# YOUNG WORKERS AT RISK:

## HEALTH AND SAFETY EDUCATION AND THE SCHOOLS

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- *A nineteen-year-old college student was working part-time at a fast food restaurant. While operating an electric cabbage shredder, she caught her hand in the machinery. She had never been given any health and safety instruction, nor been warned about the hazards of this equipment. Since her initial emergency treatment, she has had four operations and undergone months of painful, exhausting physical therapy. Her hand is permanently disfigured. Formerly a starting guard on her school's basketball team, she is no longer able to play competitive sports. She received a one-time disability payment of only $2,300.*[1]

- *While installing window shutters, a seventeen-year-old construction helper was climbing a metal ladder to hand an electric drill to another worker on a scaffold about five feet above him. Part way up the ladder, the helper received an electric shock that killed him. He had been on the job for only one month. It was later found that the extension cord on the drill had a missing ground prong, and that the drill was not double insulated. The employer had no competent safety monitor on site, nor an adequate health and safety program.*[2]

# I. Introduction and Methodology

The Labor Occupational Health Program (LOHP) is an occupational health and safety education project, affiliated with the Center for Occupational and Environmental Health at the School of Public Health, University of California at Berkeley. LOHP provides health and safety training, information, and assistance to unions, workers, joint labor-management groups, health professionals, and the general public.

In the past, LOHP has conducted a number of special projects directed at young people. We have designed health and safety curricula for use in vocational education programs in several industries, ranging from cosmetology to auto repair. We have also designed and presented health and safety workshops for high school students as part of special labor education programs in the schools. From these and other experiences with young people in our training programs, it has become clear that young adults entering the workforce need a better understanding of how to protect themselves on the job.

In early 1994, Cal/OSHA provided funding for LOHP to initiate a new project, "Young Workers at Risk."[3] The project was designed to collect information and develop recommendations for Cal/OSHA on how best to educate California's youth about workplace health and safety issues. Cal/OSHA sought means to train young people about safety both on the jobs they currently hold as teenagers, and on those they will later hold as adults. During the past several months, LOHP has collected data on the risk of injuries, illnesses, and fatalities among young workers; identified existing models for providing them with safety training; and gathered suggestions from employers, teachers, students, and others involved in education.

This report summarizes the information we collected, including the demographics of young workers in California, which laws and agencies protect them in the workplace, what opportunities exist in California's educational system for increasing health and safety awareness, and what models exist for educating young workers about safety. The report also describes suggestions and insights that health professionals, employers, students, and teachers communicated to us about how to reach young workers with health and safety information. In the final section, we offer both general and specific recommendations for educating young workers about health and safety.

The focus of this report is urban youth. A separate investigation and report would be needed to address the pressing needs of youth engaged in agricultural work.

The project methodology included the following elements:

- *Literature review:* We reviewed the literature on workplace injury and illness involving young workers, as well as the literature on school-to-work transition. A summary of the injury and illness data is presented in Section II of this report.

- *Teacher interviews/discussions:* Through focus groups, phone interviews, and staff meetings, we spoke to 64 high school instructors in the San Francisco Bay Area to get their input. We asked whether and how students are getting health and safety information now, and how best to integrate this information into the schools in the future. The two 2-hour focus groups (with 16 instructors) were particularly helpful in developing ideas about the approaches that may work best.

- *Student discussion groups:* We spoke to 180 students in ten classes at three San Francisco Bay Area high schools to find out how much they knew about job hazards and how to deal with them. We gathered this information by using participatory exercises in which students were asked to identify hazards in hypothetical situations and to develop strategies for responding to them.

- *Surveys of professionals and employers:* We solicited information through a direct mailing to over 300 occupational health professionals, and through announcements in the *Cal/OSHA Reporter* and the newsletter of the Occupational/Environmental Health Section of the American Public Health Association. In the course of the project, we spoke to and/or received information from over 90 occupational health professionals, education professionals, child labor activists, and government representatives throughout the US.

  We also distributed a brief survey form to employers and to health and safety management professionals through organizations such as the American Society of Safety Engineers, the American Industrial Hygiene Association, and the California Chamber of Commerce. We sought to learn employers' views on how well young workers are prepared in terms of health and safety. We received 90 responses to the survey, primarily from business owners/managers (33%), business health and safety staff (27%), and public sector health and safety staff (20%). Both small and large companies were represented.

# II. The Youth Workforce and Job Hazards

Nationwide studies show that more teenagers are working, for longer hours and during more weeks of the year.[4, 5] This trend will in all likelihood be accelerated by the new federal School-to-Work Opportunities Act, which encourages work-based learning as part of students' academic preparation (see page 9).

## Most Teenagers Work

A 1991 report from the U.S. General Accounting Office (GAO),[6] based on Bureau of the Census data, shows that 28% of 15-year-olds and 51% of 16- to 17-year-olds worked at some time during 1988. Fifteen-year-olds averaged 17 hours per week, for 19 weeks during the year, while 16- to 17-year-olds averaged 21 hours per week, for 23 weeks during the year.

Similarly, at the time of the 1990 census, at least 653,000 of 1,622,557 Californians from 16 to 19 years of age were working—2 out of 5 teenagers.[7]

We believe that all these figures greatly underestimate the number of young people who hold a job sometime during their teen years. Many students in our discussion groups said they work in the "underground economy," holding unreported jobs. In 1991 the GAO found that children from families with annual income under $20,000 were less likely to be working in reportable jobs than children from families with annual income over $60,000. Similarly, African American and Hispanic teenagers were less likely to be employed in reportable jobs (28%) than white teenagers (50%).[8] These findings are most likely explained by the limited availability of formal jobs in low-income communities, although the "underground economy" may thrive there.

Also, two studies based on student surveys (one in Minnesota[9] and one in Saskatchewan[10]) indicate that close to 80% of all students actually hold a job either during the school year, during the summer, or both. In the Minnesota study, 58% of tenth graders, 80% of eleventh graders, and 86% of twelfth graders had regular paid employment outside the home sometime during the year.

## Youth Jobs Have Changed

In addition to the trend toward young people working more, the nature of work available to them has also changed significantly over the past several decades. According to the 1991 GAO report,[11] 48% of working 15- to 17-year-olds had jobs in retail trade, and 25% worked in the service sector (personal, professional, and repair services). The type of employment varied by family income. More teenagers from low-income families than from high-income families (20% versus 14%) worked in "hazardous" industries such as agriculture, mining, manufacturing, construction, and wholesale trade.

National figures from the U.S. Bureau of Labor Statistics[12] show that 78% of all workers from 16 to 19 years old are concentrated in just three types of work: sales and service

(especially food service), administrative support, and laborers/handlers. By contrast only 41% of adults work in these occupations. This information was confirmed by students in our discussion groups, who listed fast food work and retail sales as the two most common jobs held by teens. For teens in the retail industry (and especially in fast food), there are late hours, minimal supervision, and unchallenging and repetitive job tasks. This is a marked contrast to past generations of teenagers, who frequently had seasonal work (agriculture), rarely worked late at night, and often worked in much closer contact with a mentor/supervisor, at a more diverse set of tasks.[13]

## Youth Jobs Can Be Dangerous

The fact that young people work primarily in fast food, retail, and other service occupations does not mean they are safe from injury. Based on emergency room data from the NEISS (National Electronic Injury Surveillance System), NIOSH[14] estimated that over 64,000 teenagers nationwide were treated for occupational injuries in emergency rooms in 1992. Over half (53.7%) of these injuries occurred in retail trades (including food service), which also had the highest rate of injury. Seventy-one percent of the injuries in retail trades occurred in eating and drinking establishments.

In California, 2,104 workers under age 18 and 65,552 workers ages 18 to 24 suffered work-related illnesses or injuries in 1991, according to the state's Division of Labor Statistics and Research.[15] These figures include only those who lost at least one day of work, and whose employers reported the injury or illness. (Reporting is required, but under-reporting may occur.)

## Injury Rates and Types

Estimates of adolescent occupational injury rates range from 5.8/100 FTE in one study,[16] up to 16/100 FTE in a Massachusetts study based on emergency room data.[17] These estimates tend to be higher then the national adult workplace injury rates of 3.9/100 workers for lost work-day injuries, and 8.9/100 workers for all workplace injuries.[18] (Because most teenagers work part-time, rates are converted to full time equivalents by using estimates of the hours they work.)

Injury rates for teenage males are substantially higher than for females,[19,20,21,22] and are highest for 18- to 19-year-old males.[23] According to the BLS, almost 40% of workplace injuries occur in the first year of work.[24]

In a Minnesota study,[25] 16% of all working students reported having incurred at least one work-related injury. In another survey-based study,[26] 18% of working teenagers reported at least one work-related injury. Other studies show between 15% and 44% of injured teenagers who received workers' compensation suffered permanent disability.[27,28,29]

Most studies have found cuts and lacerations, bruises and contusions, and strains and sprains to be the most common teenage occupational injuries. Three studies[30,31,32] found that cuts

and lacerations (primarily affecting hands and fingers) made up between 33% and 50% of all such injuries. In the Minnesota study,[33] back injuries (primarily from janitorial and nursing work) were cited as the most common severe job injuries among teenagers. The same study found that burns (primarily from restaurant work) were among the three most common injuries. In a related study[34] based on student surveys, burns were cited as the most frequent injury.

In California in 1991, the most frequently reported job injuries for those under 18 were "cuts, lacerations and punctures" (31% of all injuries), and "strains and sprains" (38%). For workers under 18, 65% of all reported injuries were in retail trade; half of these were in the fast food industry, and another 25% occurred in grocery stores.[35]

All these figures represent only a portion of the work-related injuries and illness that actually occur. One study showed that two-thirds of adolescent work injuries were never reported.[36]

In California, 12 workers under the age of 20 died from occupational causes in 1991. NIOSH[37] reported 673 work-related deaths of 16- and 17-year-olds nationwide between 1980 and 1989, probably an underestimate. NIOSH found the leading causes of death to be motor vehicles, machines, electrocution, and homicide.

An earlier analysis of OSHA fatality investigations showed that 41% of teenage occupational deaths occurred while the child was engaged in work prohibited by federal child labor laws.[38]

## III. Protection for Young Workers

Young workers are protected by the same health and safety regulations that apply to all workplaces. In California, for example, young people are covered by the general Cal/OSHA requirement that each workplace have an Injury and Illness Prevention Program (IIPP). An IIPP must include health and safety training for all employees. But there are no special health and safety requirements for young workers, nor is there any special, targeted enforcement of these rules where youth employment is involved.

However, the federal Fair Labor Standards Act (FLSA) of 1938 and California's child labor laws do regulate the number of hours people under the age of 18 may work, when they may work, and what kind of work they may do. Specifically, the FLSA prohibits the non-farm employment of minors under the age of 14. No child under the age of 16 may work during school hours (except in a work experience program), before 7 am or past 7 pm during the school year, more than 18 hours per week during the school year, or more than 40 hours per week during the summer and holidays. No one under the age of 18 may work in mining, logging, brick and tile manufacture, roofing, demolition, or excavation, nor may they operate or work as a helper on a vehicle or other power-driven machinery. Work with meat-processing machinery, delicatessen slicers, supermarket box crushers, woodworking machines,

forklifts, power saws, and other power machinery is specifically prohibited. (See Attachment A, Work Permit.)

Until recently, most of California's child labor laws were less stringent than federal law. However, this year the legislature voted to amend California's laws (based on AB 1900, introduced by Assemblyman Terry Friedman) to bring them into compliance with federal standards. The changes, approved by the governor, will take effect on January 1, 1995. They include: 1) hazardous occupations that are prohibited for those under 16 or 18 years of age under federal law will also be prohibited under California law; 2) the Labor Commissioner will be allowed to determine additional occupations that are hazardous to those under 18; and 3) extended work hours currently allowed under California law for children working in agriculture will be prohibited. Whenever state and federal law still conflict, the stricter standard will apply. For example, California's stricter hours restrictions for 16- and 17-year-old workers will continue. In California, 16- and 17-year-olds may not work before 5 am or after 10 pm, except on non-school nights, when they may work until 12:30 am. Under federal law they may work at any hour.

## Enforcement

California's child labor laws are enforced by the Division of Labor Standards Enforcement (DLSE). There is no targeted enforcement of child labor laws; enforcement officers cite all labor law violations found during any investigation. DLSE also offers other services to workers, employers, and the public. For example, the California Labor Commissioner's office in DLSE will send speakers to schools on request to give presentations on child labor laws.

The U.S. Department of Labor enforces federal child labor laws in California. There are five federal child labor coordinators in the state who coordinate and develop strategies for enforcement. They issue periodic press releases publicizing enforcement activities and violations to educate the public. They also co-sponsor workshops with the U.S. Department of Education to teach school personnel and employers about responsibilities regarding work permits and other child labor regulations. There are plans to expand these outreach efforts. The federal child labor coordinators are also very interested in sharing information with Cal/OSHA regarding enforcement activities, and in receiving information on accident investigations where minors are involved.

The state DLSE and U.S. Department of Labor are now conducting a cooperative enforcement effort (the Targeted Industries Partnership Program, or TIPP). The program targets agriculture and the garment industry. Although the program does not specifically focus on child labor, these are industries where many child labor violations occur.

## Work Permits

In California, people under the age of 18 are required to have a work permit if they are doing paid work. The only exceptions are those who have already graduated from high school, are

employed in exempt jobs such as yardwork or babysitting, or work for their own families.[39] Employers must make sure that employees under 18 have a permit.

Young people get work permits from their school, where they submit an application signed by a parent. At each school, one or more individuals are usually assigned to issue work permits. These individuals—teachers, counselors, secretaries, and others—often have little or no training about child labor laws, workplace health and safety regulations, or other issues affecting teenagers in the workplace. If school personnel decide that paid work will not be detrimental to the young person's studies, they issue the permit.

The state Department of Education is responsible for developing a standard work permit and for overseeing the work permit program. The Department is currently in the process of developing a database of all the school personnel who issue permits. At present there are no records kept on the number of work permits issued in California, and no statistics on the number of youth working without permits. There is also no information on the frequency of work permit denials, or the reasons for denial. The California Department of Education and U.S. Department of Labor have estimated the number of teenagers working without permits to be from 5% to 30%. However, in most of the classes we spoke to, very few students actually had work permits, although most worked. Some worked for family members (and so are exempted), but others were simply never asked for a work permit by their employers.

The reverse side of the California work permit is one of the few places young workers can find information about regulations that apply to their work. It includes information (in very small print) regarding federal and state child labor laws, including what types of work teenagers may not do, and the limits on hours and time of day they may work.

## Widespread Violations

Enforcement of child labor laws is a key step to protecting young workers. Forty-one percent of the 104 deaths suffered by U.S. workers under age 18 between 1984 and 1987 occurred while these children were performing work specifically prohibited by the FLSA.[40] The GAO[41] estimates that in 1988, 18% of 15-year-olds in the U.S. were working in violation of child labor laws—primarily hours regulations, and hazardous occupation/age regulations. Likewise, in recent "sweep" enforcement actions by the U.S. Department of Labor, the largest number of violations found involved 14- and 15-year-olds working too many hours, or too late at night. The second most frequent type of violation involved 16- and 17-year-olds working in hazardous jobs prohibited under child labor law. Sixty-two percent of the firms in one recent two-month "sweep" were violating some child labor law.[42]

# IV. Education in California: Increasing Health and Safety Awareness

Many different programs within California's educational system present opportunities to reach young workers with health and safety information. Following is a brief description of some of these programs and possibilities.

**Career/Vocational Education:** There are approximately 600,000 students who enroll in at least one vocational education class in California each year. This represents approximately 41% of all California high school students. Many vocational programs are narrowly trade-oriented, such as woodshop, welding, machining, and autobody repair. However, the 1990 Amendments to the Perkins Vocational Education Act (a primary source of federal funds for vocational education programs) mandate that federal vocational education basic grants be used in programs that "integrate academic and vocational education...through coherent sequences of courses so that students achieve both academic and vocational competencies." Thus many new, more integrated programs are being developed, with a focus on preparing students for a broad field, such as "Health Occupations" or "Biotechnology," rather than giving them only a narrow skill.

In addition, federally-funded programs must now provide students with instruction in "all aspects of the industry," defined to include planning, management, finances, technical and production skills, and underlying principles of technology. Also mandated is discussion of labor and community issues, including workplace safety and environmental issues related to each industry.

Following are the primary types of integrated programs that have emerged. (An individual program may overlap several of these categories.)

- *Partnership or Career Academies:* The academy model uses a "school-within-a-school" approach, building curriculum and activities around a single industry cluster. These programs integrate academic and vocational learning through coordination among teachers who work closely together. The primary target population is "at-risk" young people in danger of dropping out of school, although these programs are usually open to all students. In California there are currently 45 state-sponsored Partnership Academies, and another 15-20 locally-sponsored academies, each reaching approximately 100-150 students. Some schools have more than one academy. Examples include health academies, biotechnology academies, computer academies, media academies, and others.

- *Tech Prep:* Often called "2+2" programs (for two years of high school and two years of community college), Tech Prep programs seek to coordinate high school and community college vocational programs, so that students can move easily from one to the other. This is done by making course requirements consistent, reducing duplication and, in some cases, granting advanced standing in the college programs for courses already taken in high school. The 1990 Amendments to the Perkins Act allocate funds to stimulate Tech Prep program development. The State of California has provided 75 grants to support

Tech Prep programs, and over half of the state's 800 high schools are involved to some degree in these programs.

- *School-to-Work Opportunities Act:* On May 4, 1994, President Clinton signed the School-to-Work Opportunities Act. This legislation, jointly administered by the U.S. Departments of Education and Labor, is designed to bring together partnerships of employers, educators, labor, and others to develop programs for young people that combine school and work experience. The intent is to prepare students to enter careers in a changing work world. The program will fund states to set up school-to-work programs, and will also fund local partnerships in high-need areas. In California, the lead agency is the Employment Development Department. California currently has a federal planning grant. In November, 1994, a proposal for an implementation grant will be submitted. Eight other states have already received implementation grants.

  School-to-work programs have three basic components:

  1) **Work-based learning** provides job training, paid work experience, workplace mentoring, instruction in workplace competencies, and exposure to industry.

  2) **School-based learning** provides career exploration, formal instruction in a career major by the eleventh grade, high academic and skill standards, and one year of post-secondary education.

  3) **Connecting activities** coordinate the involvement of employers, unions, schools, and students; match students with specific work-based learning opportunities; and provide teacher training.

  Unfortunately, despite the clear intent to place many students in the workplace, there is no explicit language in the legislation to ensure that student participants receive adequate training on their rights and responsibilities under health and safety and child labor laws. There are also no explicit requirements that participating employers follow these laws.

- *Regional Occupational Centers or Programs (ROC/Ps):* There are 72 ROC/Ps throughout California, with a total enrollment of over 400,000. Each ROC/P is used by one or several school districts to provide career training to 11th and 12th graders and to out-of-school youth and adults. High school students can take courses at these centers while at the same time completing other courses at their "home" high school.

- *Community Colleges:* There are 107 community colleges in California, all of which offer courses in vocational education. The Chancellor's office (which governs the entire system) estimates that 60% of the 1.5 million students enrolled in community colleges take vocational education classes. In general, individual instructors choose what to cover in the curriculum. In LOHP's experience,[43] present workplace health and safety instruction in this setting tends to focus exclusively on safety, and varies greatly from instructor to instructor.

**Apprenticeship Programs:** Apprenticeship programs in various trades combine on-the-job training with supplemental classroom work. Programs are administered by local and regional joint labor-management apprenticeship committees. Curriculum is based on standards established by the Division of Apprenticeship Standards of the California Department of Industrial Relations. Classroom training is often provided through local school districts or community colleges. Apprentices must sign a contract, and are paid a percentage (35% to 65%) of journeyman rates for their work. Apprentices usually must have a high school diploma and be at least 17 or 18 years of age. There are approximately 35,000 to 40,000 apprentices at any given time in California, enrolled in over 2,000 apprenticeship programs. Health and safety instruction is similar to that found in community colleges: it is required, but the topics and quality vary from program to program. The focus is usually on traditional safety issues.

**JTPA Summer Youth Programs:** In 1994, over 70,000 "at risk" California youth participated in the federal JTPA (Job Training Partnership Act) Summer Youth Employment and Training Program (Title IIB). These young people work during the summer for local nonprofit or government agencies. However, they are paid by and technically work for their local "Service Delivery Area" (SDA) administration. These local bodies receive and administer the federal JTPA funds. California is divided into 52 SDAs, each of which has a Private Industry Council (PIC) to serve as an advisory body and make policy decisions about the program. PICs are made up of representatives from business, labor, and government agencies, and are appointed by a locally elected body, often the County Board of Supervisors. At the state level, the program is administered and funds dispersed ($13 million for California in 1994) by the Job Training Partnership Division of the state Employment Development Department.

Because the SDA is the "employer of record," each SDA is technically responsible for ensuring that its youth employees are adequately trained in health and safety. To meet this and other legal requirements, each SDA develops its own handbook for youth participants and for "sponsor sites." Sample of the handbooks we reviewed have no information on Cal/OSHA, although they contain at least some information on child labor law and on procedures to follow when job injuries occur. One contained some basic health and safety tips.

**General Education - Curriculum Framework:** While vocational education programs reach only about 40% of high school students, general education classes reach *all* high school students—close to 1.5 million California teenagers.

In California each general education subject area has a curriculum framework developed by teachers, education experts, and state Department of Education staff. Each framework outlines in some detail what information should be covered in its subject area, and at what grade levels. Teachers then develop their own class activities (sometimes in conjunction with other instructors at their school), using existing textbooks and curricula as well as their own materials and approaches. There are currently no requirements in any of the curriculum frameworks regarding workplace health and safety.

# V. Health and Safety Programs for Young Workers: Existing Models

In conducting this project, we spoke with over 90 health and safety and education professionals throughout the U.S. to identify existing models for educating young people about workplace health and safety issues. The types of programs we found included:

- Research projects to better identify the problem (some of which include prevention components).[44]

- Development and distribution of brochures on child labor law. (For example, there are brochures from the national AFL-CIO, the Child Labor Coalition of the National Consumers' League, and the states of New York and Rhode Island. California has a booklet, but it is not designed for teens.)

- A "Model Child Labor Law" developed by the Child Labor Coalition, which includes recommendations for educating young people.

- Attempts to better integrate health and safety instruction into the curriculum of certain vocational education programs.

- Other curriculum and training projects described below.

A number of "COSH" groups (Committees on Occupational Safety and Health) throughout the U.S. have been involved in training young workers about health and safety. They have worked through apprenticeship programs, high school classes, health fairs, and vocational education programs. For example, the Santa Clara Center for Occupational Safety and Health (SCCOSH) has been conducting short workshops on health and safety in high school classes, and is exploring development of a video focusing on teens injured at work.

We identified eight existing health and safety curricula specifically designed for high schools and vocational education programs. These are listed in Attachment B. Only three are actively being promoted—the American Lung Association curriculum, the New York curriculum, and the Australian curriculum. There are also a number of more general curricula available for "labor education in the schools," some of which touch on health and safety issues. There are, of course, many other general health and safety training materials available from public, private, and non-profit agencies. Some of these could be adapted for use in programs for young workers.

In our interviews and surveys, several people involved in curriculum development spoke of the difficulty of institutionalizing the use of new materials once they have been developed. They also pointed to the need for training and technical assistance to help instructors incorporate new materials. Many particularly emphasized the need for a *comprehensive* program to prevent workplace injury and illness among teenagers—a program involving students, teachers, parents, enforcement agencies, the medical community, and others. A

curriculum by itself is not enough. Below we describe the four most comprehensive programs we found.

**Massachusetts:** The Massachusetts Department of Public Health has a multi-year grant from NIOSH to develop a surveillance and prevention program for teenage workplace injuries. Staff have developed a system to collect injury information through hospital emergency rooms, where more thorough data is available on where and how teens are being injured. Department staff work on the project with the state Attorney General's office, federal OSHA, the state Department of Education, the state Department of Employment and Training, other units in the Department of Public Health that deal with school and adolescent health issues, teachers' associations, job coordinators' associations, and others involved in the "school-to-work" initiative. If additional funding is obtained, they hope to develop a comprehensive program that will include training and a manual for employers on teenagers and work. They will also educate teens through the schools by developing several curricula, including trade-specific information for vocational education programs and a social studies curriculum. The curricula will cover labor laws, the history of child labor, occupational health and safety issues, and critical thinking skills for entering the workforce. Based on the information the project has collected, staff have decided that the best approach is to integrate health and safety information with other basic workplace rights information that may be more immediately compelling to teen workers.

**New York:** The New York Labor Department has recently focused on child labor issues. In addition to improving regulation of child labor, the Department has developed a short curriculum called "The Working Teenager," which covers the rights and responsibilities of teenagers on the job. This curriculum was originally designed to be used as part of an introductory course that all vocational education students must take, but it is also used by many other high school instructors (especially social studies instructors). Although the curriculum does not directly address job health and safety, it is an important model because it is one of the few state-level efforts to better prepare students for the real world of work by educating them about their labor rights. The state Labor Department is also currently developing a requirement that all students must pass a short test (like a driver's test) on their workplace rights and responsibilities before they are issued a work permit.

**Kentucky:** The Kentucky state OSHA and Labor Department are using the federal "school-to-work" initiative as an opportunity to improve health and safety training for working students. As part of their school-to-work program, they plan to work with the local sponsoring partnerships to promote the inclusion of health and safety in every program. They will also recommend that employers who participate in any school-to-work program funded by the state make use of the Kentucky state OSHA consultation unit to ensure that their health and safety programs are adequate.

**Victoria, Australia:** In 1985, the Victorian Occupational Health and Safety Commission (a state government unit) was charged with promoting training in occupational health and safety, including raising awareness among young people. A Working Party was set up to develop strategies and curriculum materials. This group was composed of representatives of the

Ministry of Education and Training, the Curriculum and Assessment Board, the State Training Board, the Trades Hall Council, the Congress of Employer Associations, the Department of Labour, and higher education. Funded by the Department of Labour, the group has developed 16 booklets which incorporate health and safety issues into student programs. Materials have been designed even for subject areas not traditionally regarded as relevant to health and safety at work (e.g. Business Management and Legal Studies). The 16 booklets include teaching activities for classes in English, mathematics, drama, art, chemistry, biology, and other subjects.

## VI. What Is Needed in California: Views from Teachers, Students, and Employers

In conducting this project, we solicited the views of high school teachers and students, as well as employers of young workers, to identify educational needs and opportunities. The following is a summary of what we learned. Recommendations based on this information are presented in Section VII and VIII of this report.

### Teachers

With assistance from the California Federation of Teachers, we spoke to 64 teachers from 10 secondary schools in the San Francisco Bay Area—12 in phone interviews, 36 during short discussion sessions at staff meetings, and 16 in two 2-hour focus groups. The group included 30 vocational education instructors, 16 social studies instructors, and 18 from other areas, such as English as a Second Language, science, work experience programs, and others. Following is a summary of the information and opinions these instructors offered.

All the instructors felt that students need better preparation to enter the real world of work, and that education about workplace health and safety should be a key part of that preparation. They felt that schools are an appropriate place to reach young workers, but that very few students receive any health and safety education at present.

Students may currently get at least some information on health and safety through vocational education classes, "street law" classes (see below), work experience classes, and individual instructors who have an interest in the field. For example, one social studies instructor developed a week-long project in which students interviewed workers about health and safety issues, and then conducted further research on these issues. Another social studies instructor had junior high students collect oral histories of shipyard workers, which raised the question of asbestos hazards. Then they studied asbestos further.

- *Vocational Education:* Students enrolled in vocational education programs are required to get some training in health and safety. However, most of this training focuses only on safety hazards (excluding most health hazards). Furthermore, most instructors do not cover workers' rights and responsibilities.[45] Nevertheless, a number of instructors felt that the most important place to cover health and safety is in vocational education

programs. They recommended expanding and improving health and safety instruction in vocational classes. Still, both vocational and non-vocational instructors pointed out that over half the student body never attends a vocational education class.

- *General Education:* Many instructors felt that the best way to reach the greatest number of students would be to integrate workplace rights and health and safety information into general education classes. Although some advocated integrating this information into U.S. government and/or economics classes (required courses for 11th/12th grade), others wanted to see the information presented at an earlier age, even junior high. Many students have already entered the work world by 11th or 12th grade, either because they hold part-time jobs or because they have dropped out of school.

  The instructors generally agreed that health and safety issues presented in general education classes should be tied to coverage of broader labor and/or workplace issues (such as child labor laws, fair employment practices, National Labor Relations Board, etc.). In one of our focus groups with instructors, participants were enthusiastic about integrating information on workplace rights/health and safety into as many general education classes as possible (such as English, science, and social studies), as in the Australian model described earlier.

- *"Social Living" Classes:* A few instructors suggested that workplace health and safety could be integrated into existing "social living" or health education classes. California's curriculum framework requires that all students be given information on certain health issues and living skills. In many schools these requirements are covered in one nine-week class. Some instructors argued that the "social living" class is already overburdened with requirements.

- *"Street Law" Classes:* Instructors also mentioned the "street law" classes designed by U.C. Berkeley's Boalt School of Law. These one-quarter classes are taught at several Bay Area high schools. Other law schools in the state have similar programs. Law students (together with a high school instructor) teach high school classes about laws they need to understand for basic living. Subjects vary greatly from class to class; information on workplace rights and Cal/OSHA is covered in at least some of the classes.

- *Work Experience Programs:* Some instructors felt that health and safety should be integrated into existing work experience programs. Either short materials on health and safety (fact sheets/handbooks) or complete curricula could be developed. General education work experience programs provide credit for paid work that students do outside school. Students must also attend a few hours of related classtime. Some of these programs may already cover health and safety and child labor law, but most instructors told us this material is minimal.

- *New Class:* A number of instructors suggested adding a specific "work issues" or workplace health and safety class to the high school curriculum. This class could be

designed for students getting work permits or for vocational education students. It could also be offered to everyone as an elective.

- *Peer Education:* Some instructors suggested a peer education approach, modeled after an anti-tobacco program currently being used in several schools. In this model, students take a one-semester course, for credit, to become peer educators. They may develop classroom presentations or skits to share with other students. Then, during a later semester, these students receive a stipend ($200), in addition to course credit, to make presentations to peers in their own and other schools.

- *Videos and TV:* Instructors also discussed the development of a video, possibly produced by high school students themselves. It should be short, entertaining, and to the point. There was also discussion of encouraging teen TV programs to cover health and safety. For example, instructors suggested working with an existing Saturday program on a local San Francisco station (Channel 7), called "Straight Talking Teens."

- *Other Approaches:* Instructors also talked about the possibility of distributing information through career fairs, career counseling centers, job coordinators, or others who deal with working youth (including youth in the JTPA summer program).

The consensus of instructors in our study was that we should not rely on any one approach or strategy to get information to students—it must come from as many different places as possible.

Teacher involvement in the design of any new curriculum material is critical. Teachers can best judge the appropriateness of the material and assess whether it will be accepted by other teachers. The instructors in our study felt that high quality, practical, and ready-to-use materials would be welcomed by both students and other instructors. Most suggested that materials tied as closely as possible to the state curriculum framework, and sessions extending from three to five hours of classtime (with additional homework assignments), would be ideal.

## Students

We spoke to 180 students in ten classes at three San Francisco Bay Area high schools to assess their knowledge of job hazards and means of dealing with them. We began each session with a "brainstorming" activity. We asked what kinds of jobs teenagers typically hold, and what health and safety hazards they encounter. We then had the students identify the hazards of a hypothetical worksite (a health setting for health academy classes, and a fast food restaurant for the others). We used a "trigger" activity (Attachment C), working in small groups to see how much students knew about dealing with a health and safety problem on the job. Finally, we asked students how they would design a program in their own school to reach their peers with health and safety information. Our findings are summarized below.

Students said that they and their friends do typically hold jobs. They listed a broad range of jobs that they and their peers hold. They felt that fast food and retail store jobs are the most common for teenagers. "Underground economy" jobs were also frequently mentioned (including drug sales and prostitution).

Few had received any information or training about job safety at work or school. None were aware of any Injury and Illness Prevention Program at work. Students in the academy programs we spoke to had received some safety information specific to their field or trade, but even this was very limited, with nothing on their workplace rights.

In general, students demonstrated a very limited understanding of the range of potential hazards in the workplace. They were most acutely aware of workplace violence (from first- or second-hand experience). Most students had at least a general awareness of safety hazards (such as cuts and burns), but few were aware of job health hazards (with the exception of the health academy classes, who were somewhat aware of infection control issues).

Students had no knowledge of Cal/OSHA, or of where to turn if faced with a workplace health or safety problem. Many students had a sense that the employer "should" deal with a particular problem, but knew nothing about what the employer is required to do. Most students had unrealistic ideas for resolving problems, such as "finding a lawyer" or "suing the employer." (There was obvious confusion about the role of lawyers in workers' compensation and personal injury cases, mainly from ads on TV.) Many students did not know they would be eligible for workers' compensation if injured at work.

Most students were interested in our project and agreed that teenagers need more information on a variety of workplace issues, including health and safety. Students did not always agree on a single best method for reaching other teenagers, but they did agree that the best approach would be to use many different methods, thus reaching the greatest number. Suggestions included introducing speakers or activities in existing classes (history, vocational education, work experience); distributing information through career centers, career fairs, job coordinators, or the work permit process; using TV or videos; conducting general schoolwide awareness campaigns; and adding safety information to peer education programs. Many students were skeptical about the usefulness of written materials unless accompanied by a presentation or other event. They suggested that any written materials should be short, easily readable, entertaining, colorful, and appealing.

Students had a number of ideas for educating their peers outside the classroom, including assemblies, skits, posters, field trips to worksites, articles in the school newsletter (including both safety success stories and "horror" stories), and talks by seriously injured youth.

## Employers

We distributed a brief survey (Attachment D) to employers and health and safety management professionals to solicit views on how well young workers are prepared for health and safety problems when they enter the workforce. We received 90 responses to the survey, primarily

from business owners/managers (33%), business health and safety staff (27%), and public sector health and safety staff (20%). A range of small and large companies was represented. There was almost unanimous agreement among respondents that young people enter the workforce with very little knowledge or understanding of workplace health and safety. Almost all respondents (93%) felt that new workers should begin with a basic understanding of health and safety hazards on the job. The majority (57%) also felt that young workers should know their legal rights and responsibilities.

Although respondents understood that the employer is responsible for providing training on specific workplace hazards at each site, most (87%) felt that their own young workers do not come to the job with even a basic foundation of knowledge about safety. They said workers lack elementary understanding in areas such as machinery, toxic materials, electricity, and ergonomics.

A few employers (13%) felt that young workers come to the job with at least a general awareness or "common sense" knowledge, but even these respondents listed many areas in which young workers need to be better prepared (including rights and responsibilities, toxic materials, safe work practices, and personal protective equipment).

Many respondents complained that young workers lack concern for personal safety, lack a sense of responsibility, and lack basic reading, writing, and communication skills. *All* respondents felt that young workers need better preparation and a greater awareness of workplace health and safety issues.

While respondents offered a broad range of suggestions for increasing young workers' health and safety awareness, most of these centered on better or additional instruction in high schools or community colleges, both in vocational and general education classes. A number of employers wanted to see specific instruction in the schools on the Cal/OSHA Hazard Communication standard and Illness and Injury Prevention Programs. Several mentioned the importance of employer/school partnerships.

## VII. Recommendations

Many ideas and approaches have been suggested by the constituencies we contacted during the course of this project. To implement any change, it will be critical to form partnerships among all the organizations concerned with preparing young people for the world of work. These include schools, teachers, students, parents, state and federal labor standards enforcers, university researchers, labor and employer groups, and others. There must also be close working relationships with the many state agencies that deal with the schools and the workplace, including the Department of Education, Employment Development Department, Cal/OSHA, Division of Apprenticeship Standards, Department of Health Services, and Department of Social Services.

What follows is an overview of the key possibilities we have identified. Section VIII presents some specific steps that Cal/OSHA can take immediately.

### 1. Provide training and information through general education in high schools.

a) *Develop and disseminate new curricula.* We recommend development of new curricula to integrate information on workplace health and safety into a number of different general education subject areas, such as Social Studies (U.S. History, Economics, Government); Science (Biology, Chemistry); and English (using reading/writing activities). Other work-related issues might also be covered in the same curricula.

We believe that working secondary school instructors should be recruited to help develop curricula appropriate for use in California secondary schools. Funding should be identified for teacher stipends to participate in a summer curriculum development workshop. The materials developed should then be piloted and field tested in several schools or districts.

Once new curricula are finalized (in a ready-to-use format) they should be broadly distributed through in-service teacher training, school district curriculum offices, and county offices of education. Throughout the curriculum development process, developers should work closely with the state Department of Education to make sure that the curriculum is consistent with the state framework.

b) *Design new peer education programs.* We also recommend the use of a peer education model to raise teen awareness of workplace health and safety issues. We believe the best approach would be to train high school juniors and seniors to work with freshmen and sophomores. Following the tobacco education model (described on p.15), interested juniors and seniors could take an elective class to learn about workplace health and safety as well as child labor protection. In this class students could "brainstorm" techniques to educate others, such as skits, poster contests, and even production of their own teen-targeted videos. (Many schools have media or video programs.) Students might be paid a stipend later to carry out their training strategies.

c) *Develop new educational materials for teenagers on health and safety.*[46] There is a need for new informational materials and training aids specifically directed to a teen audience. These should focus on youth employment issues, including health and safety, and should feature young workers. Both written materials, such as fact sheets or comic books, and audiovisual materials, such as videos, are needed. Such materials must be high-quality, easy to understand, brief, and attractive. Young workers themselves should be integrally involved in the development, production, and field-testing of such materials to maximize their effectiveness.

**2. Provide training and information through vocational education programs.**

a) *Develop trade-specific information for particular trades/industry areas.* Vocational education programs are already required to provide at least some training on workplace health and safety issues related to the trades they teach. While some of the career academies, such as the health academies, have developed health and safety materials, most vocational programs and instructors do not have the training or resources to cover health and safety adequately. Curriculum materials need to be developed that will help vocational programs meet the existing requirement that they address health and safety. These materials could also cover other workplace rights and responsibilities. Once developed, they should be distributed in a systematic way, accompanied by technical assistance and training for instructors where needed.

b) *Participate in the "School-to-Work" planning process in California.* Cal/OSHA and others should participate in the School-to-Work Opportunities Act process in California to ensure that work experience for teenagers does not come at the cost of increased job-related injury and illness. One approach would be to follow the example of Kentucky, working actively with employers to make sure they have adequate health and safety programs in place. Cal/OSHA should help develop a health and safety component to incorporate into the model agreement between employers and their school district partners. Cal/OSHA should also participate in the skill certification component of the school-to-work program to ensure that one skill required of students is the ability to identify and respond to health and safety problems on the job.

**3. Provide training and information through the JTPA Summer Youth Program.**

a) *Develop handbooks for sponsor sites and youth participants.* Cal/OSHA should work with the Job Training Partnership Division of the state Employment Development Department to develop a model handbook for sponsor sites and another specifically for young workers. These could expand on handbooks already developed by individual Service Delivery Areas. The handbooks should cover child labor law, health and safety training responsibilities, and other issues important for sponsor sites. The JTP Division of EDD did at one time have a model handbook for sponsor sites, but it is currently out of date.

b) *Develop a health and safety orientation for youth participants.* At present, California youth participating in JTPA usually receive a brief orientation from Service Delivery Area staff and from their own sponsor site. Some youth also receive substantial job preparation and training from non-profit youth organizations. Others receive little job training. It would be valuable to develop a more thorough orientation, including training about health and safety and child labor laws. A workshop for participants during the program or at its conclusion might also prove useful. Participants could discuss their experiences, including those related to health and safety. This approach would fit well with the emphasis of the JTPA program on providing "academic enhancement." The

orientation and workshop could help participants get more from their work experience by providing them with a context in which to analyze it.

**4. Provide training and information through the work permit process.**

a) *Develop a course or manual for all young workers who apply for work permits.* The "Model Child Labor Law," developed by the Child Labor Coalition of the National Consumers' League in Washington, D.C., suggests that a pre-employment course and/or manual be developed by state Departments of Labor or Education. Such a course or manual should be developed for California's young workers. It might cover state and federal child labor laws; how to contact agencies responsible for administering them; general worker rights and protections (hours of work, pay, discrimination, etc.); and health and safety issues. It could also include information on the value of education and its relation to workplace skills, and an introduction to specific occupations. The state should explore the possibility of requiring youth under the age of 18 to pass a short pre-employment test on this material (something like a driver's test).

b) *Provide information on workplace health and safety to school personnel who issue work permits.* The California Department of Education, the state Division of Labor Standards Enforcement, and the U.S. Department of Labor currently provide some training on child labor laws to school personnel who issue work permits. These agencies are now making a joint effort to hold workshops systematically in all California counties. Cal/OSHA should work with them to help incorporate information on health and safety rights, injuries, and available resources. Once they are trained, work permit personnel in the schools should serve as a resource for students and other instructors who have health and safety questions. Their information could also be used in career centers, by job counselors, and at career fairs.

c) *Develop health and safety curriculum materials for use in "work experience" programs.* Health, safety, and other worker rights information should be included in existing "work experience" or "work study" programs, which usually involve some classroom time. Many of these programs already cover some such issues, but there needs to be a more institutionalized approach. Groups such as the California Association of Work Experience Coordinators could play a key role in developing and ensuring the use of this kind of material.

**5. Educate teachers and parents about the importance of workplace health and safety issues students may face.**

a) *Include information on workplace health and safety in secondary teacher training.* The health class required during teacher training should include information on workplace health and safety. Topics might include workplace injury and illness among young workers, the types of hazards they face on the job, workers' legal rights, and identifying resources to assist students who face health and safety problems at work.

b) *Distribute curricula and other health and safety information to secondary teachers.* There could be presentations in teacher training programs; in-service workshops sponsored by specific schools, school districts, or county education departments; summer workshops providing continuing education credits; or presentations at conferences of teachers' organizations and unions. (Attendance at certain conferences is mandatory for teachers.)

c) *Work with organizations such as the PTA to educate parents about youth employment issues.* Parents often play a critical role in deciding when, where, and how much their children will work. However, they may know little about job hazards and the laws that protect their children. Written materials and workshops should be developed for parents to help meet this need.

**6. Conduct a research project to assess the specific needs of young agricultural workers.**

a) Our research did not encompass youth agricultural employment. A project similar to ours should be conducted for this purpose. Such a project should include a literature review; a survey of existing training materials; and discussion with organizations working on farmworker health and safety, migrant health, and pesticide safety. Focus groups could also be held with youth organizations such as Future Farmers of America and 4-H Clubs, and with organizations of family farmers and other growers.

## VIII. Specific Steps Cal/OSHA Can Take

Many different agencies should be involved in promoting workplace health and safety for young people. The roles various agencies can play have been suggested in our recommendations above. Following is a summary of the specific steps **Cal/OSHA** can take to help ensure that young people in California will be adequately protected on the job. A number of these recommendations could be implemented quickly.

**1.** Convene a task force composed of groups and individuals dealing with California youth employment and education issues: the state Department of Education, the state Employment Development Department, state and federal labor standards enforcers, Cal/OSHA, the California Division of Apprenticeship Standards, the California Department of Health Services, the California Social Services Department, university researchers, physicians, labor and employer groups, parent/teacher groups, and others. The task force should be charged with coordinating strategies to protect young people from work-related illness and injury. It should work with the new national Child Labor Task Force established by the U.S. Department of Labor and NIOSH.

**2.** Participate in efforts to educate school personnel and employers about work permits and child labor law, including health and safety. Work jointly for this purpose with the state Department of Education, the U.S. Department of Labor, and the state Division of Labor Standards Enforcement.

3. Work with the Job Training Partnership Division of the state Employment Development Department to ensure adequate health and safety training for young participants in the JTPA summer program.

4. Participate in the state-level planning process for "School-to-Work" programs to ensure adequate health and safety preparation and protection of student workers. A Cal/OSHA representative could be appointed to the Resource Group, which will review all aspects of the state School-to-Work plan.

5. Develop educational materials on hazards in the most common youth jobs (such as fast food and other restaurant work, retail sales, and work in grocery stores). These could be used in educational efforts by career centers, work experience coordinators, teachers, employers, and others.

6. Analyze injury and illness data by age group and SIC code in order to better characterize the job hazards facing California's youth.

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39. Work permits are not required for minors engaged in any of the following types of employment:

    1. Private home employment, doing occasional odd jobs such as baby-sitting, raking leaves, or mowing lawns.
    2. Sale or delivery of newspapers, if self-employed.
    3. Self-employment.
    4. Agricultural, horticultural, viticultural, or domestic work on premises owned, operated, or controlled by minors' parents or guardians.
    5. Family-owned business if work is done on a casual, nonscheduled basis in other than manufacturing, mercantile, or similar enterprise.

40. Suruda and Halperin, *op cit.*

41. U.S. GAO, *op cit.*

42. U.S. Department of Labor, Wage and Hour Division. Press Release. April 5, 1994.

43. Based on interviews with vocational education instructors. During LOHP's work in developing the Workplace Hazards and Tobacco Education Project's (WHATEP's) vocational education curriculum "Toxics on the Job," LOHP staff interviewed and worked with over 100 vocational education instructors.

44. For example, the Connecticut Childhood Injury Prevention Center at Hartford Hospital identified cuts in grocery stores as a common teen injury. Researchers found a safer cutting tool, and began a small targeted program to get one grocery chain to use this safer tool and provide training on how to cut up boxes safely. (Connecticut Childhood Injury Prevention Center. *Final Report: Safe Teen Work Project*, April, 1994.)

45. Based on interviews with vocational education instructors. During LOHP's work in developing the Workplace Hazards and Tobacco Education Program's (WHATEP's) vocational education curriculum "Toxics on the Job," LOHP staff interviewed and worked with over 100 vocational education instructors.

46. Although we describe the possible development of several different types of written materials, it is our general recommendation that written materials be developed primarily for use in conjunction with a specific training program. While written materials may contain

useful information, most of the students we talked to felt that their peers wouldn't look at written materials unless they were already interested in the issue.