

ENVIRONMENTAL AND OCCUPATIONAL HEALTH RISKS OF  
ADOLESCENT MIGRANT FARMWORKERS: A LEARNING  
MODULE DEVELOPED USING THE INTEGRATED  
INSTRUCTIONAL DESIGN MODEL

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A Project

Presented

to the Faculty of

California State University, Chico

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science

in

Instructional Design and Technology

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by

Laura Yvette Moreno

Summer 2011



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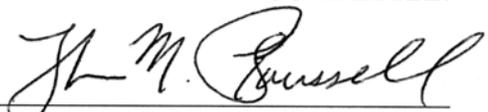
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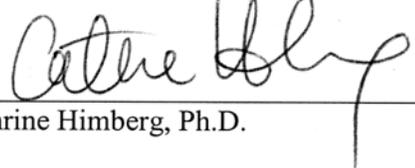
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## DEDICATION

I dedicate this project to my family. My father, Andres Moreno, taught me what hard work is and the importance of education. My mother, Rosa Moreno, taught me to stand up for what I believe. My brothers, Jose and Ricardo Moreno, and sister, Jennifer Moreno, encouraged me at every step. To my other half, Jimmy Spain, thank you for being my biggest fan and supporter. You are my source of strength, courage and faith.

Lastly, I dedicate this project to my abuelo, Basilio Moreno, who worked many jobs across California, including being a farmworker in the almond fields of Chico. I am proud and honored to see his efforts come full circle as I receive my degree from California State University, Chico.

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## ABSTRACT

# ENVIRONMENTAL AND OCCUPATIONAL HEALTH RISKS OF ADOLESCENT MIGRANT FARMWORKERS: A LEARNING MODULE DEVELOPED USING THE INTEGRATED INSTRUCTIONAL DESIGN MODEL

by

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Master of Science in Instructional Design and Technology

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Agriculture ranks among the most hazardous industries, yet national and state laws continue to provide less protection for adolescent farmworkers than they provide for youth in other kinds of jobs. Hardworking youth labor under more dangerous conditions than their contemporaries working in nonagricultural settings. Adolescent bodies are in a developmental state with potentially greater susceptibility to hazards than mature bodies. In response to the dangerous health concerns surrounding migrant adolescent farmworkers, a course module was developed using the Integrated Instructional Design Model to help educate health clinicians on the environmental and occupational health concerns associated with migrant adolescent farmworkers.

This project was designed and developed to evaluate a single evidence-based online training module, *A Vulnerable Population*. The module introduced primary migrant health clinicians to the environmental and occupational health hazards faced by migrant adolescent farmworkers. This project consisted of a prototype of one online course module targeting migrant health clinicians. The end result was the instructional courseware, media, and its full content. The course was implemented and offered to four clinicians and policy advisors identified as serving immigrant and underserved communities, who then assessed the prototype.

This project can be used in a number of professional settings, specifically public health initiatives to teach not only migrant health clinicians, but also promotores and promotoras, community members who promote health education, leadership, peer education, support, and resources. It would also be an effective tool in the instructional design field. Public health initiatives and the instructional design process will collaborate to show how that strategy can be used in a wide variety of projects.

## CHAPTER I

### INTRODUCTION

#### Background

Agriculture ranks among the most hazardous industries, according to the National Institute for Occupational Safety and Health (Centers for Disease Control and Prevention (CDC), 2008). In 2006, an estimated 23,100 children and adolescents were injured on farms; 5,800 of these injuries were due to farm work (CDC, 2008).

Still the Fair Labor Standards Act continues to provide less protection for adolescent farmworkers than for those who work in other industries (Davis, 1997, p. 2).

Adolescent farmworkers have three distinctive characteristics that make them a uniquely vulnerable population and set them apart from their adult counterparts: adolescence, socio-economics, and, ultimately, farm work itself.

Many employers may see adolescent farmworkers as a benefit because of their perceived agility, flexibility, and size. On the contrary, the National Adolescent Farmworker Occupational Health and Safety Advisory Committee found that in fact adolescent bodies are in a developmental state with potentially different susceptibility to hazards than mature bodies (U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health (NIOSH), 2004, p. 266).

Research by the National Institute for Occupational Safety and Health (2004) finds that,

... young workers are generally believed to be at increased risk of occupational injury owing to their limited job knowledge, training, and skills,” adding “physical and psychosocial factors may also place young workers at increased risk of injury, and age-related factors may render youth more susceptible to chemical and other physical exposure risks at work. (p. 266)

“... Laws governing youth employment in agriculture are different from the laws governing youth employment in other sectors of our economy,” according to the U.S. Department of Labor (2000, p. 52). “Youth workers in crop agriculture often face unusual challenges—poor living conditions, loss of educational opportunities, separation from parental supervision, and exposure to pesticides and other occupations hazards” (U.S. Department of Labor, 2000, p. 52). The Environmental Protection Agency (EPA), meanwhile, offers no greater protection from pesticide contamination for child laborers than it does for adults. There is only one set of regulations and standards, which take as their model the adult male body (Human Rights Watch, 2000, p. 4).

As a result, risks include the psychological and social stresses associated with problems of English language skills, housing accommodations, disruption of family life, school, and medical demands related to farmworkers’ environment and conditions. Adolescents with limited English speaking ability, in addition to experiencing social isolation, may be unable to read important written instructions or to translate and understand verbal orders (Vela Acosta & Lee, 2001, p. 8).

Research by Human Rights Watch (2000) found:

These hardworking youth labor under more dangerous conditions than their contemporaries working in nonagricultural settings. They are routinely exposed to dangerous pesticides, sometimes working in fields still wet with poison, often given no opportunity to wash their hands before eating lunch. They risk heat exhaustion and dehydration, as their employers fail to provide enough water, or any at all. They suffer injuries from sharp knives, accidents with heavy equipment, falls from ladders. Repetitive motions in awkward and punishing poses can interfere with the

proper growth of their bodies. Lack of sleep—because they are working too many hours—interferes with their schooling and increases their chances of injury. (p. 2)

Work related to this project emanates from the 1999 meeting of the National Adolescent Farmworker Occupational Health and Safety Advisory Committee and the 2001 Summit on Childhood Agricultural Injury Prevention, during which time representatives of employer organizations interacted with agricultural safety specialists. The National Adolescent Farmworker Occupational Health and Safety Committee specifically recommended that agencies and researchers should “identify occupational risks” that are “potentially unique and specific to hired adolescent farmworkers, and plan, implement, and evaluate interventions to eliminate or minimize occupational health and safety risks of hired adolescent farmworkers.” (Vela Acosta & Lee, 2001, p. 5) This project was designed and developed to evaluate a single evidence-based online training module, *A Vulnerable Population* (Migrant Clinicians Network, 2011a). The module introduced primary migrant health clinicians to the environmental and occupational health hazards faced by migrant adolescent farmworkers.

It was important to establish the state of migrant health clinicians’ current performance and identify where that performance needed to be improved in order to close the performance gap. This was accomplished through analyzing training needs, conducting a user analysis, and performance analysis. First, a comprehensive literature review was conducted as part of the needs assessment to determine the extent of the problem and the scope of the project. Next, a performance analysis was carried out to uncover, more precisely than the needs assessment did, what the performance problem was for migrant health clinicians, who was affected by the performance problem, how it

affected them, and what results are to be achieved by the training. This was executed through a key informant group and consultations with subject matter experts. This study uncovered what the learner needs to know and do. It also determined actual content, context, and delivery that would suit learner needs; how to assess learning requirements; and how to evaluate course effectiveness.

The results of the Literature Review, key informant interview, and subject matter expert consults were used to establish what needs to be trained to close the performance gap, develop learning objectives, design activities, and create an evaluation tool.

The design phase was driven by the products of the analysis phase. The design phase consisted of three parts: writing performance objective statements, developing performance measurements, and sequencing performance objectives.

Instructional objectives were developed using information gathered from the key informant group, then reviewed and approved through consultations with the subject matter experts.

Module objective: identify three characteristics that make migrant adolescent farmworkers a uniquely vulnerable population.

Once the learning objectives were established and approved by the subject matter experts, the performance measures were drawn out. The assessment questions were designed to test the learner's mastery of the learning objectives. The result was a criterion-referenced assessment.

Additionally, an evaluation questionnaire consisting of an attitudinal survey was designed to measure the clinicians' and policy advisors' responses after viewing the

prototype. Topics identified by the key informant group and consultants were used as the basis for the questions. The A.R.C.S. Module was also used in development of some of the questions to measure the learners' motivation or intent to behave.

The final step in the design phase was the sequencing of the performance objectives. For this project, general-to-specific sequencing was used. This sequencing method allowed for an overview of migrant adolescent farmworker health, then the ability to drill down to specific information relevant to migrant health clinicians and their ability to provide effective healthcare.

Using the learning objective for module one as a guide, it was time to start the development phase. Here, instructional strategies were specified, including the prototype's instructional, visual, and technological strategies. Strategies were implemented to ensure that the courses provide practice opportunities and feedback to increase retention and transfer of knowledge to the workplace.

Given information from the key informant group, e-learning was identified as the appropriate instructional strategy for the development of the project prototype.

A storyboard was developed to illustrate how the content was to be sequenced, how instructional activities flowed, and how media would be involved. Once the storyboard was approved, audio scripts were recorded and edited. Graphics and photographs were collected from various sources, including the Migrant Clinicians Network (2011b).

The end result was the instructional courseware, media, and its full content. With the prototype ready, the learning environment was prepared. Due to time constraints, a full launch of this project has not yet occurred. The course was

implemented and offered using the Migrant Clinicians Network Online Learning Portal (Migrant Clinicians Network, 2011b). The prototype was assessed for evaluation purposes. Four clinicians and policy advisors identified as serving immigrant and underserved communities were asked to evaluate the pilot module.

To assure the instructional soundness of the course an evaluation of the prototype was conducted using Kirkpatrick's four levels of evaluation. Due to the time constraints of the project, clinicians could evaluate only at level one, Satisfaction, and level two, Learning.

Participants accessed the prototype remotely, on their own time, and viewed the course at their own pace and at the location of their choice. After viewing the prototype, participants were prompted to "Test Their Knowledge." This assessment uncovered if objectives were met. Following the knowledge check, participants were asked to evaluate the prototype. This questionnaire measured the clinicians' satisfaction with the course.

The data from the surveys were collected and tallied for all variables of raw data to develop conclusions. The evaluation information was hand tabulated and assessed for positive feelings on the project. The data was compared and contrasted against the needs of clinicians.

### Scope of the Project

This project consisted of a prototype of one online course module targeting migrant health clinicians. This module serves as the template for the development of the rest of the course. The module can be used to teach clinicians about the environmental

and occupational health risks faced by adolescent migrant farmworkers. The complete course stresses the knowledge of occupational health hazards and the use of a rapid risk assessment to identify specific health risks according to their occupation. In addition, it teaches the clinician how to use the rapid risk assessment to start a conversation with adolescent migrant farmworkers about addressing health hazards.

### Significance of the Project

This project can be used in a number of professional settings. Specifically, this course can be used as public health initiatives to teach not only migrant health clinicians, but also promotores and promotoras, community members who promote health education, leadership, peer education, support, and resources (Migrant Health Promotion, 2011). The course teaches the user about specific health and occupational concerns specific to vulnerable, underserved, and under-represented populations.

It would also be an effective tool in the instructional design field. Public health initiatives and the instructional design process will collaborate to show how that strategy can be used in a wide variety of projects.

### Delimitations of the Project

The following factors delimited this project:

1. The needs assessment was conducted using a focus group technique called key informant interview with subject matter experts in migrant health.
2. The course contents were established by the results of the needs assessment and guided by the literature review.

3. The learning module focused on the occupational health hazards of adolescent migrant farmworkers. Specifically, how clinicians can provide better health care by identifying the jobs performed by adolescent farmworkers and the health hazards associated with those tasks.

4. A learner analysis was conducted to identify the knowledge and skills of the target audience and determine strategies for changing their behaviors.

### Limitations

The following factor limited this project: The contents of the learning modules are specific to adolescent migrant health and may not be relevant to other health groups.

### Definition of Terms

#### ADDIE

An instructional systems design model traditionally used in instructional design. This systematic approach to design and development of learning materials and activities includes five steps: Analysis, Design, Development, Implementation, and Evaluation (McGriff, 2000).

#### ARCS

Keller's ARCS Model is a framework for motivational design. The acronym ARCS stands for Attention, Relevance, Confidence, and Satisfaction (Keller, 1999).

#### Adolescent

A child from the age of 12 through 17 (Vela Acosta & Lee, 2001, p. 6).

### Farmworkers

Hired persons who leave their homes and migrate to work in agriculture in one or more states. This includes workers hired at the local level to work in seasonal agricultural jobs, but who do not leave their permanent residences (Vela Acosta & Lee, 2001, p. 6).

### Integrated Instructional Design Model

The model combines Keller's ARCS model of motivation for learning with the five-phased military instructional systems design (ISD) model (Main, 1992).

### Environmental and Occupational Health

Environmental and occupational health hazards encountered at the workplace.

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

Agriculture ranks among one of “the most hazardous industries in the nation,” according to the Occupational Safety & Health Administration (n.d, para. 1). And still, the Fair Labor and Standards Act (FLSA) and state laws provide less protection for children working in agriculture than they do for children working in other industries. Children may work in agriculture in settings that would be illegal in other industries. They are legally permitted to work at younger ages, in one of the most hazardous occupations, and for longer periods of time than any other industry available to children (United States General Accounting Office (GAO), 1998, p. 30). The GAO explained it best this way: “a 13-year-old may not, under federal law, be employed to perform clerical work in an office but may be employed to pick strawberries in a field” (1998, p. 30).

The area of focus throughout this literature review addressed the environmental and occupational health hazards faced by migrant adolescent farmworkers and the importance for migrant health clinicians to have intimate knowledge of the impact these health risks have on the unique population they serve in order to provide effective healthcare services.

Areas that needed to be addressed prior to the design and evaluation of the project include.

Adolescent Migrant Workers – To identify characteristics particular to this underserved population. More specifically, recognize how these characteristics set this population apart from other migrant workers.

Environmental and Occupational Health and Safety – To identify the occupational hazards associated with agricultural work specific to the adolescent worker. In addition, discover the health implications that arise from such hazards.

Clinicians – To identify the clinician population working in migrant health centers across the country.

Cultural Competency in Health – To understand how similar behaviors, attitudes, and policies come together in a system, agency, or among professionals and facilitate effective work in cross-cultural situations.

Theoretical Background – To determine the strategy needed to change behavior regarding a clinician's ability to provide adequate health care to adolescent migrant farmworkers. This section includes theories on behavior and intent to behave.

Instructional Design Models and Assessment – To study some of the different models that exist and decide which design factors would be best suited for use in development of this project. To gain a better understanding of how learning can best be measured and assessed.

Distance Learning and Clinician Education – To determine the strategy best suited for clinicians.

### Adolescent Migrant Workers

The exact number of adolescent farmworkers working in the United States is difficult to estimate. Data concerning aspects of working conditions and the frequency of their work-related injuries and illnesses is also hard to account for (GAO, 1998, p. 22).

Research found two nationally representative sources of data on agricultural employment: the Current Population Survey (CPS) and the National Agricultural Workers Survey (NAWS) (GAO, 1998, p. 22). Yet sampling techniques and sampling groups in both studies underestimate the number of children working in agriculture (GAO, 1998, p. 22).

The U.S. Department of Labor (2000) finds the farmworker population particularly difficult to find and survey, therefore finding it hard to know the exact number or even have a close estimate of the number of adolescent farmworkers working in the United States today (p. 52). An accurate count of the farmworker population has been described as difficult because of the diversity in definitions, high mobility, seasonal changes in location of agricultural work, locations of camps, language barriers, and avoidance by some farmworkers of contact with government agencies (Mobed et al., 1992, as cited in Vela Acosta & Lee, 2001, p. 8).

The Health and Resource Services Administration (HRSA) estimates that up to 1 million children move with their migrant families and an estimated 250,000 of those children perform work themselves (as cited in Clement, 2003, p. 2). Vela Acosta and Lee (2001) put this number at 128,000 hired adolescent farmworkers aged 14-17 years of age employed in U.S. crop agriculture (p. 5). Even the NAWS report, one of the largest farmworker surveys in the nation, does not directly interview children younger than 14

years of age due to “time constraints” (U.S. Department of Labor, 2000, p. 52).

Therefore, statistics on adolescent farmworkers under the age of 14 are not available.

This oversight increases the vulnerability of an already underserved population and may contribute to the lack of relevant and adequate healthcare provided to this group. The U.S. GAO recognizes many data sources underreport youth labor (as cited in Arroyo & Kurre, 1997, p. 13). Even the U.S. Department of labor admits to knowing very little about the level or type of workforce participation of children under the age of 14 (2000, p. 52).

As a whole, the farmworker population has always been statistically young. According to the National Agricultural Workers Survey (2005) conducted between 2001 and 2002, the average age of the 6,472 farm workers surveyed was 33 years of age (U.S. Department of Labor, 2005, p. 9). The report also found 31% of the farmworkers surveyed to be between the ages of 14 and 24 (U.S. Department of Labor, 2005, p. 9).

The largest group of adolescent farmworkers is youth who live away from their natural families and migrate, mostly from Mexico, to work in U.S. agriculture. About 80% of adolescent farmworkers are emancipated minors living on their own, and 59% are primarily international migrants (as cited in Vela Acosta & Lee, 2001, p. 8).

They are the youngest end of a stream of young Mexican men who are new entrants to farm work. Eighty percent of emancipated minors are between the ages of 16-17, 89% are male, 85% are Latino, 75% are foreign-born, and 70% are unauthorized and recent arrivals to the U.S. (as cited in Vela Acosta & Lee, 2001, p. 8)

The National Adolescent Farmworker Occupational Health and Safety Advisory Committee (2001) research has found that adolescent bodies are in a

developmental state with potentially different susceptibility to hazards than mature bodies (Vela Acosta & Lee, p. 11). In contrast, many employers may see adolescent farmworkers as a benefit because of their perceived agility, flexibility and size. On the contrary, the National Adolescent Farmworker Occupational Health and Safety Advisory Committee found that in fact adolescent bodies are in a developmental state with potentially different susceptibility to hazards than mature bodies (National Institute for Occupational Safety and Health (NIOSH), 2004, p. 266).

Additionally, migrant and seasonal adolescent farmworkers face increased risks for occupational injuries and diseases. These adolescents lack work experience and training while coping with issues associated with physical development and limited access to medical care. They also are trying to balance the demands of school and work, which pose sociologic and economic challenges that affect their health (Vela Acosta & Lee 2001, p. 5).

Research by the National Institute for Occupational Safety and Health (2004) finds that young workers are generally believed to be at increased risk of occupational injury owing to their limited job knowledge, training, and skills,” adding “physical and psychosocial factors may also place young workers at increased risk” (p. 266).

A number of factors put migrant and seasonal adolescent farmworkers at increased risks for occupational injuries and diseases.

Slesinger suggests farmworker demographics are consistent with those of many developing countries and in fact help to explain the pattern of morbidity characteristic of the population (as cited in Huang, 1993).

“... Laws governing youth employment in agriculture are different from the laws governing youth employment in other sectors of our economy,” according to the U.S. Department of Labor (2000, p. 52, para. 1). “Youths working in crop agriculture often face unusual challenges—poor living and working conditions, loss of educational opportunities, separation from parental supervision and exposure to pesticides and other occupations hazards” (2000, p. 52, para. 2).

#### Environmental and Occupational Health and Safety

Previous research efforts to enhance agricultural health and safety for young workers have not addressed the unique issues affecting migrant or seasonal hired adolescent farmworkers (Vela Acosta & Lee, 2001, p. 6).

“The U. S. agricultural industry has been described as having one of the highest occupational rates for injury, fatality, disability, and disease” (Boyle et al., 2000; Brown et al., 1997; Crandall, 1997; Gerberich et al., 1996; & Loomis, 1992; as cited in Vela Acosta & Lee, 2001, p. 8). Yet, the Bureau of Labor Statistics (2000) identifies agriculture as the second-most common employer of youth, estimated to be 8% for the 15-17 year age group (as cited in Vela Acosta & Lee, 2001, p. 8).

Children working in agriculture had been reported to have more severe injuries and a disproportionate share of fatalities compared with other industries (GAO, 1998, as cited in Vela Acosta & Lee, 2001, p. 8).

Hundreds of thousands of children and teens labor each year in fields, orchards, and packing sheds across the United States. They pick lettuce and cantaloupe, weed cotton fields, and bag produce. They climb rickety ladders into cherry orchards,

stoop low over chili plants, and “pitch” heavy watermelons for hours on end (Human Rights Watch, 2000, p. 2).

According to the GAO (1998), “work-related injuries to children working in agriculture tend to be more severe than injuries to children working in other industries” (p. 5). Research by the National Institute for Occupational Safety and Health (2004) finds,

Young workers are generally believed to be at increased risk of occupational injury owing to their limited job knowledge, training, and skills” adding “physical and psychosocial factors may also place young workers at increased risk of injury, and age-related factors may render youth more susceptible to chemical and other physical exposure risks at work. (p. 266)

In addition to harm related to physical work, job-related injuries and fatalities may also be caused by tractors, farm machinery, pesticides, farm animals, falls, and drowning (Davis, 1997, p. 3).

Research by Human Rights Watch found (2000):

These hardworking youth labor under more dangerous conditions than their contemporaries working in nonagricultural settings. They are routinely exposed to dangerous pesticides, sometimes working in fields still wet with poison, often given no opportunity to wash their hands before eating lunch. They risk heat exhaustion and dehydration, as their employers fail to provide enough water, or any at all. They suffer injuries from sharp knives, accident with heavy equipment, falls from ladders. Repetitive motions in awkward and punishing poses can interfere with the proper growth of their bodies. Lack of sleep—because they are working too many hours—interferes with their schooling and increases their chances of injury. (p. 2)

The Environmental Protection Agency (EPA), meanwhile, offers no greater protection from pesticide contamination for child laborers than it does for adults. There is only one set of regulations and standards, which take as their model the adult male body. (Human Rights Watch, 2000, p. 4)

Traditionally, migrants and their families have severely poor physical health in comparison to that of the general population (Huang, 1993, p. 2). This may be attributed to delay in time to getting good medical help (Clement, 2003, p. 19).

The American Academy of Pediatrics, Shotland, Kock, and the National Rural Health Care Association (as cited in Huang, 1993) found:

Commonly reported health problems among migrant farmworkers and their children include: lower height, weight, and other anthropometric attainments; respiratory disease; parasitic conditions; skin infections; chronic diarrhea; vitamin A deficiency; and undiagnosed congenital and developmental problems. In addition, accidental injuries, heat-related illnesses, and chemical poisoning are highly prevalent among the population. (p. 2)

Adolescent farmworkers, as is the case with all farmworkers, have very little power to protect themselves from occupational hazards. Barriers such as job loss often prohibit the worker from discussing working conditions and minor injuries. If they complain they are likely to be, at best, ignored. At worst, they will be fired (Human Rights Watch, 2000; Bechtel, Shepherd, and Rogers, 2010). Clinicians must be aware of such conditions and provide for scenarios that facilitate conversations on occupational health.

### Clinicians

According to the U.S. Department of Health and Human Services (DHHS, HRSA, n.d.a), “for more than 40 years, HRSA-supported Health Centers have provided comprehensive, culturally competent, quality primary health care services to medically underserved communities and vulnerable populations” (DHHS, HRSA, n.d.a, para. 1)

Health centers are community-based and patient-directed organizations that serve populations with limited access to health care. These include low-income populations, the uninsured, those with limited English proficiency, migrant and

seasonal farmworkers, individuals and families experiencing homelessness, and those living in public housing. (DHHS, HRSA, n.d.a, para. 2)

The goal of the health center work force is to “increase access and reduce disparities in health care” by focusing on “comprehensive, high quality, culturally-competent preventative and primary health services to migrant and seasonal farmworkers and their families with a particular focus on the occupational health and safety needs of this [the underserved] population” (DHHS, HRSA, n.d.b, p. 14). To accomplish this goal, providers who can deliver culturally-competent, accessible, and integrated health care are needed (DHHS, HRSA, n.d.b).

For the 2008 reporting period, HRSA found that 772,251 migrant and seasonal farmworkers were served by Health Centers nationally (DHHS, HRSA, 2008a.). Of those patients served 309,648 were under the age of 19 years of age (DHHS, HRSA, 2008a). According to Human Resources and Services, “it is estimated that HRSA funded health center programs serve more than one quarter of all migrant and seasonal farmworkers in the United States” (DHHS, HRSA, n.d.c, para. 4).

There are more than 114,900 clinicians working in health centers located in underserved communities (DHHS, HRSA, n.d.d); 9,100 physicians; 5,800 nurse practitioners, physician’s assistants, and certified nurse midwives (DHHS, HRSA, n.d.d). In 2008, migrant health clinics had 309,648 patients under the age of 19 (DHHS, HRSA, 2008b).

## Cultural Competency in Health

The Office of Minority Health (OMH) defines cultural competency as “a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations” (OMH, 2005, para. 1).

The Office of Minority Health (2005) adds:

Cultural competency is one [of] the main ingredients in closing the disparities gap in health care. It’s the way patients and doctors can come together and talk about health concerns without cultural differences hindering the conversation, but enhancing it. Quite simply, health care services that are respectful of and responsive to the health beliefs, practices and cultural and linguistic needs of diverse patients can help bring about positive Health outcomes. (para. 2)

“Cultural competency aims to influence the delivery of services by the provider who looks at the world through his or her own limited set of values, which can compromise access for patients from other cultures,” (OMH, 2005, para. 3) ultimately nurturing an environment where “the provider and the patient each bring their individual learned pattern of ...culture to the health care experience which must be transcended to achieve equal access and quality health care (OMH, 2005, para. 4).

## Theoretical Background

Motivation for this project stems from the 1999 meeting of the National Adolescent Farmworker Occupational Health and Safety Advisory Committee (NAFOHSAC) and the 2001 Summit on Childhood Agricultural Injury Prevention, during which time representatives of employer organizations interacted with agricultural safety specialists to develop a plan to improve working conditions for migrant and seasonal adolescent farmworkers. The National Adolescent Farmworker Occupational

Health and Safety Advisory Committee specifically recommended that agencies and researchers should:

1. Identify profiles of hired adolescent farmworkers employed in production agriculture across the United States.
2. Identify occupational risks that are potentially unique and specific to hired adolescent farmworkers.
3. Plan, implement, and evaluate interventions to eliminate or minimize occupational health and safety risks of hired adolescent farmworkers. (Vela Acosta & Lee, 2001, p. 5)

Recognizing the importance of such recommendations provided by the NAFOHSAC, the Migrant Clinicians Network and Laura Moreno combined efforts to write a grant. The grant was submitted and approved.

In order to determine the strategy needed to change behavior regarding clinicians' ability to provide adequate health care to adolescent migrant farmworkers, this section includes theories on behavior and intent to behave by Fishbein and Azjen (1975) as well as Bloom's (1956) taxonomy and, more specifically, the affective domain and how attitudes can be changed.

Fishbein and Azjen's (1975) initial theory of reasoned action identified two determinants of intent to behave. First is personal in nature and deals with general attitude toward. This refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. The second predictor is a social factor termed subjective norm; it refers to the perceived social pressure to perform or not to perform the behavior (Azjen, 2005, p. 117).

Fishbein and Azjen (2005) found this early theory to be limiting because it relied on the intention as the sole predictor of behavior. They expanded on the theory of reasoned action by including a third determinant, Theory of Planned Behavior. The third

precursor of intention is the degree of perceived behavioral control, which refers to the perceived ease, or difficulty, of performing the behavior, and it is assumed to reflect past experience as well as anticipated impediments and obstacles (Ajzen, 1991, p. 119).

According to Fishbein and Ajzen, “people intend to perform a behavior when they evaluate it positively, when they experience social pressure to perform it, and when they believe that they have the means and opportunities to do so” (Ajzen, 2005, p. 118). With this in mind, it is imperative to look at both cognitive domains of learning in addition to the affective domain when developing this project.

In their research, Bloom (1956) and Krathwohl, Bloom and Masia (1973) identified three distinct domains of learning: Psychomotor, Cognitive, and Affective Domain. The Psychomotor domain deals with the ability to move and perform physical tasks; The Cognitive domain relates with knowledge; and the Affective Domain details emotions and motivational factors. Due to the content of the project and the need to change attitudes and increase knowledge regarding the environmental and occupational health hazards of adolescent migrant farmworkers, cognitive learning objectives would not only be necessary, but pertinent in changing the audience’s attitude toward migrant adolescent farmworker health.

Additionally, within each of the three learning domains, there are a number of levels of objectives which can be reached. The cognitive domain consists of six levels: evaluation, synthesis, analysis, application, comprehension, and knowledge (Kazanas & Rothwell, 1998). The lowest level, knowledge, is as simple as recalling information, while comprehension builds on the first level and looks at the meaning of the content. The third level, application, makes use of the content learned and applies it. The next two

levels enable one to examine the content by disassembling a whole into parts (analysis) and then assemble a whole from parts (synthesis). Lastly, at the highest level, learners are to assess the value of content. Typically, the first two levels are addressed in a learning event due to the intensity of the last three levels. The following two levels allow learners to internalize what they are learning (valuing) to the extent that they develop a new system of values (organization). The top level of the affective domain, characterization, is learning a new way of life or a new outlook (Kazanas & Rothwell, 1998). As with the cognitive domain, typically the first two levels of learning are addressed in learning events due to the intensity of the following three levels.

Bloom's (1956) and Krathwohl's et al. (1973) initial research in educational objectives was first published it has been accepted, when developing learning events, that all three domains acted as separate entities. However, more recently, research has shown that the cognitive domain and affective domains are interrelated (Martin, 1989; Price, 1998; Tennyson, 1992; Tennyson & Nielson, 1998). Tennyson (1992) found the "affective domain to be an integral part to the development of learning environments" (p. 40). Adding that certain cognitive psychologists such as Brown, Harre, and Vygotsky had discovered that the "affective domain may actually dominate the cognitive" (Tennyson, 1992, p. 40).

### Instructional Design Models

The field of instructional design stems from training demands of World War II (Dick, 1987). At this time, psychologists and educators with experience in training and experimental research were tapped to conduct research and develop training materials for

military services (Reiser, 2001). After the success of the military training programs developed during World War II, many of the psychologists involved continued to work on solving instructional problems (Reiser, 2001). Since this time, a number of models have been established and implemented in the field of instructional design. The A.D.D.I.E. model, A.R.C.S. model, and Gagne's nine events of instruction are used for this study and are described below.

The main focus of instructional design is to improve performance and increase organizational efficiency and effectiveness (Kazanas & Rothwell, 1998). Research and evaluation resulted in the Integrated Instructional Design Model as the design strategy to best reach this goal and was referenced for the design of this project. The Integrated Instructional Design Model by Robert G. Main uses a combination of the A.D.D.I.E model and Keller's A.R.C.S. model, highlighting the affective domain as the framework for organizing instructional principles, strategies, and techniques (Main, 1992).

The use of technology to reach a wider population of people regarding occupational and environmental health within the adolescent farmworker population falls within the same lines.

A.D.D.I.E. is a systematic five-phase instructional systems design model developed by the military. The phases are analysis, design, development, implementation, and evaluation.

- Analysis: The analysis phase comprises two major tasks: analyzing the performance problem and assessing the instructional need (Main, 1992). The result uncovers why the instruction is needed; who needs the instruction; what they need to

know, do, or feel; where the instruction takes place; and finally when the instruction is to be conducted (Main, 1992).

Next, a needs assessment is carried out to uncover, more precisely than the performance analysis did, what the performance problem is, who it affects, how it affects them, and what results are to be achieved by the training (Kazanas & Rothwell, & 1998, p. 54).

- Design: At this stage the mode of instruction is established. Instructional objectives are developed and the competency level of the learner is specified. In addition, the instructional strategy and instructional media are determined (Main, 1992).

According to Mager (1997), instructional objectives include three characteristics: performance, conditions, and criterion (p. 46). Performance states what the learner is expected to do in order to be considered competent. Condition describes the condition in which the performance is to occur. Criterion identifies how well the learner must perform in order to be considered competent (Mager, 1997, p. 46).

- Development: In the development stage, materials are produced and authored. Due to time constraints, the course was not fully developed. A module serves as the prototype.

- Implementation: Finally, at this stage the instruction is presented within its real-world setting. Due to time constraints, the project was not fully implemented. A module of the course was prototyped, presented, and evaluated.

- Evaluation: At this stage, certification of student achievement is assessed and the success of the system is evaluated (Main, 1992).

### A.R.C.S

The A.R.C.S. Model, developed by John M. Keller, incorporates the affective domain into instructional design process. According to Keller (2001), four major conditions (Attention, Relevance, Confidence, and Satisfaction) must be met for people to become and remain motivated.

- Attention: This stage involves grabbing the learner's attention and maintaining it throughout the learning experience. According to Keller (2001), before learning can take place you must first, at the beginning of a learning event, gain the learner's attention and sustain attention throughout the duration of the lesson: "the goal is to find a balance between boredom and indifference versus hyperactivity and anxiety."

- Relevance: Relevance answers the "why?" question. According to Keller, the most effective and direct way to do this is to "inform the learner of the importance of the learning outcome to some desired state or goal" (as cited in Main, 1992).

- Confidence: This stage is related to the learner's expectancy of success and, according to Keller (2001), can influence the learner's persistence and accomplishment.

- Satisfaction: This stage relates to overall satisfaction of the learning experience. According to Main (1992), satisfaction comes from achieving performance goals.

- Feedback: A key component of the Integrated Instructional Design Model is feedback throughout the planning and development of the project (Main, 1992).

According to Main (1992), validation and feedback should be integrated throughout every phase of the Integrated Instructional Design Model through formative evaluation.

- **Integrated Instructional Design Model:** This model combines the Military's A.D.D.I.E. model and Keller's A.R.C.S Model of Motivation (Main, 1992). The Integrated Instructional Design Model was selected for this project not only because of its systematic approach to design and development but also for its motivational component. Motivation is a key component in changing a learner's attitudes toward migrant adolescent farmworker health.

An illustrated concept of how both models are integrated is shown in Table 1.

Table 1

*Integrated Instructional Design Model*

	Phases of Instructional Design				Validation/Feedback
	Analysis	Design	Development	Implementation	
Affective Domain					
Attention					
Relevance					
Confidence					
Satisfaction					

In this model, A.D.D.I.E. is used in combination with A.R.C.S., which is weaved throughout every phase of the instructional design process. The final cell is Validation/Feedback, which occurs throughout the entire process (Main, 1992).

In order to assure the instructional soundness of the course, an evaluation of the prototype was conducted using Kirkpatrick's four levels of evaluation: Reaction,

Learning, Behavior, and Results (Kirkpatrick and Kirkpatrick, 2006, p. 21). Due to the time constraints of the project, clinicians could evaluate only at the first two levels, Satisfaction and Learning. The survey measured the clinicians' satisfaction with the course. An online quiz immediately at the conclusion of the course assessed to what degree the clinicians acquired the intended information.

### Distance Learning and Clinician Education

In Cobb's study (as cited in Harden, 2005, p. 45), "internet [medical] continuing education is gaining in popularity, and most participants are satisfied with the experience and find it to be an effective learning format." "e-Learning is providing in CME [Continuing Medical Education] a bridge between the cutting edge of education and training and outdated practices embedded in institutions and professional organizations" (Harden, 2005, p. 45). Today, not only is it common for clinicians to have their own personal computers but it is also common to find computers in clinical settings. According to Bennet, Casebeer Kristofco, and Strasser, (as cited in Harden, 2005, p. 45), computers are readily available in most physicians' homes and workplaces and are influencing physicians' Internet information-seeking behaviors." Harden (2005) adds that "technological developments, in particular the rapid growth of the Internet and e-learning, are altering the nature of CME, and opportunities offered in providing impossible to resist" (p. 45).

## CHAPTER III

### METHODOLOGY

#### Introduction

The methodology used for the development of this project was Dr. Robert G. Main's Integrated Instructional Design Model. There are ten steps to this method: Analysis, Design, Development, Implementation, Evaluation, Attention, Relevance, Confidence, Satisfaction, and Feedback (Main, 1992). This chapter will outline in detail how each step was implemented in the development of this project.

#### Analysis

In beginning this project, it was important to establish the state of current performance and identify where that performance needed to be. This was accomplished through analyzing training needs, user analysis, and performance analysis.

First, a comprehensive literature review was conducted as part of the needs assessment, to determine the extent of the problem and the scope of the project.

Next, a performance analysis was carried out to uncover, more precisely than the needs assessment did, what the performance problem is, who it affects, how it affects them, and what results are to be achieved by the training. This was executed through a key informant group and consultations.

The key informant group consisted of an advisory committee of five clinicians with expertise in pediatric medicine, occupational and environmental medicine, migrant health, primary health care, provider education, and outreach to hard-to-reach vulnerable populations. The advisory committee met through teleconference. They were questioned on relevant characteristics of the learner, the performance problem, how it affects clinician performance, the results to be achieved by the training, current learning settings, and course assessment and evaluation (See Appendix A for key informant group results).

In order to identify critical tasks and media design opportunities, a learner analysis had to be conducted to meet the audiences' diverse cultural, social, and educational backgrounds. Emphasis is put on adult learning theories and motivational theories. The context analysis allows design for the environment in which the instructional product will be delivered. It is important to understand under what circumstances an instructional solution will be administered so advantage can be taken of all resources and the solution can address any barriers that might arise.

This analysis uncovered what the learner needs to know and do, determined actual content, context, and delivery that will suit the learner needs, how to assess learning requirements, and how to evaluate course effectiveness.

During the interview hand-written notes were taken. Once the interview was finished, the notes were transcribed and analyzed for commonalities and key information. Consultations were later conducted with two subject matter experts as follow-up to the key informant interview.

The results of the literature review, key informant interview, and subject matter expert consults were used to (1) establish what kind of training will close the

performance gap, (2) develop learning objectives, (3) design activities, and (4) create evaluation tools.

### Design

The design phase was driven by the products of the analysis phase. The design phase consisted of three parts: writing performance objective statements, developing performance measurements, and sequencing performance objectives.

Learning objectives form the basis for what needs to be learned, how well it is to be performed, and under what condition it is to be performed. Instructional objectives were developed using information gathered from the key informant group, then reviewed and approved through consultations with the subject matter experts. Learning objectives were designed to identify the knowledge, skills, attitudes, and abilities that need improvement in order to achieve the instructional solutions goal.

For the purpose of this project module one was developed and the learning objective for this module was simplified. Module objective: identify three characteristics that make migrant adolescent farmworkers a uniquely vulnerable population.

Once the learning objectives were established and approved by the subject matter experts, the performance measures were drawn out. The assessment questions were designed to test the learner's mastery of the learning objectives. The result was a criterion-referenced assessment. Subject matter experts were consulted for review and approval of assessment questions.

The assessment questions are listed in Figure 1. The assessment tool can be seen in Appendix F and results viewed in Chapter IV.

1. Identify three characteristics that make adolescent migrant farmworkers a uniquely vulnerable population. [Correct answers in bold.]

- Working in agriculture
- Adolescence
- Country of origin
- Ethnicity
- Migration pattern
- Migrant status

2. Match the following risks with the corresponding migrant adolescent farmworker vulnerability.

Risk	Vulnerability
Adolescent migrant farmworkers with limited English speaking ability may be unable to read important written instructions or to understand verbal orders when working in agriculture.	Migrant status Adolescence Working in agriculture Ethnicity Country of origin Migration pattern
Migrant adolescent farmworkers are legally permitted to work at younger ages and work for longer periods of time than any other industry.	Migrant status Adolescence Working in agriculture Ethnicity Country of origin Migration pattern
Teens experience rapid growth of organ and musculoskeletal systems, which may make them more likely to be harmed by exposure to hazardous substances or to develop cumulative trauma disorders.	Migrant status Adolescence Working in agriculture Ethnicity Country of origin Migration pattern

Figure 1. Assessment tool to test the learner's mastery of learning objectives.

Additionally, an evaluation questionnaire consisting of an attitudinal survey was designed to measure the clinicians' and policy advisors' response after viewing the prototype. Topics identified by the key informant group and consultants were used as the basis for the questions. The A.R.C.S. Module was also used to develop some of the questions to measure the learners' motivation or intent to behave. The final evaluation questions were reviewed and approved by the subject matter experts.

The evaluation questions are listed below. Participants were asked if they strongly agreed, agreed, disagreed, or strongly disagreed with a given statement. The evaluation tool can be seen in Appendix H and results viewed in Chapter IV.

1. The module was presented in a clear and thoughtful manner.
2. The materials directly related to the objectives.
3. I found the module to lack valid information.
4. The module was easy to navigate.
5. This module was long and boring.
6. The interactive elements of the course were effective.
7. The use of mixed media (graphics, animation, audio) was effective.
8. The course maintained my attention.
9. I am confident I can use or apply this information.
10. I am satisfied with my module experience.
11. I feel my understanding of the unique vulnerabilities of adolescent migrant farmworkers has increased after experiencing this module.
12. I recommend this course be fully developed.
13. What did you like best about the module?

14. What did you like least about the module?

15. Additional Comments: Feel free to expand/comment on your answer to any of the questions above as you feel necessary.

The final step in the design phase was the sequencing of the performance objectives. For this project general-to-specific sequencing was used. This sequencing method allowed for an overview of migrant adolescent farmworker health, then the ability to drill down to specific information relevant to migrant health clinicians and their ability to provide effective healthcare. What resulted from sequencing was a directive for prototype development of module one and a blueprint for future development of the course in its entirety.

### Development

Using the learning objective for module one as a guide, it was time to start the development phase. Here instructional strategies were specified, including the prototype's instructional, visual, and technological strategies. Strategies will be implemented to ensure that the courses provide practice opportunities and feedback to increase retention and transfer of knowledge to the workplace.

Given information from the key informant group, e-learning was identified as the appropriate instructional strategy for the development of the project prototype. Among its benefits, e-learning (1) delivers content consistently, (2) is flexible in its delivery in terms of time and place of learning, and (3) allows that all characteristics identified by the key informant group as important issues can be addressed when developing the prototype for clinicians as the learner audience.

First, a storyboard was developed to illustrate how the content was to be sequenced, how instructional activities flowed, and how media would be involved. The content of the storyboard was then chunked into smaller “parts,” building a larger coherent module. The storyboard also included the voiceover audio script for the module.

The storyboard was then reviewed and revised by subject matter experts. Once revisions were complete, subject matter experts again reviewed and approved the storyboard before it was finalized. The storyboard used can be seen in Appendix B.

Media was used to supplement the content and increase retention. Once the storyboard was approved, audio scripts were recorded and edited. Graphics and photographs were collected from various sources, including the Migrant Clinicians Network.

Adobe Captivate© was chosen as the software for course development because of its flexibility and simple navigation. First, the course was produced using Microsoft PowerPoint©; this included images, graphics, photographs, text, and some simple animation components. The finished product was then imported into Adobe Captivate© where audio was then incorporated, navigation was configured, and course functionality was automated. Open navigation was used in the development of the course, allowing learners to jump between sections in a non-linear fashion. The prototype was reviewed and revised as needed by the subject matter experts. Once revisions were made, the prototype was reviewed and approved before being finalized. The end result was the instructional courseware: media and its full content. Screenshots of the prototype are included in Appendix I.

## Implementation

With the prototype ready, the learning environment was prepared. Due to time constraints, a full launch of this project has not yet occurred.

Moodle© was identified as the learning management system for prototype delivery, administration, and documentation of course participation. The course was implemented and offered using the Migrant Clinicians Network Online Learning Portal. The portal uses Moodle©. Ease of use and familiarity among clinicians working with the Migrant Clinicians Network and its varied functionalities played a role in choosing Moodle© as the logistical support system in implementing this project.

Instructions for course evaluation were included on the homepage of the course for easy viewing. Informed consent was also input directly on the homepage for acknowledgement. A screenshot of the course homepage can be seen in the appendix section (See Appendix D).

Moodle's Quiz tool© was used for implementing and tracking the results of the assessment. A screenshot of the tool can be seen in the appendix section. Moodle's Questionnaire tool© was used for the implementation and tracking of results for the attitudinal survey. A screenshot of the questionnaire can be seen in the appendix area.

## Evaluation

Due to time constraints, a full launch of this project has not yet occurred. The prototype was assessed for evaluation purposes. Four clinicians and policy advisors identified as serving immigrant and underserved communities were asked to evaluate the pilot course offered through the Migrant Clinicians Network Online Learning Portal. The

pilot course was offered to four clinicians and policy advisors identified as serving in immigrant and underserved communities.

In order to assure the instructional soundness of the course an evaluation of the prototype was conducted using Kirkpatrick's four levels of evaluation: Reaction, Learning, Behavior, and Results. Due to the time constraints of the project, clinicians could evaluate at only the first two levels: Satisfaction and Learning.

Participants were contacted individually through e-mail and given a unique username and password to log into the Learning Management System (LMS). Simple instructions were provided: (1) View module prototype, (2) Test your knowledge of Content, (3) Evaluate the prototype.

Participants accessed the prototype remotely, on their own time, and viewed the course at their own pace and location of their choice.

After viewing the prototype, participants were prompted to "Test Their Knowledge." This assessment uncovered if objectives were met. Following the knowledge check, participants were asked to evaluate the prototype. This questionnaire measured the clinicians' satisfaction with the course.

The instruments that were used, as well as the results of the formative assessment, can be seen in Chapter IV.

#### Attention

Throughout the instructional Design Process, motivation was incorporated in the form of the A.R.C.S. Model.

First, audio was used throughout the module in the form of voiceover. The voiceover served as another method of illustrating the module content. The visual display of the module played a key part in gaining the learners' attention. The content was illustrated using graphics and photographs. Animation served to highlight important topics in the course content. The course also made use of interactive activities where learners were allowed to explore additional content.

### Relevance

An important catalyst for motivation is relevance. When working with adults it is necessary to show the connection made between the project and the learner's life. The key informant group identified specific training needs from which course content was developed. Clinicians may not be familiar with the actual jobs that migrant adolescent farmworkers perform on the job and the health risks associated with performing those jobs. This project was designed to focus attention on the environmental and occupational health risks faced by migrant adolescent farmworkers and how those factors make them a uniquely vulnerable population. In addition, it was developed to heighten the clinicians' awareness of symptoms related to occupational health hazards.

### Confidence

Confidence was built into this system in more than one way. The level of learning that takes place is not too simple as to make the content discussed irrelevant to clinicians; content is delivered in a serious tone and vocabulary relevant to the learner. E-learning itself has built-in confidence boosters. E-learning allows learners to access content at any time and experience learning at their own pace. The course design

included interactive components that allowed learners to explore content in a non-linear fashion. Knowledge checks helped the learners get a good look at where they stood in mastery of the module content.

### Satisfaction

According to Keller (2001), learners must feel satisfied with their learning experience, meaning that they must be able to relate to the lesson in order to retain the information within the content. The learners' satisfaction with the prototype has been measured in the evaluation stage. The evaluation revealed learners who had viewed the prototype were satisfied with the module, content, and learning. Satisfaction was gained first by gaining the learners' attention, maintaining it, and assuring content was relevant to their profession, thus instilling confidence in them.

### Feedback

Feedback was integrated at every stage of the Integrated Instructional Design Model. Subject matter experts were consulted at every critical step to review and confirm accuracy of the module content. Collecting formative evaluation information throughout the project maintained the integrity of the project, and it also made certain no major change would be necessary.

## CHAPTER IV

### RESULTS

#### Introduction

In February 2010, a focus group in the form of a key informant group met through teleconference. The five focus group participants included clinicians, pediatricians, and policy advisors. The focus group served as a needs assessment to unveil key information for the design and development of the learning module.

The results of the focus group are below.

- In order for the course to be successful, clinicians will need to buy into the tool.
- The goal of the course is to raise the clinicians' awareness and knowledge about adolescent migrant farmworkers and to motivate them to want to use risk assessment. Motivation is key. This includes information that differentiates the needs of adolescent patients vs. other patients, including adolescent development as it intersects with the workplace.
- Clinicians should discuss exposure history: Why should the clinicians want to take an occupational history? Why is it important?
- Clinicians need to be reminded what a worker's ability is to take control or address hazards in the workplace. This includes discussion over regulations and their unique vulnerabilities and their ability to take control.

The course should include resources that are practical and readily available. Current resources for clinicians' use include Pub-med, Up-to-date, and Web-MD.

- Course should include case-based training. For example, a child comes in with a profile from the assessment tool. The clinician is then taken through the process of a health history discussion and next steps.

Finally, the prototype that had been developed was piloted with a group of four clinicians and policy administrators. Upon completing the prototype learners were given an attitudinal questionnaire about the module. The questionnaire was designed at level one evaluation, to calculate the learners' reaction to the prototype.

### Evaluation

Before the completion of the project, it was necessary to conduct an evaluation as requested by the committee. Due to time constraints the project was tested at level one, Satisfaction. For the evaluation, the prototype was presented to four clinicians. The clinicians were given an attitude survey at the completion of the module to measure their satisfaction with the course.

The evaluation questions for the pilot test are listed below. For each question, the participants were asked to state whether they strongly agreed, agreed, disagreed, or strongly disagreed with the statement. After the questionnaires were collected, the data was correlated by giving each answer a number between one and four. Questionnaire answers were recorded into an Excel spreadsheet and numbers were averaged out to determine if the participants agreed or disagreed with the statements. The data was coded for positive feelings toward the project. The results are listed in Table 2.

Table 2

*Evaluation Results*

Responses	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Strongly Agree	3	3	3	0	2	0	2	3	3	3	2	2	3
Agree	1	1	1	0	1	0	1	1	1	1	1	1	1
Disagree	0	0	0	2	1	1	0	0	0	0	1	1	0
Strongly Disagree	0	0	0	2	0	3	1	0	0	0	0	0	0
Q 14	<p>Visually attractive--great photos and graphics</p> <p>I think you're on the right track. I like the mix of photos, graphics, etc. You may want to consider the level of information being offered. It seems very basic to me. You may want to evaluate whether others who are not trained in peds think about the level of complexity.</p> <p>Wonderful integration of your voice with the visuals. Liked the variety with newspaper, photos, real displays of adolescents at work. Nice pace. Liked the interactive piece but it could have been more interactive and more detailed or specific.</p> <p>Kept my attention, love the interactive elements.</p>												
Q15	<p>No complaints!</p> <p>The contrast of the graphics for the interactive section were such that I could not read the content. I also didn't know how to move forward once the graphic popped up. Would a close button make it clearer?</p> <p>Stayed at a pretty superficial level. How many adolescents are at risk? Boys more than girls? What are the chief hazards they face—specifically? Violence, falls, lack of pay, stress, etc.? Maybe this is for later modules—if so, give the viewer a hint that more details can be either drilled down or will be in future sessions.</p> <p>The Interactive elements exploring specific risks for adolescents was well designed, but the darker colors made the text hard to read on the three interactive elements. It wasn't super clear how to get from the quiz to the evaluation.</p>												
Q16	<p>I mis-navigated in the section that discussed the 3 aspects of adolescence—didn't notice the X in the first box and returned to the previous window... Really nicely done, Laura!</p> <p>Laura best wishes with your project. Contact me if you would like clarification of my responses or comments. Susan</p> <p>Thanks so much! This will be far superior to the traditional ppt sort of lecture we give and receive.</p> <p>It is really great! Can't wait to see the rest!</p>												

- I found the module content to be useful and relevant.
- The module was presented in a clear and thoughtful manner.
- The materials directly related to the objectives.
- I found the module to lack valid information.
- The module was easy to navigate.
- This module was long and boring.
- The interactive elements of the course were effective.
- The use of mixed media (graphics, animation, audio) was effective.
- The course maintained my attention.
- I am confident I can use or apply this information.
- I am satisfied with my module experience.
- I feel my understanding of the unique vulnerabilities of adolescent migrant

farmworkers has increased after experiencing this module.

- I recommend this course be fully developed?
- Comments
- What did you like best about the way the module was presented?
- Is there anything about the module that you would change to improve it?
- Additional Comments: Feel free to expand/comment on your answer to any of

the questions above as you feel necessary. Please include the question number.

### Analysis

- When the participants were asked if they found the module content to be useful and relevant, an average of 3.5 was returned, informing us that overall, the group agreed that the information was useful.
- When asked if the module was presented in a clear and thoughtful manner, participants agreed and answered with the average of 3.5.
- The third question asked if the material directly related to the objectives. The average of the response was 3.5.
- When the participants were asked if they found the module to lack valid information, respondents returned an average of 1.5.
- When asked if the module was easy to navigate, the respondents disagreed, with an average of 2.5.
- In question six, when participants were asked if the module was long and boring, the average response was 1.5.
- When asked if the interactive elements of the course were effective, the participants disagreed, with an average of 2.5.
- When asked if the mixed media such as graphics, animation, and audio was effective, the average response was 3.5.
- In question nine, when the participants were asked if the course maintained their attention, the average score was 3.5.
- With an average of 3.5, participants agreed when asked that they were confident in using or applying the information.

- When asked if the participants were satisfied with the module experience, the respondents agreed, with an average score of 3.
- When asked if the participants' understanding of the unique vulnerabilities of adolescent migrant farmworkers had increased after experiencing the module, respondents agreed, with an average score of 3.
- When asked if the participants recommended the course be fully developed they agreed, with an average score of the 3.5.
- When participants were asked what they liked best about the module, participants agreed that they liked the use of mixed media, specifically identifying the graphics and images.
- When participants were asked what they liked least about the module, respondents indicated that the contrast in the interaction was such that they could not easily read the content. In addition, the controls of the interaction were not easily seen.
- On the last question, when asked for additional comments, respondents once again identified the navigation issue within the module interaction.

What did you like most?

- Visually attractive—great photos and graphics
- I think you're on the right track. I like the mix of photos, graphics, etc.
- You may want to consider the level of information being offered. It seems very basic to me. You may want to evaluate whether others who are not trained in peds think about the level of complexity.

- Wonderful integration of your voice with the visuals. Liked the variety with newspaper, photos, real displays of adolescents at work. Nice pace. Liked the interactive piece but it could have been more interactive and more detailed or specific.

- Kept my attention, love the interactive elements.

What did you like least?

- No complaints!
- The contrast of the graphics for the interactive section were such that I could not read the content. I also didn't know how to move forward once the graphic popped up. Would a close button make it clearer?

- Stayed at a pretty superficial level. How many adolescents are at risk? Boys more than girls? What are the chief hazards they face—specifically? Violence, falls, lack of pay, stress, etc.? Maybe this is for later modules—if so, give the viewer a hint that more details can be either drilled down or will be in future sessions.

- The Interactive elements exploring specific risks for adolescents was well designed, but the darker colors made the text hard to read on the three interactive elements. It wasn't super clear how to get from the quiz to the evaluation.

Additional comments.

- I mis-navigated in the section that discussed the 3 aspects of adolescence—didn't notice the X in the first box and returned to the previous window... Really nicely done, Laura!

- Laura best wishes with your project. Contact me if you would like clarification of my responses or comments. Susan

- Thanks so much! This will be far superior to the traditional ppt sort of lecture we give and receive.

- It is really great! Can't wait to see the rest!

### Main Ideas

- The group found the content covered to be useful, relevant, and full of valid information, yet one participant suggested the content might be basic. It is recommended that the module content be reviewed again to identify opportunities to add higher level learning opportunities.

- The participants agreed that the module had a difficult navigation system, specifically having to do with interactions. It is recommended a help button be added to the interaction to assist the learner through interactive transitions.

It is recommended that the pilot be retested.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Introduction

This chapter presents a summary of the research done in the analysis, design, development, implementation, and evaluation of this learning module, “A Vulnerable Population.” It highlights the key points and topics researched during the design and development of this project. Recommendations for the use of the module as well as areas for further research are also discussed.

#### Summary

Agriculture ranks among the most hazardous industries, according to the National Institute for Occupational Safety and Health (Centers for Disease Control and Prevention (CDC), 2009). In 2006, an estimated 23,100 children and adolescents were injured on farms; 5,800 of these injuries were due to farm work (CDC, 2008). Still the Fair Labor Standards Act continues to provide less protection for adolescent farmworkers than for those who work in other industries (Davis, 1997, p. 2).

Many employers may see adolescent farmworkers as a benefit because of their perceived agility, flexibility, and size. On the contrary, the National Adolescent Farmworker Occupational Health and Safety Advisory Committee found that, in fact,

adolescent bodies are in a developmental state with potentially different susceptibility to hazards than mature bodies. Research by the National Institute for Occupational Safety and Health (2004) finds that “young workers are generally believed to be at increased risk of occupational injury owing to their limited job knowledge, training, and skills,” adding “physical and psychosocial factors may also place young workers at increased risk.”

In response to the dangerous health concerns surrounding migrant adolescent farmworkers, it has been decided that a course be developed to help educate clinicians on the environmental and occupational health concerns associated with migrant adolescent farmworkers.

Using the Integrated Instructional Design Model developed by Robert G. Main (1992), a module was designed and developed to test with clinicians.

The first step in development of this module was a comprehensive literature review as part of the performance analysis, to determine the extent of the problem and the scope of the project. Next a needs assessment was carried out using a key informant group. The group consisted of an advisory committee of five clinicians with expertise in pediatric medicine, occupational and environmental medicine, migrant health, primary health care and provider education, and outreach to hard-to-reach vulnerable populations.

The next phase in the Integrated Instructional Design model was design. The results of the literature review, key information interview, and subject matter expert consults were used to establish the need for training and to develop the learning objectives and activities during the design phase.

Next was the development phase where the course content was developed and prepared, learning materials were defined, and exams were prepared. The learning module has been designed as part of a course.

The next phase in the process was implementation and, finally, evaluation. The learning module was launched online, where clinicians reviewed the module then evaluated the prototype.

### Conclusion

Small changes were made to the prototype at the conclusion of the evaluation phase, developing it into a learning module. The module was designed as a part of a larger course within the clinical setting to educate clinicians serving in migrant health centers on the environmental and occupational health concerns of migrant adolescent farmworkers. The learning module is appropriately called “A Vulnerable Population”. Screenshots of the module can be viewed in Appendix H.

### Recommendation

The learning module presented can be used in a number of different settings. It is recommended the module be distributed to professors in several different academic areas. Some of the subject areas this module could be used are physical education, physiology, health, communications, psychology, education, agriculture, and nursing programs.

Additionally, this course can be used in conjunction with public health initiatives to teach not only migrant health clinicians, but also promotores and

promotoras, community members who promote health education, leadership, peer education, support, and resources (Migrant Health Promotion, 2011).

It would also be an effective tool in the instructional design field. Public health initiatives and the instructional design process will collaborate to show how that strategy can be used in a wide variety of projects. The approach used in this project can be adapted in a variety of settings and used to educate in a number of social issues concerning underserved populations, such as smoking, drug use, and homelessness.

Due to time constraints, the scope of the project was limited to one 15-minute module. It is recommended that this module be further researched and developed into its entire course.

#### Suggestions for Further Research

Upon completing the prototype evaluation of learning module “A Vulnerable Population,” changes to the module based on the data uncovered are indicated. It is recommended that the remaining two modules be developed, implemented, and evaluated to test the content of the module and satisfaction among participants.

Two separate implementation studies are also recommended. One study should focus on which subject area the module is best suited for. Ideas for subjects to test include, but are not limited to, agriculture, physical education, education, multi-cultural education, and public health education.

The second study should focus on learners, testing for additional target audiences. It is recommended that the module be tested on other groups to see if it can potentially be used in other areas, such as in universities and community organizations.

Future studies should be longitudinal, measuring long-term effects of the module.

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## APPENDIX A

## STUDY NUMBER 1 – FEBRUARY 2010

### Transcription

Key informant group exercise: Clinicians used as Subject Matter Experts  
February 10, 2010

1. What are the general attitudes of the learners toward the instructional content?
  - a. It is better than the traditional PowerPoint or conference.
  - b. I think more and more clinicians are turning toward online learning but there are benefits and downfalls.
  - c. I agree. Not every topic benefits from online learning.
  - d. Because this topic of adolescent farmworkers is on a general level it would be beneficial to lean toward online instruction.
2. What experience do the learners have in the subject area? Have your employees/audience previously received training in this subject area?
  - a. Clinicians in general do not receive specific training on adolescent migrant farmworkers. Pediatricians of course [receive training].
3. What results should be achieved by clinicians?
  - a. The goal of the course is to raise the clinician's awareness and knowledge about adolescent migrant farmworkers and to motivate them to want to use risk assessment. Motivation is key. This includes information that differentiates the needs of adolescent patients vs. other patients, including adolescent development as it intersects with the workplace.
4. How does the gap affect individuals inside the targeted group?
  - a. In order for the course to be successful, it will require a buy-in into the tool for clinicians to use it.
  - b. Clinicians should discuss exposure history: Why should the clinicians want to take an occupational history? Why is it important?
  - c. Clinicians need to be reminded what a worker's ability is to take control or address hazards in the workplace. This includes discussion over regulations and their unique vulnerabilities and their ability to take control.
  - d. The course should include resources that are practical and readily available. Current resources clinicians use include Pub-med, Up-to-date, and Web-MD.
  - e. Course should include case-based training. For example, a child comes in with a profile from the assessment tool. The clinician is then taken through the process of a health history discussion and next step.

5. What are the risk factors for adolescents working in agriculture?
  - a. Language barriers.
  - b. Underreporting of injuries.
  - c. Using equipment designed for adults.
  - d. Easily fatigued.
  - e. Regulatory assumptions – lack of regulation.
  - f. I suggest the addition of questions related to sexual harassment in the workplace: a recent survey by the Maine Department of Labor found that 1/3 of teens in a variety of work settings reported that they had been sexually harassed.
6. Why are adolescent farmworkers more vulnerable?
  - a. Adolescents are more vulnerable because of biological and developmental stage coupled with poor regulatory protections in agriculture.
  - b. Perception of hazards differ.
  - c. Inexperience.
  - d. Adolescents traveling as “emancipated minors” or unaccompanied by an adult. Not only do these adolescents often face legal documentation status issues, but may also experience a lack of social support.
  - e. Cognitive developmental level.
  - f. Performing tasks that are inappropriate for their age.
  - g. Use of equipment designed for adult-size individuals.
  - h. Lack of physical maturity and strength.
  - i. More easily fatigued.
  - j. Regulatory exemptions for child/teen agricultural workers.
7. Other concerns mentioned by advisory council members included:
  - a. Teens working involuntarily.
  - b. Teens not in school.
  - c. Adult expectations and child/adolescent perception of how to prove themselves as adults.
  - d. Perception of risk.
  - e. Want to be seen as responsible and competent.
  - f. Doing anything they are told; not asking questions; vulnerability issue.
  - g. Lack of control – not only employer-to-employee relationship, but also adult to child.
  - h. Supervision and emancipated minor aspects.
  - i. Briefly discussed the emancipated minor status and determined that if an adolescent is without an adult, they are self-sufficient and are functionally adults (this may be different state to state – much broader). The adolescent is still a minor under labor laws, but clinically will have access to care. In Maine, except around reproductive health issues, if under 18, adult or family member needs to sign a paper to treat. However, physicians do not abide

by this if the adolescent is alone. Adolescents often just say they are 18 – clinics do not ask for a birth certificate.

8. What role do clinicians play?
  - a. Few programs/studies have involved the clinician. This project could open the door for this conversation. Discussed role of clinicians in NIOSH projects – experience w/ clinicians is that they're impatient with community process. They want to do something, but the community first had to decide where to go. It's a process. By the time it's done the clinicians have moved on.
  - b. Discussed migrant clinicians' "on-the-job" expertise in occupational health because so many of their patients are at an increased risk for occupational injuries or related illness. Varying opinions on this. At the very least, interested in occupational health. Suggested that primary care physicians practicing migrant health care are receptive to practicing good occupational health care and risk assessment/prevention, but not necessarily knowledgeable. The general sense is that clinicians would embrace a tool, and that the general thinking among clinicians is, "I really should be better at this."
  - c. In Oregon clinicians focus agriculture health and safety knowledge to the adult population but with adolescents, talk primarily about violence, drugs, and social pressures. Perhaps they have some assumptions that teens are not in the fields, and thus see other issues as more urgent for teens.
9. Has there been any training similar to what we are trying to achieve?
  - a. WHACS: Developed by the South Carolina state-wide family practice residency program. The instrument was added to an occupational manual for clinicians. The Northeast Center for Agricultural Health and Medicine has been using this for about 10 years. The model has been incorporated into an occupational manual for migrant clinicians. The manual looks at specific crops and health and safety issues related to each crop (MCN website).
  - b. This could possibly be adapted to be more specific to adolescents.
  - c. The format has worked fairly well.
10. Additional Thoughts:
  - a. Are we looking at one broad overarching set of questions that would cover all, or do we feel there should be different sets of content that is more specific to age and/or task?
  - b. Algorithm w/ branches might be helpful. Put into place an algorithm for adolescents and different work scenarios, thus creating a tool that could be modified for different settings?
  - c. How consistent tasks are over certain span of time should be considered.
  - d. Different job-task tools might be too much for a clinician.
  - e. Checklist of common hazards that they might ask about?

11. What are your ideas for online training?
- a. Could click on packinghouse and enter the packinghouse.
  - b. OSHA has teen worker webpage and has virtual work sites.
  - c. Could print a summary so that when adolescent is done with the program, a list of discussion points is generated.
  - d. Patient would be able to take home a printout.
  - e. So if, for example, patient clicks on a ladder, what is the next step? What does it prompt clinician to do?
  - f. Body – what do you wear?
  - g. Throughout the assessment, the avatar could make various statements such as: every 30 seconds, a teen is injured at work; electrical concerns, etc.
  - h. A link to movies, etc.
12. Evaluation and Other considerations:
- a. Validation: Pilot the tool and conduct in-depth interview after someone used tool to validate accuracy of information, the questions asked, clarity of pictures.
  - b. To start, use an initial paper tool, a drawing/picture that would help prompt view as to what risks are encountered and what protection is needed (shirt, hat, eye/ear protection).
  - c. Will something be missed by using a computer-based tool rather than something simpler? Will something be missed in terms of interaction between patient and computer rather than patient and clinician?
  - d. A virtual “walk through a farm” could prompt memory better than asking, what do you do and how do you do it? (An individual may not be very expressive).
  - e. Cultural shift of not interacting with the provider.
  - f. The program could change based on language, nuances of language based on patient’s country of origin.

## APPENDIX B

## STORYBOARD

Course

### The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.

#### Introduction

##### Part 1: Across the Headlines



- A 17-year-old girl dies of heat exhaustion in California.
  - A 9-year-old boy dies when accidentally run over by a truck his father was driving while harvesting blueberries in Michigan.
  - A 17-year-old girl in Oregon suffers injuries in farm accident involving a power takeoff shaft
- A girl in California was repeatedly raped by her supervisor, but had the courage to report the abuse despite retaliation from the company.
- A 7-year-old boy is injured when he was run over by a tractor just hours after completing a farm safety course.

Each year, headlines like these appear on our local news and in newspapers, documenting the hazards facing young farmworkers. The articles, however, do not tell us the important role of the clinician in understanding and assessing the risks faced by young workers in agriculture and helping to prevent injuries, exposures and deaths.

#### Action

Learner clicks "Next" button.

Source: Hopewell, J. (2011). Migrant Clinicians Network. Retrieved from <http://www.migrantclinician.org/>

Source: Microsoft. (n.d.) Images. Rows of agricultural crops on a farm. Retrieved from <http://office.microsoft.com/en-us/images/results.aspx?qu=farm#ai:MP900400763|mt:2|>

## 66.10

### The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.

#### Introduction

#### Part 2: Course Learning Objectives

By the end of this lesson, you will be able to:

- Identify unique vulnerabilities of migrant adolescent farmworkers
- Recognize common tasks/jobs performed by migrant adolescent farmworkers and the health concerns related to these tasks/jobs.
- Understand the importance of recognizing occupational and environmental injury, illness, and exposures in the context of patient care
- Know how to use a simple tool to help rapidly recognize the tasks and the health risks associated with these tasks.
- Discuss environmental and occupational health resources available for healthcare providers.



Welcome, my name is Laura Moore and I will be taking you through the course **Reducing Adolescent Risk through Interactive Assessment**. This course is brought to you by the Migrant Clinicians Network in collaboration with the National Children's Center for Rural Agricultural Health and Safety.

In this course we will discuss the unique vulnerabilities of migrant adolescent farmworkers, help you become familiar with common tasks performed by migrant adolescent farmworkers, and assist you in understanding the importance of recognizing occupational and environmental injuries, illnesses, and exposures in the context of patient care. Finally, we will introduce you to a simple tool to help rapidly recognize health risks associated with the tasks performed by your adolescent farmworker patients.

Before we get started, let's review the following page that discusses your role in this course.

#### Action

Learner clicks "Next" button.

Co.100

## **The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.**

### **Introduction**

#### **Part 3: Your Responsibility**

- **Participate** - Your active participation will make the course much more effective.
- **Complete** - This course offers you your set of instruction.
- **Assess** - Please complete the final assessment to help us see any changes in knowledge
- **Evaluate** - Please give us your feedback and fill out a brief course evaluation.



Working in agriculture offers many benefits for adolescents such as being introduced to the importance of a strong work ethic, learning new skills and responsibilities, and earning money. However, agriculture is one of the hazardous occupations and there are significant risks associated with agriculture, particularly for youth. Despite the dangers of agriculture, federal and state laws provide less protection for adolescents working in agriculture than they do for adolescents working in other industries.

In this module, we will explore the three distinct characteristics that make migrant adolescent farmworkers a uniquely vulnerable population.

When you are ready, continue to the following page.

### **Action**

Learn more about us

Source: Microsoft. (n.d.) Images. *Female nurse standing and smiling wearing scrubs.*  
Retrieved from <http://office.microsoft.com/en-us/images/results.aspx?qu=nurse&ctt=1#ai:MP900409080|mt:2>

Go to

## **The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.**

### **Module 1: A Vulnerable Population**

#### **Part 1: Learning Objectives**

By the end of this lesson, you will be able to:

- 1) Identify three unique characteristics that make adolescent farmworkers a uniquely vulnerable population.**



Working in agriculture offers many benefits for adolescents such as being introduced to the importance of a strong work ethic, learning new skills and responsibilities, and earning money. However, agriculture is one of the most hazardous occupations and there are significant risks associated with agriculture, particularly for youth. Despite the dangers of agriculture, federal and state laws provide less protection for adolescents working in agriculture than they do for adolescents working in other industries.

In this module, we will explore the three distinct characteristics that make migrant adolescent farmworkers a uniquely vulnerable population.

When you are ready, continue to the following page.

#### **Action**

Learner click next button

Source: Microsoft. (n.d.) Images. *Female nurse standing and smiling wearing scrubs.*  
Retrieved from <http://office.microsoft.com/en-us/images/results.aspx?qu=nurse&ctt=1#ai:MP900409080|mt:2>

## Course

### The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.

#### Module 1: A Vulnerable Population Part 2: Three Unique Vulnerabilities

1. Adolescence
2. Working in Agriculture
3. Migrant Status



Migrant adolescent farmworkers have three distinct characteristics that make them uniquely vulnerable 1) Being an adolescent, 2) Working in agriculture, and 3) Being a migrant.

It is important to understand how these characteristics affect the health of your patient.

Let's look further. When you are ready, continue to the following page to get specific about the characteristics

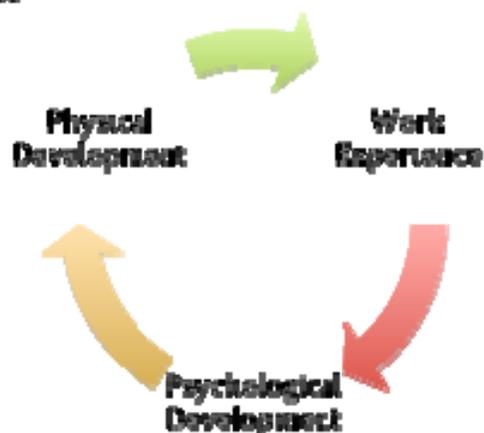
#### Action

Learner clicks "Next" button.

Co. 199

## The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.

### Module 1: A Vulnerable Population Part 3: Adolescence



The characteristics of young workers and the nature of their employment are both factors that increase their risk of injury or illness on the job (NIOSH, 2003).

- 1) Developmental Development
- 2) Psychological Development
- 3) Work & Experience

Now let's take a closer look at adolescence workers. In this interactive diagram you will explore how physical and emotional development combined with lack of work experience are associated with risks for adolescent migrant farmworkers at risk. Click on each one of the three categories to explore each topic in depth.

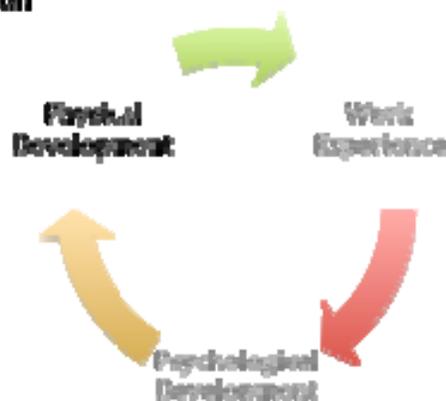
#### Action

Learn more about each topic to learn in depth (interactive). See following page for content.

Co. 10

## The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.

### Module 1: A Vulnerable Population Part 3a: Developmental



Adolescent workers are still physically young and still experiencing rapid growth.

#### Physical Development

- Teens experience rapid growth of organ and musculoskeletal systems, which may make them more likely to be injured by exposure to hazardous substances or to develop cumulative trauma disorders (Bredner & Weil, 1999; Geleb, 2000).
- Teens may lack the experience and physical and emotional maturity needed for certain tasks.
- Teens explore, experiment, and take risks, but lack a sense of vulnerability.
- Teens need more sleep than adults at a time when sleep habits and patterns due to multi-tasking and multiple demands may not be beneficial (Carlock, 2004).
- Teens experiencing growth spurts may get injured as they fail to navigate safely in a hazardous space.

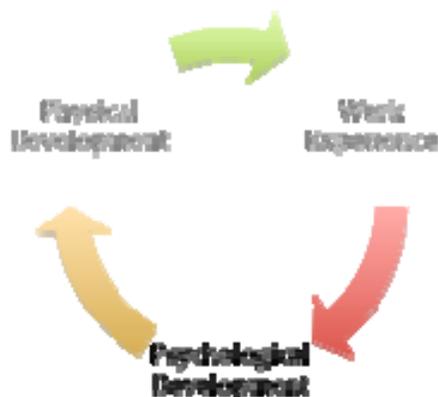
#### Action

Learnier class Physical Development, Chooses most options.

Co. 98

## The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.

### Module 1: A Vulnerable Population Part 3B: Emotional



The adolescent worker may lack the emotional maturity needed for certain tasks on an agricultural work.

#### Psychological Development:

- Teens desire acceptance from adults and peers, and are susceptible to peer pressure, yet want to assert their independence ( "Applied Psychology," 1953).
- Teens may lack the self-confidence and communication skills to effectively question or convey concerns to their supervisors.
- Teens often have limited self-confidence and communication skills, making it more difficult for them to effectively question or convey concerns to their supervisors.
- Teens may lack assertiveness and may be afraid to ask questions or speak up because they are concerned about looking stupid or losing their job.
- Teens are more likely to struggle with subordination and control issues. Sexual harassment, and unfair harassment in general are more likely to occur with younger workers.

#### Action

• Learner class Physical Development, Classroom must option.

Co.10

## The Clinician's Role In Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.

### Module 1: A Vulnerable Population Part 3c. Lack of Experience



Because of their young age, adolescent workers lack relevant work experience needed to perform their job in a safe manner.

#### Work Experience:

- Teens commonly perform tasks outside their usual work assignments for which they may not have received training.
- Teens may be unfamiliar with work requirements and safe operating procedures for certain tasks.
- Teens may trust an adult supervisor will keep them out of harm's way.
- Teens lack of knowledge about work requirements and safe operating procedures for certain tasks.
- Teens May perform tasks outside their usual work assignments for which they may not have received training (Flores, Hagan, Mera et al., 1998).
- Teens may not know their legal rights and may not know which work tasks are prohibited by child labor laws.
- Teens are less likely than adult workers to receive health and safety training on the job.

#### Action

Coerner assess Knowledge and Experience and choose next option.

6.7m

## **The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.**

### **Module 1. A Vulnerable Population Part 4: Working in Agriculture**

- 7 Agriculture ranks among the most hazardous industries in the nation.
- 7 23,100 children and adolescents are injured on farms.

Federal and state laws provide less protection for teens working in agriculture than they do for children working in other industries.



It is well known agriculture ranks among one of the most hazardous industries in the nation, this according to the Occupational Safety & Health Administration. In 2006, an estimated 23,100 children and adolescents were injured on farms. 3,000 of those injuries were due to farm work. And still, the Fair Labor and Standards Act (FLSA) and other state laws provide less protection for children and adolescents working in agriculture than they do for children and teens working in any other industry.

Adolescent workers may work in agricultural settings that would be illegal in other industries. They are legally permitted to work at younger ages, and work for longer periods of time than any other industry. The EPA Environmental Protection Agency, is the agency that is responsible for farmworker protection and pesticide regulation. The EPA does not consider the adolescent characteristics developmental, emotional or lack of work experience in its assessment of chemical risk. Regulations are generally designed considering only use by and exposure to an adult male.

#### **Action**

Learn more about us here.

Source: Pogue, A. (2009). Photographer.

Co. 98

## **The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.**

### **Module 1: A Vulnerable Population Part 3: Migrant Status**

- ❗ **Poor physical health in comparison to general population.**
- ❗ **Limited access to health care and a delay in seeking medical attention.**
- ❗ **Linguistic and cultural barriers**
- ❗ **Limited education and loss of educational opportunities.**
- ❗ **Separation from family and social networks and often parental supervision.**



**In addition to dealing with changes during adolescence, and the challenges of agricultural work itself, adolescent migrant workers face additional barriers due to their migrant status: limited access to health care, linguistic barriers, cultural barriers, limited education as well as loss of educational opportunities and, separation from family, just to name a few.**

**Traditionally, migrants and their families have poorer health compared to the general population. This may be attributed to limited access to health care and a delay in time in actually seeking medical attention.**

**Adolescents with limited English speaking ability, in addition to experiencing social isolation, may be unable to read important written instructions or to understand verbal orders when working in agriculture. The linguistic barrier can be an even greater risk when the worker is requested to perform unfamiliar tasks or carry out more hazardous jobs such as operating machinery or working with chemicals.**

**The largest group of adolescent farmworkers is youth who live away from their families and migrate to work in the United States. About 60% of adolescent farmworkers are emancipated minors living on their own. (Acosta and Lee 2001)**

**Adolescent farmworkers who are emancipated minors are probably the group most at risk. Outside of work they face numerous challenges associated with living in poverty, limited access to health care and education.**

Source: Pogue, A. (2009). Photographer.

Course

**The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.**

For the migrant adolescent farmworkers who remain with their families, they ace the challenge of balancing the demands of school, work and family. Juggling extended work hours and responsibilities along with family responsibilities may result in loss of educational opportunities. This stress in work and family poses sociologic and economic challenges that can affect their health.

Adolescent farmworkers, as is the case with all farmworkers, often have little power to protect themselves from occupational hazards. There are numerous barriers that prevent workers from taking steps to minimize risks. Above all, workers fear losing their jobs and this will hinder them from discussing working conditions and/or work related injuries and illnesses. Clinicians must be aware of such barriers and provide for scenarios that facilitate conversations on occupational health.

We've covered a lot of information so far. We've discussed the risks associated with being an adolescent migrant working in agriculture. Now, it is time for you to assess your understanding that information. Continue to the next page. The following interactive activity will help you assess how well you understand the content we've discussed thus far.

**Action**

Learner clicks next button.

Course

**The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.**

**Module 1: A Vulnerable Population**

**Part 6: Patient Profile Benjamin**

- **No protective equipment**
- **Working with unfamiliar chemicals**
- **Speaks a different language than "field boss."**
- **No previous farm experience**
- **No job orientation**
- **15 years old**
- **Going to school while working in agriculture**



In this Interactive activity you will have an opportunity to assess your understanding of the three key characteristics that make adolescent migrant farmworkers a vulnerable population.

In the following activity, you will learn about a patient's work history. Then you will identify the characteristics that put the adolescent migrant farmworker at risk.

**Action**

**Activity: Module 1, Part 6**

Learner goes through a patient history. The Learner reviews the patient's work history. The Learner is to drag and drop phrases that put the adolescent's health at risk under the correct category.

Source: Microsoft. (n.d) Images. *File folder with documents*. Retrieved from <http://office.microsoft.com/en-us/images/results.aspx?qu=folder#ai:MC900439822|mt:1|>

## 6.40

### The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers.

#### Module 1: A Vulnerable Population Part 7: Summary

##### Contribute to health risks

- 1) Adolescence
- 2) Agricultural work
- 3) Migrant Status



During adolescence, young people are still experiencing a great deal of change, and learning new skills. Add migrant status and a high-risk occupation such as agriculture and it is easy to see the vulnerability of this population. Now that you have a good understanding of occupational health risks of adolescent migrant farmworkers, it's time to discuss the specific tasks adolescent farmworkers perform on the job.

When you are ready, continue to Module 2: Occupational Risk where you will learn about common tasks performed by adolescent farmworkers and the importance of recognizing occupational and environmental injuries, illnesses and exposures in the context of patient care.

Learner clicks next button.

## APPENDIX C

California State University, Chico  
CONSENT FORM

My name is Laura Moreno, and I am a graduate student studying Instructional Technology. For my master's project, I am designing a prototype of a module for clinicians on the occupational health risks of adolescent migrant farmworkers. The final step in designing my prototype is to evaluate the course in the form of a questionnaire. As part of the project, your questionnaire results will be recorded and stored on a secure server. Participation in this questionnaire is completely voluntary, and you may quit at any time without being penalized. There is also no risk or benefit in participating in the interview.

Please indicate below the uses of the questionnaire results to which you are willing to consent. This is completely voluntary. In any use of the questionnaire results, your name will not be identified. Questionnaire results are for my personal use only and will be destroyed upon completion of defense and project write-up.

1. The questionnaire results can be studied by the research team for use in the research project.
2. The questionnaire results can be used for scientific publication.

By continuing, you confirm that you have read the description and give your consent for the use of questionnaire results as indicated above.

## APPENDIX D

# LEARNING MANAGEMENT SYSTEM

**MCN** Migrant Clinicians NETWORK  
MCN Courses > POM

You are logged in as Admin admin: Student (Return to my normal role)

Return to my normal role

## Topic outline

The Clinician's Role in Addressing Occupational Risks of Adolescent Migrant Farmworkers

### Prototype of Module 1: A Vulnerable Population

California State University, Chico  
CONSENT FORM

My name is Laura Moreno and I am a Graduate student studying Instructional Technology at California State University, Chico. For my Master's project, I am designing a prototype of a course module for clinicians on the occupational health risks of adolescent migrant farmworkers. The final step in designing my prototype is to evaluate the module in the form of a questionnaire.

As part of the project, your questionnaire results will be recorded and stored on a secure server. Participation in this questionnaire is completely voluntary, and you may quit at any time without being penalized. There is also no risk or benefit in participating in the questionnaire.

Below are the uses of the questionnaire results to which you would consent to. This is completely voluntary and up to you. In any use of the questionnaire results, your name will not be identified. Questionnaire results are for my personal use only and will be destroyed upon completion of defense and project write-up.

1. The questionnaire results can be studied by the research team for use in the research project.
2. The questionnaire results can be used for scientific publication.

**By continuing, you confirm that you have read the description above and give your consent for the use of questionnaire results as indicated above.**

### 1 Let's Get Started! Easy as 1-2-3

1. Start Prototype: Module 1
2. Test your knowledge
3. Evaluate the Prototype

### Your Steps!

1. Start Prototype: Module 1
2. Test your knowledge
3. Evaluate the Prototype

### Administration

- Profile

You are logged in as Admin admin: Student (Return to my normal role)

[Home](#)

Validate HTML    Section 508 Check    WCAG 1.0.3 Check

## APPENDIX E

## ASSESSMENT QUESTIONS

1. Identify three characteristics that make adolescent migrant farmworkers a uniquely vulnerable population. [Correct answers in bold.]
  - a. **Working in agriculture**
  - b. **Adolescence**
  - c. Country of origin
  - d. Ethnicity
  - e. Migration pattern
  - f. **Migrant Status**
2. Match the following risks with the corresponding migrant adolescent farmworker vulnerability.

<b>Risk</b>	<b>Vulnerability</b>
Adolescent migrant farmworkers with limited English speaking ability may be unable to read important written instructions or to understand verbal orders when working in agriculture.	Migrant Status Adolescence Working in Agriculture Ethnicity Country of Origin Migration Pattern
Migrant adolescent farmworkers are legally permitted to work at younger ages and work for longer periods of time than any other industry.	Migrant Status Adolescence Working in Agriculture Ethnicity Country of Origin Migration Pattern
Teens experience rapid growth of organ and musculoskeletal systems, which may make them more likely to be harmed by exposure to hazardous substances or to develop cumulative trauma disorders.	Migrant Status Adolescence Working in Agriculture Ethnicity Country of Origin Migration Pattern

## APPENDIX F

# TEST YOUR KNOWLEDGE MODULE

## ASSESSMENT

### 2. Test your knowledge

1

Marks: 3

Identify three factors that make adolescent farmworkers a uniquely vulnerable population.

Choose at least one answer.

- a. Working in Agriculture
- b. Adolescence
- c. Country of Origin
- d. Ethnicity
- e. Migration Pattern
- f. Migrant Status

2

Marks: 3

Match the following risks with the corresponding migrant adolescent farmworker vulnerability.

Adolescent Migrant Farmworkers with limited English speaking ability may be unable to read important written instructions or to understand verbal orders when working in agriculture.

Migrant adolescent farmworkers are legally permitted to work at younger ages, and work for longer periods of time than any other industry.

Teens experience rapid growth of organ and musculoskeletal systems, which may make them more likely to be harmed by exposure to hazardous substances or to develop cumulative trauma disorders.

- Choose...
- Choose...
- Choose...

Save without submitting Submit all and finish

You are logged in as Admin admin: Student (Return to my normal role)

FOM

## APPENDIX G

## MODULE EVALUATION QUESTIONS

Please read the following carefully and answer truthfully using the following scale: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

1. I found the module content to be useful and relevant.
2. The module was presented in a clear and thoughtful manner.
3. The materials directly related to the objectives.
4. I found the module to lack valid information.
5. The module was easy to navigate.
6. This module was long and boring.
7. The interactive elements of the course were effective.
8. The use of mixed media (graphics, animation, audio) was effective.
9. The course maintained my attention.
10. I am confident I can use or apply this information.
11. I am satisfied with my module experience.
12. I feel my understanding of the unique vulnerabilities of adolescent migrant farmworkers has increased after experiencing this module.
13. I recommend this course be fully developed.

### Comments

14. What did you like best about the way the module was presented?
15. Is there anything about the module that you would change to improve it?
16. Additional Comments: Feel free to expand/comment on your answer to any of the questions above as you feel necessary. Please include the question number.

## APPENDIX H

# MODULE EVALUATION

Migrant Clinicians  
N E T W O R K
Jump to...

POM > Questionnaire > 3. Evaluate the Prototype

**3. Evaluate the Prototype**

Please read the following statements carefully and answer truthfully using the following scale:  
Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

- \*1 I found the module content to be useful and relevant.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*2 The module was presented in a clear and thoughtful manner.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*3 The materials directly related to the objectives.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*4 I found the module to lack valid information.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*5 The module was easy to navigate.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*6 This module was long and boring.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*7 The interactive elements of the course were effective.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*8 The use of mixed media (graphics, animation, audio) was effective.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*9 The course maintained my attention.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*10 I am confident I can use or apply this information.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*11 I am satisfied with my module experience.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*12 I feel my understanding of the unique vulnerabilities of adolescent migrant farmworkers has increased after experiencing this module.

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*13 I recommend this course be fully developed?

SA	A	D	SD
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
- \*14 What did you like most about the module?
- \*15 What did you like least about the module?
- \*16 Additional Comments: Feel free to expand on any of your above answer.

Submit questionnaire

You are logged in as Admin admin: Student (Return to my normal role)

POM

## APPENDIX I

## PROTOTYPE

The screenshot shows a video player interface. On the left is a table of contents with columns for 'Slide Title', 'Duration', and 'Status'. The 'Introduction' slide is highlighted in green and has a checkmark. The main video area displays a wide shot of a farm field with rows of crops under a blue sky. Below the video, the text reads 'The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers' followed by the title 'A Vulnerable Population' in large green letters. A 'START' button is visible in the bottom right corner of the video frame. The video player controls at the bottom show a progress bar at 00:03 / 06:31 Minutes.

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

The Clinician's Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers

# A Vulnerable Population

00:03 / 06:31 Minutes

START

The screenshot shows a video player interface. On the left is a table of contents with columns for 'Slide Title', 'Duration', and 'Status'. The 'Learning Objec...' slide is highlighted in green and has a checkmark. The main video area displays a slide titled 'Benefits of Adolescents Working in Agriculture'. The slide lists three benefits: 'Strong work ethic', 'New skills and responsibilities', and 'Earn money', each preceded by a green plus sign. To the right of the text are three photographs: one of a person in a blue shirt working in a field, one of a person in a white shirt working in a field, and one of a person in a blue shirt working in a field. At the bottom of the slide, the text reads 'The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers A Vulnerable Population | Module 1 | Introduction'. The video player controls at the bottom show a progress bar at 00:21 / 06:31 Minutes.

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

## Benefits of Adolescents Working in Agriculture

- Strong work ethic
- New skills and responsibilities
- Earn money

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Introduction

00:21 / 06:31 Minutes

Source: Photographs/stills obtained from Hopewell, J. (2011). Migrant Clinicians Network. Retrieved from <http://www.migrantclinician.org/> Borrowed material originated from Pogue, A. (2009). Photographer. Reprinted with permission.

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	



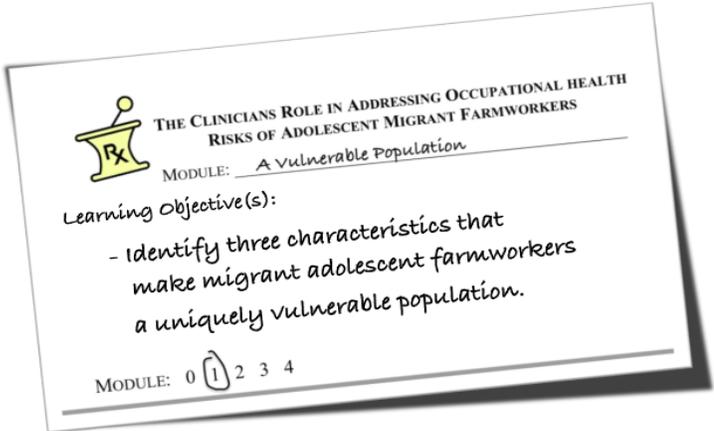
### Dangers of Adolescents Working in Agriculture

- ✗ Federal and state laws provide **less protection** for adolescents working in agriculture
- ✗ Significant risks associated with agriculture, particularly for youth
- ✗ Agriculture, one of the **most hazardous** occupations

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Introduction

Find 00:41 / 06:31 Minutes

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	



THE CLINICIANS ROLE IN ADDRESSING OCCUPATIONAL HEALTH RISKS OF ADOLESCENT MIGRANT FARMWORKERS  
MODULE: A vulnerable population

Learning objective(s):  
- Identify three characteristics that make migrant adolescent farmworkers a uniquely vulnerable population.

MODULE: 0 1 2 3 4

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Introduction

Find 00:50 / 06:31 Minutes

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Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

### Three Characteristics That Make Them Vulnerable

**Adolescence**      **Working in Agriculture**      **Migrant Status**

**The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers**  
**A Vulnerable Population** | Module 1 | Three Unique Vulnerabilities

Find 01:17 / 06:31 Minutes

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

### Factors that Increase risk of injury or illness on the job for Adolescent workers

**Physical Development**

**Work Experience**      **ADOLESCENCE**      **Psychological Development**

**The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers**  
**A Vulnerable Population** | Module 1 | Three Unique Vulnerabilities: Adolescents

Find 01:38 / 06:31 Minutes

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Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	
Course Summary	00:16	

Find 02:08 / 06:31 Minutes

### Work Experience

Because of their young age, adolescent workers often lack relevant work experiences needed to perform their job in a safe manner.

Teens:

- Commonly perform tasks outside their usual work assignments for which they may not have received training.
- Less Likely than adult workers to receive health and safety training on the job.
- May be unfamiliar with work requirements and safe operating procedures for certain tasks.
- Are likely to trust that an adult supervisor will keep them out of harms. way.
- May not know their legal rights and may not know which work tasks are prohibited by child labor laws.



Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

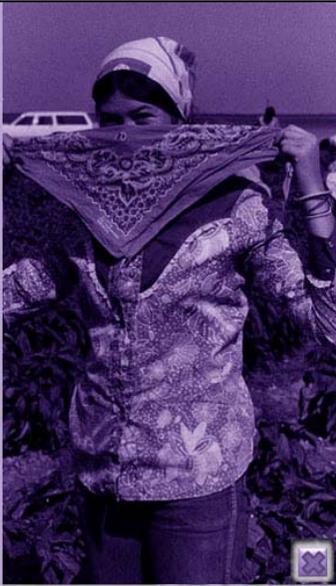
Find 02:02 / 06:31 Minutes

### Physical Development

Adolescent workers are still physically young and still experiencing growth.

Teens:

- Experience rapid growth which may make them more likely to be harmed from exposure to hazardous substances or to develop cumulative trauma disorders.
- May lack the experience and physical and emotional maturity needed to perform certain tasks.
- Explore, experiment, and take risks, but lack a sense of vulnerability.
- Need more sleep than adults but due to sleeping habits and patterns, multitasking and demands, may not be getting enough sleep.



Source: Photographs/stills obtained from Hopewell, J. (2011). Migrant Clinicians Network. Retrieved from <http://www.migrantclinician.org/> Borrowed material originated from Pogue, A. (2009) Photographer; Dotter, E. (2008). Photographer. (respectively). Reprinted with permission.

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	



### Psychological Development

Adolescent workers often lack the emotional maturity needed for certain tasks in agriculture.

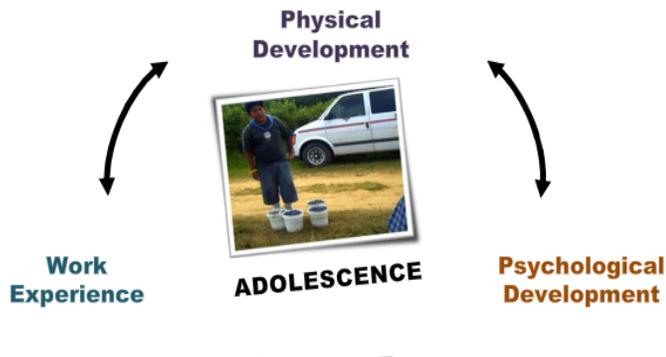
Teens:

- Desire acceptance from adults and peers, are susceptible to peer pressure, yet want to assert their independence.
- May lack the self-confidence and communication skills to effectively question or convey concerns to their supervisors.
- May Lack assertiveness and may be afraid to ask questions or speak up because they are concerned about looking stupid or losing their job.
- are more likely to struggle with subordination and control issues. Sexual harassment, and indeed harassment in general are more likely to occur with younger workers.

Find 02:05 / 06:31 Minutes

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

### Factors that Increase risk of injury or illness on the job for Adolescent workers



Click on a category to learn more about the risk factors for adolescent workers.

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Adolescents

Find 01:59 / 06:31 Minutes

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Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

Find 02:30 / 06:31 Minutes

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

Find 02:54 / 06:31 Minutes

**Adolescents Working in Agriculture**

- Work in agricultural settings illegal in other industries
- Legally permitted to work at younger ages
- Permitted to work for longer periods of time than any other industry

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Working in agriculture

Source: Photographs/stills obtained from Hopewell, J. (2011). Migrant Clinicians Network. Retrieved from <http://www.migrantclinician.org/> Reprinted with permission.

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

## Environmental Protection Agency (EPA)

- Responsible for farmworker protection and pesticide regulation
- Does not consider adolescent characteristics in assessment of chemical risks

Regulations are generally designed considering only use by and exposure to an adult male

Find 03:23 / 06:31 Minutes

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

## Migrant Status

- Limited access to health care
- Linguistic barriers
- Cultural barriers
- Limited education and loss of educational opportunities
- Isolation

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Migrant Status

Find 03:54 / 06:31 Minutes

Source: Photographs/stills obtained from Hopewell, J. (2011). Migrant Clinicians Network. Retrieved from <http://www.migrantclinician.org/> Borrowed material originated from Dotter, E. (2009). Photographer. Reprinted with permission.

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	



## Health Care

**Migrant and their families poorer health compared to general population:**

- Limited access
- Delay in time in seeking medical attention

Find 04:11 / 06:31 Minutes

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Migrant Status

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

## Education



**Balance demands of school, work and family**

Find 05:24 / 06:31 Minutes

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Migrant Status

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Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

## Linguistic Barrier

- Unable to read important instructions or understand verbal orders
- Greater risk when performing unfamiliar tasks or carry out more hazardous jobs such as operating machinery or working with chemicals

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Migrant Status

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

Education
Balance
Loss

**Balance demands of school, work and family**

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Migrant Status

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Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	✓
3. Migrant Sta...	02:47	✓
Course Summary	00:16	



## Minimizing Risk

- Little power to protect selves from occupational hazards
- Barriers prevent workers from taking steps to minimize risks
- Fear of losing job prevent discussion of working conditions and/or work related injuries and illnesses

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Migrant Status

Find 06:06 / 06:31 Minutes

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

## Summary

**Migrant Status**

**Adolescence**

**Working in Agriculture**

**3**  
Unique Vulnerabilities of Adolescent Migrant Farmworkers

The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Summary

Find 06:28 / 06:31 Minutes

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Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

Find 04:28 / 06:31 Minutes

## Linguistic Barrier

- Unable to read important instructions or understand verbal orders
- Greater risk when performing unfamiliar tasks or carry out more hazardous jobs such as operating machinery or working with chemicals



The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Migrant Status

Slide Title	Duration	Status
Introduction	00:04	✓
Learning Objec...	00:52	✓
Three Unique ...	00:23	
1. Adolescence	00:48	✓
2. Working in A...	01:18	✓
3. Migrant Sta...	02:47	✓
Course Summary	00:16	

Find 05:02 / 06:31 Minutes

## Emancipated Minors

- Youth living away from their families and migrate to work in US make up largest group of adolescent workers
- 80% of adolescent farmworkers are emancipated minors living on their own



The Clinicians Role in Addressing Occupational Health Risks of Adolescent Migrant Farmworkers  
A Vulnerable Population | Module 1 | Three Unique Vulnerabilities: Migrant Status

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## APPENDIX REFERENCES

Dotter, E. (2008). Photographer.

Hopewell, J. (2011). Migrant Clinicians Network. Retrieved from [http://www.](http://www.migrantclinician.org/)

[migrantclinician.org/](http://www.migrantclinician.org/)

Pogue, A. (2009). Photographer.