

Injury and Asthma Among Youth Less Than 20 Years of Age on Minority Farm Operations in the United States, 2000

Volume I: Racial Minority National Data

**John R. Myers, Kitty J. Hendricks,
E. Michael Goldcamp, and Larry A. Layne**

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

July, 2005

DISCLAIMER

Mention of the name of any company or product does not constitute endorsement by the National Institute for Occupational Safety and Health. In addition, citations to Web sites do not constitute NIOSH endorsement of the sponsoring organizations or their programs or products.

Furthermore, NIOSH is not responsible for the content of these Web sites.

This document is in the public domain and may be freely copied or reprinted.

To receive documents or other information about occupational safety and health topics, contact NIOSH at

Publications Dissemination, EID

National Institute for Occupational Safety and Health
4676 Columbia Parkway
Cincinnati, OH 45226-1998

Telephone: 1-800-35-NIOSH (1-800-356-4674)

Fax: 1-513-533-8573

E-mail: pubstaft@cdc.gov

or visit the NIOSH Web site at **www.cdc.gov/niosh**

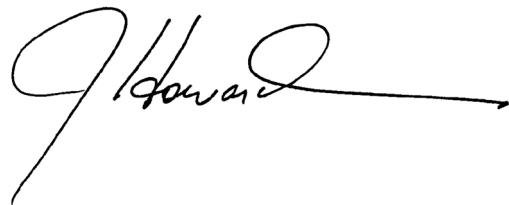
DHHS (NIOSH) Publication No. 2005-147

FOREWORD

In 1996, NIOSH began the Childhood Agricultural Injury Prevention Initiative to prevent farm-related injuries to the millions of youth less than 20 years of age who are exposed to agricultural hazards each year. Youth on farms may be exposed to a wide range of work and non-work-related hazards, including falls, all-terrain vehicles (ATVs), and animals. As a place of work and a place of residence, the farm presents unique challenges for injury prevention.

The NIOSH initiative is based on a comprehensive program of surveillance, research, and partnerships. In keeping with the breadth of the Initiative, the following document presents national data for non-fatal youth injuries on racial minority farms for 2000. These data, drawn from a special survey of minority farm operators across the U.S., indicate that 531 youth were injured on racial minority farms during 2000. The causes of these injuries included falls, animals, and vehicles such as ATVs. This document, which is the first in a series of four documents, fills a current data need by providing national demographic information on youth exposed to these hazards on minority farm operations.

This document is an important step in understanding the magnitude of youth injuries occurring on racial minority-operated farms in the U.S. We hope this information will serve as a valuable resource to federal, state and local agencies; health and safety professionals; and farm safety advocates in their efforts to develop focused and coordinated strategies to prevent youth injuries on farms.



John Howard, M.D.
Director
National Institute for Occupational
Safety and Health
Centers for Disease Control and
Prevention

Injury and Asthma Among Youth Less Than 20 Years of Age on Minority Farm Operations in the United States, 2000
Volume I: Racial Minority National Data

Contents

Foreword.....	iii
Acknowledgments	xiii
Public Health Summary	xv
Section I: The Minority Farm Operator Childhood Agricultural Injury Survey	1
Introduction.....	1
Methods	2
Layout and use of the data tables.....	7
National highlights for racial minority farms	10
References.....	13
Section II: National Demographic, Injury, and Asthma Estimates for Youth Less Than 20 Years of Age on Racial Minority Farm Operations.....	15
Demographic estimates of:	
Racial minority farms (Table 2.1).....	17
All youth (Table 2.2).....	17
All working youth (Table 2.3)	18
Household youth by sex and age (Table 2.4).....	19
Household youth by type of farm (Tables 2.5 - 2.7).....	19
Household youth by work status (Tables 2.8 - 2.10)	22
Household youth exposed to riding a horse (Tables 2.11 - 2.13).....	24
Household youth exposed to operating an all-terrain vehicle (Tables 2.14 - 2.16)	25
Household youth exposed to operating a tractor (Tables 2.17 - 2.19)	27
Estimates of injuries to:	
All youth by relationship to the farm (Tables 2.20 - 2.22)	28
All youth by race (Tables 2.23 - 2.25)	30
All youth by sex and age (Table 2.26)	31
All youth by work status (Tables 2.27 - 2.28).....	31
All youth by type of farm (Tables 2.29 - 2.31)	32

All youth by type of injury (Tables 2.32 - 2.34)	34
All youth by body part injured (Tables 2.35 - 2.38)	35
All youth by source of injury (Tables 2.39 - 2.41).....	38
All youth by type of injury event (Tables 2.42 - 2.44)	41
Household youth by sex and age (Table 2.45).....	44
Household youth by work status (Tables 2.46 - 2.47)	44
Household youth by type of farm (Tables 2.48 - 2.50).....	45
Household youth by type of injury (Tables 2.51 - 2.53).....	47
Household youth by body part injured (Tables 2.54 - 2.57)	48
Household youth by source of injury (Tables 2.58 - 2.60)	51
Household youth by type of injury event (Tables 2.61 - 2.63)	54

Estimates of injury rates for:

All youth by work status (Tables 2.64 - 2.69).....	57
Household youth by sex and age (Table 2.70).....	61
Household youth by work status (Tables 2.71 - 2.72)	61
Household youth by type of farm (Tables 2.73 - 2.75).....	62
Household youth by type of injury (Tables 2.76 - 2.78).....	63
Household youth by body part injured (Tables 2.79 - 2.81)	65
Household youth by source of injury (Tables 2.82 - 2.84)	66
Household youth by type of injury event (Tables 2.85 - 2.87)	69

Estimates of asthma among household youth:

By sex (Table 2.88).....	72
By age (Tables 2.89 - 2.90).....	72
By type of farm (Tables 2.91 - 2.92).....	73
With 1 or more asthma attacks while doing farm work (Tables 2.93 - 2.95).....	74
With 1 or more asthma attacks requiring professional medical attention (Tables 2.96 - 2.98)	76

Estimates of asthma prevalence rates for household youth:

By sex and age (Table 2.99).....	77
By type of farm (Tables 2.100 - 2.101).....	78
With 1 or more asthma attacks while doing farm work (Tables 2.102 - 2.104).....	79
With 1 or more asthma attacks requiring professional medical attention (Tables 2.105 - 2.107)	80

Section III: National Demographic, Injury, and Asthma Estimates for Youth Less Than 20 Years of Age on Black Farm Operations81

Demographic estimates of:

Black farms (Table 3.1).....	83
------------------------------	----

All youth (Table 3.2).....	83
All working youth (Table 3.3)	84
Household youth by sex and age (Table 3.4).....	85
Household youth by type of farm (Tables 3.5 - 3.7).....	85
Household youth by work status (Tables 3.8 - 3.10)	88
Household youth exposed to riding a horse (Tables 3.11 - 3.13).....	90
Household youth exposed to operating an all-terrain vehicle (Tables 3.14 - 3.16)	91
Household youth exposed to operating a tractor (Table 3.17 - 3.19).....	93

Estimates of injuries to:

All youth by relationship to the farm (Tables 3.20 - 3.22)	94
All youth by race (Tables 3.23 - 3.25)	95
All youth by sex and age (Table 3.26)	96
All youth by work status and age (Table 3.27)	97
All youth by type of farm (Tables 3.28 - 3.30)	97
All youth by type of injury (Tables 3.31 - 3.33)	98
All youth by body part injured (Tables 3.34 - 3.36)	100
All youth by source of injury (Tables 3.37 - 3.39).....	101
All youth by type of injury event (Tables 3.40 - 3.42)	103
Household youth by sex and age (Table 3.43).....	106
Household youth by work status and age (Table 3.44).....	106
Household youth by sex and type of farm (Table 3.45).....	106
Household youth by type of injury (Tables 3.46 - 3.47).....	107
Household youth by body part injured (Tables 3.48 - 3.50)	108
Household youth by source of injury (Tables 3.51 - 3.53)	109
Household youth by type of injury event (Tables 3.54 - 3.55)	111

Estimates of injury rates for:

All youth by work status (Tables 3.56 - 3.61).....	112
Household youth by sex and age (Table 3.62).....	115
Household youth by work status and age (Table 3.63).....	115
Household youth by sex and type of farm (Table 3.64).....	115
Household youth by type of injury (Tables 3.65 - 3.66).....	116
Household youth by body part injured (Tables 3.67 - 3.69)	116
Household youth by source of injury (Tables 3.70 - 3.72)	118
Household youth by type of injury event (Tables 3.73 - 3.74)	119

Estimates of asthma among household youth:

By sex (Table 3.75).....	120
By age (Tables 3.76 - 3.77).....	120
By type of farm (Tables 3.78 - 3.79).....	121
With 1 or more asthma attacks while doing farm work (Tables 3.80 - 3.82)	122

With 1 or more asthma attacks requiring professional medical attention (Tables 3.83 - 3.85)	124
--	-----

Estimates of asthma prevalence rates for household youth:

By sex and age (Table 3.86).....	125
By type of farm (Tables 3.87 - 3.88).....	126
With 1 or more asthma attacks while doing farm work (Tables 3.89 - 3.91).....	127
With 1 or more asthma attacks requiring professional medical attention (Tables 3.92 - 3.94)	128

Section IV: National Demographic, Injury, and Asthma Estimates for Youth Less Than 20 Years of Age on Native American Farm Operations129

Demographic estimates of:

Native American farms (Table 4.1)	131
All youth (Table 4.2).....	131
All working youth (Table 4.3)	132
Household youth by sex and age (Table 4.4).....	133
Household youth by type of farm (Tables 4.5 - 4.7).....	133
Household youth by work status (Tables 4.8 - 4.10)	136
Household youth exposed to riding a horse (Tables 4.11 - 4.13).....	137
Household youth exposed to operating an all-terrain vehicle (Tables 4.14 - 4.16)	139
Household youth exposed to operating a tractor (Tables 4.17 - 4.19)	140

Estimates of injuries to:

All youth by relationship to the farm (Tables 4.20 - 4.22)	142
All youth by race (Tables 4.23 - 4.25)	143
All youth by sex and age (Table 4.26)	144
All youth by work status and age (Table 4.27)	144
All youth by type of farm (Tables 4.28 - 4.30)	145
All youth by type of injury (Tables 4.31 - 4.33)	146
All youth by body part injured (Tables 4.34 - 4.36)	148
All youth by source of injury (Tables 4.37 - 4.39).....	150
All youth by type of injury event (Tables 4.40 - 4.42)	153
Household youth by sex and age (Table 4.43).....	156
Household youth by work status and age (Table 4.44).....	156
Household youth by type of farm (Tables 4.45 - 4.46).....	157
Household youth by type of injury (Tables 4.47 - 4.49).....	158
Household youth by body part injured (Tables 4.50 - 4.52)	159
Household youth by source of injury (Tables 4.53 - 4.55)	161
Household youth by type of injury event (Table 4.56 - 4.58).....	164

Estimates of injury rates for:	
All youth by work status (Tables 4.59 - 4.64).....	167
Household youth by sex and age (Table 4.65).....	171
Household youth by work status and age (Table 4.66).....	171
Household youth by type of farm (Tables 4.67 - 4.68).....	172
Household youth by type of injury (Tables 4.69 - 4.71).....	173
Household youth by body part injured (Tables 4.72 - 4.74).....	174
Household youth by source of injury (Tables 4.75 - 4.77)	176
Household youth by type of injury event (Tables 4.78 - 4.80)	179
Estimates of asthma among household youth:	
By sex (Table 4.81)	182
By age (Tables 4.82 - 4.83).....	182
By type of farm (Tables 4.84 - 4.85).....	183
With 1 or more asthma attacks while doing farm work (Tables 4.86 - 4.88)	184
With 1 or more asthma attacks requiring professional medical attention (Tables 4.89 - 4.91)	185
Estimates of asthma prevalence rates for household youth:	
By sex and age (Table 4.92).....	187
By type of farm (Tables 4.93 - 4.94).....	187
With 1 or more asthma attacks while doing farm work (Tables 4.95 - 4.97)	188
With 1 or more asthma attacks requiring professional medical attention (Tables 4.98 - 4.100)	189
Section V: National Demographic, Injury, and Asthma Estimates for Youth Less Than 20 Years of Age on Asian Farm Operations	191
Demographic estimates of:	
Asian farms (Table 5.1).....	193
All youth (Table 5.2).....	193
All working youth (Table 5.3)	194
Household youth by sex and age (Table 5.4).....	195
Household youth by type of farm (Tables 5.5 - 5.7).....	195
Household youth by work status (Tables 5.8 - 5.10)	198
Household youth exposed to riding a horse (Tables 5.11 - 5.13).....	199
Household youth exposed to operating an all-terrain vehicle (Tables 5.14 - 5.16)	201
Household youth exposed to operating a tractor (Tables 5.17 - 5.19)	202
Estimates of injuries to:	
All youth by relationship to the farm (Table 5.20)	204
All youth by race (Table 5.21)	204

All youth by age (Table 5.22)	204
All youth by work status (Tables 5.23 - 5.27).....	205

Estimates of injury rates for:

All youth by relationship to the farm (Table 5.28)	207
All youth by work status (Table 5.29 - 5.33)	207

Estimates of asthma among household youth:

By sex (Table 5.34).....	209
By age (Tables 5.35 - 5.36).....	210
By type of farm (Tables 5.37 - 5.38).....	211
With 1 or more asthma attacks while doing farm work (Tables 5.39 - 5.41).....	212
With 1 or more asthma attacks requiring professional medical attention (Tables 5.42 - 5.44)	213

Estimates of asthma prevalence rates for household youth:

By sex and age (Table 5.45).....	215
By type of farm (Tables 5.46 - 5.47).....	215
With 1 or more asthma attacks while doing farm work (Tables 5.48 - 5.50).....	216
With 1 or more asthma attacks requiring professional medical attention (Tables 5.51 - 5.52)	217

Section VI: National Demographic, Injury, and Asthma Estimates for Youth Less Than 20 Years of Age on “Other Race” Farm Operations219

Demographic estimates of:

“Other race” farms (Table 6.1).....	221
All youth (Table 6.2).....	221
All working youth (Table 6.3)	221
Household youth by sex and age (Table 6.4).....	222
Household youth by type of farm (Tables 6.5 - 6.7).....	222
Household youth by work status (Tables 6.8 - 6.10)	223
Household youth exposed to riding a horse (Tables 6.11 - 6.13).....	225
Household youth exposed to operating an all-terrain vehicle (Tables 6.14 - 6.16)	226
Household youth exposed to operating a tractor (Tables 6.17 - 6.19)	228

Estimates of injuries to:

All youth by relationship to the farm (Table 6.20)	229
All youth by race (Table 6.21)	229
All youth by age (Table 6.22)	229
All youth by work status (Tables 6.23 - 6.27).....	230

Estimates of injury rates for:	
All youth by relationship to the farm (Table 6.28)	232
All youth by work status (Tables 6.29 - 6.33).....	232
Estimates of asthma among household youth:	
By sex (Table 6.34)	234
By age (Tables 6.35 - 6.36).....	234
By type of farm (Tables 6.37 - 6.38).....	235
With 1 or more asthma attacks while doing farm work (Tables 6.39 - 6.41)	236
With 1 or more asthma attacks requiring professional medical attention (Tables 6.42 - 6.43)	237
Estimates of asthma prevalence rates for household youth:	
By sex and age (Table 6.44).....	237
By type of farm (Tables 6.45 - 6.46).....	238
With 1 or more asthma attacks while doing farm work (Tables 6.47 - 6.49)	238
With 1 or more asthma attacks requiring professional medical attention (Tables 6.50 - 6.51)	239
Appendix A: Bibliography of NIOSH Childhood Agricultural Injury Articles and Documents	241
Appendix B: Minority Farm Operator Childhood Agricultural Injury Survey Questionnaire	249
Appendix C: Definitions Used for the Racial Minority Farm Operator Childhood Agricultural Injury Survey	265
Appendix D: Sampling Estimators Used for the Racial Minority Farm Operator Childhood Agricultural Injury Survey	269

Acknowledgments

The authors are indebted to Doug Kleweno, Kevin Barnes, Montie Tesky, Joe Samson, and Gail Gregory of the U.S. Department of Agriculture (USDA), National Agricultural Statistics Service (NASS) for their invaluable assistance in the survey design, data collection, data entry, and review of this work; all of the NASS State cooperators who collected these data; Cheryl Paul of the Constella Group for her efforts in completing the layout of the document; and Patricia Ulakovic of NIOSH for her assistance in printing this document.

Public Health Summary

What is the purpose of this document?

This document provides previously unavailable youth demographic, injury and asthma estimates at the national level for youth on racial minority operated farms in the U.S. A racial minority is defined as any person who is Black, Native American, Asian, or who are of “other” races. These data represent the initial step in developing research and prevention programs to reduce the burden of injury and asthma on racial minority farms in the U.S.

What are the hazards?

According to data from the National Institute for Occupational Safety and Health and the U.S. Department of Agriculture, there were an estimated 531 youth less than 20 years of age injured on racial minority farm operations in the U.S. in 2000. Major causes of these injuries included contact with objects and falls. In addition, there were an estimated 2,506 youth with asthma living on these farms. The injury and asthma estimates reported here should be considered conservative because of the potential for recall and other reporting biases in the survey.

How are youth exposed or put at risk?

Exposures to farm hazards are not limited to youth who work on farms. In addition to injuries sustained during work activities, youth may be injured while living on farms, while visiting farms, or when they accompany their working parents or adults into the fields. The farm environment also contains many known triggers for asthma. The injury and asthma hazards these youth encounter may be work or non-work in nature, and make the farm a unique environment for developing prevention strategies.

What recommendations have the federal government made to protect the health of farm youth?

The Fair Labor Standards Act of 1938 (FLSA) and its amendments set standards for child labor in agriculture. However, the FLSA covers only employees whose work involves production of agricultural goods which will leave the state through interstate commerce. In addition, FLSA regulations do not apply to youth working for their parents or guardian(s) on the family’s farm. Youth who work on farms are often not protected by workplace safety and health regulations from the Occupational Safety and Health Administration (OSHA) because these youth frequently work for small operations that are not inspected by OSHA, or because OSHA regulations do not apply to the farm household members. For all youth on farms, there are no protections for injuries from hazards associated with non-work activities, which often expose them to the same hazards as work activities. Given the limited protections for youth on farms, there is a need for states and communities to develop and implement programs to reduce childhood agricultural injuries.

Where can more information be found?

Additional NIOSH documents and information on childhood agricultural injuries or other related topics may be obtained by calling the NIOSH toll-free number (1-800-35-NIOSH; 1-800-356-4674) or visiting the NIOSH homepage <http://www.cdc.gov/niosh>.

