addresses we don't have.
6 But addresses, see, if we have full name and
7 social security number there are ways to get
8 addresses and information --
9 **DR. RENNIX:** LexisNexis.
10 **DR. BOVE:** Yeah, I mean, we could go through
11 the VA. We can go through if necessary Social
12 Security.
13 **MR. BYRON:** How about the VFW and the
14 American Legion? I mean, there's ways to get
15 to these guys, okay?
16 **DR. BOVE:** That's more of a notification
17 issue.
18 **MS. DYER:** Yeah, it's a notification issue,
19 Frank, but in the same, it's not only a
20 notification. If you're wanting to get in
21 touch with people, we're giving you ways. I
22 mean, you have a lot of drawbacks on these,
23 but if you start going to the VA or to the VFW
24 and all these sources where these Marines are,
25 you're really going to get an unbiased because

1 they don't know anything other than that they
2 were stationed at Camp Lejeune. And what
3 we're saying is it's not going to be up to
4 you. It's going to be up to the Marine Corps.
5 And you can call it notification if you want,
6 but it's also in the --
7 **MR. BYRON:** Developing a database.
8 **MS. DYER:** -- it's developing a database.
9 Thank you, that's what I was trying to
10 get out.
11 You know, you're wanting to develop
12 one that is sound, that's not biased, and
13 you're having a lot of problems with these. I
14 still think you should use some of these, but
15 I think it's going to be up to the Marine
16 Corps to notify some of these organizations so
17 we can get a true database.
18 **DR. BOVE:** What I'm saying is that initial
19 identification of the people that are going to
20 come through these databases, unless we have
21 some other source, getting current contact
22 information comes from various sources
23 including possibly these databases, but
24 there's LexisNexis, too. That's what we used
25 in the survey for most of the people. So

1 we're able to contact almost, you know, 80 or
2 more percent of the people.
3 **MS. DYER:** Are we asking the Marine Corps
4 today? Is this something that we need to ask
5 Chris to do? Just specifically ask the Marine
6 Corps to notify the VFW and some of these
7 other organizations so that we can get a
8 database of people going? Is that something
9 you want us to do?
10 **DR. BOVE:** Not before we identify which
11 database we're going to base the code work on.
12 And we also don't know who would need to
13 contact them yet for the study. For
14 notification it's a different issue, but for a
15 study we haven't talked about whether we're
16 going to do a survey or not and contact these
17 people. In a mortality study you wouldn't
18 necessarily have to contact them. Or you
19 could contact a very small sub-population and
20 get all the information you need for a study.
21 So these are issues we need to talk
22 about because we don't, we're jumping ahead.
23 I think that's what I'm trying to tell you.
24 For example, if we decide to do a mortality
25 study, and we wanted to look at the mortality

1 of everybody on the DMDC database who were
2 Marines at Camp Lejeune, and maybe the
3 unexposed group would be from Camp Pendleton,
4 just for argument's sake. We send all the
5 information to the National Death Index. We
6 get back what the cancer rates were at Camp
7 Lejeune versus Camp Pendleton.
8 **MR. BYRON:** And you haven't contacted
9 anybody.
10 **DR. BOVE:** You haven't contacted anybody.
11 If you have drinking water exposure
12 information which we do have and can assign,
13 we can actually do internal comparisons if
14 it's possible. This is all, you know, let's
15 just say it's possible. So we don't have to
16 contact anybody.
17 Now we see that there are a few
18 cancers in particular that are elevated, and
19 we want to explore further. We may want to do
20 a case-control sample, and then we want to do
21 interviews to find out if there are other
22 exposures or something of that sort, we'd want
23 to contact.
24 For cancer registry, the same thing.
25 You may not have to contact them at all to do

1 initial stuff, but you may want to contact
2 them at a later date if you wanted to get more
3 information like an occupational history.
4 Because there are other causes of these
5 diseases besides drinking contaminated water
6 at Camp Lejeune. So that's what I'm saying.
7 And now for a survey, in other words
8 if we want to do what Dave suggested, or at
9 least was interested in, was reaching those
10 dependents for which we have no data for, no
11 high school records, no other way of getting
12 to but doing a survey sort of like what we had
13 to do with those children who were born
14 outside the base, but whose mothers were
15 pregnant on base. That's the only way we
16 would have gotten any information on them was
17 through the survey. Then we would decide what
18 population we want to survey and that's when
19 we want to figure out who they are and how to
20 get in touch with them. So that's a
21 different. If we can do that type of study,
22 that's what we have to do.
23 **MR. ENSMINGER:** Well, I'm telling you, with
24 the dependents over on Hadnot Point that's the
25 way it's going to have to be done because like

1 I said they were replaced with clean water in
2 '72. These records don't go that far back.
3 To find a good sample of the dependents that
4 were exposed --
5 **DR. BOVE:** Other than the high school
6 records.
7 **MR. ENSMINGER:** Or the housing records. I
8 don't know how far they go back.
9 **DR. BOVE:** They'll go back far enough. The
10 high school, it may be good enough to study
11 high school. If we have enough numbers you
12 don't have to study everybody.
13 **MR. ENSMINGER:** Yeah, I know that.
14 **DR. BOVE:** Again, we'll get to that and hope
15 --
16 **MR. ENSMINGER:** We've just got to get enough
17 people.
18 **MR. STALLARD:** Sandra, do you have something
19 to add?
20 **MS. BRIDGES:** Yes.
21 Jerry, you talked about '72. That was
22 when the old hospital, they were phasing out
23 the old hospital --
24 **MR. ENSMINGER:** No.
25 **MS. BRIDGES:** -- and building a new one.

1 **MR. ENSMINGER:** No, that was ’83, ’83.
2 **MS. BRIDGES:** My kids were born --
3 **MR. ENSMINGER:** In the old hospital.
4 **MS. BRIDGES:** In the old hospital.
5 **MR. ENSMINGER:** And they didn’t open the new
6 one, they did not build, they did not move
7 into the new hospital until 1983.
8 **MS. BRIDGES:** It took that long for them to
9 build one?
10 **MR. ENSMINGER:** Yes.
11 **MR. STALLARD:** Okay, folks, it’s lunchtime.
12 What are the key take aways that we’ve had
13 from Frank’s presentation? Can somebody give
14 me the headline that is a key take away?
15 **MS. McCALL:** We don’t have to study
16 everybody.
17 **MR. STALLARD:** We don’t have to study
18 everybody. What else?
19 **MR. BYRON:** That we’re going to have
20 information from the CHAMPS organization once
21 we get an IRB required. You guys should have
22 the data by the next meeting, right? I’m
23 tying you down to this, Frank, now.
24 **DR. BOVE:** No, we’ll tie them down. We want
25 --

1 **MR. ENSMINGER:** We didn't discuss civilian
2 personnel data either.
3 **DR. BOVE:** Well, we could. I mean, the
4 information that --
5 **DR. RENNIX:** For the issue on this we're
6 going to have to do interviews. We have no
7 health information for the civilians. So
8 there have to be interviews. That's just
9 another population to do a case control with.
10 **MR. ENSMINGER:** Well, you're not going to --
11 **MS. DYER:** Are they saying, Chris that by
12 the next meeting --
13 **DR. BOVE:** Well, Chris, we have social
14 security numbers. We can send them through
15 the National Death Index.
16 **DR. RENNIX:** Oh, you're right, the cohort,
17 yeah. I was talking about as far as doing --
18 **DR. BOVE:** You can't get it through CHAMPS.
19 **MR. STALLARD:** Okay, folks, we can continue
20 on either through lunch or we can eat lunch
21 and come back and resume and Frank is going to
22 be back on the, Frank is going to be back on
23 the podium and the microphone when we get
24 back.
25 Did you have something to say, Perri?

1 **MS. RUCKART:** One thing I wanted you to add
2 to your list is that if the members of the CAP
3 know of specific websites, could you research
4 them and send the exact name because sometimes
5 when we say what we think the name is, it's
6 not the exact name. And if you could say when
7 you log on what information you're able to see
8 that could be helpful.
9 **MR. STALLARD:** ID other websites potential
10 interest.
11 **MS. RUCKART:** CAP members will do that
12 because --
13 **MR. STALLARD:** Okay, all right, folks, be
14 back at 1:15. I understand that this is a
15 working lunch. You'll have the opportunity to
16 work with Doctors Clapp and Fisher, correct?
17 During lunch? They are available for you.
18 All right, 1:15.
19 (Whereupon, a lunch break was taken from 12:00
20 p.m. until 1:00 p.m.)
21 **MR. STALLARD:** All right, folks, welcome
22 back. We're going to get started. We'll get
23 to recoup some of the time that we're off on
24 the agenda. We have a limited amount of time
25 and a lot of ground to cover. Welcome back.

1 Everyone present and accounted for. Terry is
2 on her way. She is here. I haven't seen
3 Sandra though. Anybody seen Sandra?
4 **DR. BOVE:** She was just here. She got a
5 call.
6 **MR. STALLARD:** All right, then let's resume
7 things. We're going till approximately 2:30
8 or shortly before 3:00 we'll wrap up, and we
9 will finish by 3:00 o'clock today.
10 So Frank, I think we're back to you.

BEGIN DISCUSSION ON CRITERIA AND ISSUES INVOLVED IN PLANNING A CREDIBLE SCIENTIFIC STUDY

11 **DR. BOVE:** I sent you, I sent a handout on
12 key methodological issues. And then yesterday
13 I decided to shorten it considerably to four
14 key points, and that's what you have handed
15 out to you this morning. So make sure you
16 have it. It's the one with the chart as page
17 two, but now we're just looking at page one.
18 And it's four key issues that I thought that
19 we could think about today.
20 One is how we decide who we're going
21 to study and how we sample them or if we're
22 not sampling them, how we get them logged.
23 And the issues around selecting these groups
24 for study include bias issues and statistical

1 power.
2 The second issue is focus I would say.
3 It's a focus issue. You can't study every
4 disease, but you can focus on ones that were,
5 at least there's some evidence or maybe
6 suspected that they're caused by the chemical
7 so that you don't go off on a wild goose
8 chase; that's the focus question.
9 Number three, you could call what are
10 the data items necessary first to determine
11 who was exposed and who isn't to get
12 information on the disease status, and then
13 information on what we call so called
14 confounding factors or possible confounding
15 factors, such as smoking or other occupations.
16 So that's the third issue.
17 And the fourth one focuses on the
18 outcome and how we can get unbiased
19 information on the outcome or how we deal with
20 bias, avoiding bias in the outcome. So those
21 are four key ones.
22 The fifth one in the handout had to do
23 with there are other ways to make the link
24 between TCE or PCE and a particular disease by
25 looking at some other population, a workplace

1 occupation, so that we don't have to do it.
2 The evidence is already there from some other
3 study to make the case. So that's a fifth
4 point we can, that's a different issue than
5 the other four. So I thought I'd, it's there,
6 but it's not, we can talk about it, but I
7 wanted to focus more on the first four issues.
8 And again, Chris and Dick can
9 certainly chime in anywhere and correct any
10 mistakes I make. One thing that actually Dick
11 was mentioning to me earlier was people
12 remember the first Woburn study. The first
13 Woburn study was done at Harvard. Dick and I
14 were around at the time.
15 There's two parts to that study or two
16 key parts to this study. One was a leukemia
17 study based on cancer data, medical records
18 and so on. The second part was a
19 questionnaire study where the community people
20 actually did the interviewing along with grad
21 students at Harvard. Not me though, I wasn't
22 one of them.
23 And the different ways that the two
24 studies, the two parts of the study were
25 treated by the scientific community were

1 interesting. One of the ways you have to
2 think about strategically is, you know, if we
3 do a study, we want to make it effective.
4 We want to have some impact in, the
5 first part of the study was based on medical
6 records with good water data and so on, that
7 had more credibility although there was a lot
8 of back and forth and a lot of attack going
9 on. So even a good study will be attacked.
10 In fact, there was a civil war in Harvard's
11 one department fought against the other on
12 this one.
13 But the part of the study that didn't
14 have any legs, so to speak, didn't do
15 anything, didn't go anywhere was the part that
16 was based on an interview. So you have to
17 keep that in mind that if you're just studying
18 outcomes that are based on self reporting, it
19 is a weaker study. There's no question about
20 it, and when you can verify the outcomes, you
21 have a stronger study. So I guess I'm already
22 at point four.
23 But that Woburn study didn't have a
24 problem, I think, with point one. You're able
25 to define the groups well in that study based

1 on the drinking water data, and people were
2 not included or excluded based on some kind of
3 other factor. So I think that that part of
4 the study was fine. But again, you know, I'm
5 prefacing all this by just saying you have to
6 think strategically. Studies that are more
7 effective, you have records that you can base
8 stuff on. If you base it on self reports,
9 it's a weaker study.
10 So let's go down point by point and go
11 through this because it's difficult.
12 **MR. STALLARD:** Could you just for Sandra's
13 purposes tell what we're talking about right
14 now that you handed out?
15 **DR. BOVE:** Okay, it's just two things. Both
16 have the same titles. One is a longer
17 version. It's the first, so the first issue
18 is --
19 Okay, so the first question is is it
20 possible to obtain unbiased samples of exposed
21 and unexposed groups? And what we mean in
22 this case is that being included in the study
23 is not related to exposure and disease status.
24 If you have people who join your study because
25 they know they were exposed, and they know

1 they're diseased, you're going to run into a
2 problem. And that's sort of what I lay out
3 here.
4 It's complicated but what you want is
5 to have defined groups of exposed and
6 unexposed people without really knowing their
7 disease status. So their disease status has
8 no impact on whether they're included or not
9 included. And that, where this comes up is in
10 situations, and where studies could be
11 criticized, is when you have a population that
12 somehow you get from some source you really
13 don't know how they got there.
14 For example, your website. If people
15 join your website because they already know
16 they're sick and they think they're exposed,
17 and people who don't join your website, who
18 are not diseased, you run into the problem of
19 a questionable sample, a biased sample. And
20 so you can be criticized, any study based on
21 that could be criticized.
22 So that's, and again, it doesn't mean
23 necessarily you can't do it, but you have to
24 keep in mind that these are some of the
25 limitations that when if you do base a study

1 on that, you can expect to hear these kinds of
2 criticisms, and they may be fatal criticisms.
3 That is, no one will take the study seriously.
4 So that's the first issue. Any
5 questions about that because I'm going through
6 it quickly. It's complicated, but in most
7 bias situations you have a relationship both
8 with disease and exposure. And somehow it's
9 preferential in one group versus another. For
10 example, in the exposed population the people
11 who got in there somehow had a health problem
12 that you're studying and then the unexposed,
13 they didn't, something of that sort.
14 So it has to be, it's complicated, and
15 I don't know how to do a better job of
16 explaining it than what I did right here. So
17 any questions about these two, I and double-I
18 here and under 1-A, I guess, and ^ longer.
19 **DR. RENNIX:** These are for cohort or
20 population studies, not for a case control.
21 **DR. BOVE:** Well, for case control it's, I'll
22 mention that later.
23 **DR. RENNIX:** Right. We're talking about
24 population so we're interested in unbiased
25 look at the frequency of disease in a

1 population, but be it exposed or be it by
2 geography or something. But you don't want it
3 to be biased going in or you can't make any
4 assumptions to generalize it to anybody else.
5 Then it becomes something that's just unique
6 to that group you're looking at, and you
7 really can't do anything with it. You
8 couldn't take it anywhere.

9 **MR. ENSMINGER:** All right, let me throw a
10 hypothetical at you here.

11 **DR. RENNIX:** Go ahead.

12 **MR. ENSMINGER:** We've got Camp Lejeune
13 housing. We had, we know we had the Holcomb
14 Boulevard water system come on line for the
15 housing areas in '72, '73 which removed them
16 from the contaminated Hadnot Point water
17 source. The people prior to Holcomb Boulevard
18 come on line would be a known exposure group.
19 How would you find a unexposed group for after
20 that housing area was replaced from Hadnot
21 Point water?

22 Because regardless of these people
23 were taken off the Hadnot Point water, they
24 still went to the Naval Hospital. They still
25 went to the PX. They went to the

1 commissaries. They went to the spouses' work
2 places. They were still being exposed, but
3 maybe minute, but they were still having
4 exposures.
5 **DR. BOVE:** Right, well, that's right off the
6 bat. That's one difference between the two is
7 one group has a constant exposure to higher
8 levels and the other ones do not. If you
9 really think about it, we're all exposed to
10 something including TCE probably right, not
11 necessarily in this room, but you know, in our
12 daily lives, certainly benzene when we pump
13 gas. So we're all exposed but there are some
14 people who are exposed a whole lot more, and
15 that's how the contrasts are made.
16 **MR. ENSMINGER:** So you could take a control
17 group of the ^ before they were replaced and
18 then study the group of period of time of the
19 same housing areas --
20 **DR. RENNIX:** In the case controls you're
21 correct. But in a cohort, a population you
22 have to know when they lived, where they
23 lived, in order to say when you put them in
24 their exposure groups for the population what
25 their exposure was. No, you don't all have to

1 be yes, no. It could be low, medium, high or
2 infrequent, frequent. So you can take a look
3 at that.
4 There is a dose response relationship.
5 There should be a difference in the disease
6 you're seeing. But if there's not, if it's a
7 different disease theory then you have, you
8 want to design your study that matches the
9 disease model that you're trying to show,
10 you're trying to illustrate. So that exposure
11 variable becomes very important.
12 It's a cumulative exposure which is
13 what most people deal with is how long did you
14 drink that water, what's the concentration so
15 you get a dose. Whereas others we have one
16 exposure like radiation. Hits you once, it
17 doesn't matter what happens after that.
18 You've had the dose. So we have to make sure
19 we design it around the disease outcome and we
20 understand that disease outcome so we can put
21 the right exposure variable in that equation
22 or in that study.
23 **DR. BOVE:** For example, for birth defects
24 that we're studying, first trimester. You can
25 be exposed in the second trimester, but not

1 the first, it doesn't make any difference.
2 **MR. ENSMINGER:** What's that?
3 **DR. BOVE:** Timing, for birth defects, for
4 the particular birth defects we're studying,
5 the damage occurs first trimester, actually a
6 very short period in the first trimester,
7 early in the first trimester. If you're not
8 exposed then but exposed in the second
9 trimester, it has no effect on that birth
10 defect.
11 **MR. ENSMINGER:** What was it? Neural tube
12 defects is on the 21st day or something?
13 **DR. BOVE:** Twenty-one to 25, 26, around
14 there. Yeah, the tube's closing.
15 **MR. ENSMINGER:** What about full term?
16 **DR. BOVE:** What about full term?
17 **DR. RENNIX:** Exposure happens the entire
18 term?
19 **MR. ENSMINGER:** Yeah.
20 **DR. RENNIX:** You were exposed in that window
21 then. So let's say a person --
22 **MR. BYRON:** Say if my daughter was exposed
23 the first trimester, second trimester, third
24 trimester.
25 **DR. RENNIX:** Then there might be other

1 things besides just neural tube you're dealing
2 with.
3 **DR. BOVE:** All we're concerned about for a
4 birth defect of either cleft or NTD would be
5 the first trimester exposure. We don't care
6 about the second and third trimester. It
7 doesn't make any difference. For leukemia it
8 does. We think that it does. We're not sure
9 so we look at all, the whole period. So it
10 depends on the disease. And for some diseases
11 like adult cancers we're going to have a
12 cumulative exposure, the dose times the length
13 of time. Whereas something, you can look at
14 other ways of looking at these exposures,
15 well, it depends.
16 But the point is simply that how you
17 define these populations, exposed and
18 unexposed, is not determined by who's sick and
19 who isn't. And for case control sampling it's
20 the reverse. The cases in our study, the
21 current study, we have cases and controls. We
22 don't know where they live. We're blinded to
23 that until we, the fact that they got into the
24 study is a case control that had nothing to do
25 with whether they were exposed or not since we

1 didn't know. We took them in, and now we'll
2 find out whether they were exposed or not.
3 So again, so that's point four. You
4 don't want to link the two in selecting the
5 people into or not into a study, in either
6 case, okay. So that's, I thought you were
7 going to raise another issue which is here are
8 these people who are exposed to Hadnot Point
9 water as they lived in Holcomb Boulevard
10 housing for the periods before '72, and yet we
11 may not be able to study them. The people we
12 will be able to study for Hadnot Point may be
13 the barracks or maybe some other group.
14 And that's okay, at least, I mean,
15 it's too bad we won't be able study them.
16 Then we'd have stronger power if we could
17 include them, the more people we can include
18 the better. But unless all the disease
19 occurred among them and nothing to the other
20 for some strange reason which doesn't make any
21 sense, there wouldn't be a bias issue.
22 But it goes back to my point is you
23 don't have to study everybody. You can study
24 just, you know, as long as the people you do
25 study have similar disease situations to the

1 people you couldn’t study pretty much.
2 Okay? This is difficult stuff, and
3 interrupt and --
4 **DR. CLAPP:** Speaking as a professor this is
5 textbook stuff as Frank was saying. In fact,
6 these two paragraphs could have come out of a
7 textbook. So we teach people this for a whole
8 semester, and you’re getting it in about ten
9 minutes.
10 **DR. RENNIX:** That’s right.
11 **MS. DYER:** (Inaudible)
12 **MR. BYRON:** So what you’re saying, Frank, is
13 that selection bias would dictate that it
14 probably is not a good idea for individuals
15 that know, be in the study.
16 **DR. BOVE:** Unless we can include you for --
17 **DR. RENNIX:** There are some times when you
18 want people, it doesn’t make any difference
19 whether they know or not. It’ doesn’t make
20 any difference. You have to be aware of it
21 when you design the study that you’re going to
22 accept those kinds of people.
23 **MS. RUCKART:** If you’re not interviewing
24 them it would matter less, too.
25 **DR. BOVE:** For example, let’s look at the

1 survey. The survey, we didn't get everybody.
2 We probably got 80 percent or roughly of the
3 people out there, and so that could be called
4 into question. Well, the people you did
5 survey, maybe you said that they volunteered
6 or you were able to contact them because they
7 had diseases that you were interested in. The
8 people you couldn't survey didn't.
9 But that would be bias, but I don't
10 think so because we did get a high percentage
11 of them so that's one good thing. And the
12 second good thing is that the people didn't
13 know, both whether they were exposed or
14 unexposed pretty much, we haven't put that out
15 on the website yet, and they didn't know what
16 diseases we were interested in either. So
17 it's likely that there isn't that kind of
18 bias. But if they did know those things, and
19 they somehow volunteered or didn't volunteer -
20 -
21 **DR. RENNIX:** But there is in that 20 percent
22 it could be that those people maybe didn't
23 respond because they're not sick and why
24 bother. It doesn't bother me. I know some
25 people that did not respond to the survey

1 because they're friends of mine and nobody was
2 sick. They just didn't bother to do it. So
3 what you can do is you can look at it as if
4 the 20 percent were all disease free or you
5 can assume it's the same in both, and then you
6 get a range of possible results. So it gives
7 you an understanding of it. If both results
8 are high, then it doesn't make any difference
9 then.
10 **MR. ENSMINGER:** Yeah, but that 16,500 number
11 in that initial in utero survey included 4,000
12 births that were estimated to have been
13 conceived at Lajeune ^ and elsewhere. My
14 daughter was one of them.
15 **DR. BOVE:** We didn't know how many really.
16 It was a guesstimate.
17 **DR. RENNIX:** So the assumption is that the
18 4,000, the disease rate that is in that is the
19 same as what it would have been in the other
20 group --
21 **DR. BOVE:** For the diseases you're studying
22 --
23 **DR. RENNIX:** It goes both ways. So you look
24 at the range so if it's the same, but would it
25 be worse, do you think that out of that 4,000

1 that they were sicker --
2 **MR. ENSMINGER:** No, I'm just saying that
3 close to those 4,000 and probably that 20
4 percent were the lion's share that you never
5 found.
6 **DR. BOVE:** The argument against the problem
7 for another kind of problem was that we, it
8 was obvious that we weren't getting all the
9 heart defects. And so a case can be made that
10 in fact quite the opposite. That we're
11 somehow missing them and maybe more of them
12 didn't contact us because certainly we're not
13 seeing a whole lot of, in some of the other
14 endpoints we asked about, birth defects we
15 asked about, we didn't see a huge number of
16 them. So you can make that argument.
17 But I think the key argument here is
18 that it has to be the disease you're
19 interested in. It can't just be if they're
20 sick. The people who didn't respond had to
21 have very few neural tube defects, very few
22 clefts or none at all, and the people who did
23 respond had all of them, you know. It'd have
24 to be that kind of difference. And it'd have
25 to be a pretty big difference to make a big

1 effect although in a small study maybe not so
2 big actually.
3 But that's, these are things to think
4 about, and I'm sure that the, when we put this
5 study out there there'll be people pointing
6 fingers at the survey saying, well, is it, and
7 raising these issues. I mean that's one of
8 the things that happens when you, even a good
9 study.
10 **DR. RENNIX:** We'd be required to find some
11 of, that people that didn't respond and find
12 out why they didn't. To see if there was a,
13 the way we ask the question, that whole
14 segment of the population was excluded, like
15 wasn't in Spanish, and most of that percentage
16 were Hispanics. It's a possibility, so we
17 just didn't attract that group. So you'd be
18 required under most studies to explore why
19 people did not respond.
20 **DR. BOVE:** So in the bigger handout, I guess
21 I should refer to that, too here, we've dealt
22 with some of the selection bias issues and
23 ways to avoid selection biases -- it's point
24 III, guys -- is to either include everybody
25 then you won't have a problem or you have to

1 make sure that how you include people isn't
2 related to their exposure and disease status.
3 So that's enough on that unless there are more
4 questions. It gets more technical actually
5 than even I want to get into right now or you
6 want to hear.
7 But the second issue on the second
8 page under B talks about another issue, and
9 this is, I can refer to the more recent Woburn
10 study as an example. Here's a study that was
11 done real well. I mean, we've got cancer data
12 on these people, cases are verified, better
13 water data than the first study, but what we
14 have is small numbers. You have 19 or 20
15 cancers in the initial run and then actually
16 some of them drop out because one reason or
17 another. I can't remember all the reasons.
18 So you have large relative risks, but
19 you have wide what they call confidence
20 intervals, a lot of uncertainty in the
21 estimates. And so I might say this is good,
22 strong evidence for an effect, but you can
23 find people who say, look, they're small
24 numbers, your confidence interval includes one
25 or includes no effect, and so the study

1 doesn't mean anything. And so we can get that
2 kind of wide range of opinion on a study I
3 think was well conducted.
4 And it goes back to the issue of
5 statistical power and these are things that
6 statistical power is affected by. But when
7 you have small numbers in a study like we do
8 in the current study, like you do when you
9 study any rare disease, no matter how, unless
10 you have a huge population, you have these
11 problems.
12 When they studied the Agent Orange
13 victims and they looked at particular birth
14 defects they had some low numbers there, too,
15 even though the population's even larger than
16 we've been studying here. So this is an issue
17 we always face when we're dealing with rare
18 diseases. And so as it says here, it's
19 affected by the size of the population, but
20 even more so the background rate of disease.
21 Now the p-value, we tried to reduce
22 the, tried to minimize the problem a little
23 bit by choosing a p-value of .10 or 90 percent
24 confidence interval as opposed to what a lot
25 of people use is a 95 percent confidence.

1 It's arbitrary which confidence interval you
2 use. It's arbitrary what p-value you use.
3 It's also arbitrary what power you're willing
4 to accept.
5 Many people accept an 80 percent
6 power. I actually like to see higher power
7 than that if it's possible. I actually feel
8 that the two types of error that go into this,
9 and this is getting maybe too far. Stop,
10 never mind, the power's an issue and Woburn is
11 a case where, for example, where a study
12 that's well designed can be attacked for that
13 reason.
14 Okay, I'm putting you all to sleep,
15 all right. Believe me, I had trouble my first
16 epi course.
17 **MR. STALLARD:** Frank, before you go on, I'd
18 just remind everybody once again why this is
19 so important to talk about, important for the
20 credible study so that we keep it in context.
21 **DR. BOVE:** I'm trying to get you to think
22 strategically, and that's the whole point.
23 These are issues you have to think about when
24 you're trying to think of how, what kind of
25 population study and how to design the study.

1 So that's what I'm trying, by bringing up
2 these issues these are the things I'm thinking
3 about when I'm looking at these databases,
4 when you're saying I want to study this group.
5 I want to study that group. These are the
6 things I start thinking about. Well, if I do
7 it, what happens with this? Can I avoid this
8 kind of bias? Can I get that piece of
9 information that will help me with defining
10 exposure better or the outcome better.
11 **MS. DYER:** Haven't you done this enough in
12 the past and in your professional history that
13 you should already know, and you should just
14 do it?
15 **DR. RENNIX:** Let me give you an example. In
16 my study of breast cancer I had 98 breast
17 cancer cases, and you would think that you
18 could do a lot of analysis with that. But
19 when you start stratifying, looking at things
20 like whether or not they smoke, whether or not
21 they drank, every time you look at a different
22 factor, the number of cells that you can do
23 analysis on doubles. You have to have a
24 certain number of cases to study in each of
25 those cells. I got two levels down and I ran

1 out of cases and had to stop.
2 So it's really important to try and
3 get as many cases you can to give you the
4 power to do the level of analysis to be
5 meaningful to the group. So you can plan as
6 best you can, but nature moves those things
7 around the way it's going to go and you try
8 and build enough safety in there to do at
9 least a little bit of analysis. So that's why
10 they have all – we go through all these things
11 very methodically so that we don't waste our
12 time. We go and collect all the cases and you
13 do one level analysis, and you're done.
14 Fallon had 16 cases. They could only
15 do one level analysis, unifactorial analysis
16 because every time they would try and do one
17 more thing like the mother smoked and the
18 father had this occupation, it would be a cell
19 or two that had zeros in it which means
20 there's nothing we can study then. It's
21 impossible to study that cell. So we're
22 trying to find an association between some
23 risk factor and the risk for disease. We need
24 to have numbers in those cells to make that
25 calculation and make the finding.

1 **DR. BOVE:** But another answer to your
2 question is, yeah. I already have, I know
3 this stuff. I think about this stuff all the
4 time, well, a lot of the time, and that's why
5 I say the things I say, like I'd rather do a
6 study that has a cancer registry involved or a
7 birth defect registry. That's why I tell my
8 people that you don't do a study unless we can
9 define exposure properly because it's a wild
10 goose chase otherwise. And I say that about
11 cluster investigations. That's how I felt
12 about Fallon, for example. I was very nervous
13 about going into Fallon because we had no real
14 hypothesis going in and it was a fishing
15 expedition.
16 **DR. RENNIX:** No hypothesis coming out
17 either.
18 **DR. BOVE:** And we had nothing coming out.
19 But that's not the case for Dover Township,
20 Toms River. That's not, even Brick Township
21 for autism. We had a hypothesis going in. It
22 just didn't pan, we just couldn't find a
23 connection, but at least we knew what we were
24 looking for when we walked in there. If you
25 don't, -- and Woburn. We knew, we had a

1 hypothesis. We could define exposure, we
2 could define those leukemia cases.
3 So these ideas are always there, but
4 that's why I say, that's why I'm hesitant to
5 think about doing a survey because I'm worried
6 about these issues. That's why I'm hesitant
7 of looking at outcomes where we don't have
8 medical record verification.
9 I'm not worried about the exposure
10 side. The exposure side's darn good. The
11 only thing about the exposure side would be if
12 I didn't have information on where they were
13 on base, if I have the family housing records,
14 I do, but for barracks or something like, you
15 know, then I start worrying about this again
16 thinking that, well, what will happen is
17 anything we find will probably be an
18 underestimate of the effect. But if it's too
19 much of an underestimate, you won't find it.
20 So all these ideas are there, what I'm
21 talking about it. So I'm just bringing them
22 out here that these are the kinds of things
23 going on in my head when I'm thinking about
24 how to do a study. These are the things I'm,
25 you know, and I want you to start thinking

1 about these issues, too, so we're all on
2 roughly the same page. You don't have to
3 think about it to this level. Just so you
4 know, but that's fine, but you know, but after
5 this you'll appreciate some of this stuff and
6 be able to think about it when you're thinking
7 about along with the rest of us on how to do
8 these things.
9 **MR. ENSMINGER:** We should have Dr. Clapp put
10 together a laymen's terms since he's a
11 professor.
12 **DR. CLAPP:** Well, I can profess. We do have
13 actually, it's not for this kind of a study,
14 but we do have a PowerPoint that I can send
15 along about some of these same issues
16 including statistical power and p-values and
17 that kind of thing. I'd be happy to do that.
18 **MR. ENSMINGER:** That would be helpful.
19 **DR. CLAPP:** Okay.
20 **MR. ENSMINGER:** Frank talks about big terms,
21 and --
22 **DR. BOVE:** That's why I wrote this thing. I
23 think I wrote this thing better than I'm
24 presenting it, trying to --
25 **MR. BYRON:** The first one was a little more

1 simplified.
2 **MS. RUCKART:** I helped write that. I helped
3 simplify it.
4 **DR. BOVE:** It was pretty simple before she
5 got that.
6 **DR. CLAPP:** She got it down to four points.
7 **DR. BOVE:** It's difficult. But also, that's
8 why I'm asking, you know, ask questions.
9 Let's move on to point number two, are
10 the exposures capable of -- this is an easy
11 one. Are they capable of causing the health
12 outcomes you're interested in. And here
13 again, you could study everything and make a
14 mess of things or you can focus. And that's
15 why I bring this out.
16 I think it's important to focus and to
17 at least look at diseases where you have some
18 idea that there might be a connection. And I
19 mean it, you could be that vague, but that
20 still rules out a lot of diseases that you
21 don't have to look at.
22 **MR. ENSMINGER:** Which number two are you on?
23 **DR. BOVE:** I'm on either one. Mine aren't
24 numbered. So what we do when we, you know, to
25 try to make a case to do a study, because

1 oftentimes you have to make a case to do a
2 study for funding reasons or to get to your
3 higher ups, is to say, well, we found in an
4 animal data or there's some human data or
5 there's something, there's a chemical that's
6 similar to TCE and PCE that has been shown in
7 either human or animal to have a, so that's
8 how, you know, if any of those things are
9 true, it's either suspected or shown in animal
10 or human data or similar chemicals has done
11 that, then you can make the case, I think, to
12 study that disease.
13 If there isn't any then it is a wild
14 goose chase because you can look at a million
15 diseases, probably as many diseases as you
16 could think of, and there's no reason to look
17 at one versus the other if there's no evidence
18 for either one, right? So it's important to
19 focus the study. It's also, if you don't
20 focus it's impossible to design it well. So
21 that's point two.
22 Point three, well, point three is what
23 are the crucial data items we need. The first
24 point, point A, has to do with trying to
25 determine what their exposure is, and we need

1 this kind of information to determine both
2 their exposure to the TCE and PCE on base, and
3 also, if you have an occupational history
4 other exposures, that might also cause
5 disease. That's also point C.
6 But occupations on base would again
7 involve TCE or PCE exposure. And B would be
8 the outcome side, death certificates, cancer
9 data, other methods to confirm diagnoses. And
10 point C, studies are often criticized because
11 they don't deal with confounders. And
12 confounders are factors like smoking that can
13 cause the disease you're interested in.
14 Suppose we were looking at, we're interested
15 in lung cancer at Camp Lejeune, which TCE has
16 been associated with in occupational data or
17 PCE, maybe both.
18 **MR. BYRON:** Why are you laughing, Doc?
19 **DR. RENNIX:** Because lung cancer's one of
20 the toughest ones to study. A lot of things
21 cause lung cancer.
22 **DR. BOVE:** Right, and one of the --
23 **MR. BYRON:** ^ solvents come out in your
24 lungs.
25 **DR. RENNIX:** No, I understand that, but it's

1 also smoking and solvents and --
2 **DR. BOVE:** Just an example.
3 **DR. RENNIX:** -- biological --
4 **MS. DYER:** You said it.
5 **DR. BOVE:** I know I said it, but I said it
6 for a reason. And that is that, you know, in
7 looking at smoking, smoking causes lung
8 cancer. There's no doubt about it, right,
9 except in maybe some cigarette manufacturer's
10 eyes. And smoking may also be related to your
11 drinking water exposure. How likely is that?
12 Not likely, but suppose the people at Tarawa
13 Terrace just smoked more than the people at
14 Holcomb Boulevard for some strange reason.
15 **DR. RENNIX**: Enlisted housing. Enlisted
16 personnel smoke more than officers do. Like I
17 say they showed that.
18 **MR. BYRON:** An example would be the alcohol
19 relationship that the exposures that we were
20 talking about the last --
21 **DR. BOVE:** But the key point here I'm trying
22 to make is this. That for a confounder really
23 to have any impact unless it's a tiny study,
24 that is, it has to first be a risk factor. It
25 has to cause the disease on its own. So

1 smoking causes lung cancer, but it also has to
2 be related to the exposure you're interested
3 in. In other words the exposed people have to
4 smoke more and the unexposed smoke less or
5 vice versa. The exposed people smoke less,
6 the unexposed smoke more. If there's not
7 those two things, it's not a confounder.
8 So a lot of people get confused by
9 that. They make charges of confounding in
10 studies when there isn't any or very little.
11 But it's an issue that comes up a lot so I
12 wanted to make sure you're aware of it. So
13 the risk factor that could be a confounder has
14 to be related both to the disease, has to
15 cause the disease and has to also be somehow
16 associated with the exposure. And most times
17 with drinking water it's hard to find any
18 confounders because there aren't any risk
19 factors that are related to that exposure.
20 But in Camp Lejeune you may make the
21 case here that if the enlisted people smoke
22 more or drink more alcohol or less alcohol
23 than, you know, and that's, and alcohol is the
24 cause of the disease you're interested in then
25 you might have a prop^. So that's

1 confounding. And again, it's another one of
2 these technical issues that, but if, you'll
3 hear it when people start criticizing studies
4 including this one, I'm sure.
5 **MR. ENSMINGER:** Well heck, the government
6 used to put cigarettes in the C-rations. Here
7 boys, light 'em up.
8 **DR. BOVE:** As long as everybody's smoking
9 the same amount, it's not a problem. Exposed
10 people and unexposed people are all smoking in
11 roughly the same, it's not a problem. So
12 that's point three. Any questions there?
13 **MR. ENSMINGER:** So in other words you're
14 saying like going back to lung cancer just to
15 grab an arbitrary number, a long-term smoker
16 can reasonably expect that for probably 57
17 percent long-term smokers would get lung
18 cancer. However, if you combine smoking with
19 asbestos exposure, it goes up to something
20 like --
21 **DR. RENNIX:** That's a different --
22 **MR. ENSMINGER:** -- 98 percent.
23 **DR. BOVE:** That's a different issue.
24 **DR. RENNIX:** That's what we call interaction
25 or synergy.

1 **MR. ENSMINGER:** That's not a confounder.
2 **DR. BOVE:** Well, it could be a confounder,
3 too.
4 **DR. RENNIX:** ^ worker is related to being a
5 smoker.
6 **DR. BOVE:** But what you're talking about is
7 a different phenomenon. That's called
8 interaction. That means the two exposures
9 work together and increase, or it could go the
10 other way, decrease the risk. They could work
11 against each other. So it's possible, so you
12 know.
13 **MR. ENSMINGER:** So what's the difference
14 between drinking and these VOC exposures?
15 It's the same thing.
16 **DR. BOVE:** Let me separate these two issues.
17 I have this problem with some epidemiologists
18 sometimes to getting these two things
19 separate.
20 What you just said is when two
21 exposures make the situation worse for that
22 person, asbestos and smoking, maybe alcohol
23 and TCE. I don't know.
24 **DR. RENNIX:** Alcohol and sleeping pills.
25 **DR. BOVE:** Whatever, right, okay? So that's

1 not a bias issue. That's something you
2 actually want to know. That's something to
3 study actually. You want to avoid bias
4 because you want to study this and design a
5 study actually to determine this. You'd have
6 to design it specially to see how strong the
7 interaction is. So that's the difference
8 between the two. Whereas, alcohol can be a
9 confounder if the exposed people drink more
10 than the unexposed people, and alcohol is
11 causing the disease you're looking at. That's
12 where the bias, okay?
13 **MR. STALLARD:** Excuse me. How about
14 absorption when you're talking about exposure.
15 How does that fit in, swimming in it versus
16 drinking it?
17 **DR. RENNIX:** That's route of exposure.
18 **DR. BOVE:** Well, that brings up a couple of
19 different things. Route of exposure may make
20 a difference if one route can cause it, but
21 the other route can't for some reason. Like
22 in animal studies sometimes -- well, never
23 mind.
24 Route could be important because one
25 way if you ingested it it may get detoxified

1 easier than inhaling it or vice versa. So
2 that's route of exposure, there's that issue.
3 Also, there's the issue of multiple ways you
4 can get exposed. So I may just get exposed
5 by, suppose I drink bottled water, and we're
6 talking TCE. So I'm not getting it by
7 ingesting it. I'm only getting it by
8 breathing it in my shower when I use hot
9 water. So my exposure may be, will be a
10 little bit less than someone who doesn't use
11 bottled water, drinks it as well. But
12 actually more of the exposure is inhalation
13 and dermal than ingestion. So the route of
14 exposure's important to think about in those
15 terms, too.
16 **DR. RENNIX:** And you're estimating the dose.
17 That's when you would look at routes of
18 exposure.
19 **MR. STALLARD:** You're on number four now?
20 **DR. BOVE:** Yes.
21 This is a little more, but this is an
22 important issue. Let me see how I can express
23 this so that we can, the first part is --
24 **MS. RUCKART:** Do you want to compare it to -
25 -

1 **MR. ENSMINGER:** Well, this number four has
2 got Camp Lejeune written all over it.
3 **DR. BOVE:** Yeah, that's why I'm trying to
4 think of the best way to, because I do use an
5 example, but that's on the other part of it.
6 I'll compare it to Camp Lejeune.
7 We're not sure we can ascertain, we
8 know we didn't ascertain or identify all the
9 heart defect we could. When we looked at the
10 data, we found that we expected two times, two
11 or three times as many heart defects as we
12 actually found. And so we know that's a
13 problem. But supposed, so when we can't
14 completely ascertain a disease, we may not
15 have a study at all because you know there's
16 something wrong.
17 But if for some reason you're
18 identifying the diseased people better in the
19 exposed group than you are in the unexposed
20 group, then you're having a problem again.
21 And I think that that was the main point here.
22 But I think more so than ascertain and
23 verifying which is the next point is even more
24 important. But again, because we couldn't
25 study, because we didn't ascertain all the

1 heart defects or even come close, we didn't
2 study heart defects even though we wanted to.
3 So sometimes when you don't have a
4 good method of identifying cases, we can't do
5 the study. So that's how that worked out.
6 But again, it's back to the selection bias
7 situation where if one group you're doing
8 better at determining exposure, one group
9 you're determining disease status better than
10 the other group, if you're doing it better on
11 the exposed side than the unexposed or vice
12 versa, it's a bias issue.
13 You're going to be able to, the two
14 groups need to be comparable in the way we
15 identify cases of disease and the way you
16 verify them and so on. So that's standard and
17 commonsense. If one group you do something
18 different than another group, it's hard to
19 compare the two, and that's basically what
20 we're talking about in terms of all these
21 biases issues really. But the point that
22 brings out the survey and the case control
23 study, the current case control study, is
24 really point 5 on the big sheet or for the, on
25 this one, which is when we had trouble

1 verifying or confirming the diseases.
2 And that's where we had this
3 difficulty where we, in the survey we asked
4 people did their child have a disease or not.
5 And if they said yes then we requested medical
6 records, and in some cases we were able to get
7 them. In some cases we couldn't get them
8 right away. We did other efforts to try to
9 verify cases. We found out that some cases
10 the parents thought they had the disease when
11 actually the medical records said something
12 else.
13 And this happened quite a bit. Not
14 overwhelmingly, but it happened enough so that
15 this is a problem. And for a birth defect
16 like what we were talking about, or a
17 childhood cancer like this which you would
18 think how could they not know, they were
19 wrong. That the medical record actually said
20 something else. So this is an issue. I don't
21 quite understand it myself. I know what my
22 kids have. I'm sure you know what your kids
23 have, but some people don't obviously.
24 And so this is an issue when you can't
25 verify the diagnoses. And in particular if

1 you have a difference in the exposed and
2 unexposed group in the way you're able to
3 verify, that can be a bias issue. It will be
4 a bias issue, so that's why we try not to look
5 at endpoints that we can't verify. If we look
6 at self-reported ones, they're always open to
7 the charge that these people say they have it,
8 but they may not have it.
9 But the other side of this coin, and
10 actually probably even more important, is when
11 you do a study with self-reporting of
12 outcomes, and if people know they're exposed,
13 they may tend to either over-report or report
14 accurately, either one. It's the unexposed
15 people that because they weren't exposed they
16 don't care about or don't think they have a
17 problem, maybe don't remember, the unexposed
18 actually tend to underreport. I'd say you
19 have a problem that way, too. And that's
20 basically what I was pointing out here.
21 So with self-reported symptoms it can
22 go either way. You can have over-reporting
23 among the exposed people, and underreporting
24 in the unexposed, and both could occur or one
25 or the other could occur and either, no matter

1 what, either way you have a bias and you get
2 the wrong answer. So that's what these two, I
3 think these two examples are pretty much
4 about.
5 There's also a problem, one last
6 thing, is that sometimes people try to deal
7 with the statistical power issue by getting as
8 large a group as possible. But sometimes when
9 you do that you introduce biases or a lot of
10 noise into your study, and so there's this
11 trade off between bias and statistical power.
12 And I'm not going to say anything more
13 than that, but these are just issues that you
14 have to think of, you know, sometimes there's
15 no easy solution. Sometimes you have to make
16 choices. You can have a large study with a
17 lot of noise in it, a small study with very
18 little power but good data and sometimes, you
19 know, you have to make choices as to what kind
20 of study you want and which one you think is
21 most effective.
22 **MR. BYRON:** Real quick since we're talking
23 about the current study, how many of those
24 cases were denied because the medical records
25 from the base were unavailable?

1 **DR. BOVE:** There are some pending cases
2 where we have no, we could get no information,
3 right.
4 **MR. BYRON:** So I mean as far as those
5 children might have died recently after birth
6 it could be in this study? And I know that
7 there's a big issue to be able to get medical
8 records from the military. I mean, I have
9 medical records from the military and once I
10 left the military. But how many of those
11 cases are based on medical records that
12 couldn't be found by the military, you know?
13 I'd also like to know how many of
14 those cases, I asked this question previously
15 when it was 106 or 107 children, how many are
16 still surviving? ^ the 57 or whatever, how
17 many are still surviving? Can you get that
18 for me for the next meeting?
19 **DR. BOVE:** Are still surviving today?
20 **MR. BYRON:** Yes.
21 **DR. BOVE:** I don't know if we, we can't get
22 that information. We could tell you as of the
23 time of the survey.
24 **DR. RENNIX:** Yeah, probably survey only.
25 **DR. BOVE:** But not as of today.

1 **MR. BYRON:** That would be fine.
2 **DR. BOVE:** A lot of, we tried various
3 strategies. We went through this before. We
4 went over that. We didn't just rely, if we,
5 for an NTD or for a cleft in particular, we
6 would have been satisfied with, for example, a
7 surgeon report on the cleft repair or for a
8 spina bifida any information from physical
9 therapy. So you didn't have to have
10 necessarily, you know, you could have some
11 kind of evidence in a record.
12 **MR. BYRON:** Right, as long as they're
13 existing past when the sponsor left the Marine
14 Corps. Do you see what I'm saying?
15 **DR. BOVE:** No, it's a family, if a child had
16 any medical care that could shed light on
17 whether they had the disease or not, we used
18 it.
19 **MS. RUCKART:** We would not be able to easily
20 tell you how many of the confirmed cases were
21 because of records from the base because we
22 didn't break it down by which type of record
23 confirmed their case, just for our purposes it
24 was confirmed, yes, they have it; no, it
25 wasn't; or we can't get any.

1 **MR. BYRON:** So you didn't keep those records
2 on how many were denied because of medical
3 records from the military couldn't ^.
4 **MS. RUCKART:** Yeah, I have no idea.
5 **DR. BOVE:** Because we didn't rely only on
6 that. As I said --
7 **MR. BYRON:** Right, I didn't think you did.
8 I just wanted to know how many.
9 **DR. RENNIX:** The military's a last ditch
10 effort going into National Archives, looking
11 for records.
12 **DR. BOVE:** Yeah, that was pretty much --
13 **MR. BYRON:** Well, I'm just saying this
14 because I know that most of the people here
15 don't have medical records.
16 **DR. BOVE:** Any medical records?
17 **MR. BYRON:** As far as the military's
18 concerned.
19 **DR. RENNIX:** No, not just, it doesn't have
20 to be just military records.
21 **MR. BYRON:** No, I know it doesn't have to be
22 just the military, what I'm saying to you is -
23 -
24 **DR. BOVE:** Any medical records of your child
25 that would relevant to determining whether

1 they had the disease or not. We went to one
2 facility and got CARE records on a person
3 because we wanted to definitely rule in or out
4 whether this person had the disease --
5 **MR. BYRON:** I think you're missing what I'm
6 saying. If the child died prior to his
7 sponsor leaving the military, and they
8 reported that they had these illnesses, were
9 they discluded (sic) because those records
10 couldn't be found?
11 **DR. BOVE:** Yes.
12 **MS. RUCKART:** No, no, because we would look
13 at the death certificate.
14 **MR. BYRON:** Okay, thank you.
15 **DR. BOVE:** Any medical record that was
16 relevant. But sometimes the death certificate
17 didn't help. In other words if the death
18 certificate said they died of, we thought the
19 child had leukemia and the death certificate
20 said aplastic anemia, we may want to say,
21 well, let's make sure that, you know, and see
22 if there's any other information because maybe
23 they made a mistake on the death certificate.
24 If we could find other information,
25 too, we would try to find it. Because death

1 certificates are notorious for being
2 inaccurate, and especially going back then, so
3 we want, you know. But that just goes to show
4 you that the best data is registry data, and
5 that's why I like to do studies based on
6 registries and have problems with studies that
7 aren't just for that reason. It's the best
8 data.
9 **MR. STALLARD:** I have a question. Is Camp
10 Lejeune an anomaly in the research literature
11 because of its highly transient community
12 population? Or are there other studies --
13 **DR. RENNIX:** There're studies or other
14 populations like it?
15 **MR. STALLARD:** Well, if -- either/or?
16 **DR. RENNIX:** Yes, there are plenty of
17 populations like it. Plenty.
18 **DR. BOVE:** But not ones we, we usually study
19 people around a Superfund site or even
20 drinking water situations where there are more
21 stable communities. We're talking about
22 people who have lived there for awhile. This
23 isn't --
24 **DR. RENNIX:** You guys look at it, yes.
25 **DR. BOVE:** For you guys, no, --

1 **DR. RENNIX:** We've got tons of bases where
2 people are going and coming constantly. Camp
3 Pendleton's the closest parallel for the
4 Marine Corps. They have their own school
5 system there, a very confined base. I'm not
6 sure about the Army or the Air Force have
7 anything like it, but there's, yes.
8 **DR. BOVE:** And for occupational studies it
9 depends. If the exposure is something that's
10 an irritant as well as causes a cancer or
11 something, you'd have turnover because people
12 couldn't work, you know? But you also have a
13 stable, long-term group who can. It's more
14 difficult to study these kinds of cohorts than
15 most others, yeah.
16 **MR. STALLARD:** Just for my, there are people
17 who do the science and stuff and understand
18 this language, so I'm trying to facilitate my
19 own understanding here. So are we closer to
20 narrowing down a target population to study
21 that would be less confounding, less
22 susceptible to bias, that would be appropriate
23 for us to consider based on the datasets that
24 we have available to us or the ones we have
25 yet to get? That was several questions.

1 **DR. BOVE:** Let's play out this scenario.
2 Let's say we want to focus right now on active
3 duty, so they have to be in the DMDC database
4 back to let's say 1971. Anyone who, according
5 to their record, had spent some time in
6 Lejeune or trained in Lejeune and those people
7 who trained at Camp Pendleton. We know right
8 off the bat that a lot of people went back and
9 forth because some people, a lot of Marines
10 went through Camp Lejeune for training and
11 school and everything else. So that's a
12 problem.
13 So what you'd have if you compared the
14 people who were at Lejeune versus Camp
15 Pendleton as their main place of training,
16 right? And said these are exposed and these
17 are unexposed and compare their disease
18 outcomes. Let's say look at death because we
19 can verify that. We know that some of the
20 people over here were ^ unexposed, actually
21 spent time in Camp Lejeune, and some of these
22 people maybe didn't get exposed because we
23 don't know exactly what they did on base.
24 Maybe they drank bottled water and
25 drank somewhere else. So some of the exposed

1 people will be unexposed. Some of the
2 unexposed people will be exposed. What
3 happens, you underestimate an effect if there
4 is one. So that's a bias that we have, but we
5 wouldn't have selection bias because they're
6 in the study has nothing to do what their
7 disease status us. So that's fine. And the
8 biases towards underestimating, you know, I
9 don't like that but it's better that than if
10 it's biased in the other direction.
11 People don't believe it if it, in
12 other words, if you have a risk of two or
13 something like that, there's twice the number
14 of diseased in the exposed group as the
15 unexposed group. Really, the real risk is
16 probably even higher within this scenario. So
17 that's an example where you don't have a
18 problem with selection bias. You have a
19 problem with what we call exposure
20 misclassification, and that's where the bias
21 would go to as an underestimate.
22 Now confounders, do the people at
23 Pendleton smoke more, or do they drink more,
24 or do they have different occupations after
25 they leave? Probably not, so confounding may

1 not be an issue. So that's the scenario, and
2 you have a large number of people but the
3 question is what disease you're looking at.
4 If you're looking at a real rare disease like
5 liver disease like somebody's ICD-9 codes
6 we're interested in, or liver cancer, a
7 particular kind, you have small numbers.
8 You're going to have a power issue. But
9 probably with such large numbers we'll be
10 probably fine there. So that group sounds
11 pretty good.
12 **DR. CLAPP:** Let's do that one.
13 **MS. DYER:** Let's do something.
14 **DR. BOVE:** But that's not the group you all
15 are interested in. But that's the group
16 that's the easiest to study I think. Correct
17 me if I'm wrong.
18 **MR. ENSMINGER:** Well, you've got the most
19 data on it.
20 **DR. RENNIX:** But the question is does it
21 give you what you're looking for? If we can
22 run this exercise and come up with an answer,
23 are you going to go so what at the end? If
24 you feel like this would be meaningful
25 information for you as a CAP because that's

1 what we're here to do is support your desires.
2 If Frank writes this all out, and you read it
3 and say, so we find out that the risk of liver
4 cancer might be higher in the exposed group.
5 Is that something you want to find out?
6 **MR. BYRON:** Let me ask this question.
7 **MR. ENSMINGER:** You know, regardless of what
8 we think of whether it will be useful to us in
9 the CAP, what use would this be to science?
10 **DR. BOVE:** All right, and I would say that -
11 -
12 **MR. ENSMINGER:** That's the big question.
13 **MS. DYER:** Because that's what you're going
14 to do one way or the other anyway.
15 **DR. BOVE:** What I would like to do in this
16 scenario then is try to plug more of Morris'
17 information into this study I just laid out.
18 And that would require knowing more about what
19 they did on base. Where they resided, what
20 occupations they had on base and so on because
21 then you can plug in more of Morris'
22 concentration data in there.
23 With the data I just said, exposed or
24 unexposed, you might be able to have some of
25 that by knowing whether they were here during

1 the early '60-- no, we don't have that. If
2 there's more variability in the exposure
3 information then I could have said that they
4 were, depending on when they were there, they
5 got higher or lower exposures.
6 But the problem with the scenario I
7 just laid out is that there are two different
8 water, two different water, there are three
9 different water systems on base, two water
10 systems pertaining to different contaminants
11 and one not contaminated. And I'll I'm saying
12 is that anyone who went through there was
13 exposed. So it's got this fuzziness to it.
14 It's not as strong as one where if you
15 used housing records, family housing records
16 and know where they were, whether they were at
17 Holcomb Boulevard and when, when they were at
18 Hospital Point and when they were at Tarawa
19 Terrace, we could use more of Morris' data and
20 have a stronger study. So that's -- you see
21 how --
22 **DR. CLAPP:** Let's do the stronger stuff.
23 You know what I'm saying? Let's do the high,
24 medium and low Camp Lejeune exposed compared
25 to the Pendleton.

1 **MR. ENSMINGER:** What was the estimated
2 population of Hospital? I think there were
3 20-some houses there.
4 **DR. RENNIX:** I have no idea. I'm in the
5 Navy. I had nothing to do with their housing.
6 **DR. BOVE:** What are you talking? Hospital
7 Point?
8 **MR. ENSMINGER:** Yeah.
9 **DR. BOVE:** Well, Nancy's study it's a tiny
10 group of births because she thought that
11 Hospital, she didn't know about Holcomb
12 Boulevard being exposed to the Hadnot Point --
13 **MR. ENSMINGER:** Well, she had like 31, 32
14 births.
15 **DR. BOVE:** That's right, so that means it's
16 a small population.
17 **MR. ENSMINGER:** Known exposures to TCE.
18 **DR. BOVE:** That would be Hospital Point.
19 That would be entirely Hospital Point. So 31
20 births --
21 **MR. ENSMINGER:** Which wasn't true because
22 your period was '68 to '85, so you had four
23 years of data that was never captured.
24 **DR. BOVE:** That's what I'm saying. That's
25 what I'm re-analyzing, yeah.

1 **MR. ENSMINGER:** Because she had the
2 incorrect water system.
3 **DR. BOVE:** Right, I'm re-analyzing just for
4 that reason. But I'm just trying to get a
5 sense of how many, I want to get a sense of
6 how many people at Hospital Point, it's tiny
7 because they only had 31 births in that whole
8 period of time.
9 **MR. ENSMINGER:** No, but I'm talking about
10 total population for, let's say from 1968 to
11 1985. In that total time period with people
12 moving out and new families moving in.
13 **DR. BOVE:** Well, I'm just trying, I mean
14 roughly. We have about 6,000 births in Tarawa
15 Terrace during that period, and we had 31 in
16 Hospital Point. So you can do the arithmetic
17 and make an estimate if it's much smaller ^.
18 **DR. RENNIX:** It's considered officer
19 housing?
20 **MR. ENSMINGER:** Yes, it is.
21 **DR. RENNIX:** It's both?
22 **MR. ENSMINGER:** No, it's officer housing.
23 **MS. BRIDGES:** Are you talking about 31
24 births in officers' housing?
25 **DR. BOVE:** In that Hospital Point housing--

1 **MR. ENSMINGER:** Yeah, Hospital Point. Most
2 of it still is.
3 **DR. RENNIX:** Is that where the BOQ is?
4 **MR. ENSMINGER:** No, the BOQ is up on
5 Paradise Point.
6 **MS. BRIDGES:** On the old hospital records,
7 the old hospital, would they have discarded
8 those also? Or would they have moved them
9 over to the new one?
10 **DR. RENNIX:** The patient records are
11 archived at the National Archives. So they
12 would, after five years if there's no call for
13 that record, it gets put in a box, the serial
14 numbers are recorded for what's in that box,
15 and that box sent off to a warehouse some
16 place in that archive system.
17 **MS. BRIDGES:** Inpatient records?
18 **DR. RENNIX:** Inpatient records, yes.
19 **MS. BRIDGES:** For children?
20 **DR. RENNIX:** Inpatient, all inpatient
21 records. But they're hard copies. They're
22 not computerized. They're in boxes.
23 **MS. BRIDGES:** What would it take to get
24 that?
25 **DR. RENNIX:** The inpatient records were not

1 on the sixth floor of the National Archives.
2 They were probably in a regional location like
3 they might, like the VA has their records,
4 like when they closed Roosevelt Road's, those
5 records went some place in Florida and were
6 archived there. So they don't send them to
7 the actual National Archives in St. Louis, the
8 inpatient records, just the service record,
9 the pay record and the personnel record go to
10 the National Archives.
11 **MS. BRIDGES:** How could we find out where
12 those went?
13 **DR. RENNIX:** You have to contact the local
14 National Archives to see, for North Carolina,
15 and find out where those records go. But
16 they're hard copy which is nice that
17 they're... In order to get those records, a
18 hospital has to request them, and they'll ship
19 those boxes back to that hospital, and then
20 people can inspect them. You can't go to
21 National Archives and just look at them. You
22 have to request a hospital to pull them.
23 **MS. BRIDGES:** Can we look at them or does
24 someone in the hospital have to look through
25 them? I'm thinking of making mistakes.

1 Mistakes are made all the time. They're filed
2 wrong. If we were doing them ourselves, we'd
3 be more particular.
4 **DR. RENNIX:** I'm not sure what their
5 inpatient load at Camp Lejeune was, but you're
6 talking lots and lots of records. You can
7 look at it. The hospital has to request it to
8 have the box returned to the hospital, and
9 then whoever looks at it has to have
10 permission. I mean, you have to get ^ or
11 whoever is the custodian, ^ in this situation,
12 give you permission to look at it.
13 **MR. ENSMINGER:** Has anybody done that?
14 **MS. BRIDGES:** Someone told me they were, the
15 last time we were at the meeting, I was told
16 they were destroyed, and if I'm not mistaken,
17 you told me they were destroyed.
18 **MR. ENSMINGER:** Has anybody requested
19 through the Naval Hospital at Camp Lejeune to
20 get the records?
21 **DR. RENNIX:** I'll find out. I will get you
22 the history of the medical records from Camp
23 Lejeune.
24 **MR. STALLARD:** Wait, I'd like to capture
25 that. What is that commitment?

1 **DR. RENNIX:** It's the history of medical
2 records for Camp Lejeune, inpatient and
3 outpatient.
4 **MS. BRIDGES:** For 1971, first for 1970 and
5 inpatient records from '71.
6 **MR. STALLARD:** From when now?
7 **MR. ENSMINGER:** We need to go bigger than
8 that.
9 **MS. BRIDGES:** There were hundreds of kids in
10 there sick, and they were giving them water in
11 Enfamil mixed.
12 **DR. BOVE:** But this isn't just kids. This
13 is everybody.
14 **DR. RENNIX:** Let me just find, it's not just
15 kids, everybody.
16 **MS. BRIDGES:** They were diluting their
17 formula with it.
18 **DR. BOVE:** No, no, no, but the records --
19 **MR. STALLARD:** It's the records. We're
20 interested in what the records are and what's
21 available.
22 **MR. ENSMINGER:** Well now, let me tell you
23 something. The only records that were going
24 to be maintained at the Naval Hospital are not
25 active duty.

1 **DR. RENNIX:** I'm sorry?
2 **MR. ENSMINGER:** Active duty records weren't
3 maintained at the Naval Hospital.
4 **DR. RENNIX:** Well, active records are
5 archived back at the National Archives. Your
6 medical record, your personnel record, your
7 pay record.
8 **MR. ENSMINGER:** But we're talking dependent
9 record.
10 **DR. RENNIX:** Right, those, and only
11 inpatient records are archived. And I'll find
12 out what the disposition of those were.
13 **MR. ENSMINGER:** And of what period?
14 **DR. RENNIX:** I'll go back as far they'll
15 tell me.
16 **MR. ENSMINGER:** Okay.
17 **MR. STALLARD:** Until '70 something?
18 **DR. RENNIX:** As far back as they'll tell me,
19 whatever they'll tell me. I'll just find out
20 what the disposition of the medical records
21 are for Camp Lejeune. Let me just find out
22 what the process is.
23 **DR. BOVE:** Yes, find out what the process
24 is.
25 **DR. RENNIX:** They'll tell me what it is. It

1 might be ten years destroyed or whatever, but
2 I know they archive it for a period because I
3 have to find --
4 **MR. ENSMINGER:** That'll be a gold mine for
5 what we're talking about.
6 **MR. STALLARD:** So we have a commitment to
7 action by Chris to check on the disposition of
8 the in- and outpatient medical records at Camp
9 Lejeune Naval Hospital.
10 **MR. ENSMINGER:** Naval Regional Medical
11 Center.
12 **DR. BOVE:** We had this issue before and I
13 cannot --
14 **MS. BRIDGES:** And they said they would --
15 **DR. BOVE:** Yeah, and I have to --
16 **MS. BRIDGES:** -- we did not get --
17 **DR. BOVE:** I'll have to ask.
18 **DR. RENNIX:** That's why I want to verify. I
19 know that for another study that I've been
20 involved in that the records are archived,
21 inpatient records are archived.
22 **DR. BOVE:** But how far back --
23 **DR. RENNIX:** That's what I want to find out.
24 **DR. BOVE:** No, no, in this --
25 **DR. RENNIX:** In this situation? Well, it

1 was for the trial period of study so it went
2 back 50 years.
3 **DR. BOVE:** It went back that long?
4 **DR. RENNIX:** That's what they said.
5 **DR. BOVE:** Because that's not my
6 understanding here.
7 **DR. RENNIX:** Let me find out.
8 **DR. BOVE:** Let me double check my source,
9 too.
10 **MR. BYRON:** Well, I had brought up the fact
11 that Onslow Memorial Hospital destroyed theirs
12 after seven years when I tried to retrieve
13 them in 2000.
14 **DR. BOVE:** That's my understanding.
15 **MR. BYRON:** But that's only Onslow. I
16 didn't --
17 **MS. BRIDGES:** But that's Onslow Memorial
18 Hospital. That's Jacksonville, not Camp
19 Lejeune.
20 **DR. RENNIX:** Not Camp Lejeune. I will find
21 out what the policy is.
22 **MR. STALLARD:** All right, we have clarity --
23 **MS. BRIDGES:** They would show the doctors
24 that were on staff then, too.
25 **DR. RENNIX:** Bet they signed the record.

1 **MR. STALLARD:** -- a commitment to action.
2 Folks, I want to bring us back a little bit.
3 We had a presentation of science research
4 protocol 101 by Frank, and we went over
5 several things. So Dr. Clapp suggested and I
6 heard it said by Frank that the active duty
7 seems to be a feasible population to study.
8 Is that a correct statement?
9 **DR. CLAPP:** Yeah, that's what I think, and I
10 also think it's what the Advisory Committee a
11 year ago recommended, right? That there be
12 this mortality study? Frank just laid out a
13 way to do it that is feasible.
14 **MR. STALLARD:** So what I'm looking for is
15 consensus. We keep, at some point we're going
16 to have to put a line and say this is what we
17 want to do. Otherwise, we'll just keep
18 meeting and learning more about science.
19 **MR. ENSMINGER:** From what I've seen from the
20 databases that they've given us to look at,
21 the DMDC which would be the active duty
22 population at Hadnot Point and the civilian
23 personnel that worked for the base would be a
24 good study group, both --
25 **MS. DYER:** We're on the CHAMPS.

1 **MR. ENSMINGER:** CHAMPS is so incomplete.
2 **DR. BOVE:** Let's wait on CHAMPS until we see
3 what the ^ are.
4 **MR. ENSMINGER:** CHAMPS will give you some
5 more information on the active duty people.
6 It's not going to give us, now, we've got
7 that, I mean, when I looked at this stuff, I
8 had already formulated in my mind that the
9 active duty was the best group. But what are
10 we going to do about the dependents?
11 **DR. BOVE:** That's the question.
12 **MR. STALLARD:** Okay, let's talk about that -
13 -
14 **MR. ENSMINGER:** I have a suggestion on those
15 dependents. We know that we have an exposed
16 group at Hospital Point to TCE and its
17 degradation products, and probably some BTEX.
18 We also know that we have an exposed
19 population to PCE at Tarawa Terrace that went
20 beyond '72. So a lot of those dependent
21 records at, we'd be able to find just about
22 every family that lived in Tarawa Terrace and
23 may have lived at Hospital Point housing.
24 **MS. DYER:** Through what?
25 **MR. ENSMINGER:** Huh?

1 **MS. DYER:** Through --

2 **MR. ENSMINGER:** Through the DMDC and through

3 the housing records.

4 **MS. DYER:** The housing records, yeah.

5 **DR. BOVE:** You wouldn't find the names of

6 the dependents --

7 **MS. DYER:** In the high schools.

8 **DR. BOVE:** -- you would have how many

9 dependents there were --

10 **MR. ENSMINGER:** No, you said by name in your

11 handout.

12 **DR. BOVE:** Did I?

13 **MR. ENSMINGER:** Yes. Under the DMDC.

14 **MS. BRIDGES:** What data do you think, full

15 name, social security --

16 **MR. ENSMINGER:** Marital status, number of

17 dependents.

18 **DR. BOVE:** Number, number, number.

19 **MR. ENSMINGER:** Date and age and

20 entry/separation -- oh, yeah, okay.

21 **DR. BOVE:** Now if that was the case I

22 wouldn't be, I wouldn't have any problem with

23 dependents.

24 **MS. DYER:** But if you're using the base

25 housing along with the base school records

1 that's going to cross over --
2 **MR. ENSMINGER:** I don't know if my housing
3 record had my name and my dependents on it.
4 **MS. RUCKART:** It doesn't.
5 **DR. RENNIX:** It doesn't.
6 **MR. ENSMINGER:** I think it does.
7 **DR. BOVE:** It does not.
8 **MR. ENSMINGER:** It has the number --
9 **DR. RENNIX:** And also the time of death if
10 you're looking at death registry, you won't
11 have the same, if it's a woman, she probably
12 doesn't have the same last name any more.
13 It's going to be difficult.
14 **DR. BOVE:** Except from the high school
15 graduates if they have a social security
16 number.
17 **MS. BRIDGES:** ID cards.
18 **DR. RENNIX:** We have some, they didn't go
19 back that far.
20 **MR. ENSMINGER:** So our, your dependency page
21 in your record book --
22 **DR. RENNIX:** Not computerized, it's there.
23 It's not computerized. You have to do a
24 manual extraction.
25 **MR. ENSMINGER:** That was by name.

1 **DR. RENNIX:** Yes, well, we have, there are
2 microfiches available. Who wants to read
3 them? I mean, you're talking about thousands
4 and thousands of --
5 **MR. ENSMINGER:** I'll bet there's all kinds
6 of people reading mine.
7 **DR. BOVE:** My feeling is that for dependents
8 there's two routes that I can think of. One
9 is the high school, and we have to see what
10 that's. The other is we did survey these
11 people who had births during that period of
12 time. They could be resurveyed. That's
13 another approach. It's not the greatest
14 approach, but it's another approach. Other
15 than those --
16 **MR. ENSMINGER:** The 12,598?
17 **DR. BOVE:** The 12,598, other than that I'm
18 not sure how we get at dependents.
19 **MS. DYER:** Well, can't you survey the active
20 duty sponsor and the civilian for the
21 dependents?
22 **DR. BOVE:** Well, now you're talking about an
23 enormous survey. A lot of these people --
24 **MS. DYER:** Well, we've got to do something.
25 **DR. BOVE:** -- would not have -- no, no, no,

1 but a lot of those children would not even
2 have been on the base necessarily. At least,
3 you know, as you include larger and larger
4 numbers, you're going to have more and more
5 problems. But you at least know that these
6 people were born. And I'm not talking about
7 the people born off base even. I'm talking
8 about the people born on base.
9 So you know that they're born on base,
10 maybe they also spent a good portion of their
11 childhood on base. That's what I'm trying to
12 get at. Exposures after birth. We know
13 they're born on base, likely they were exposed
14 after birth, too. How long, that would be
15 part of the survey. That's what I'm thinking.
16 That's the group it would be, the people who
17 were surveyed, or any other people we could
18 get who had a child born at Camp Lejeune.
19 That would be one way to get at some of the
20 dependents.
21 **MR. BYRON:** Would there be any records on
22 the childcare? I mean as far as like they had
23 childcare for family members. For TT they had
24 a childcare center.
25 **DR. BOVE:** We haven't heard anything about

1 that. We could explore that.
2 **DR. RENNIX:** My assumption would be it's not
3 computerized. It'd be a green book kind of
4 thing, sign in/sign out.
5 **MR. ENSMINGER:** With the bias thing in mind,
6 the 12,598 that you contacted before, that was
7 for all births, so those people lived all over
8 the place, on the base, in exposed and
9 unexposed areas.
10 **DR. BOVE:** I'm not worried about bias there
11 because we would try to contact them all, and
12 we wouldn't know what their disease --
13 **DR. RENNIX:** Disease status is or exposure
14 status for that matter.
15 **MR. ENSMINGER:** Just trying to find people.
16 **DR. BOVE:** Yeah, you wouldn't, I don't
17 expect any bias there. We wouldn't tell them
18 why we, what diseases we were interested in up
19 front. I mean, we'd ask a bunch of questions,
20 for example, we could do that so no one knows
21 exactly what disease we were really studying.
22 And the exposure situation would be something
23 different. Exposure here gets complicated
24 because when we put exposure information on
25 the website now people will see it and that

1 might have some impact on how they respond. I
2 don't know.
3 But as long as we include as many as
4 possible at least it won't have the selection
5 bias. We may have a misclassification of
6 exposure problem, but that's, I don't expect
7 that to be a big deal.
8 **DR. RENNIX:** That should be random.
9 **MR. BYRON:** Is there any records at like
10 Navy Relief or a WIC program or any of that?
11 **DR. RENNIX:** Active duty weren't eligible
12 for WIC until recently.
13 **MR. BYRON:** What's that?
14 **DR. RENNIX:** They weren't eligible for WIC
15 until recently.
16 **MR. BYRON:** My kid was on WIC in 1982, so
17 that's not true. They had a WIC office right
18 at, I think it was Camp Johnson.
19 **MR. ENSMINGER:** I had sergeants working for
20 me that, sergeants in active duty Marine
21 sergeants, that qualified for food stamps.
22 **MR. BYRON:** You're at poverty level --
23 **DR. RENNIX:** I know, I know.
24 **MR. BYRON:** -- in the '80s.
25 **MR. STALLARD:** So I had a question here from

1 Terry.

2 **MS. DYER:** So we have five sources that
3 we're going to use for the databases. And
4 they are the active duty, the civilian, the
5 base housing, the base school records and the
6 ATSDR survey. Is that correct?

7 **DR. BOVE:** Those are five databases that we
8 could use.

9 **MS. DYER:** That we can use. All right, do
10 you want to put this down?

11 **MS. BRIDGES:** I've got another one.

12 **MS. DYER:** So we've got --

13 **MS. BRIDGES:** I don't know if it makes any
14 sense.

15 **MS. DYER:** I checked them.

16 **MS. BRIDGES:** But the library on base. Do
17 they keep records of athletic programs,
18 athletic awards, that type of thing? Because
19 they had a big swim team, the active duty
20 people had a swim team, young men there at the
21 big Olympic pool at Montford Point. And they
22 closed -- to keep the pool closed.

23 **DR. BOVE:** The question is whether they keep
24 any of this information. Those big places,
25 you know, if they don't have any reason to,

1 they don't. And that's the problem. That
2 really is the problem with all this stuff.
3 **MS. BRIDGES:** Because they had all those
4 chemicals, and they would be active duty.
5 **MR. MARTIN:** The databases you just defined,
6 I'm one of those dependents you would never
7 find.
8 **DR. BOVE:** Right, that may be. Again, that
9 doesn't mean that --
10 **DR. RENNIX:** I have a question for Perri.
11 You said in the beginning about
12 accessing the school records, that some type
13 of permission had to be required from
14 somebody?
15 **MS. RUCKART:** Same type of thing as Frank
16 was told about the DMDC that we have to have,
17 the DOD has to authorize --
18 **DR. RENNIX:** The Marine Corps or the DOD?
19 That's important.
20 **MS. RUCKART:** I think they said the DOD.
21 These are the DOD Education Authority. They
22 want someone to authorize that ATSDR can have
23 access to these records. I picked -- they may
24 have said Headquarters Marine --
25 **DR. BOVE:** We confuse the two, so I don't

1 know --

2 **MS. RUCKART:** They haven't returned my call.

3 I've called them twice and asked them what do

4 they need to --

5 **DR. RENNIX:** Could you forward that

6 information to me, please, and I will see if

7 we can get Headquarters of the Marine Corps to

8 just do a letter.

9 **DR. BOVE:** Perri, weren't they supposed to

10 call Headquarters?

11 **MS. RUCKART:** I have no idea what they did

12 or didn't do. I've called them twice. They

13 did not return my phone call.

14 **DR. BOVE:** When we were on the call

15 together, I thought that they were going to do

16 that. They were going to --

17 **MS. RUCKART:** Well, I have asked them how we

18 can get access to those records, and they've

19 not returned my call. I can give you the

20 names of the people that I spoke to.

21 **MR. STALLARD:** Who is this we're speaking of

22 now?

23 **MS. RUCKART:** I can give you their names.

24 **DR. RENNIX:** Department of Defense Dependent

25 --

1 **MS. RUCKART:** It's the legal counsel at the
2 DOD Education Authority.
3 **DR. RENNIX:** DODDS.
4 **MR. STALLARD:** DODDS.
5 **MS. RUCKART:** I thought they were DODEA,
6 Education Authority.
7 **DR. RENNIX:** I just thought the DODDS school
8 system.
9 **MR. STALLARD:** Department of Defense, and
10 then Schools.
11 **MS. RUCKART:** Yeah, but these two people are
12 --
13 **MR. STALLARD:** Okay, so in general now
14 before we move on and start to wrap up --
15 **MR. ENSMINGER:** I have one biggie for this -
16 -
17 **MR. STALLARD:** Well, I want to get clarity,
18 just a moment, Jeff, and we'll go to it.
19 I want clarity and would like you
20 thinking about what is an appropriate plan of
21 action to get a response from these
22 organizational entities that to date have not
23 been as responsive.
24 **MR. ENSMINGER:** That's what I was going to
25 bring up. And who, who is taking the lead on

1 this thing now to kick these people in the
2 butt, to say it nice, to get them to start
3 responding, these DOD agencies?
4 **MR. STALLARD:** Let's define that. What is a
5 response? What is a response? Let's be sure
6 we all understand.
7 **MR. BYRON:** The IRB that's required to get
8 information.
9 **DR. RENNIX:** The DMDC data. ATSDR wrote a
10 letter to DMDC outlining what they needed for
11 the data, and what they were going to do with
12 it and everything like that. And Marine Corps
13 referenced that letter and said give them the
14 data, or give them the input they need. So
15 that's how they got that input for the
16 previous study. So the same thing here. So
17 what's going to happen is the people in the
18 Marine Corps don't know what ATSDR actually
19 needs. They just know they need something.
20 And these agencies won't release it unless the
21 owner of the data, Marine Corps, gives them
22 permission. So ATSDR will have to write a
23 letter detailing I need this information.
24 Here's how I'm going to use it. Here's how
25 I'm going to protect it because of privacy

1 issues. So there are questions you have to
2 fill out. The Marine Corps, since they're
3 supporting this effort, would have to endorse
4 that request and say, yes, give them the
5 information.
6 **MR. ENSMINGER:** Well, then --
7 **DR. BOVE:** Wait, wait, wait, wait, before
8 we, right now when I gave them that experiment
9 to see how well they could match the housing
10 records, they needed a point of contact. What
11 you're suggesting now, what you're saying now
12 is something we would do after we've written
13 the feasibility report, it gets accepted at
14 both ends --
15 **DR. RENNIX:** There's only one point of
16 contact for DOD in this effort and that's Mike
17 White, who is the DOD liaison between ATSDR
18 and the agencies, the services. So if that's
19 what they're looking for.
20 **DR. BOVE:** That's what we're looking at
21 right now to find out just how well they've
22 matched those housing records with the DMDC
23 personnel file. What Chris is saying is
24 something we would have to do after we finish
25 this feasibility report, and say this is what

1 we're going to do. We'll do this study, and
2 this is the data we need, just like you said,
3 and deal with the privacy issues, too, because
4 the last time around, the DMDC would only give
5 us a name if it was a direct hit with our
6 housing, with the information we were asking
7 for. If there were a couple of names it
8 matched, we didn't get that data. It had to
9 be a direct hit, so exact match. So that has
10 to be dealt with, too, in terms of if there's
11 any matching going on, and there will be with
12 housing records, that has to be dealt with,
13 too. But first I just want to see how well
14 they did on this match, if they've done it yet
15 and if they, hopefully, they'll do it soon,
16 just how well they did the match, and for that
17 they need a point of contact. They've said
18 that clearly. So let's do that first, write
19 up this feasibility report based on all this
20 discussion and what we've found and get that
21 out so people can comment --
22 **DR. RENNIX:** Could ATSDR send a request to
23 Mike White requesting a point of contact for
24 this request?
25 **DR. BOVE:** We can do that.

1 **MS. DYER:** Or approval.

2 **DR. RENNIX:** Whatever it is; it's a request.

3 **MS. RUCKART:** ^ We've already done that.

4 **UNIDENTIFIED SPEAKER IN AUDIENCE:** We
5 requested it already three weeks ago ^ DOD
6 meeting, ^ was on the phone requesting a
7 contact, and we've yet to get a response.

8 **DR. BOVE:** We'll do it again. We'll ask
9 again.

10 **MR. ENSMINGER:** And then for the active duty
11 cohort, what years are you looking at
12 specifically, like from 1975 I would assume to
13 '85, ten years? Because right on your paper
14 here you said that the Unit Identification
15 Code wasn't included until as of 1975.

16 **DR. BOVE:** But there's duty location before
17 then.

18 **DR. RENNIX:** Yeah, they have zip codes.
19 They have other things that you can --

20 **MR. ENSMINGER:** Well, the zip codes weren't
21 included until '79.

22 **DR. BOVE:** No, duty location he said.

23 **MS. DYER:** That was computerized in '71.

24 **MR. ENSMINGER:** Yeah, but the unit
25 identification codes ^^^ in '75.

1 **DR. BOVE:** Okay, two different types of
2 studies. One including as far back as we can
3 go with the DMDC data but not paying too much
4 attention as to where they lived, but just
5 saying they were at Camp Lejeune versus
6 Pendleton. They're exposed, unexposed. For
7 the housing records we have to, it would be
8 fewer years because we couldn't go back as far
9 probably with matching. So that's two
10 different types of groups. So, you know, for
11 a quick and dirty comparison of Marines at
12 Camp Lejeune versus Camp Pendleton we can go
13 back to '71 probably.
14 For housing records so we can find
15 exactly where they lived on base maybe for an
16 internal Holcomb Boulevard versus Tarawa
17 Terrace versus Hadnot Point system, you may
18 not be able to go back as far as '71, but
19 maybe as far back as we have good matches on
20 the housing data which may be '75 or something
21 of that sort. So that's those two groupings
22 right there, using the housing records because
23 that really gets to the exposure a whole lot
24 better than the other. But if they're in the
25 barracks, they got exposed so, you know. So

1 those two cohorts are there.
2 The CHAMPS data we have to wait for
3 the IRB to get the, to find out the
4 frequencies. The utility of the CHAMPS
5 database once again is to look at diseases
6 besides cancer and mortality like liver
7 disease, kidney diseases where we can get
8 verification because it's in CHAMPS. Now all
9 the limitations I said earlier are still
10 there, but that's one way to get it. So from
11 a disease point of view the CHAMPS database is
12 useful, but again, it's only active duty and
13 so on.
14 For Dave's point, I don't know how to
15 reach every dependent. The only two ways I
16 could think of reaching any dependents
17 whatsoever is to use the high school data and
18 to use the survey or both. Or we may decide
19 it's too hard to study dependents and not do
20 it all.
21 That's where we're at with dependents.
22 For civilians we have that civilian database
23 that has social security number. We can do
24 the same thing with them as we could do with
25 the active duty.

1 **MR. ENSMINGER:** But you're losing an
2 opportunity here with a high exposure
3 population that, you're going to lose this
4 opportunity if you don't come up with a way of
5 finding the dependents that lived in Hadnot
6 Point housing.
7 **MS. DYER:** When I lived on base, I lived on
8 base from '58 to '73, and I had a base ID
9 card. All dependents had to have a base ID
10 card. Isn't that somewhere?
11 **MR. ENSMINGER:** That was, your dependency
12 page in your record book which Dr. Rennix said
13 that that's not part of the computer program.
14 **MS. DYER:** It's not somewhere where
15 dependents, it's not, there's nothing
16 anywhere?
17 **DR. RENNIX:** There was a typed form. It's
18 in my service record and has on there each of
19 my family members who was issued an ID card.
20 It's on a typed form, there's no --
21 **MR. ENSMINGER:** It's a dependency form.
22 **DR. RENNIX:** It wasn't till later they
23 became computerized.
24 **MR. BYRON:** In the early '80s, the mid-'80s,
25 there was no dependency card that I'm aware

1 of.

2 **DR. RENNIX:** It was just an ID card.

3 **MR. BYRON:** My wife may have, but my

4 children didn't.

5 **MS. DYER:** I did; I was --

6 **MR. MARTIN:** Yeah, I think you had to be 12

7 before --

8 **MS. DYER:** Yeah, you had to be 12 to get

9 one, yeah.

10 **DR. BOVE:** Well, let's think of, I haven't

11 foreclosed anything. Think about ways we can

12 study them. I mean, and there are these tapes

13 that we need to find out more about, too,

14 which apparently identify all marines from '67

15 to '69. I'm referring to that study that -- I

16 gave a copy of that study to whoever that was

17 at that --

18 **DR. RENNIX:** Michelle Rouveaux (ph).

19 **DR. BOVE:** --DMDC meeting. Well, no, it

20 wasn't her. It was someone else.

21 **DR. RENNIX:** I hoped it was Michelle because

22 she's the head of the data center. Once the

23 housing records are computerized we could get

24 a population of Hadnot Point and an estimate

25 of how many people actually lived there and

1 identify them. That's the only way we're
2 going to get that and then link it back to
3 other things.
4 **MR. ENSMINGER:** Well, I mean, you could
5 take, just like Tarawa Terrace. When I moved
6 in there, there was a waiting list. I mean,
7 that place stayed full. I mean, that was like
8 going from hell to heaven. I mean, if you had
9 to live off base back at that time because we
10 didn't get paid very much.
11 **MR. BYRON:** Trailer park.
12 **DR. BOVE:** The way to get at the Hadnot
13 Point exposed is just like you said. It
14 appears in these housing records and we find
15 ways to get more information on the people who
16 were at Holcomb Boulevard before '72 and at
17 Hospital Point. And if necessary, we could
18 see what the VA has. We could try various
19 angles to get their social security number and
20 full name and data of birth which is something
21 within --
22 **MR. ENSMINGER:** Do the housing records have
23 the number of their dependents on it?
24 **MS. RUCKART:** No.
25 **MR. ENSMINGER:** It doesn't say how many

1 people lived in that housing?

2 **MS. RUCKART:** No.

3 **DR. RENNIX:** No.

4 **MR. MARTIN:** I think whether you got a three

5 bedroom --

6 **MR. ENSMINGER:** So that wouldn't tell you

7 either.

8 **MR. MARTIN:** -- that was based on the number

9 of dependents you had in your household,

10 whether you had a three bedroom or a two

11 bedroom or --

12 **DR. RENNIX:** But you maxed out at about four

13 bedrooms?

14 **MR. ENSMINGER:** Yeah.

15 **DR. RENNIX:** So you could have 12 kids.

16 **MS. DYER:** Not in TT. They didn't have four

17 bedrooms in TT. There was only three

18 bedrooms.

19 **MR. BYRON:** I remember when my DD-214 came

20 in ^ record of how many dependents I had.

21 **DR. BOVE:** ^

22 **MR. BYRON:** ^

23 **WRAP UP AND PLAN NEXT MEETING**

24 **MR. STALLARD:** Okay, folks, we seem to be

25 going into open dialogue here. We need to

1 wrap up and sort of set the stage and
2 expectations for our next meeting. Do we have
3 consensus that we're going to move ahead on
4 this study group? So what does that mean? By
5 next meeting we would have something in draft
6 or outline format that will sort of set forth
7 the study protocol and things of that sort or
8 at least more detailed information?
9 **DR. BOVE:** To me it depends on when the next
10 meeting is because a lot of this stuff is out
11 of our control like when do we get the
12 frequencies from CHAMPS, when we get the DMDC
13 information on how well they matched. Also
14 we're talking about in a couple months from
15 now we're talking about the holiday season.
16 So all these things are facing us.
17 If we're talking about meeting in
18 January, then all this stuff will probably be
19 ^. There's no reason why it shouldn't be
20 done, including the --
21 **MR. MARTIN:** Why don't we wait until the
22 water modeling's complete? That's due in
23 January. Is that correct?
24 **DR. BOVE:** The summary report's due in
25 January. So again, January would make it a

1 little easier on us and also more likely that
2 this stuff would get done.
3 **DR. RENNIX:** We'll also have money to give
4 you.
5 **MR. STALLARD:** So there'd be money. So do
6 we have consensus? All those in favor of
7 linking the water modeling and the next
8 meeting, please remain seated.
9 Okay, good.
10 There was a motion by Terry that we
11 link water modeling and the next meeting
12 together. Are you all in favor of that?
13 **MS. RUCKART:** I'm just thinking maybe the
14 meeting would have to be in February because
15 I'm not sure when exactly in January Morris is
16 going to have this for us.
17 **MR. STALLARD:** So February. So shall we
18 shoot for February? All right.
19 And that way progress can be made on
20 actually more articulation on the --
21 **DR. BOVE:** Yeah, there are several things
22 that can be done. One is we should find out
23 about the RUC/MCC. We should see if there's
24 bachelor quarters, any information there.
25 Find out something about Command chronology.

1 These are all things that were mentioned. Get
2 the point of contact set up and get the DMDC
3 matching information and how well we did. The
4 CHAMPS frequency should be done by then, and a
5 draft feasibility report should be ready by
6 then.
7 **MR. BYRON:** Do we have to draft a data use
8 agreement, too? So that it's ready and we
9 don't have to wait for that. We already know
10 what we're going to use it for, right?
11 **DR. RENNIX:** If ATSDR wants the data here,
12 they have to put in a data use agreement. If
13 they just want a report from them, a feed of
14 results, then that's a different story.
15 **MS. DYER:** And Perri, this morning what we
16 were talking about needing to get approval for
17 was it monies or more personnel?
18 **MS. RUCKART:** Are you talking about the
19 housing records?
20 **MR. ENSMINGER:** Contract.
21 **MS. DYER:** Yes.
22 **MS. RUCKART:** You're talking about the
23 housing records.
24 **MS. DYER:** No, it was this morning.
25 **MR. STALLARD:** We were talking about this

1 morning about getting authority to do the ^^.
2 **MS. RUCKART:** Well, we're hoping to talk
3 with our management later this week to find
4 out how we can go about getting this done.
5 **MR. BYRON:** So once we have all this
6 information -- let me see if I'm following
7 this correctly -- then we can look at doing
8 the feasibility study through electronic means
9 possibly without having to have everyone
10 contact through a survey?
11 **DR. BOVE:** The feasibility assessment we
12 need do to make the case to do a study. I
13 have to make that case to my own higher ups as
14 well as the DOD. So that's --
15 **MR. BYRON:** But to do that ---
16 **DR. BOVE:** So I have to say that there are
17 these databases and these groups are worth
18 studying for these reasons, and that's what
19 the feasibility assessment has --
20 **DR. RENNIX:** That's feasible, that we'll get
21 the result that we're seeking. So there's got
22 to be like if Frank gets through the first
23 part and the return on information is 30
24 percent, it's still reason to go forward. So
25 there's backing out points in a feasibility

1 study where you make a go/no go decision.

2 **MR. BYRON:** Yeah, but what I'm asking is can
3 that be done electronically or do we have to
4 have other avenues of reporting for that? We
5 were talking last night and earlier this
6 morning about the possibility of being able to
7 do it electronically so we don't have to
8 establish all these registers, have people
9 calling in and giving them the information.

10 **MR. ENSMINGER:** You're going to be able
11 probably to do that with the active duty
12 people and civilians.

13 **DR. RENNIX:** That's correct.

14 **MR. STALLARD:** As far as I understand
15 things, we're trying to scrape together a plan
16 and the outline for the active duty and the
17 civilian. There is still a question on the
18 table about the feasibility even, how you
19 would go about reaching the dependent
20 population. And that's going to be a -- still
21 on the table for consideration. If it could
22 be done, how would we do it. But this is
23 going to move ahead. Is that correct?

24 **DR. BOVE:** Again, I have to write up the
25 feasibility report, sell it to my higher ups

1 and the DOD.

2 **MR. ENSMINGER:** And another thing you need
3 to think about is that the Congressionally
4 mandated notification is going to happen next
5 year, too.

6 **DR. RENNIX:** That's got a trigger in it
7 doesn't it though? Doesn't there have to be a
8 adverse finding in the current study?

9 **MR. ENSMINGER:** Yeah.

10 **DR. RENNIX:** That's the trigger, so, yeah.
11 In the Marine Corps Captain Otte was working
12 on that issue before about trying to put
13 together a registry so they could do a
14 notification. He's investigating all the
15 different data sources.

16 **MR. BYRON:** Well, is that dependent on the
17 current study or is that dependent on studies
18 or reports that have already come out?

19 **DR. RENNIX:** I believe it says current
20 study, a current study trigger. For the
21 notification for the Marine Corps, is that in
22 the legislation?

23 **UNIDENTIFIED SPEAKER:** In the legislation is
24 that the completion --

25 **DR. RENNIX:** The current study.

1 **DR. BOVE:** Completion but not necessarily
2 any findings.
3 **MR. MARTIN:** Where now with ^'s database can
4 we discuss when they go in and enter their
5 1525 Tarawa Boulevard address, show that?
6 **MS. DYER:** Not until the water modeling --
7 **DR. BOVE:** Yeah, I would want us to finish
8 Hadnot Point, too, so that those people could
9 do that as well.
10 **MR. MARTIN:** That would be well after
11 January of next year.
12 **DR. BOVE:** Yeah, because Hadnot Point won't
13 be ready, the preliminary data will be ready
14 to throw into our study sometime in the
15 spring. But my feeling is that final data on
16 Hadnot Point, at least final in terms of those
17 three sites, and the modeling and sensitivity
18 analysis and all that is the fall of next
19 year.
20 **MS. DYER:** Yeah, but we had discussed last
21 time going ahead with that database with when
22 TT was done --
23 **DR. BOVE:** He's going to put that out, yeah.
24 **MS. DYER:** So they will be able to go in and
25 find out exactly how much is coming in.

1 **DR. BOVE:** That's what his plan is. My own
2 concern is that other people who were on other
3 parts of the base will be disappointed when
4 their information's not out there.
5 **MR. ENSMINGER:** Well, as it gets done it
6 goes up.
7 **DR. RENNIX:** ^
8 **MS. DYER:** ^
9 **MR. BYRON:** And you are welcome to come to
10 my house still.
11 **DR. BOVE:** All right, so we're going to meet
12 some time in February.
13 **MR. STALLARD:** Folks, we have still some
14 time left available to us. Are there any
15 issues that have not been addressed that you'd
16 like to get clarity on right now? We still
17 have 20 minutes, officially have time and so
18 the question was is there anything that you'd
19 like to have clarified or --
20 **DR. BOVE:** Actually, I'm still trying to
21 figure out what you were saying, Jeff, so.
22 **MS. DYER:** We all are.
23 **DR. RENNIX:** I understood it.
24 **DR. BOVE:** You understood it? Somebody
25 explain it to me then.

1 **MR. STALLARD:** Translation, please, is that
2 what that is?
3 **MR. ENSMINGER:** You mean the electronic
4 versus --
5 **DR. RENNIX:** He's saying that, well, we're
6 going to do a cohort analysis electronically.
7 We're not going to have to interview anybody.
8 **DR. BOVE:** Oh, is that what you meant?
9 **DR. RENNIX:** Yeah, make it easy. I do it
10 the easiest, most expedient way.
11 **MR. ENSMINGER:** And I said for the active
12 duty and civilian employees that's feasible.
13 For the dependents --
14 **DR. RENNIX:** We have to interview.
15 **DR. BOVE:** But let me say one more thing
16 about what you were saying about feasibility.
17 And that is, first I have to write up a report
18 based on this stuff we've already gone over,
19 to make the case that this study needs to
20 happen. But what Chris was saying is suppose
21 now we decide to do a study of active duty and
22 for some reason the data is bad or something,
23 and it's obvious that the study can't go
24 forward and be credible for some reason or
25 another. Then we can back out. That's what

1 you were suggesting.

2 **DR. RENNIX:** Right.

3 **DR. BOVE:** You know, for example, I can't,
4 suppose we wanted to do a survey, and we
5 started surveying people and find out we can't
6 contact most of the people or something of
7 that sort. Something's wrong. Then we can
8 back out. So that's, we do look at
9 feasibility as we go, but the feasibility
10 report is just to make the case to now to
11 start it off, the study itself.

12 **MS. McCALL:** When you're looking for cancer
13 incidence, are you looking for any specific
14 cancers?

15 **DR. BOVE:** Right now, when we talk about
16 mortality, we will look at any cause of
17 mortality and see what we come up with. For
18 cancer, because we haven't talked that much
19 about diseases except using the CHAMPS
20 database, and mortality for cancer, the
21 strategy I've been thinking about using, and
22 this is something again we all should think
23 about, is focusing on those states, few
24 states, where most veterans seem to end up or
25 most Marines seem to have retired to and look

1 at the cancers in those states if we can get
2 permission from those cancer registries and
3 look at a few cancers. And again, most of the
4 people in those states who have the particular
5 cancer we might be studying will have nothing
6 to do with Lejeune. So but it's the only way
7 I think we can do a study of cancer incidence.
8 But again, we'll leave that for another
9 discussion because I see Chris is ^.
10 **MS. DYER:** Who's collecting the stuff --
11 **MR. STALLARD:** I'm going to go over that.
12 There are three things that I just
13 wanted to summarize briefly. You've asked for
14 copies of the photos, and they will be
15 provided once Morris gets the release
16 authority. Jeff has asked for the number of
17 surviving children from the Sonnenfeld study
18 as of the date it was published. So the ATSDR
19 study.
20 **DR. BOVE:** Survey.
21 **MR. STALLARD:** Survey, so who's going to get
22 that for him? Frank, okay.
23 **DR. RENNIX:** No more time. The number of
24 cases and controls.
25 **MR. BYRON:** There was 106 --

1 **MS. RUCKART:** The vital status --
2 **DR. RENNIX:** Of the cases how many are still
3 surviving?
4 **MR. BYRON:** There's 57 of those children
5 that you've verified their case. I want to
6 know how many of the 57 are surviving today.
7 If you have that.
8 **DR. BOVE:** And the 106, too?
9 **MR. BYRON:** No, I already have the 106.
10 It's 73 or something like that.
11 **DR. BOVE:** We gave you that already. That's
12 right.
13 **MR. BYRON:** I'm interested in knowing now
14 out of the 57.
15 **MR. ENSMINGER:** I know one that's not.
16 **MS. BRIDGES:** And Chris, you're going to
17 look into the --
18 **DR. RENNIX:** Records, how to get archives.
19 **MR. STALLARD:** We did discuss a plan of
20 action for how to secure the relationship and
21 point of contact with DOD. That's clear?
22 Right? Okay.
23 And then I think last but most
24 important as we started, please complete your
25 vouchers before you leave today. If it's

1 done, great. And tomorrow please, I think I
2 saw everybody with a FedEx thing. Send in
3 whatever else tomorrow.
4 **MR. BYRON:** Who do we hand vouchers in to?
5 **MR. STALLARD:** Say what?
6 **MR. BYRON:** Who do we hand the vouchers in
7 to?
8 **MR. STALLARD:** Just leave them right here on
9 the table.
10 Thank you for abiding by our guiding
11 principles. We'll see you in February. Thank
12 you.
13 (Whereupon, the meeting was adjourned at 2:40
14 p.m.)

1 **CERTIFICATE OF COURT REPORTER**

STATE OF GEORGIA

COUNTY OF FULTON

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of Sept. 26, 2006; and it is a true and accurate transcript of the testimony captioned herein.

I further certify that I am neither kin nor counsel to any of the parties herein, nor have any interest in the cause named herein.

WITNESS my hand and official seal this the 24th day of October, 2006.

____

STEVEN RAY GREEN, CCR

CERTIFIED MERIT COURT REPORTER

CERTIFICATE NUMBER: A-2102