Appendix E: MEDICAL SUPERVISOR IN-PERSON VISITS

In 2015, OEHHA initiated a series of in-person visits with medical supervisors and other health care providers who order ChE tests for the Medical Supervision Program ("Program") throughout California. The goals of the visits were:

1. Provide the physician (medical supervisor) with a copy of the recently revised *Guidelines for Physicians* (OEHHA, 2015) and copy of the latest edition of Recognition and Management of Pesticide Poisonings (USEPA, 2013).
2. Remind the physician of the requirements of HSC §105206, established in 2011:
    - The purpose of the ChE test must be indicated on the laboratory test requisition.
    - The person tested must receive a copy of the test results and any recommendations from the medical supervisor within 14 days of the medical supervisor receiving the test results.
    - Physicians in California must indicate the purpose of the ChE activity test if it is ordered to confirm a possible case of pesticide illness due to a ChE-inhibiting pesticide.
3. Review the responsibilities of the physicians in the Program and provide them with one summary of the essential steps of the Program.
4. Remind physicians that they must have a written agreement with each employer in order to provide medical supervision services.
5. Ask the physician about the process he/she uses to order ChE tests (electronically or with hard copy laboratory slips), and if the purpose of the test could be indicated on the form they use.
6. Determine approximately how many of the ChE tests that the physician orders each year are for the purpose of complying with the Program.
7. Ask the physicians if they have any suggestions to improve the Program and answer any questions about the Program.
8. Inform physicians about OEHHA's medical supervision education and training resources, as outlined in a brochure provided to physicians during the visits.

The visits usually required about 15-30 minutes to complete. A list of the names of medical supervisors was generated from multiple sources, including information reported to DPR on the ChE test results in 2011-2014, responses to the questionnaire survey mailed by DPR to potential medical supervisors in April 2014, the names of medical supervisors provided by their colleagues during the course of visits, and cold calls to clinics specializing in urgent care and industrial or occupational medicine in cities located in major agricultural production areas throughout California.

OEHHA's long-term goal is to contact all healthcare providers who order ChE tests for the Program. For those providers who cannot be interviewed in person, OEHHA will provide them the latest information about the Program by phone and/or mail. We have identified and reached out to 87 physicians. Of these, 79 are currently participating in the program and meet our definition of 'physician medical supervisor' (Figure E1). As of November 20, 2015, 60 health care providers were visited. These included 41 medical supervisors, 8 physician assistants and 3 nurse practitioners who were working under the direction of a medical supervisor. Another

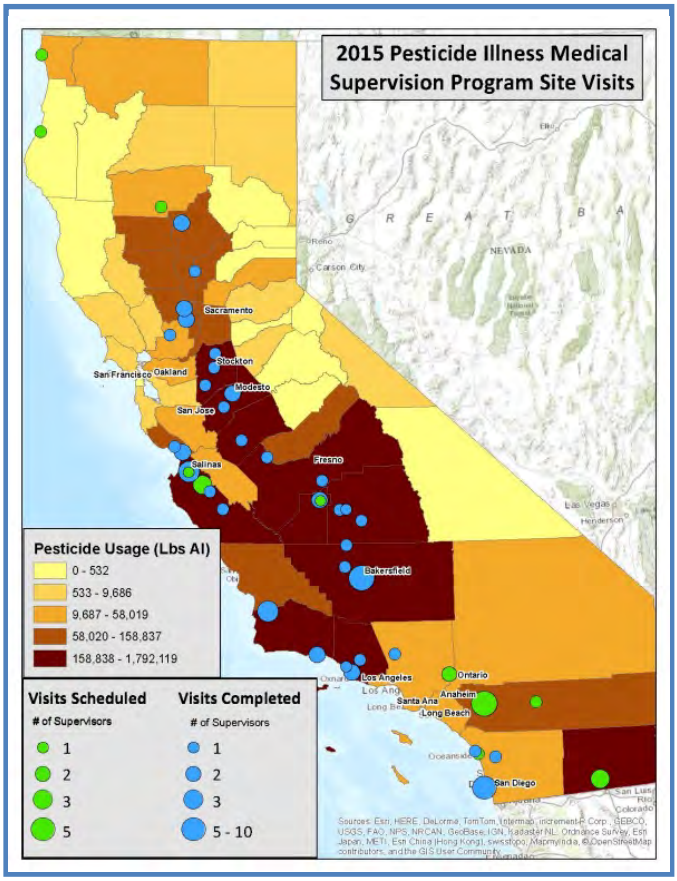

Figure E1: *Geographic distribution of OPs/CBs types I and II used (2011 – 2013), and location and number of in-person visits. (Total number of physicians visited, n=60)*

eight physicians were confirmed not to be medical supervisors in the Program at time of interview. When only physician assistants or nurse practitioners were present at time of in-person visit, the medical supervisors will be contacted by phone for follow-up. Figure E2 summarizes major findings from the in-person visits with medical supervisors (n=41).

A few of the physicians visited were not medical supervisors even though they originally had classified themselves as such in the questionnaire survey. They apparently misunderstood that the survey was specifically referring to California's Medical Supervision Program, not the general supervisory/managerial responsibilities of some physicians. They also may have responded to the survey because they order annual baseline ChE tests for non-pesticide workers such as emergency first responders.
We found that some medical supervisors on our list retired during the 2011-2014 timeframe, and others had just begun to assume the responsibilities of medical supervision. Some medical supervisors who had not completed or received the survey, and hence were not included on the DPR survey list, were identified by their colleagues during the course of the visits or through cold calls. A map showing the locations of the medical supervisors who were interviewed as well as those identified as suspected or likely medical supervisors but not yet confirmed is shown above (Figure E1).

In general, medical supervisors were knowledgeable about the Program (Figure E2c). Most were able to provide a general estimate of the number of ChE tests they ordered each year during the last 3 to 5 years (Figure E2a). Their level of awareness of the Program generally correlated with the number of tests they reported ordering per year. Similarly, medical supervisors working in regions where large amounts of OPs/CBs are used, including California's Central Valley and Salinas Valley, were generally more familiar with their responsibilities than those working in regions with less frequent OPs/CBs use. However, many medical supervisors throughout the state were not aware of and not complying with the new provisions of HSC §105206. They appreciated being told about them and were willing to integrate them into their practice. Many medical supervisors stated they did not have many follow-up tests because their patients most likely did not handle OPs/CBs often enough (Figure E2b). This comment is consistent with one of the primary findings of the growers' headquarters inspections, suggesting that the work activities of OP/CB pesticide handlers were often managed to ensure that the threshold required for follow-up testing (more than six days in a 30-day period) was not

exceeded. Most medical supervisors stated they rarely had follow-up tests that required an employer to take action (review of work practices or removal from any activities that involved OP/CB handling), but if they did, they contacted the employer to discuss test results and make recommendations.

Overall, the medical supervisors visited were very receptive and found the information we provided especially helpful. Three key requests were made by multiple medical supervisors: 1) work with the clinical laboratories to update the requisition slips to include a space to indicate the test purpose, 2) create a downloadable spreadsheet tool for physicians to use to log and calculate changes in patient ChE levels, and 3) post the one-page ChE test reporting and review summary document created by OEHHA, on the OEHHA website so that it is readily accessible.

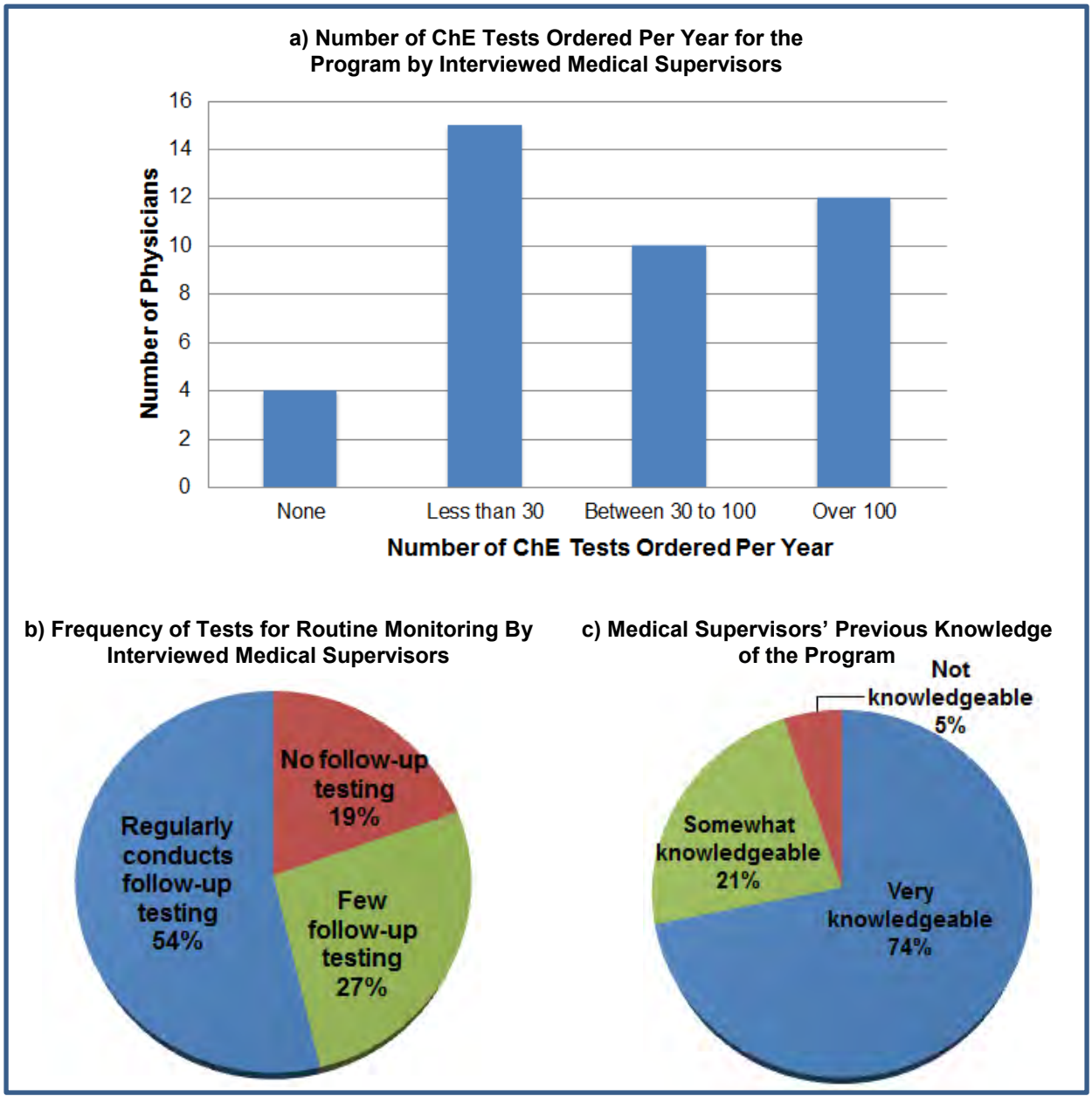

Figure E2: *Major findings from in-person visits. Total number of medical supervisors interviewed, n=41.*

Medical Supervision Program In-Person Visit Checklist

Location: _____ Medical Supervisor: _____

Date: _____ Total time of visit: _____ Other Clinic Staff: _____

Team Members Present (Circle): Chuck Salocks Bill Ngai Suzanne Forsyth
Rebecca Belloso Hana Blatter Other: _____

- ❏ Introduce yourself and those with you- ***OEHHA manages MedSup program***
- ❏ Briefly mention the Medical Supervision Program- ***not an inspection/enforcement visit***
- ❏ How long have you acted as a Medical Supervisor? _____
- ❏ How many health care providers in your clinic participate in the program/order ChE tests/evaluate test results? _____
- ❏ Purpose of Visit- ***Explain why we are here***
    - ❏ Give a copy of the *Guidelines/EPA Pesticides Poisoning* handbook
    - ❏ Physicians are required to have copy of *Guidelines*/be aware of contents
    - ❏ Inform Medical Supervisor of changes to the law- ***SEE GLOSSY***
- ❏ Initial Visit/Establish Baseline
    - ❏ Screen worker- Is employee healthy enough to work with pesticides?
- ❏ Periodic Testing Requirements
    - ❏ What is the process when ordering tests? Does your clinic software/electronic medical record allow you to add comments (indicate purpose of test) when ordering? (Yes / No)
    - ❏ Establish baseline- regulation requires 1 test (***Both RBC and plasma ChE level***)
      OEHHA suggests an average of 2 tests
    - ❏ Cautionary information – Approved labs only/Do not use lab normal values for baseline
- ❏ Test Result Actions and Recommendations
    - ❏ Physician must compare results to the baseline and ***ensure employer and employee*** receive a copy of results and recommendations
    - ❏ Should employee:
        - ***keep working?***
        - ***be removed from work?***
        - ***return to work***?
    - ❏ Frequency of follow ups
        - ❏ Do your patients follow up/come back for second tests? (Yes / No)
        - ❏ How many come back for follow up/secondary testing?
          Approximate number or percent: _____

- ❏ Reminder- Medical Supervisor must have written agreement with employer
- ❏ Program Outreach
    - ❏ What is the best way to reach you and your staff? _____
      _____
    - ❏ How many ChE tests are you ordering per year? _____ How many are for the Medical Supervision program? _____
    - ❏ Do you send the test results/recommendations to the employers? (Yes / No)
    - ❏ Do you feel your recommendation is taken seriously? (Yes / No)
    - ❏ Do you have suggestions for improving the program? (Yes / No) Any concerns?
    - ❏ Direct physician to training resources- ***provide brochure***
    - ❏ (Yes / No) Notes: _____
      _____
      _____
      _____
    - ❏ Do you have any questions? (Yes / No) Notes: _____
      _____
      _____
      _____

Cholinesterase Testing for Monitoring Workers in the California Medical Supervision Program

1. **SCREEN THE WORKER** on the initial visit to be sure he/she can work with cholinesterase inhibiting pesticides.

2. **ESTABLISH BASELINE** cholinesterase activity levels *before* follow-up testing.
   - One test is required by regulation and consists of measuring RBC cholinesterase **AND** plasma cholinesterase (***not* one or the other**).
   - Average of two tests is recommended by OEHHA. Details in *Guidelines*.
   - **Do not use lab normal values for baselines.**
   - Always put blood samples on ice or store at 4°C immediately after drawing.

3. **LAB**. Only use a California Department of Public Health certified lab listed at: http://www.cdph.ca.gov/certlic/labs/Documents/CHE%20LAB%20list%2001012007.pdf

4. **INDICATE PURPOSE OF THE TEST** on the lab slip when ordering a cholinesterase activity test for this program. Use one of the following terms:

   Baseline, Follow-up, or Recovery

5. **FOLLOW-UP TESTS** as required.
   - Once every 30-day qualifying period for first 3 follow-up tests.
   - If no problems detected, then at least once every 60 days (two 30-day qualifying periods) unless otherwise recommended by the physician.
   - More frequent testing is at the discretion of the physician.

6. **COMPARE FOLLOW-UP RESULTS TO THE BASELINE LEVELS** to evaluate for inhibition of cholinesterase and make recommendations, including:

Percent of Baseline Activity	RBC ChE	Plasma ChE
<80%	Prompt retesting of employee and evaluation of work practices by employer	
≤70%	Immediate removal of employee from further exposure	-
≤60%	-	Immediate removal of employee from further exposure

Provide a copy of test results and recommendations to the employer.

7. **INFORM WORKER OF RESULTS**. Must ensure that the tested worker receives a copy of the test results and any recommendations from the medical supervisor within 14 days of the medical supervisor receiving the results.

8. **RETURN TO WORK**. Determine when a worker removed from further exposure to these pesticides can resume working with them.
   - When cholinesterase activity levels return to ≥ 80 percent of *both* RBC and plasma cholinesterase baseline values