



ODH Violence and Injury Prevention Program





Help Them Reach their Full Potential





ODH Violence and Injury Prevention Program Website



<http://www.odh.ohio.gov/>

Select "I" on the A-Z index at top
and then select
"Injury Prevention"





Violence and Injury Prevention Program

- Ohio Injury Prevention Partnership
 - Child Injury
 - Falls Among Older Adults
 - Prescription Drug Poisoning
- Local Grantees (9 currently)
 - 4 address Child Injury
- Child Passenger Safety Program
- Injury Surveillance
 - Ohio Violent Death Reporting
 - Census of Fatal Occupational Injuries
 - General Injury Surveillance



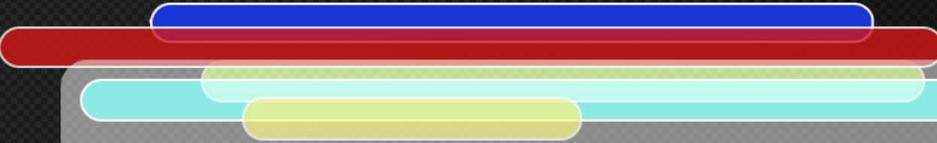


Ohio Injury Prevention Partnership

Established in 11/2007

- Group of professionals representing a broad range of organizations concerned with building Ohio's capacity to address the prevention of injury.
- Helps to improve statewide collaboration around IVP.
- Assist ODH with establishing priorities and future directions regarding IVP.
- Open to anyone with an interest in IVP.





OIPP – Child Injury Action Group

Established in 1/2010

- 
- Increase statewide collaboration around child injury prevention (IP) efforts.
 - Plan a 2010 statewide symposium focusing on traumatic brain injury prevention among Ohio youth.
 - Develop a strategic plan to address child injury with a focus on policy-level solutions.
 - Build state and local capacity for child IP efforts.
 - Research and assess the feasibility of implementing evidence-based IP policies and programs at the local and state level.
 - Promote evidence-based child and youth IP programs throughout Ohio

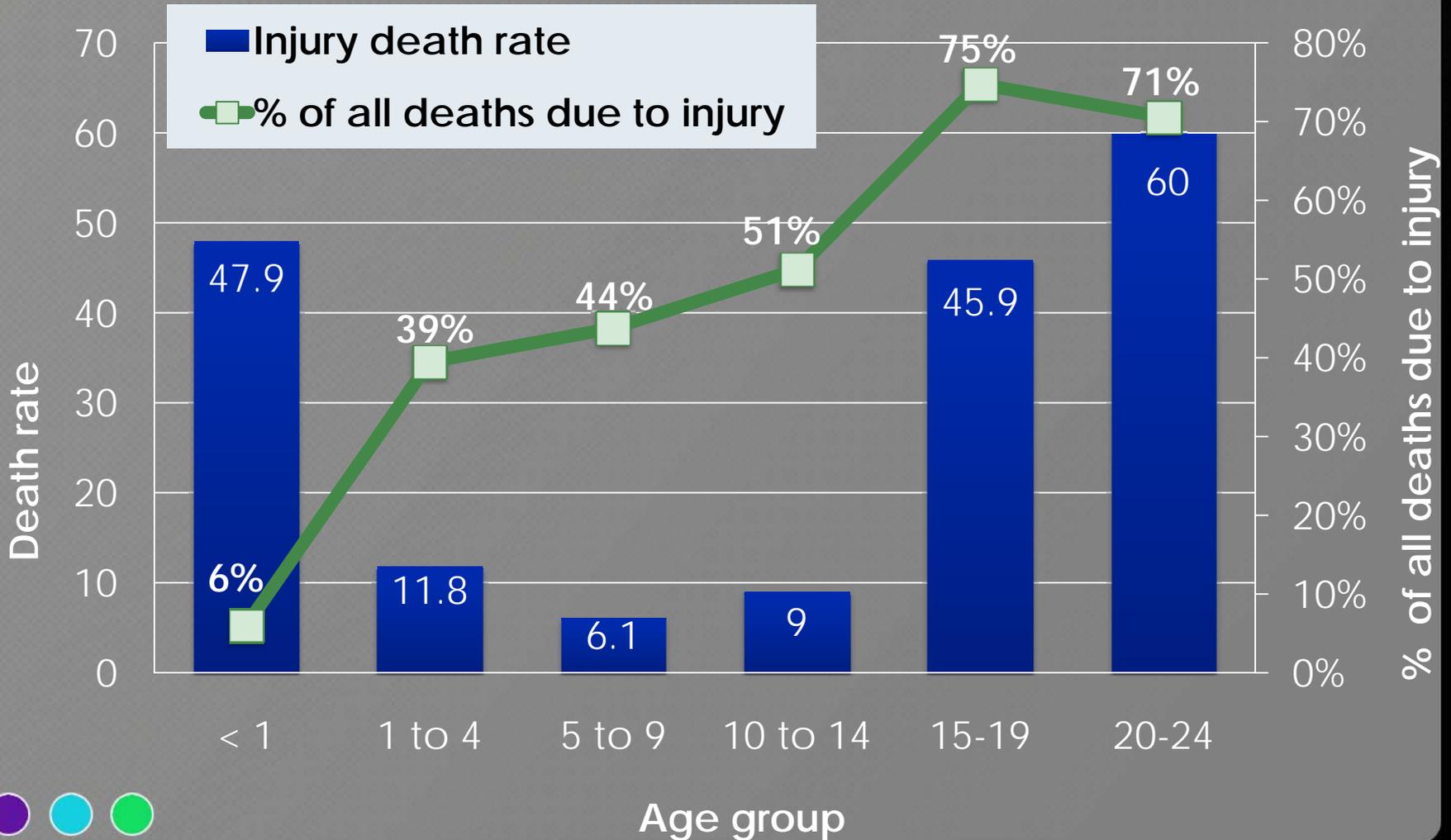




Leading Causes of Death by Age Group, Ohio, 2006-07 (source: CDC WISQARS)

	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Congenital Anomalies 447	<u>Unintentional Injury</u> 89	<u>Unintentional Injury</u> 75	<u>Unintentional Injury</u> 70	<u>Unintentional Injury</u> 1,033	<u>Unintentional Injury</u> 1,114	<u>Unintentional Injury</u> 1,374	Malignant Neoplasms 4,599	Malignant Neoplasms 8,891	Heart Disease 44,129	Heart Disease 54,643
2	Short Gestation 441	<u>Homicide</u> 44	Malignant Neoplasms 34	Malignant Neoplasms 40	<u>Suicide</u> 341	<u>Suicide</u> 416	Malignant Neoplasms 1,097	Heart Disease 3,404	Heart Disease 5,737	Malignant Neoplasms 35,102	Malignant Neoplasms 50,205
3	SIDS 193	Congenital Anomalies 37	<u>Homicide</u> 19	<u>Suicide</u> 20	<u>Homicide</u> 330	<u>Homicide</u> 347	Heart Disease 969	<u>Unintentional Injury</u> 1,685	Chronic Low. Respiratory Disease 1,270	Chronic Low. Respiratory Disease 10,653	Chronic Low. Respiratory Disease 12,508
4	Maternal Pregnancy Comp. 160	Malignant Neoplasms 30	Congenital Anomalies 14	Congenital Anomalies 19	Malignant Neoplasms 128	Malignant Neoplasms 282	<u>Suicide</u> 492	<u>Suicide</u> 602	Diabetes Mellitus 1,125	Cerebrovascular 10,149	Cerebrovascular 11,733
5	<u>Unintentional Injury</u> 131	Heart Disease 16	Septicemia 8	<u>Homicide</u> 17	Heart Disease 84	Heart Disease 268	<u>Homicide</u> 229	Liver Disease 596	<u>Unintentional Injury</u> 931	Alzheimer's Disease 7,178	<u>Unintentional Injury</u> 9,743
6	Placenta Cord Membranes 110	Influenza & Pneumonia 10	Heart Disease 5	Cerebrovascular 6	Congenital Anomalies 42	Diabetes Mellitus 55	HIV 172	Diabetes Mellitus 562	Cerebrovascular 852	Diabetes Mellitus 5,563	Diabetes Mellitus 7,483
7	Respiratory Distress 63	Cerebrovascular 7	Cerebrovascular 4	Chronic Low. Respiratory Disease 4	Cerebrovascular 18	Congenital Anomalies 45	Diabetes Mellitus 162	Cerebrovascular 498	Liver Disease 603	<u>Unintentional Injury</u> 3,241	Alzheimer's Disease 7,236
8	Bacterial Sepsis 48	Chronic Low. Respiratory Disease 6	Chronic Low. Respiratory Disease 4	Heart Disease 4	Diabetes Mellitus 15	Cerebrovascular 39	Liver Disease 162	Chronic Low. Respiratory Disease 452	<u>Suicide</u> 384	Influenza & Pneumonia 3,203	Influenza & Pneumonia 3,690
9	Circulatory System Disease 38	Septicemia 5	Benign Neoplasms 2	Benign Neoplasms 3	Chronic Low. Respiratory Disease 13	HIV 37	Cerebrovascular 153	Nephritis 182	Nephritis 354	Nephritis 2,878	Nephritis 3,505
10	Necrotizing Enterocolitis 37	<u>Two Tied</u> 4	Influenza & Pneumonia 2	<u>Two Tied</u> 2	<u>Three Tied</u> 11	Liver Disease 26	Chronic Respiratory Disease 82	Viral Hepatitis 177	Septicemia 318	Hypertension 2,083	<u>Suicide</u> 2,620

Proportion of deaths due to injury and injury death rate per 100,000 by age group, ages 0-24, Ohio, 2002-05*



*Source: CDC WONDER



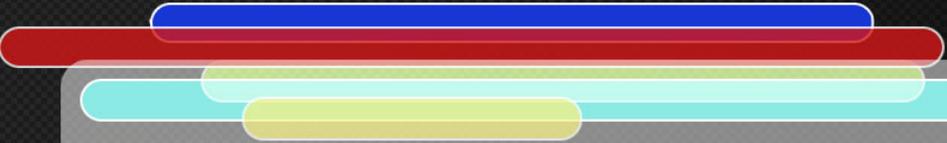
WHAT IS "INJURY?"



The National Safety Council defines Injury as:

- *physical harm or damage to the body resulting from an exchange, usually acute, of mechanical, chemical, thermal, or other environmental energy that exceeds the body's tolerance.*
- Severity is determined by how much energy exceeds the tissue tolerances.
- Injury prevention strategies strive to prevent the transfer of energy to the body.





Injury Further Defined...

- **INTENT**
 - Unintentional – “Accidental”
 - Intentional (e.g., child abuse, suicide, homicide, domestic violence, sexual assault, elder abuse)
- Energy **AGENT** – heat (burns), chemical (poisoning), mechanical, electrical, lack of energy (suffocation)
- **VEHICLE** – firearm, motor vehicle, drugs/medication
- **EVENTS** that preceded them (occupational-related, sports-related)
- **OUTCOME** or results of the energy transfer (e.g., traumatic brain injury, SBS, drowning)





INJURIES AREN'T "ACCIDENTS"!



INJURIES

- Preventable
- Predictable
- Result of exposure to energy

ACCIDENTS

- Not Preventable
- Random/fate
- Result of human error or behavior

9 out of 10 injuries are preventable





Accidents





Injury Triangle Example

Host (Child)



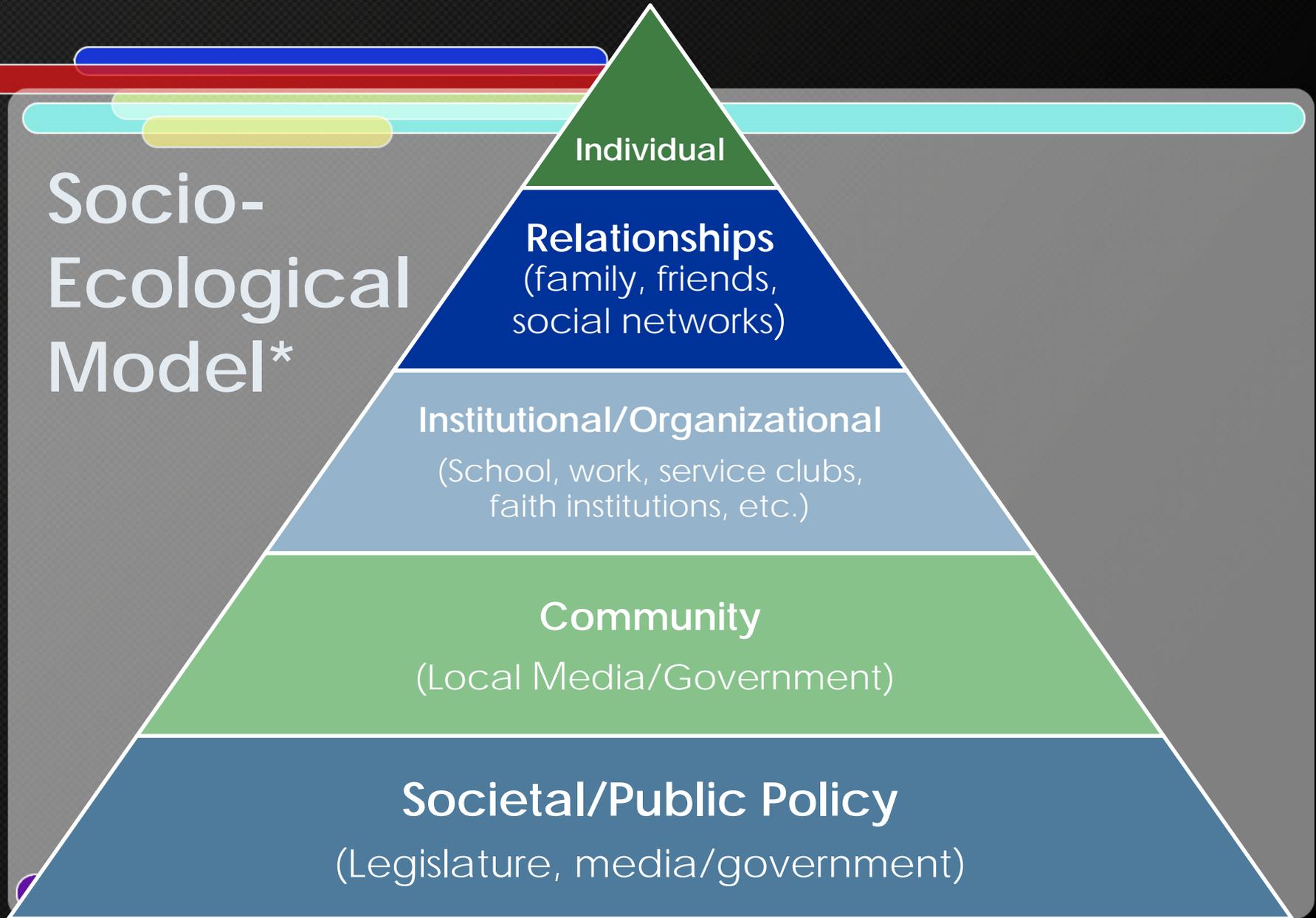
Energy Agent
(Babywalker/fall)

P/S Environment
(home/stairs)



*Source: Lydia Guy, Washington Coalition of Sexual Assault Prevention Programs; "Introduction to Public Health" by Mary-Jane Schneider, Jones & Bartlett Publishers, 2006

Socio- Ecological Model*



The "E's" of Injury Prevention



- Engineering
- Environmental Changes (Physical and Social)
- Enactment and Enforcement of Laws, Regulations & Policies
- Economic Factors
- Education
- Evaluation



TBI in the United States





An estimated 1.7 million
TBIs occur in the
U.S. annually.



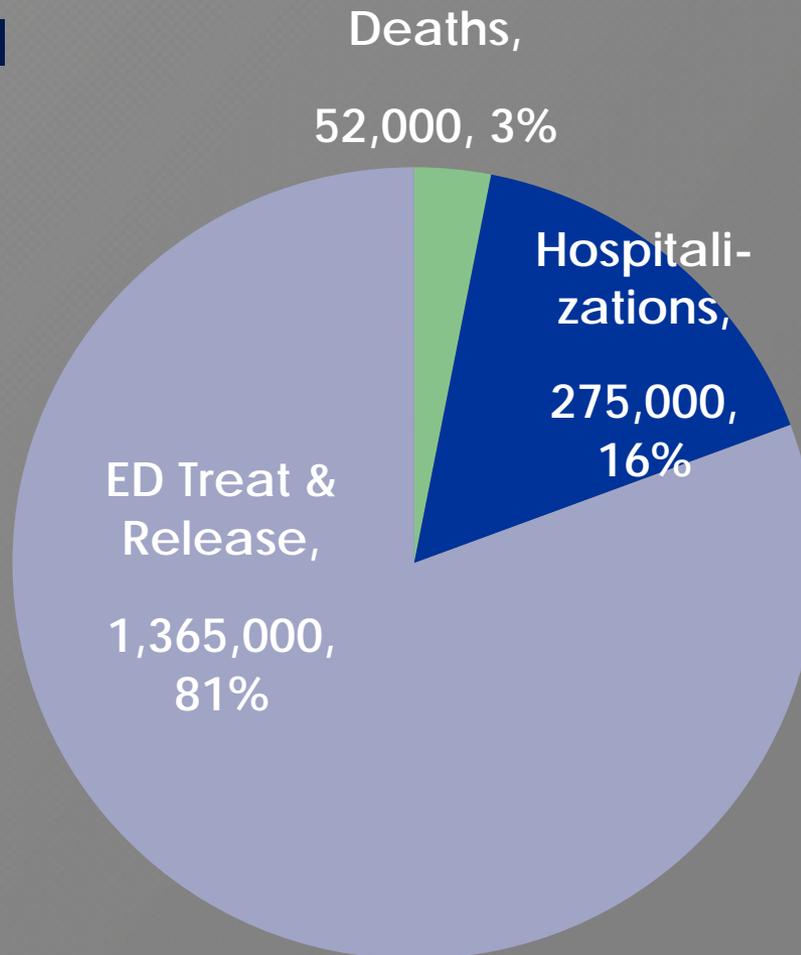
That's 1 TBI for every 180
people in the U.S.

TBIs are a contributing
factor to a third (30.5%) of
all injury-related deaths in
the United States.



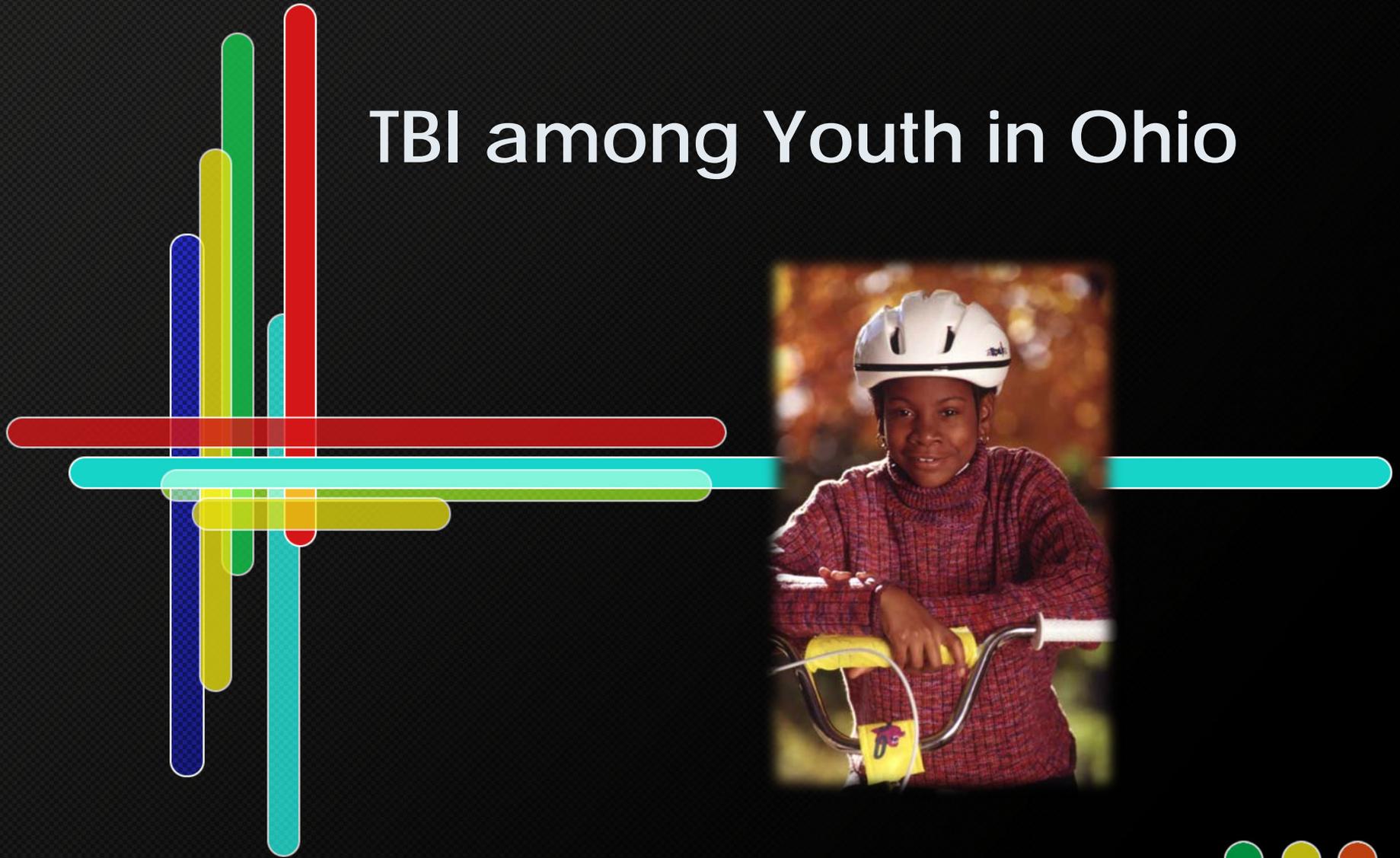
Distribution of Annual TBIs by Severity, US, 2002-06

About 35% of the annual ED Visits are made by children 0-14 years.





TBI among Youth in Ohio



Average annual number of TBIs¹ among Ohioans 18 or younger, by severity of outcome

Deaths
(187)¹

Inpatient,
Discharges (1365)²

ER visits (24,248)²

Receiving Other Medical Care
or No Care (??)



Leading intents/mechanisms asstd. with TBIs, by age group, severity of outcome, Ohio¹

*excluding firearm-related

age group	#1 cause ER visits	#1 cause hospitalization	#1 cause deaths ⁱ
<1	fall	fall	homicide*
1-4	fall	fall	homicide*
5-9	fall	fall	other land trans
10-14	other unintentional injury	motor vehicle traffic	other land trans
15-18	other unintentional injury	motor vehicle traffic	other land trans
overall	fall	motor vehicle traffic	other land trans ⁱ

¹Source of ER & inpatient data: Ohio Hospital Association, 2003-07

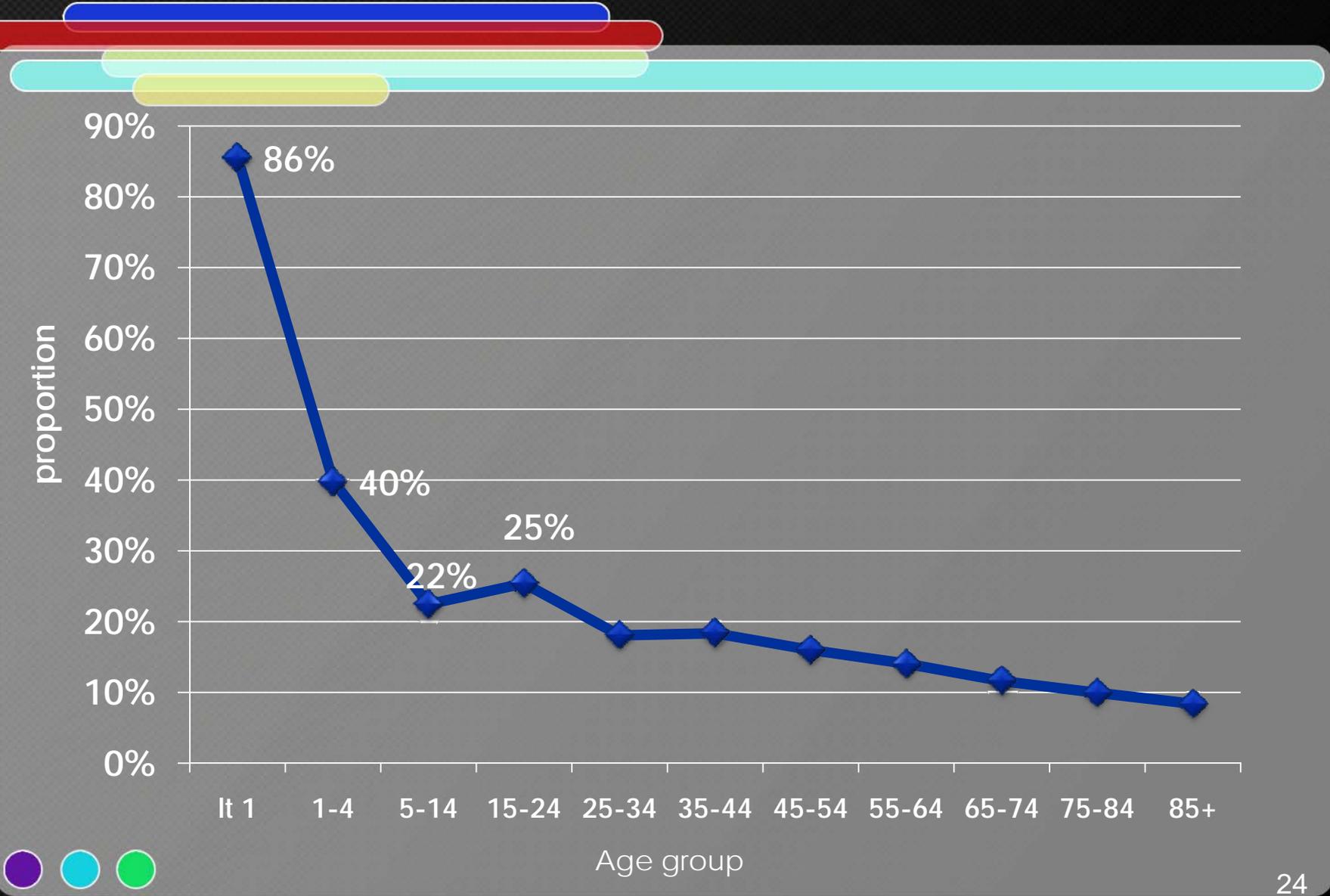
Source of fatality data: ODH, Office of Vital Statistics, 2000-08

ⁱOverall leading cause of death in 0-18 age group is MV Traffic

Leading Causes of Fall-related ER visits and Hospitalizations

Age Group	ER Visits	Hospitalizations
<1 Year	<ul style="list-style-type: none">•From Furniture (beds)•Other level, unspecified•Stairs/steps	<ul style="list-style-type: none">•Other level, unspecified•From Furniture•Stairs/steps
1 to 4	<ul style="list-style-type: none">•Unspecified•From Furniture•Same level, unspecified•Stairs/steps	<ul style="list-style-type: none">•Other level, unspecified•From Furniture•Unspecified•Stairs/steps•Playground
5 to 14	<ul style="list-style-type: none">•Unspecified•Same level, unspecified•Recreation (roller skates/ skateboards)•Playground•Other level, unspecified•Stairs/steps•Sports	<ul style="list-style-type: none">•Other level, unspecified•Playground•Unspecified•Same level, unspecified•Recreation (roller skates/ skateboards)•Stairs/steps•Sports

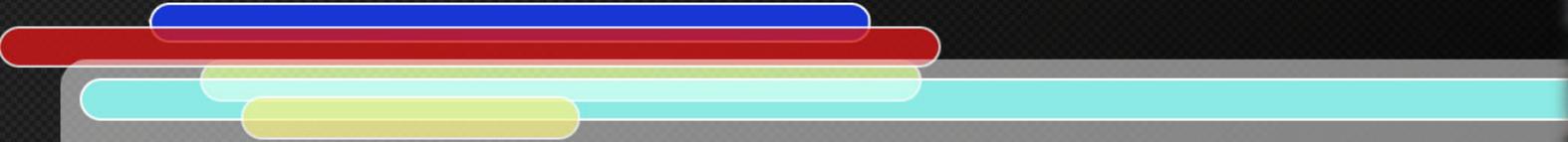
Proportion of fall-related hospitalizations with aTBI by age group, Ohio, 2002-05*



*Source: Ohio Hospital Association



Behavioral Risk Factors for Child Injury



• Infants

- Dependent on caregiver
- Require constant supervision
- Unable to verbally communicate
- Begin to turn over and grasp objects
- Explores by mouthing objects (spends a lot of time sucking)

• Toddlers

- Curious, exploratory and impulsive
 - Require close supervision
 - Increased motor abilities
 - Oral exploration puts objects in mouth
 - Imitative of adult behavior
- 

Behavioral Risk Factors for Child Injury

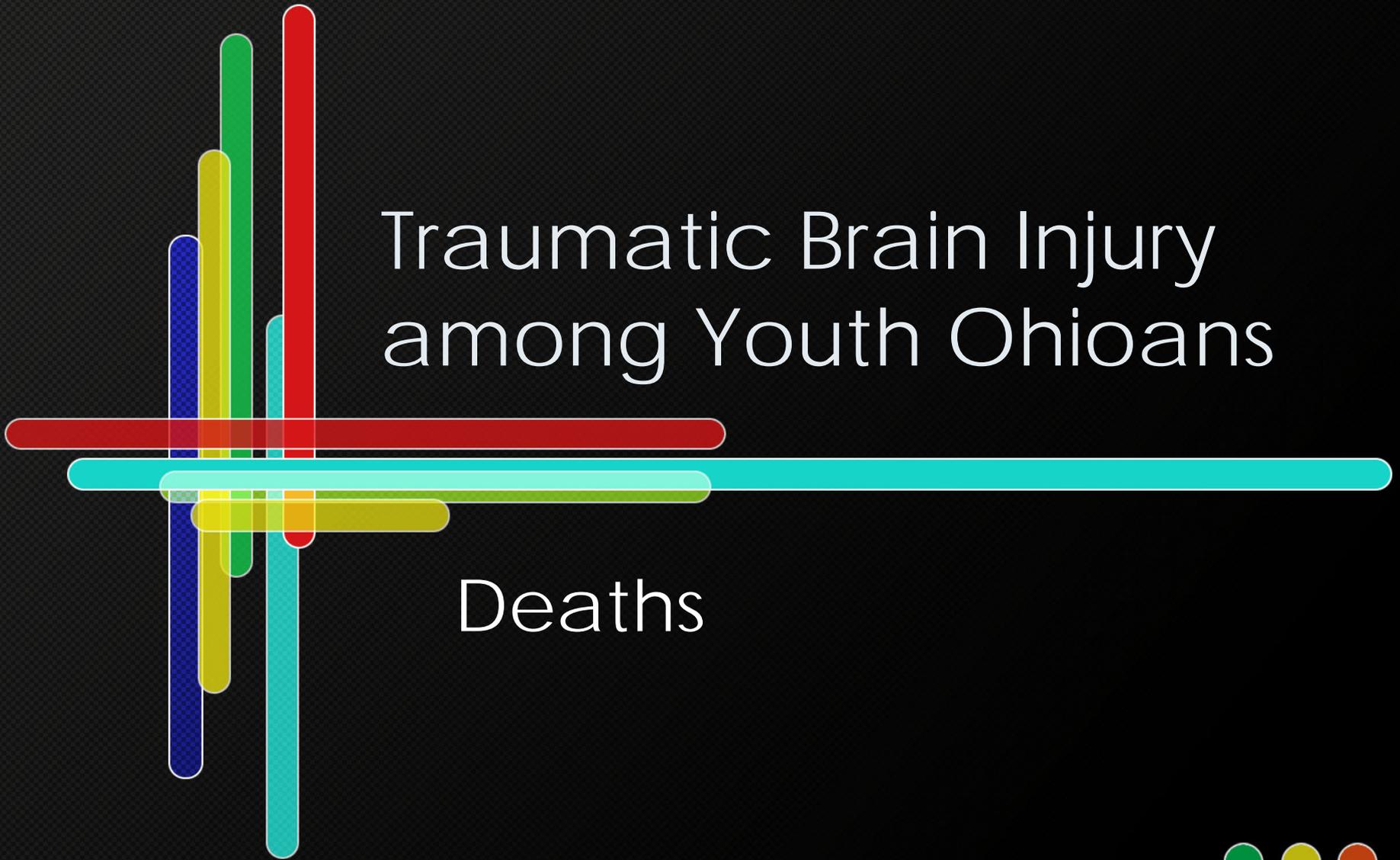


- **Elementary School Age**
 - More mature motor skills
 - Increased mobility
 - Increased independence
 - Unable to assess speed and time of oncoming traffic
 - Lack of decision making experience
- **Young Adolescent**
 - Curious, experimental, risk taking behavior
 - Increased independence
 - Need for peer approval and influenced by peer pressure
 - Dynamic period of change and transition





Traumatic Brain Injury among Youth Ohioans

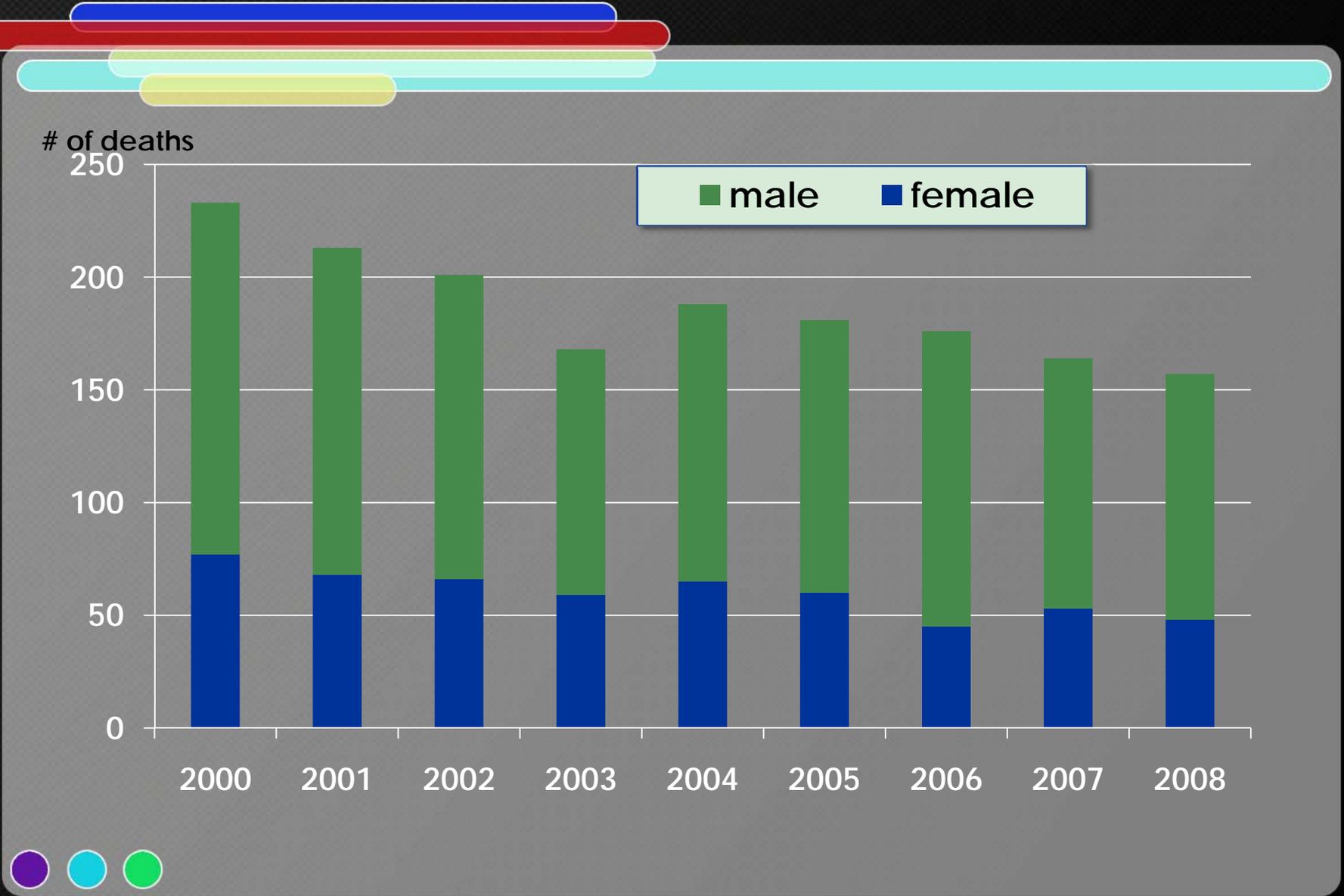


Deaths





Number of TBI¹-associated deaths of persons 18 or younger, by year, sex, Ohio, 2000-08²



²Source: Ohio Dept of Health, Office of Vital Statistics

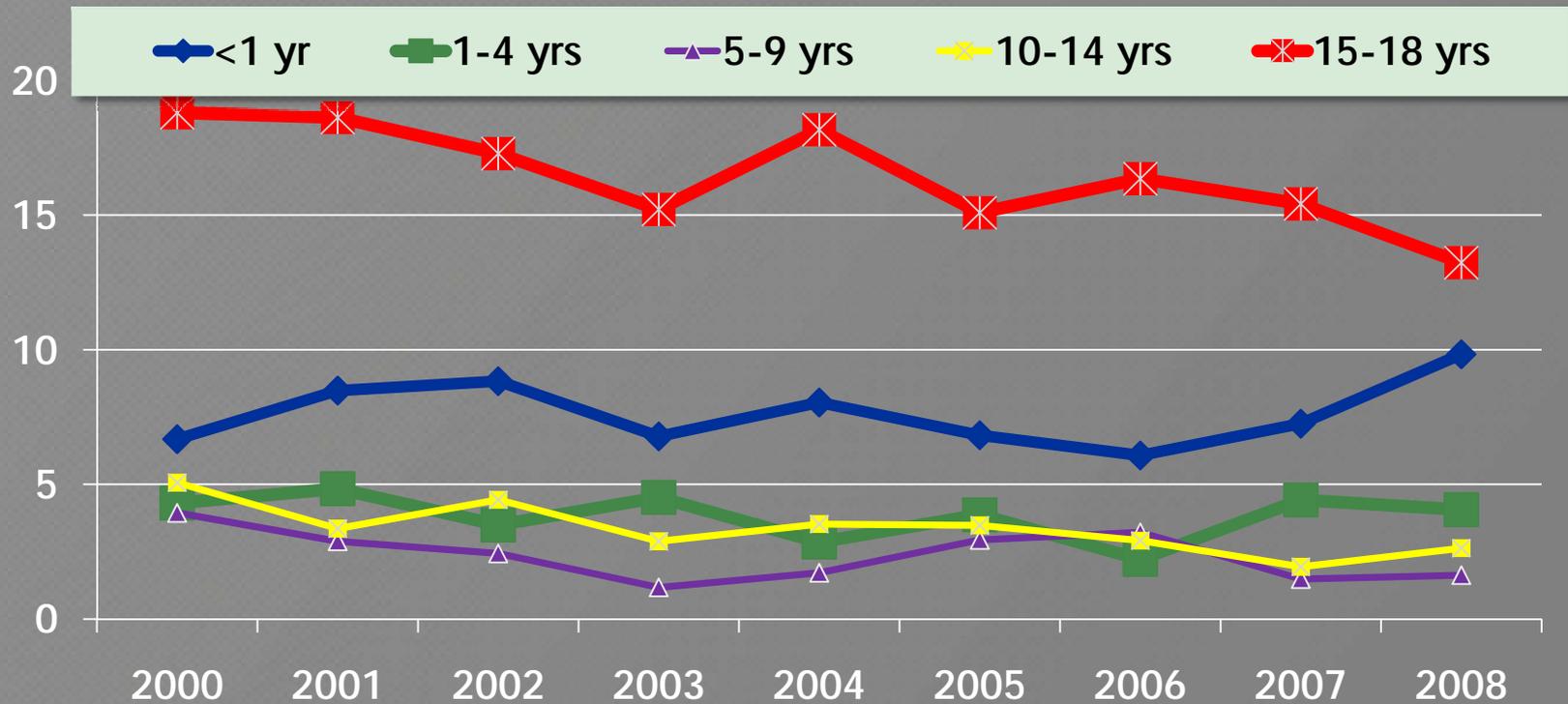
¹traumatic brain injury

TBI¹-related death rate² among 18 year old or younger Ohioans, by age group, year, 2000-08³

²death rate
per 100,000

¹traumatic brain injury

²Source: Ohio Dept of Health, Office of Vital Statistics

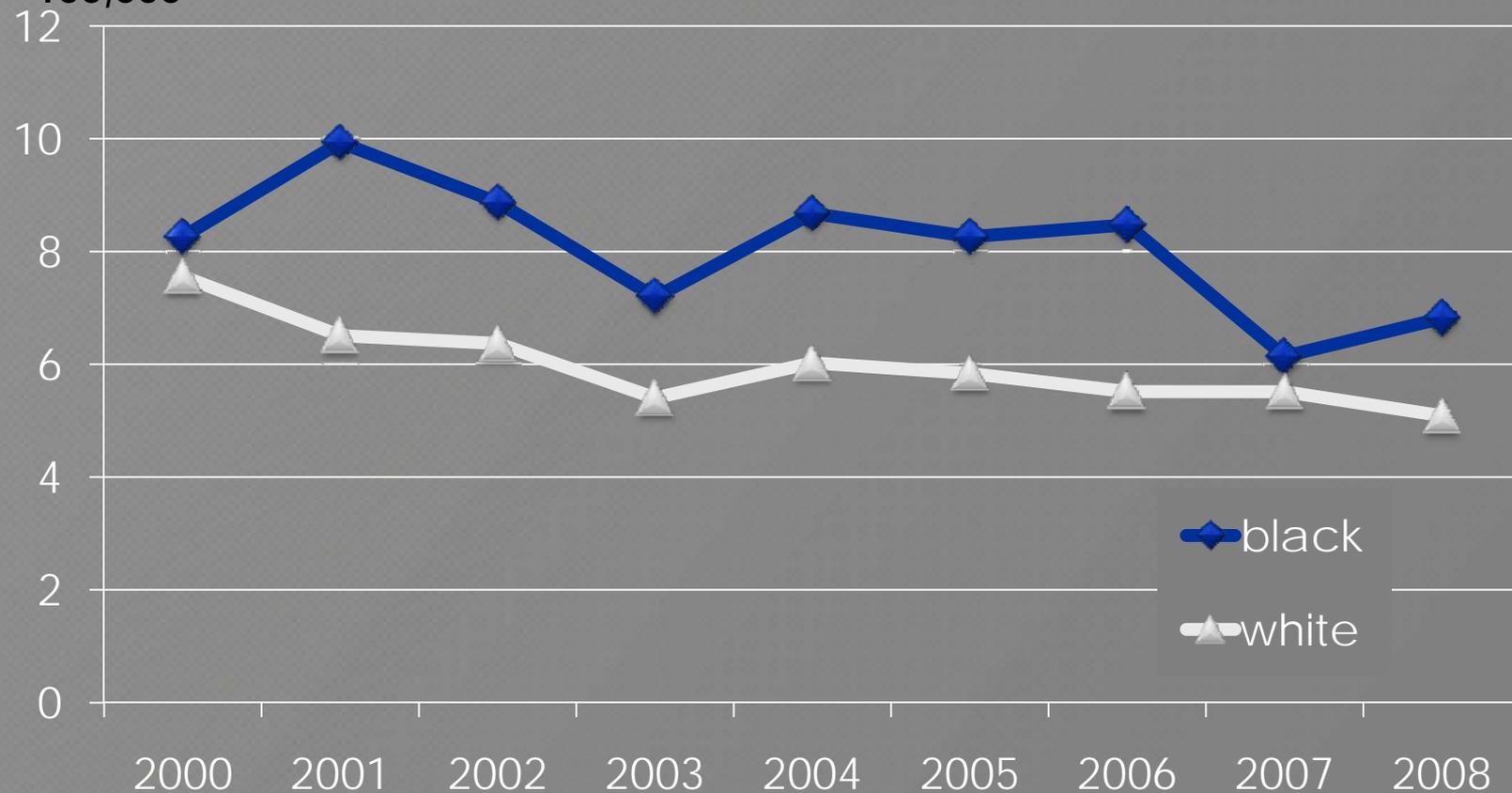




TBI¹-related fatality rate² for Ohioans 18 or younger, by year, race (black/white), 2000-08³

²rate per 100,000

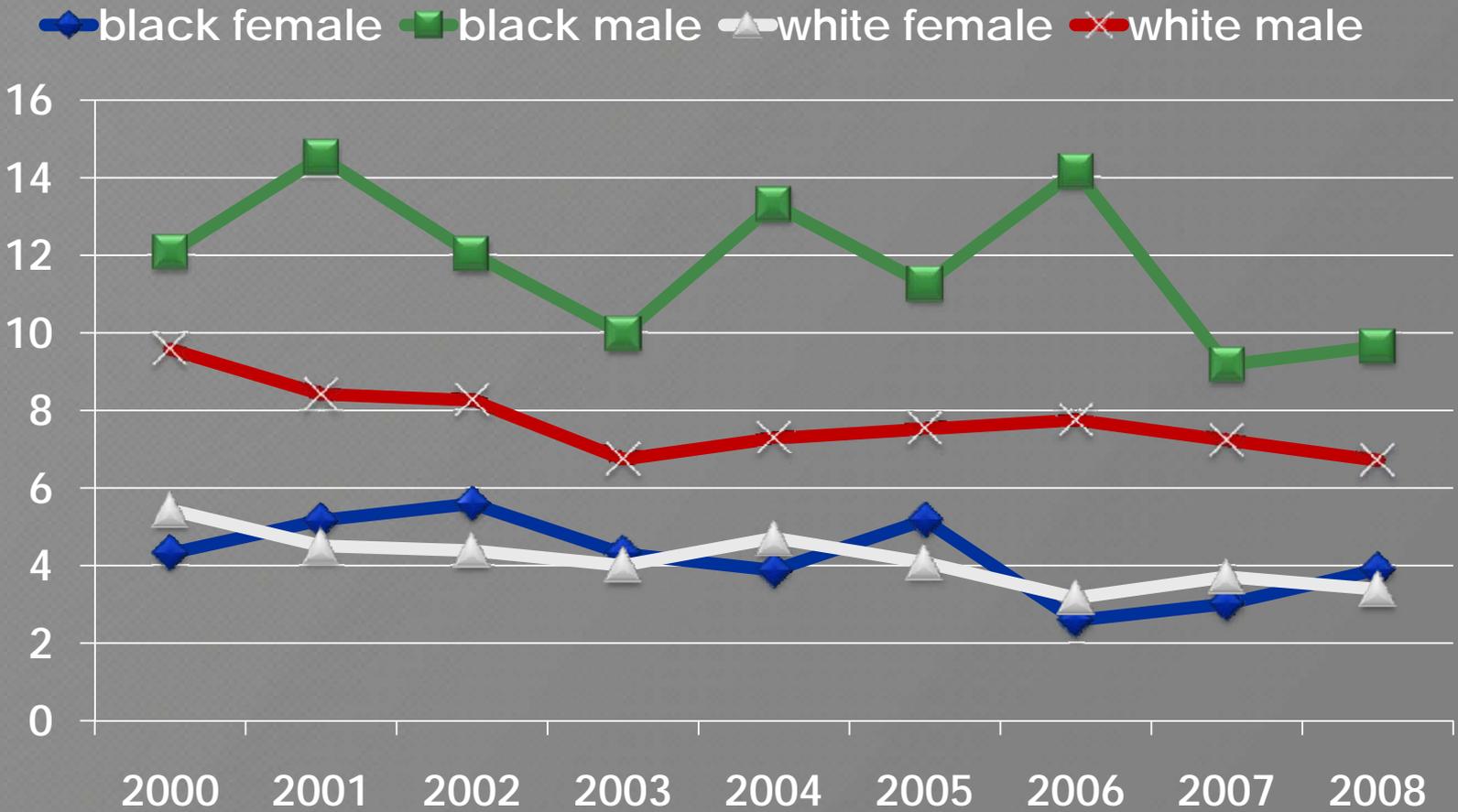
¹traumatic brain injury



³Source: Ohio Dept of Health, Office of Vital Statistics



TBI¹-related death rates², by year, race, & sex, Ohio, 2000-08



³Source: Ohio Dept of Health, Office of Vital Statistics

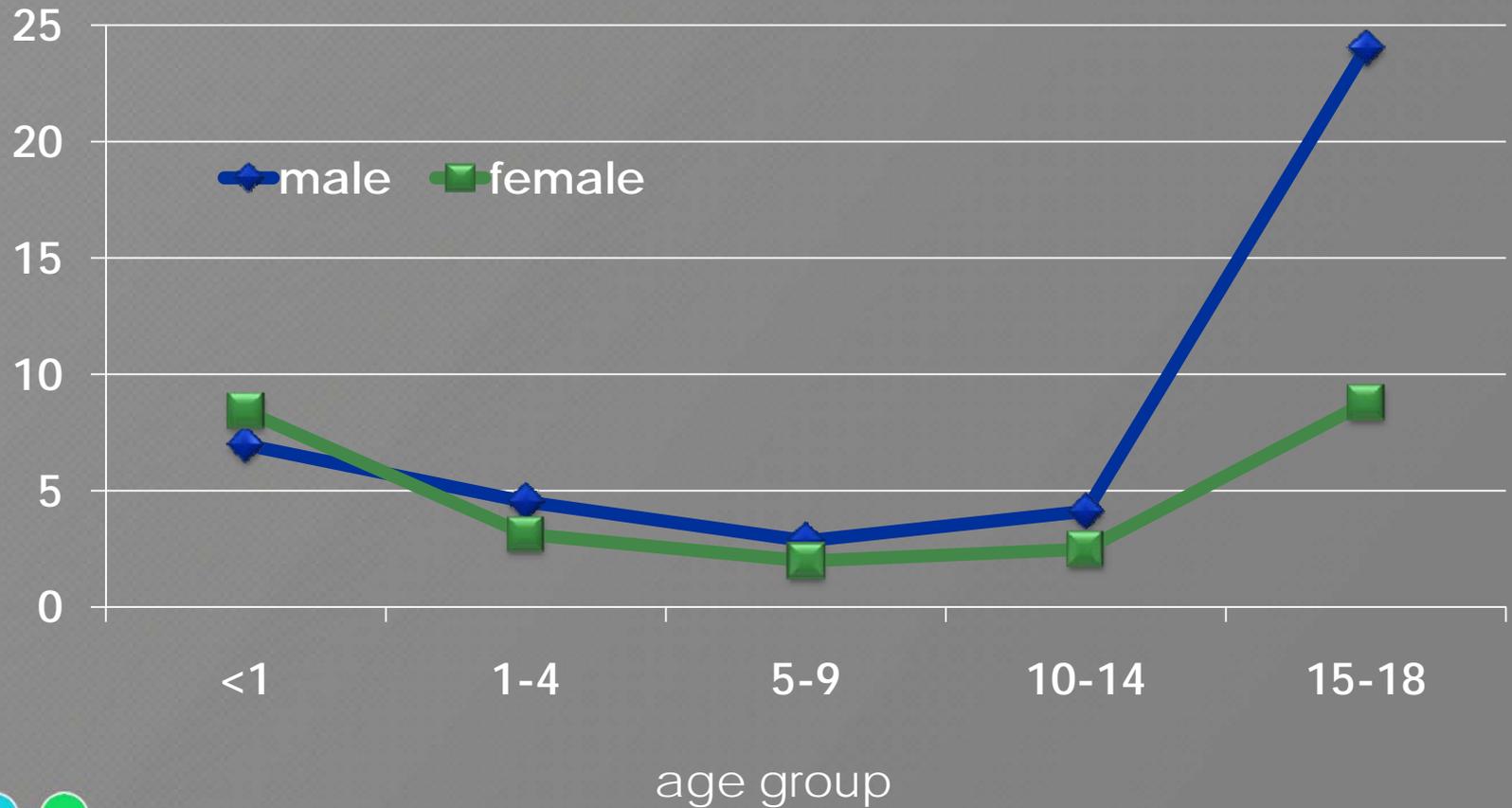


Average annual rate¹ of TBI²-related fatalities, by age group, sex, Ohio, 2000-08³

¹rate per 100,000

²traumatic brain injury

³Source: Ohio Hospital Association

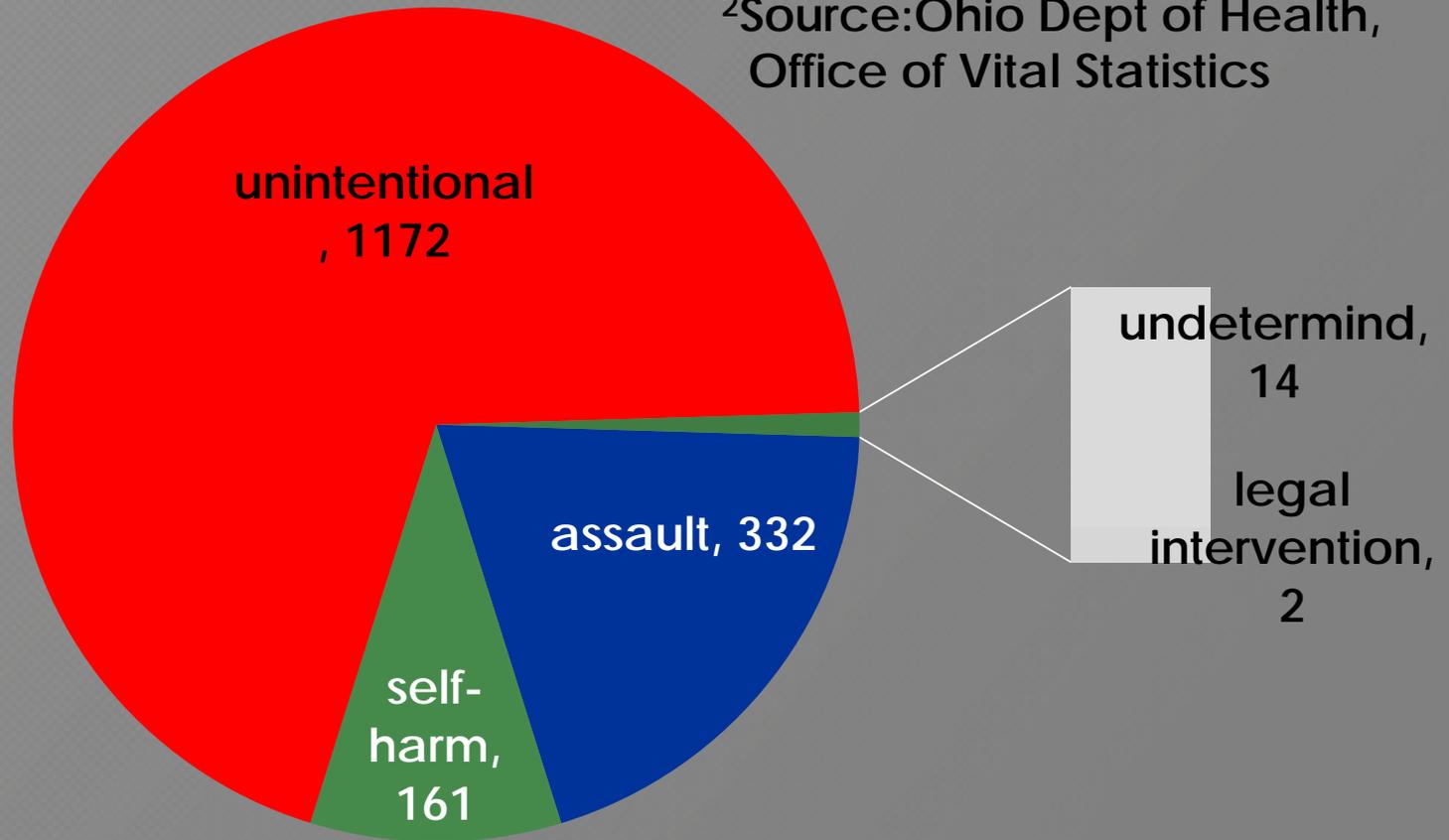




Intent associated with TBI¹-related fatalities among Ohioans 18 or younger, 2000-08²

¹traumatic brain injuries

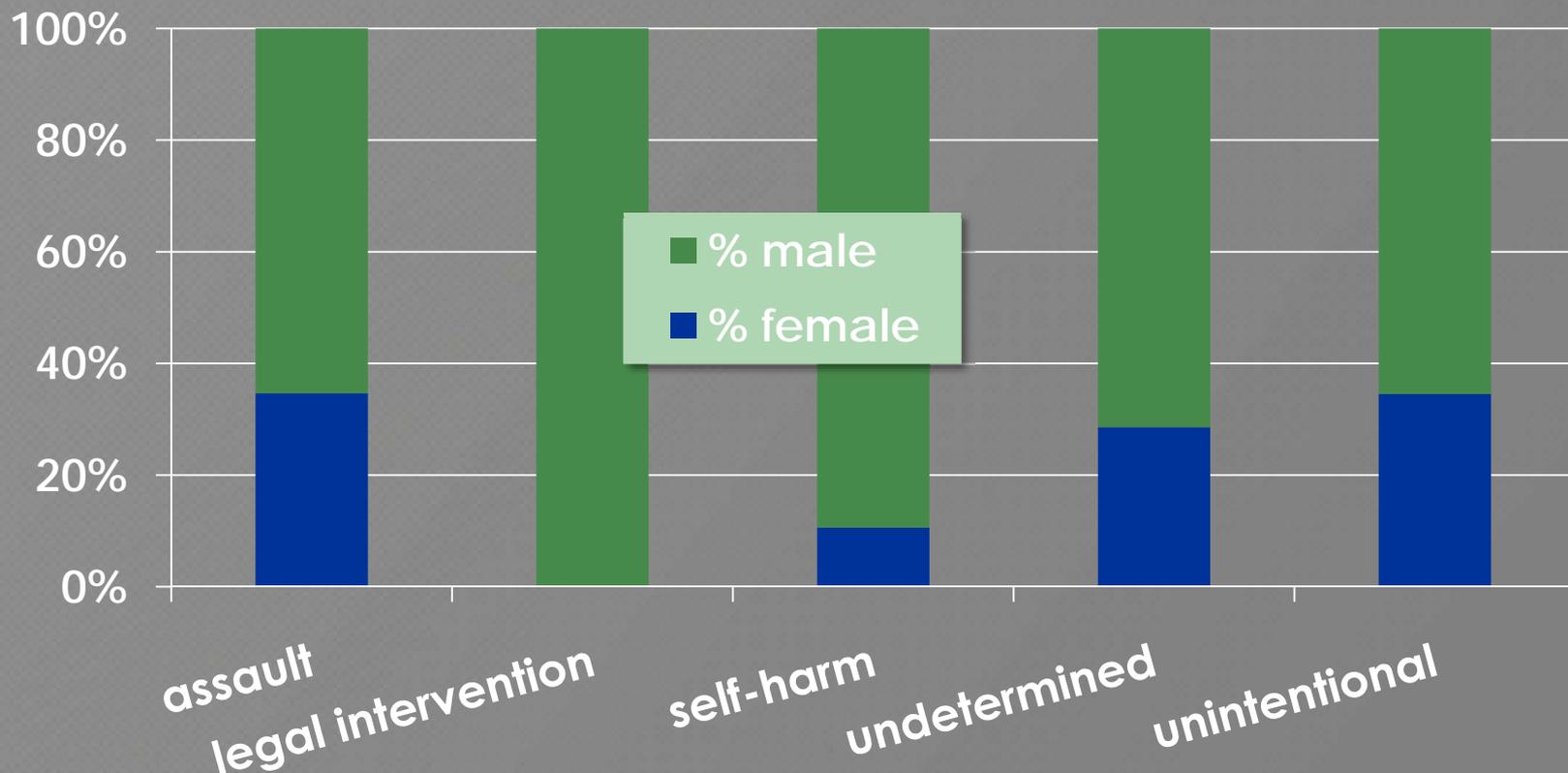
²Source: Ohio Dept of Health, Office of Vital Statistics



Gender composition of TBI¹-related deaths² among 18 or younger, by intent, Ohio, 2000-08

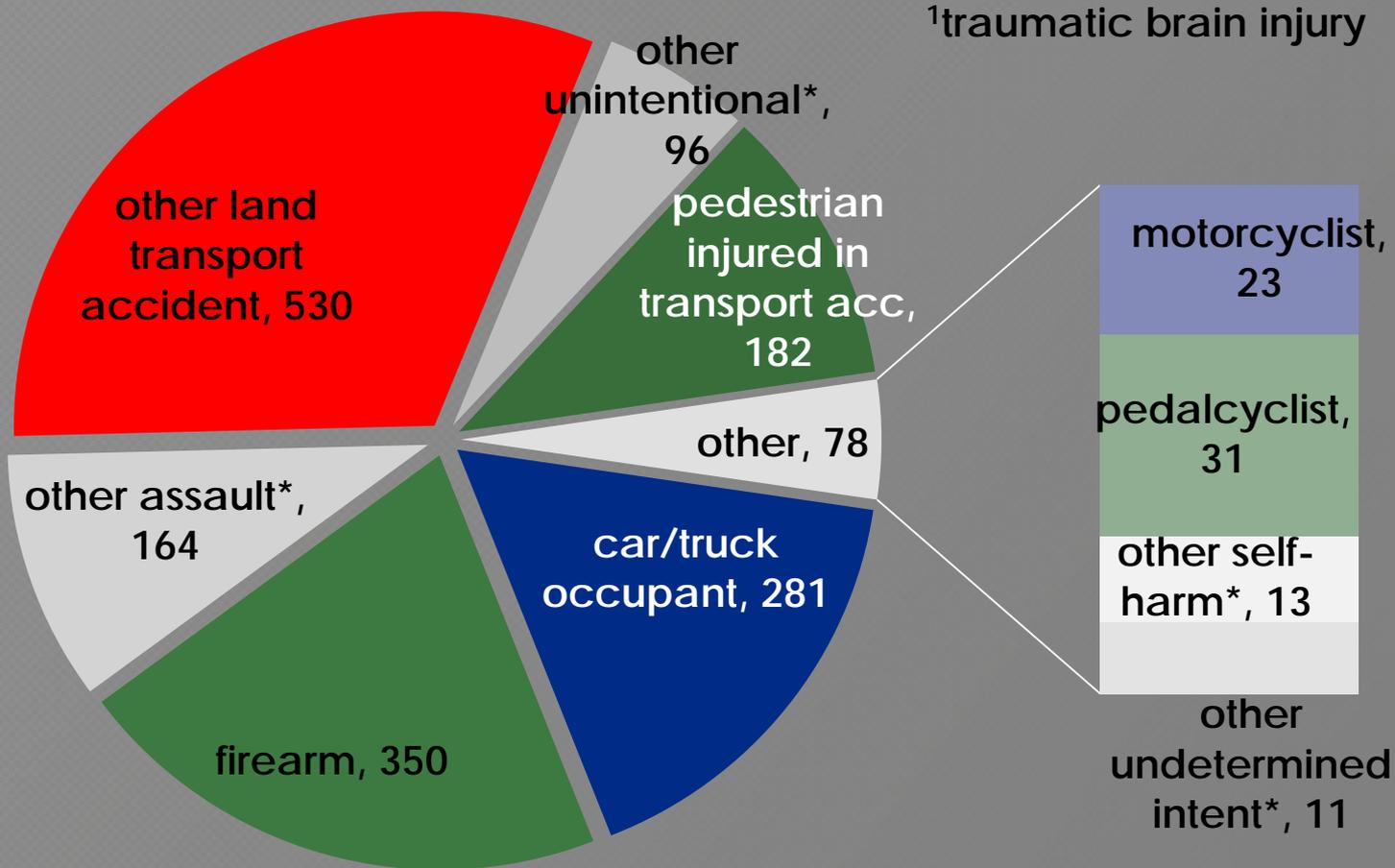
¹traumatic brain injury

²Source: Ohio Dept of Health, Office of Vital Statistics





Mechanisms/intents associated with TBI¹ deaths among persons 18 or younger, Ohio, 2000-08²

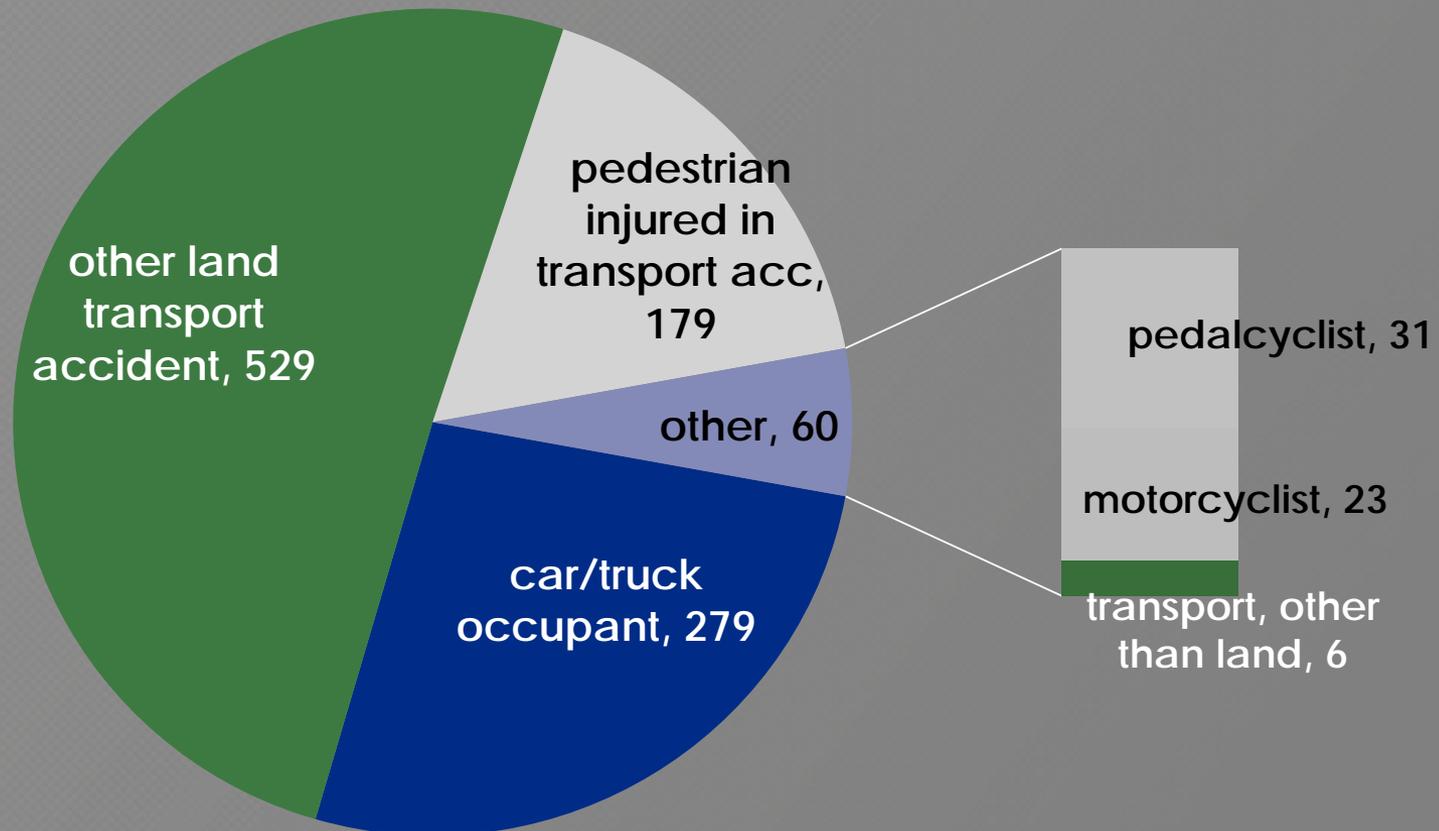


*excluding firearm-related

²Source: Ohio Dept of Health, Office of Vital Statistics

Classification of transport-related TBI¹ deaths² among Ohioans 18 or younger, 2000-08

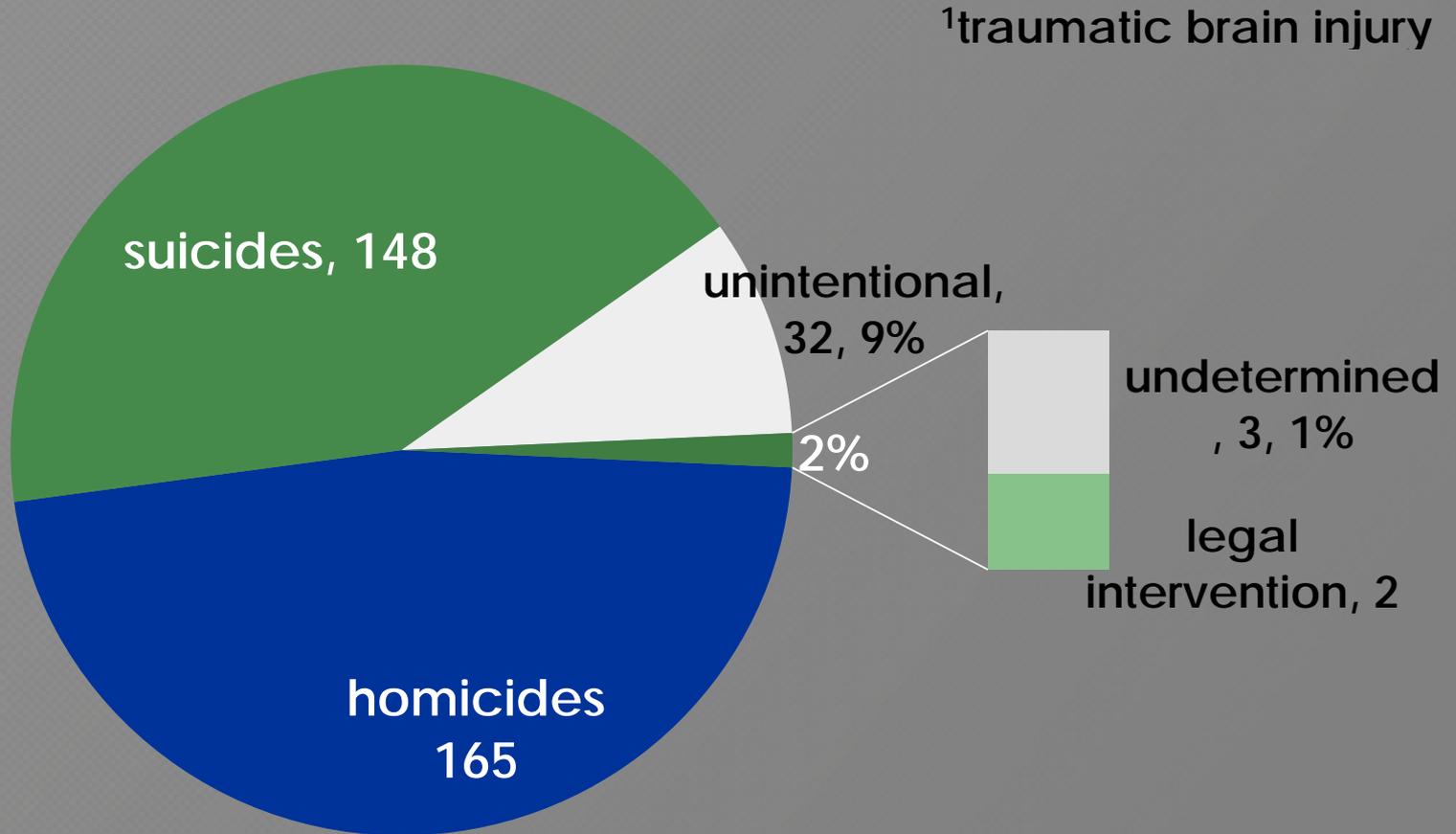
¹traumatic brain injury



²Source: Ohio Dept of Health, Office of Vital Statistics



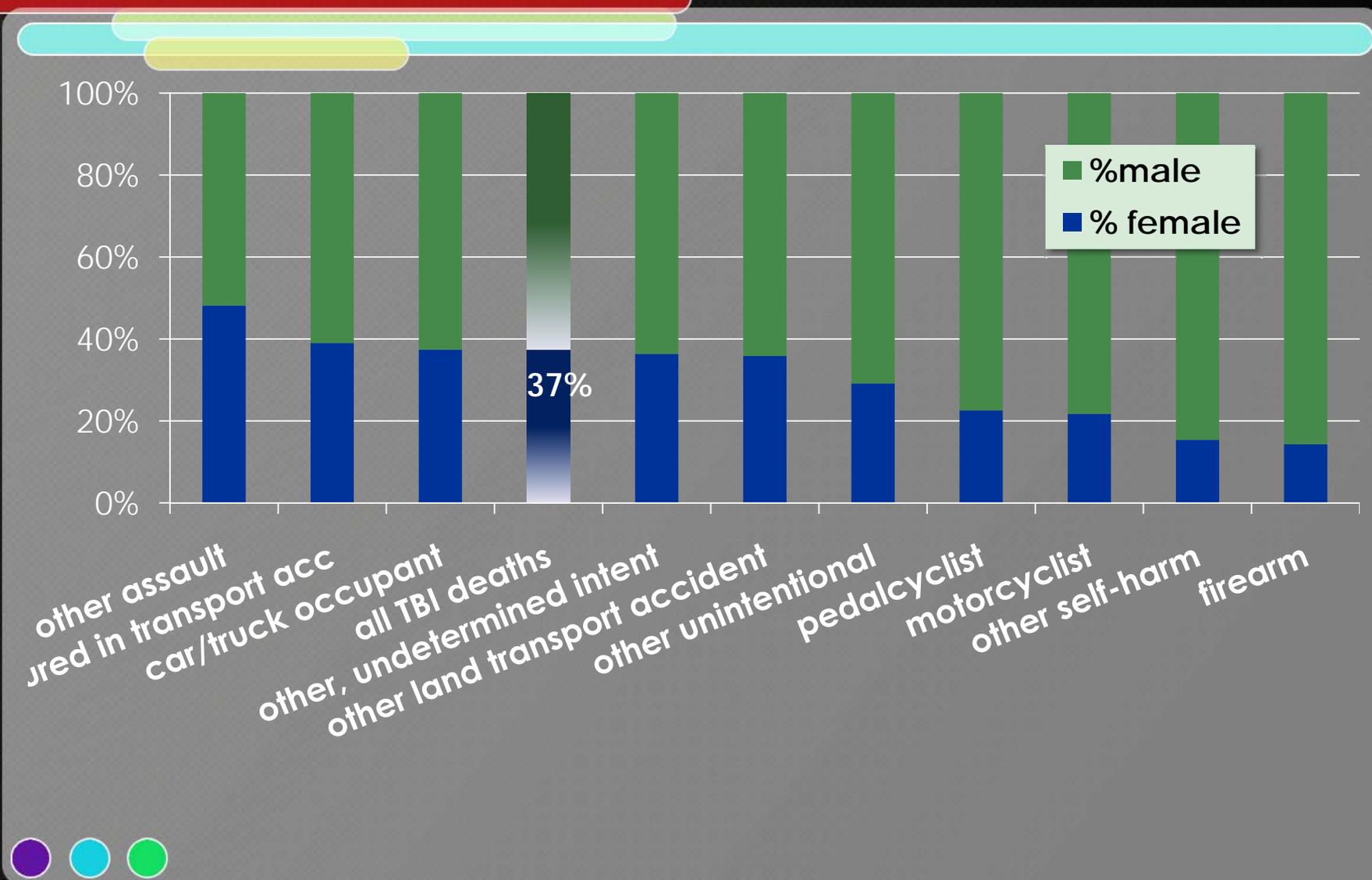
Distribution of intent for firearm-related TBI¹ deaths among Ohioans 18 or younger, 2000-08²



²Source: Ohio Dept of Health, Office of Vital Statistics



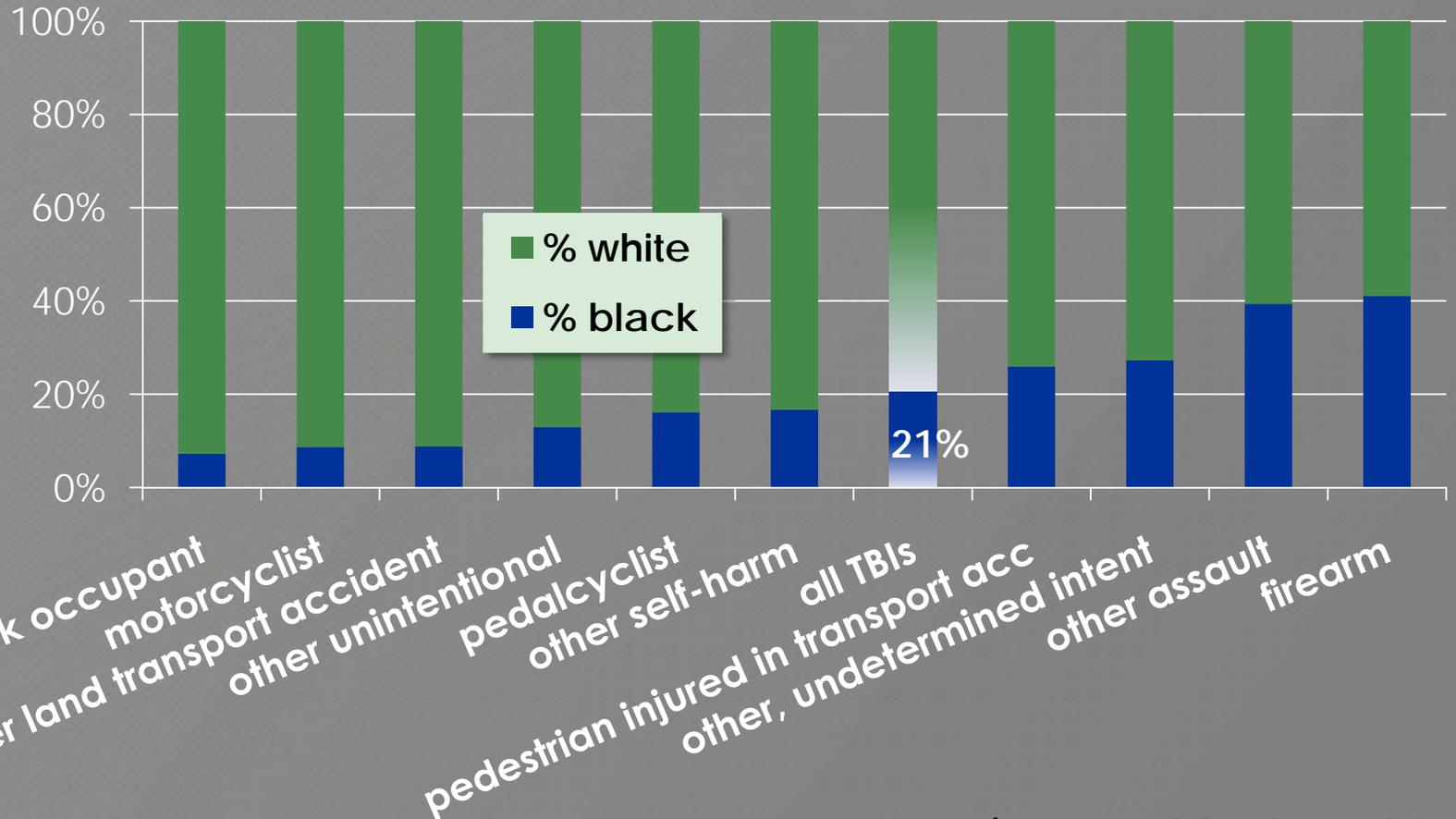
Gender composition of TBI¹-related fatalities² among 18 or younger, by injury mechanism, Ohio, 2000-08



²Source: Ohio Dept of Health, Office of Vital Statistics

¹traumatic brain injury

Racial composition¹ of TBI²-related fatalities³ among Ohioans 18 or younger, by injury mechanism, 2000-08

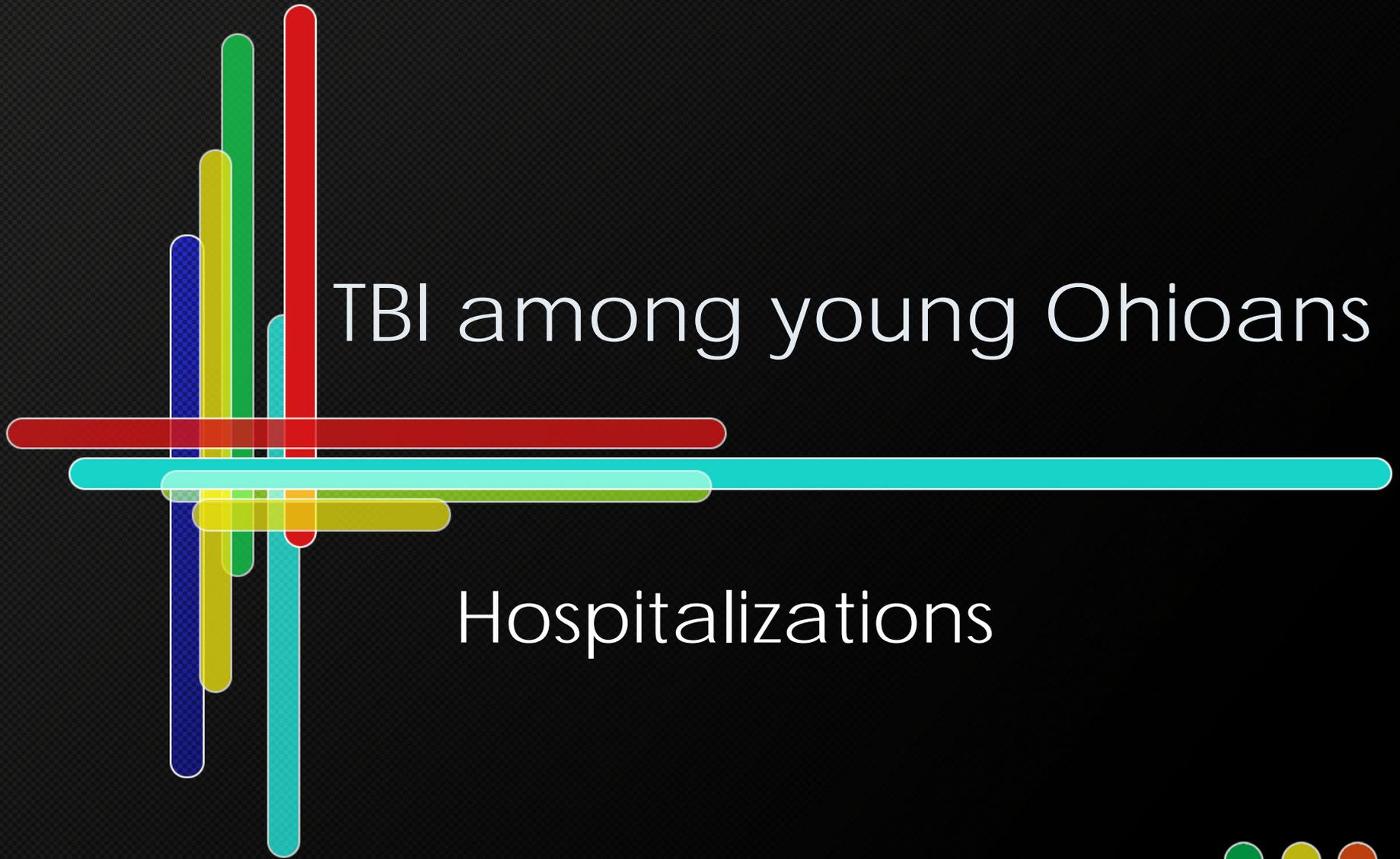


¹among black & white



TBI among young Ohioans

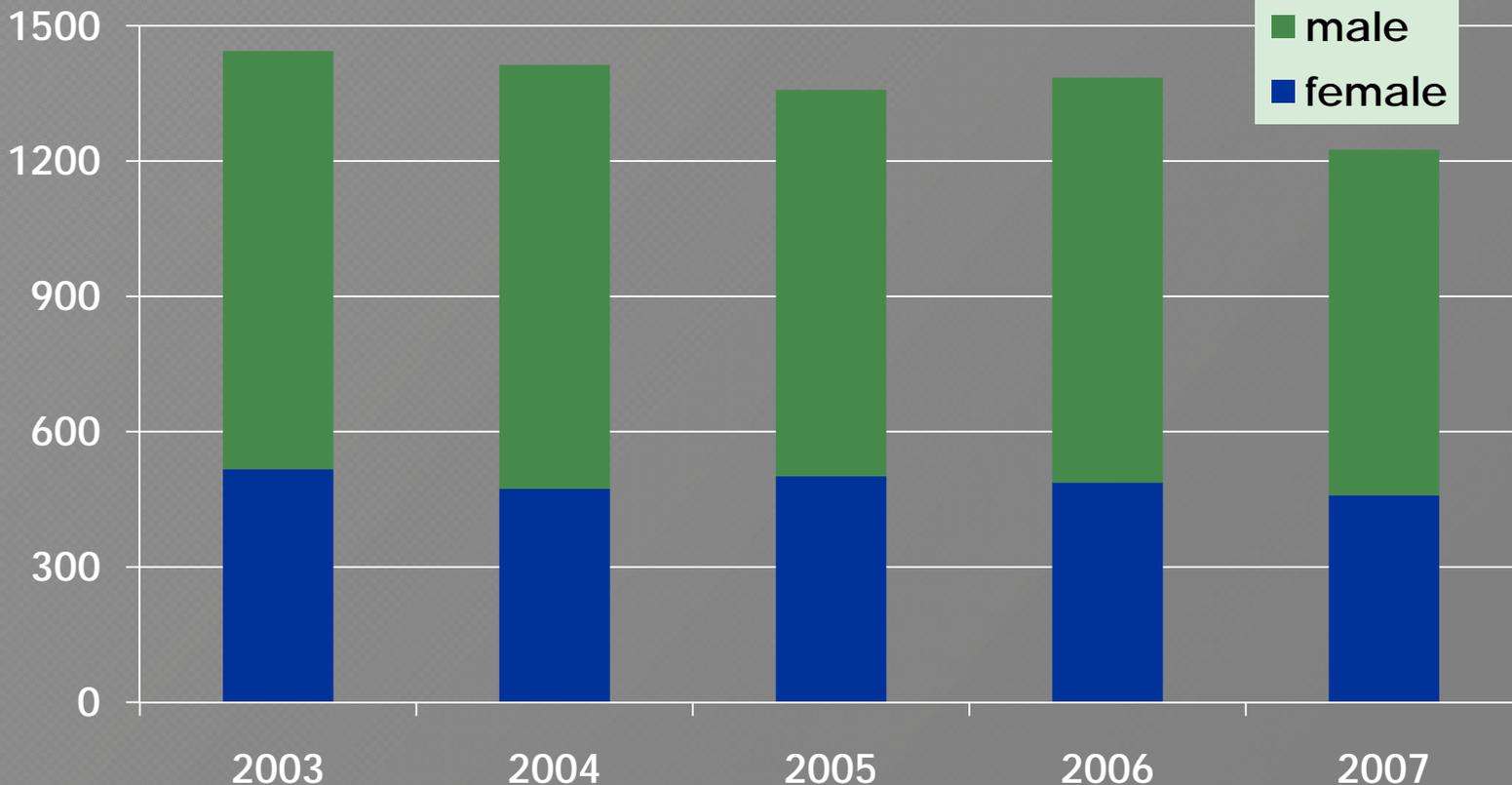
Hospitalizations





Number of TBI¹-related hospital discharges² of Ohioans 18 or younger, by year, sex, 2003-07

discharges



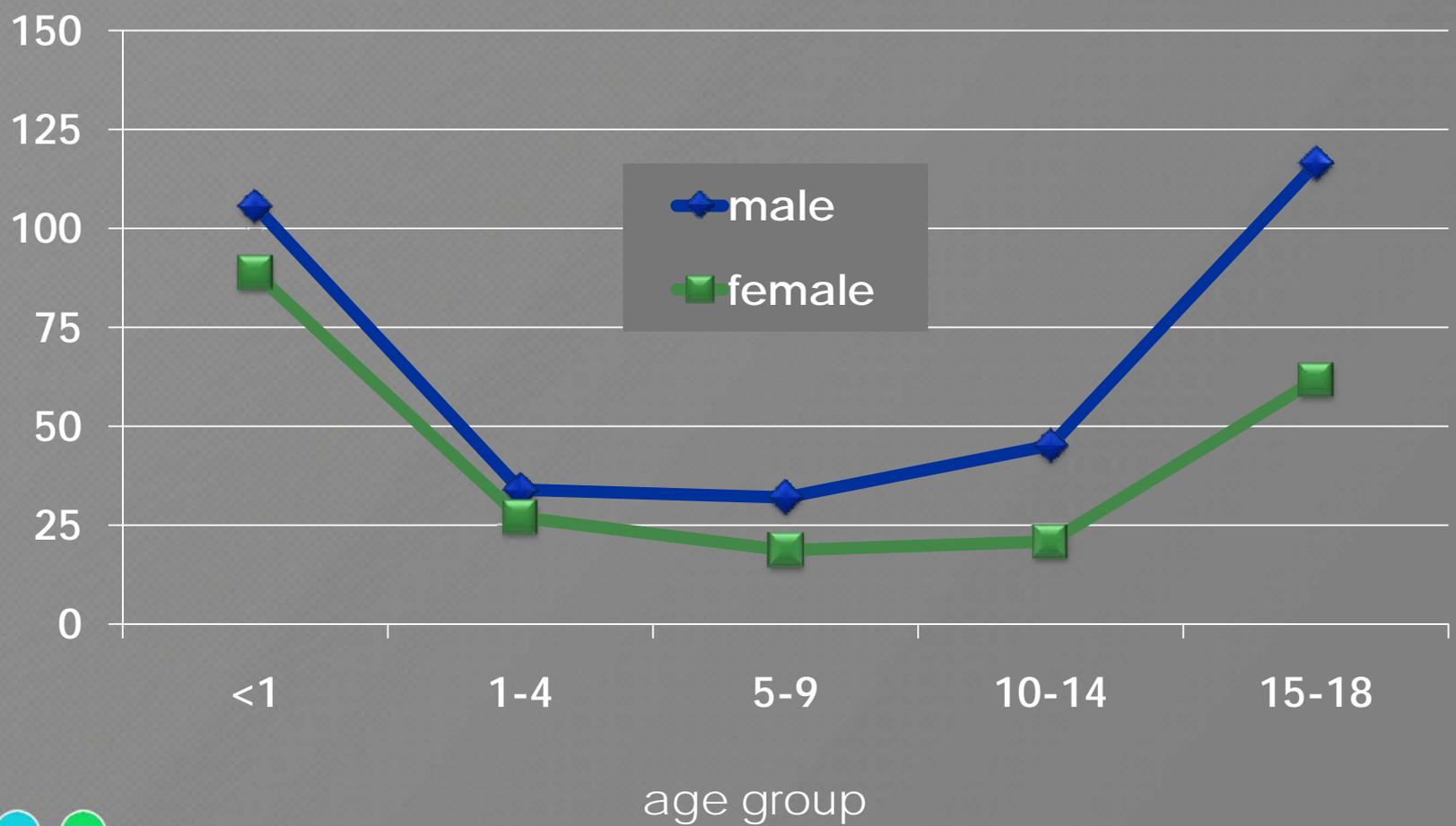
²Source: Ohio Hospital Association

¹traumatic brain injury



Average annual rate¹ of TBI²-related discharges, by age group, sex, Ohio, 2003-07³

¹rate per 100,000

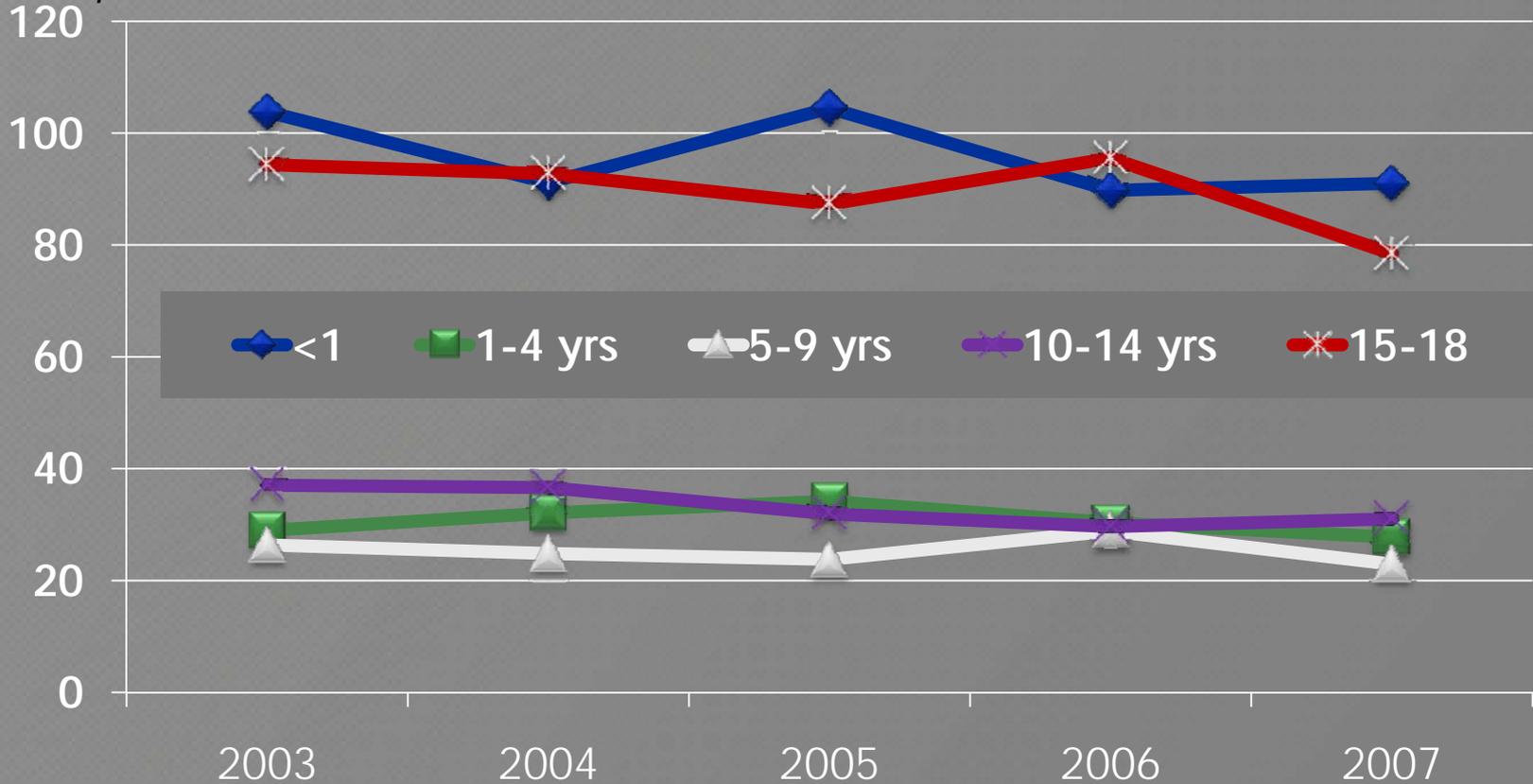


²Source: Ohio Hospital Association

¹traumatic brain injury

Discharge rate¹ after treatment for TBI² among 18 or younger, by year, age group, Ohio, 2003-07³

¹rate per 100,000

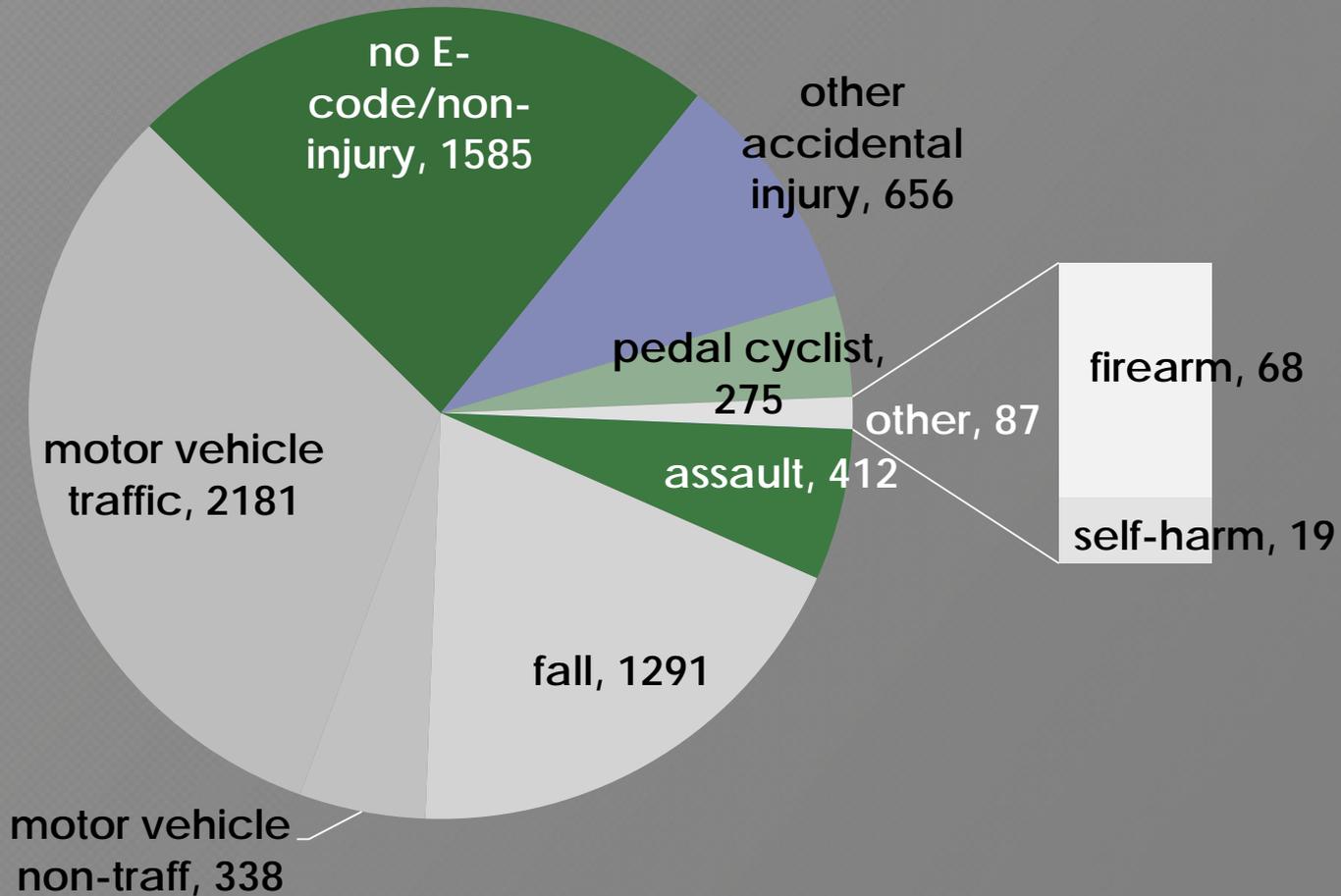


²Source: Ohio Hospital Association

¹traumatic brain injury



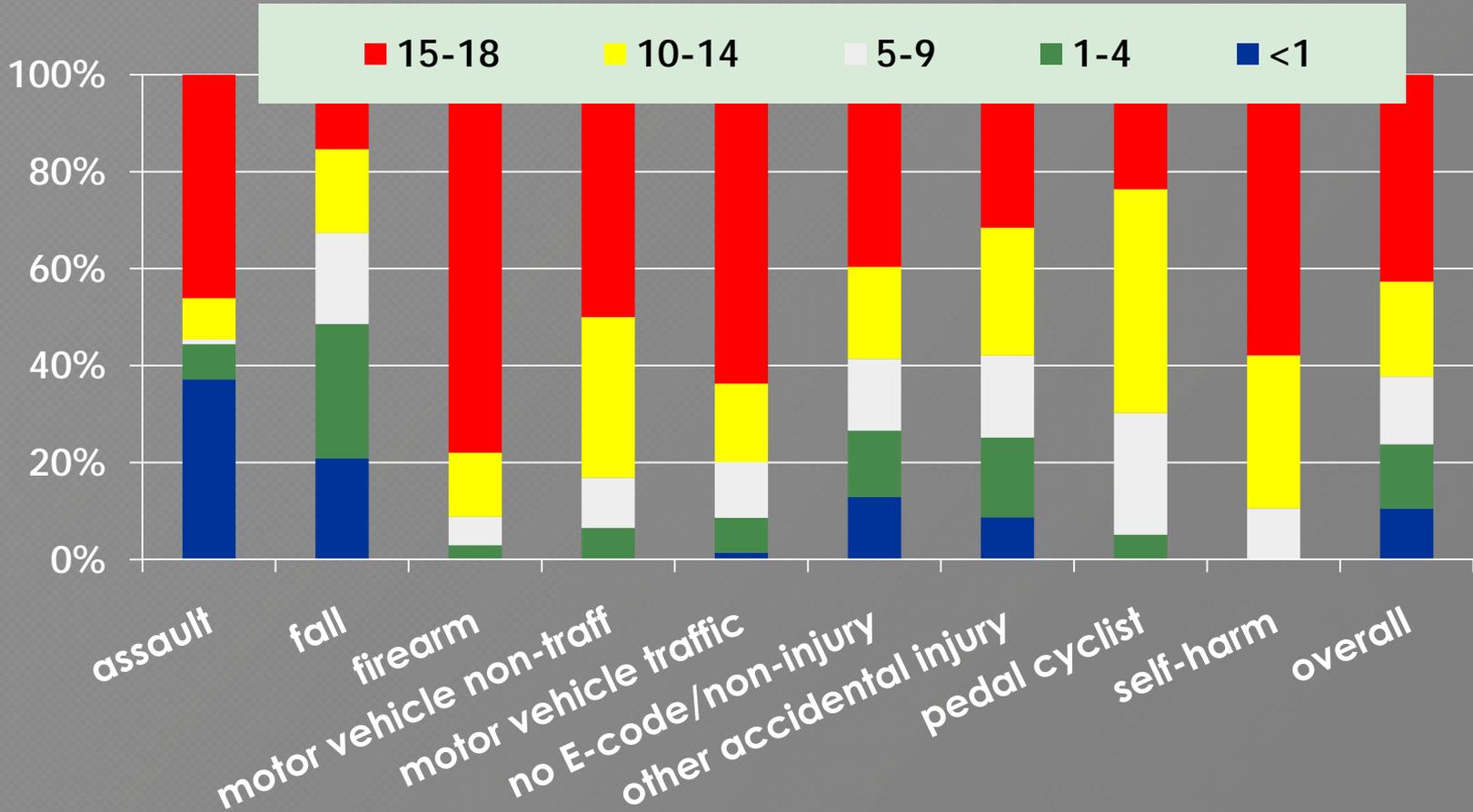
Mechanisms/intents asstd w/TBI¹-related discharges among persons 18 or younger, Ohio, 2003-07²



²Source: Ohio Hospital Association

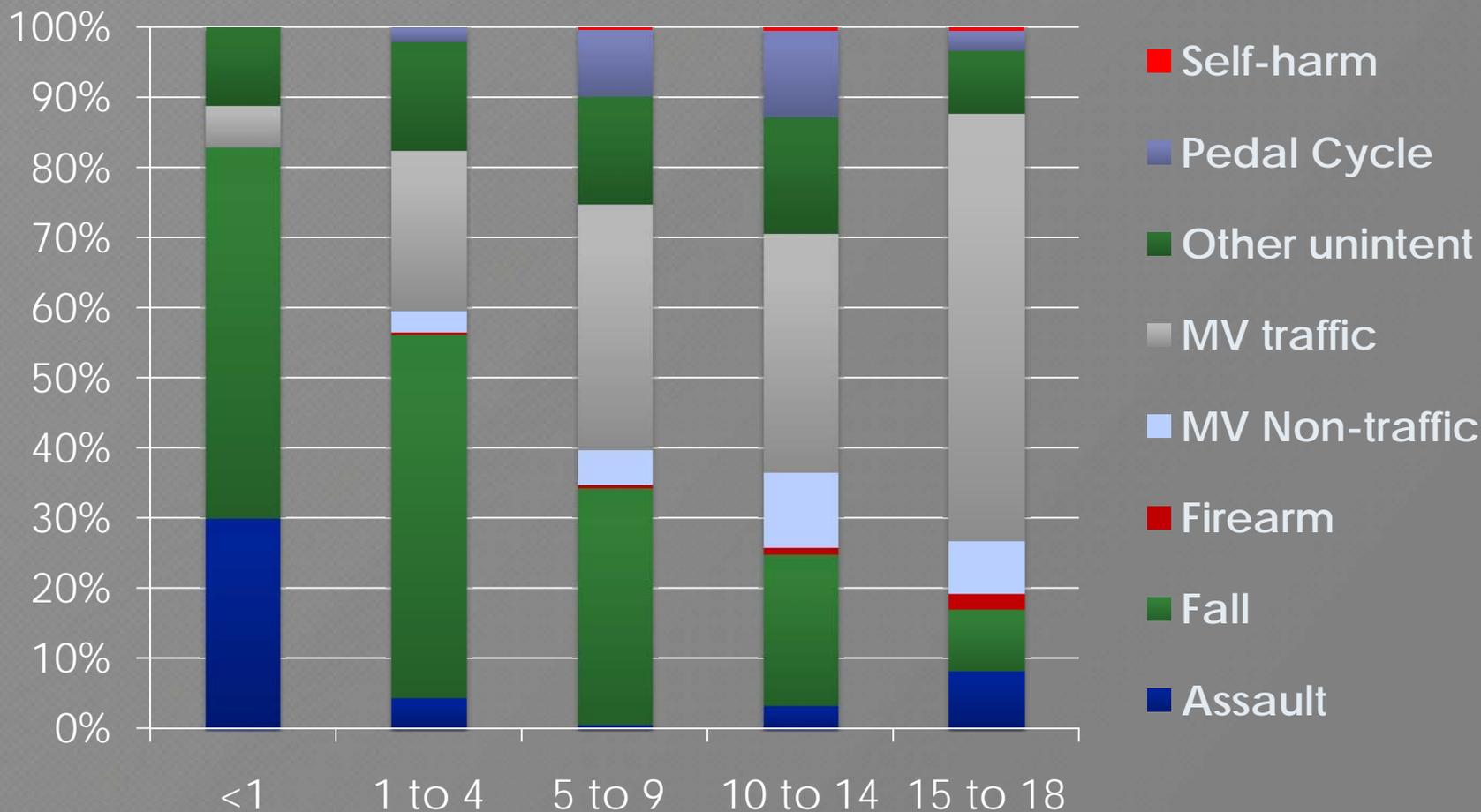
¹traumatic brain injury

Age group distribution of TBI-related discharges, by mechanism/intent, ages 0-18, Ohio, 2003-07¹



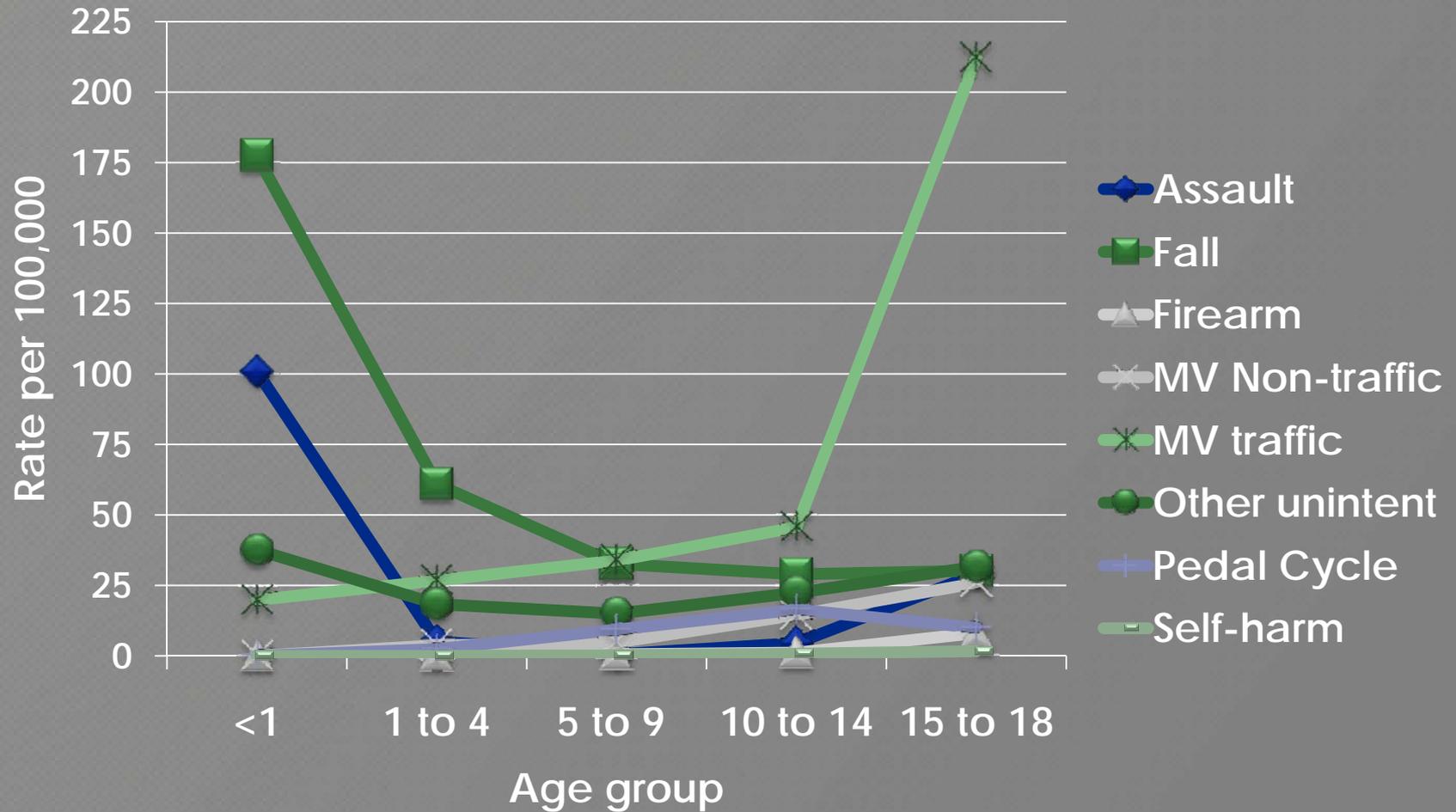
¹Source: Ohio Hospital Association

Age group distribution of TBI-related discharges, by mechanism/intent, ages 0-18, Ohio, 2003-07¹



¹Source: Ohio Hospital Association

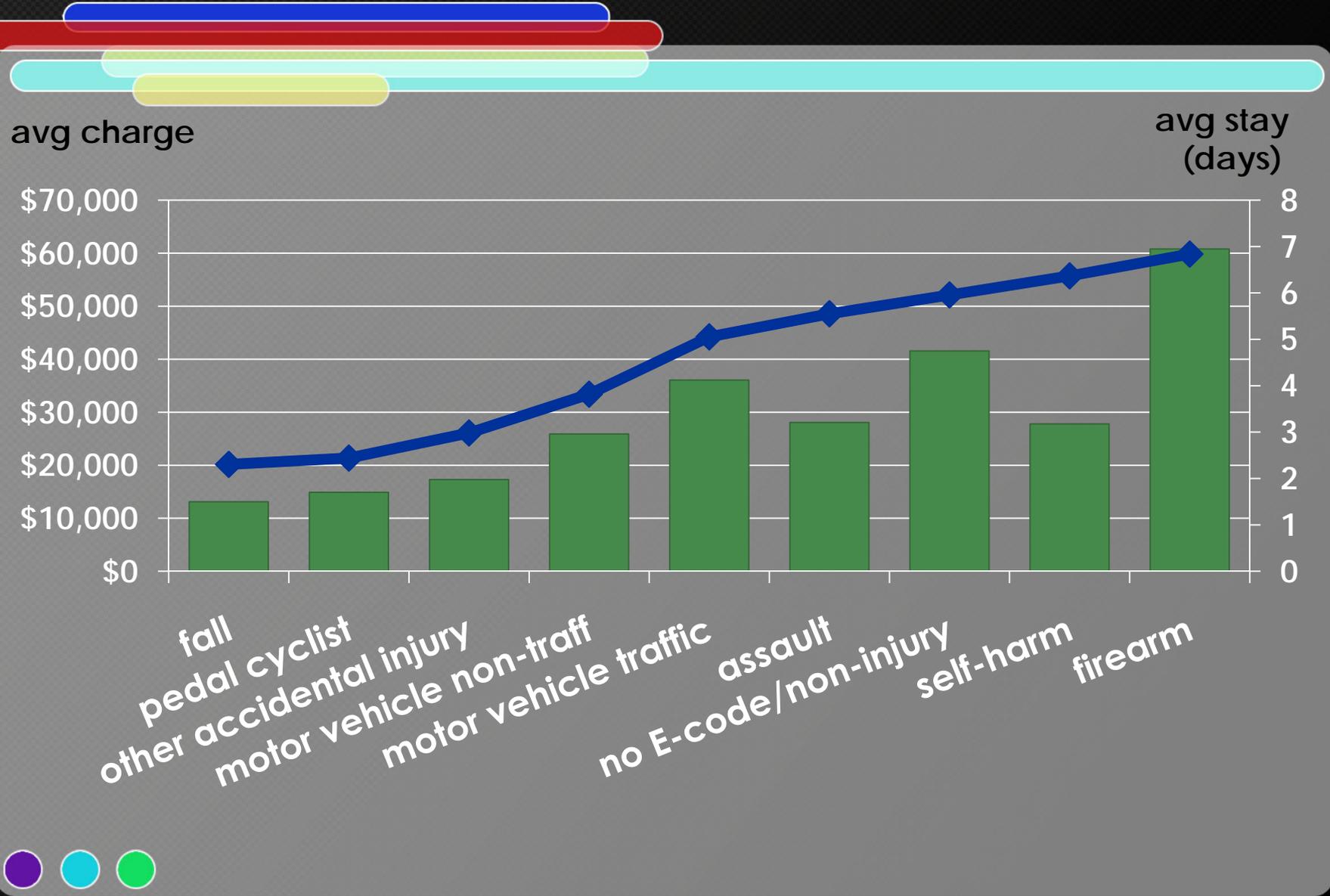
Hospitalization rates (per 100,000) for leading causes of TBIs by age group, ages 18 & younger, Ohio 2003-07*



*Source: Ohio Hospital Association



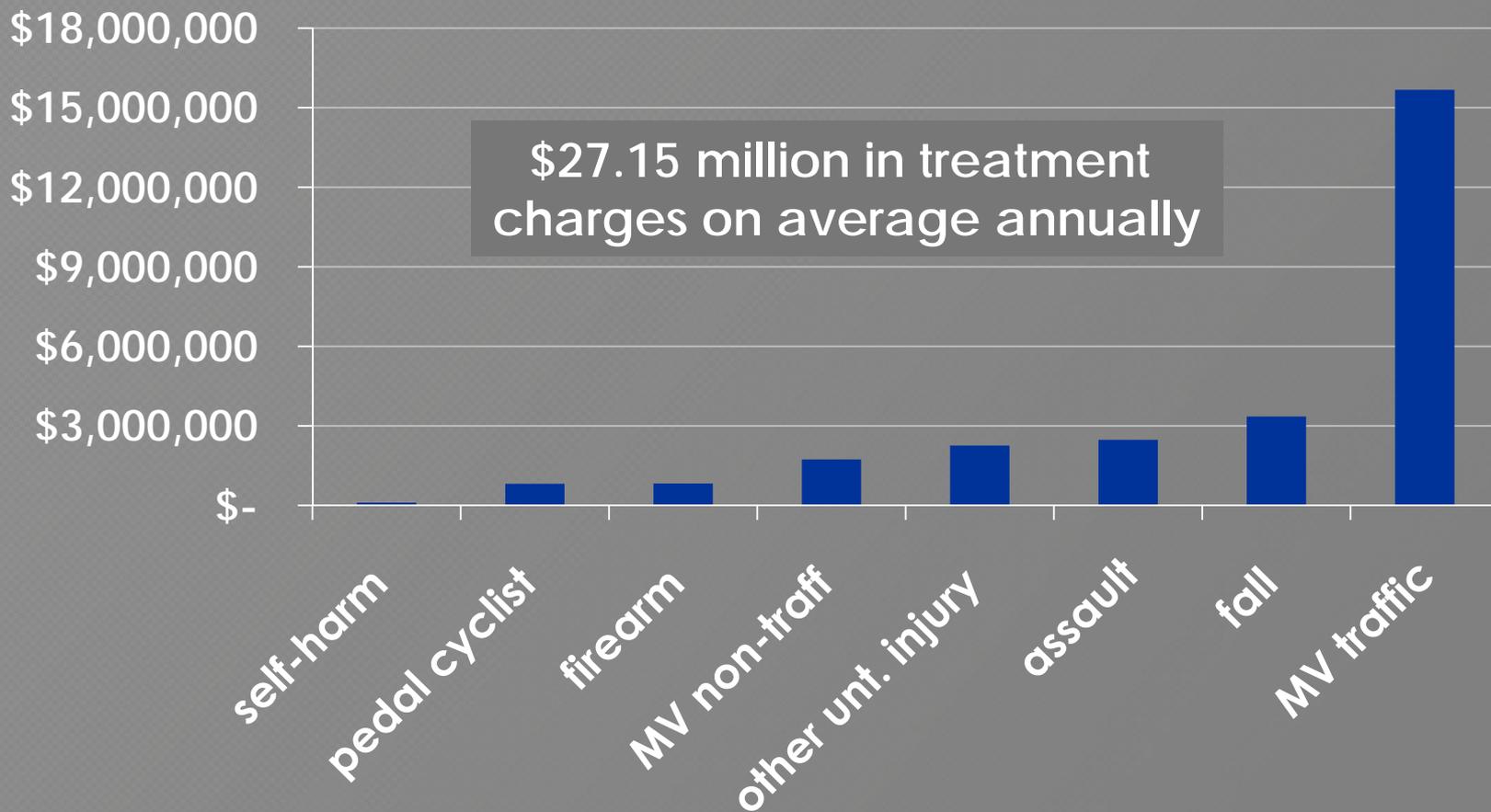
Mean charges & length of stay for TBI¹-treated hospitalizations, by mechanism/intent, Ohio, 2003-07²



²Source: Ohio Hospital Association

¹traumatic brain injury

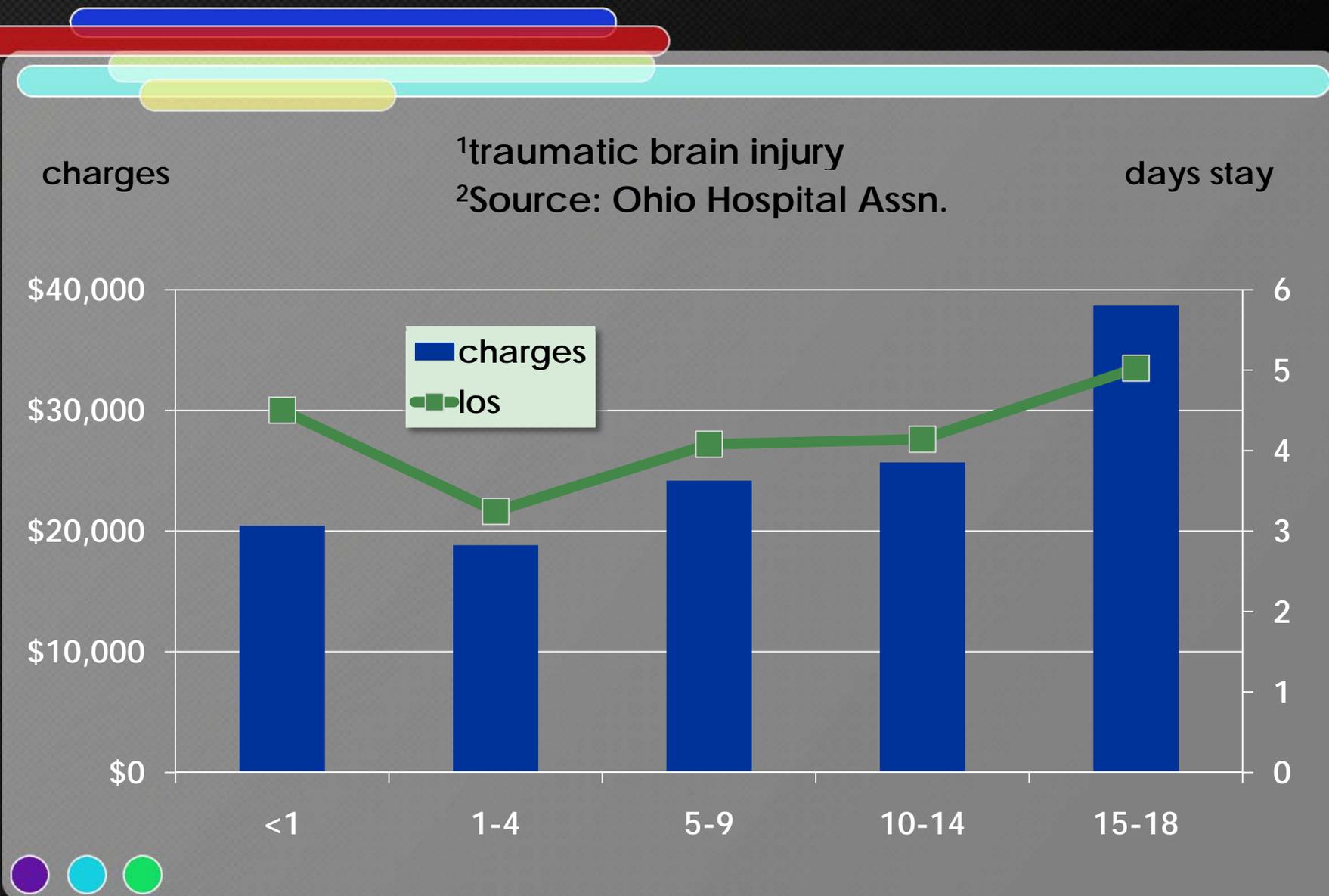
Average annual charges for TBI¹-treated hospitalizations, by mechanism/intent, ages 0-18, Ohio, 2003-07²



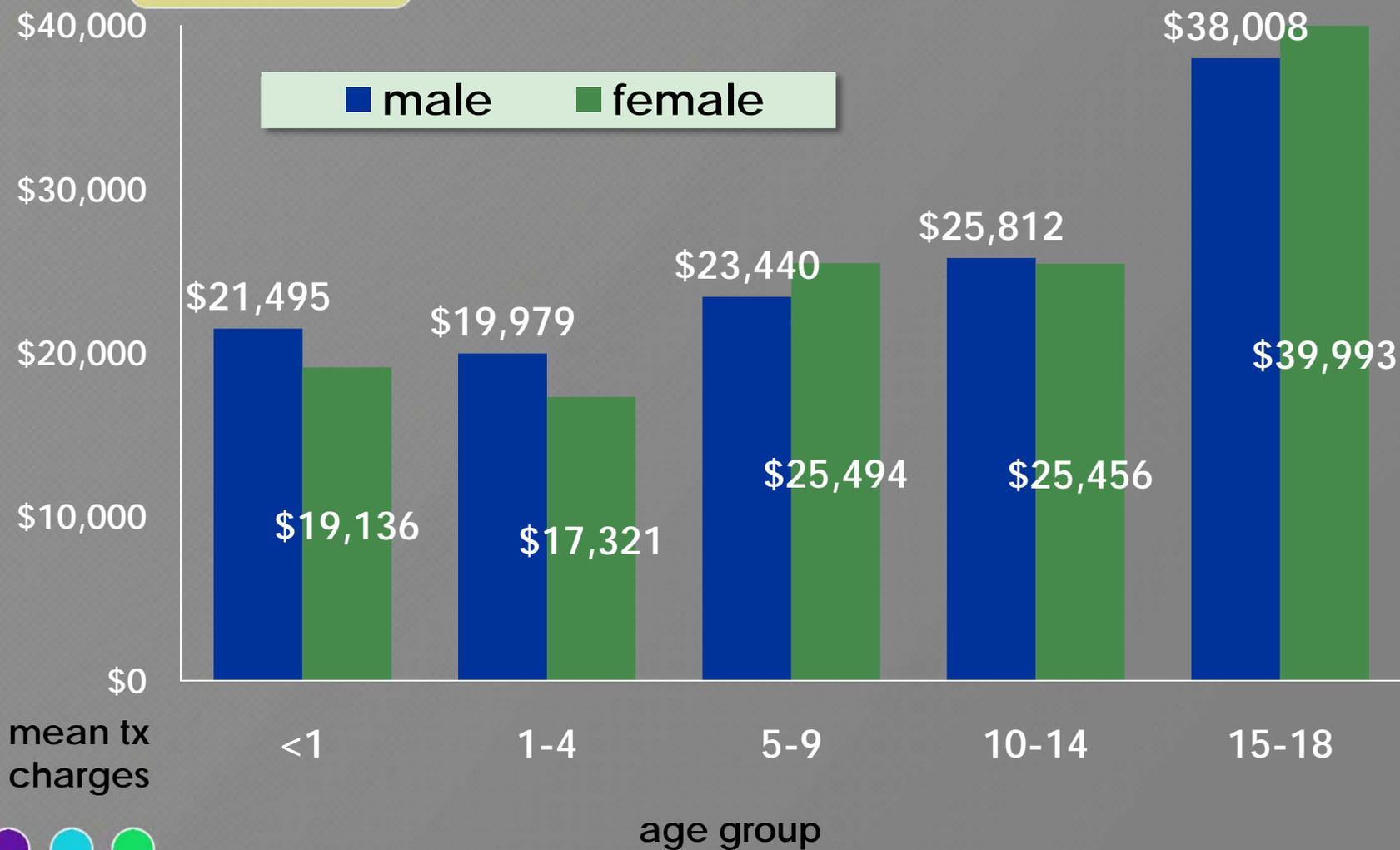
²Source: Ohio Hospital Association

¹traumatic brain injury

Mean treatment charges and length of stay among TBI¹-related discharges 18 or younger, by age group, Ohio, 2003-07²



Average charges for TBI¹-related treatment of 18 or younger, by age group, sex, Ohio, 2003-07²

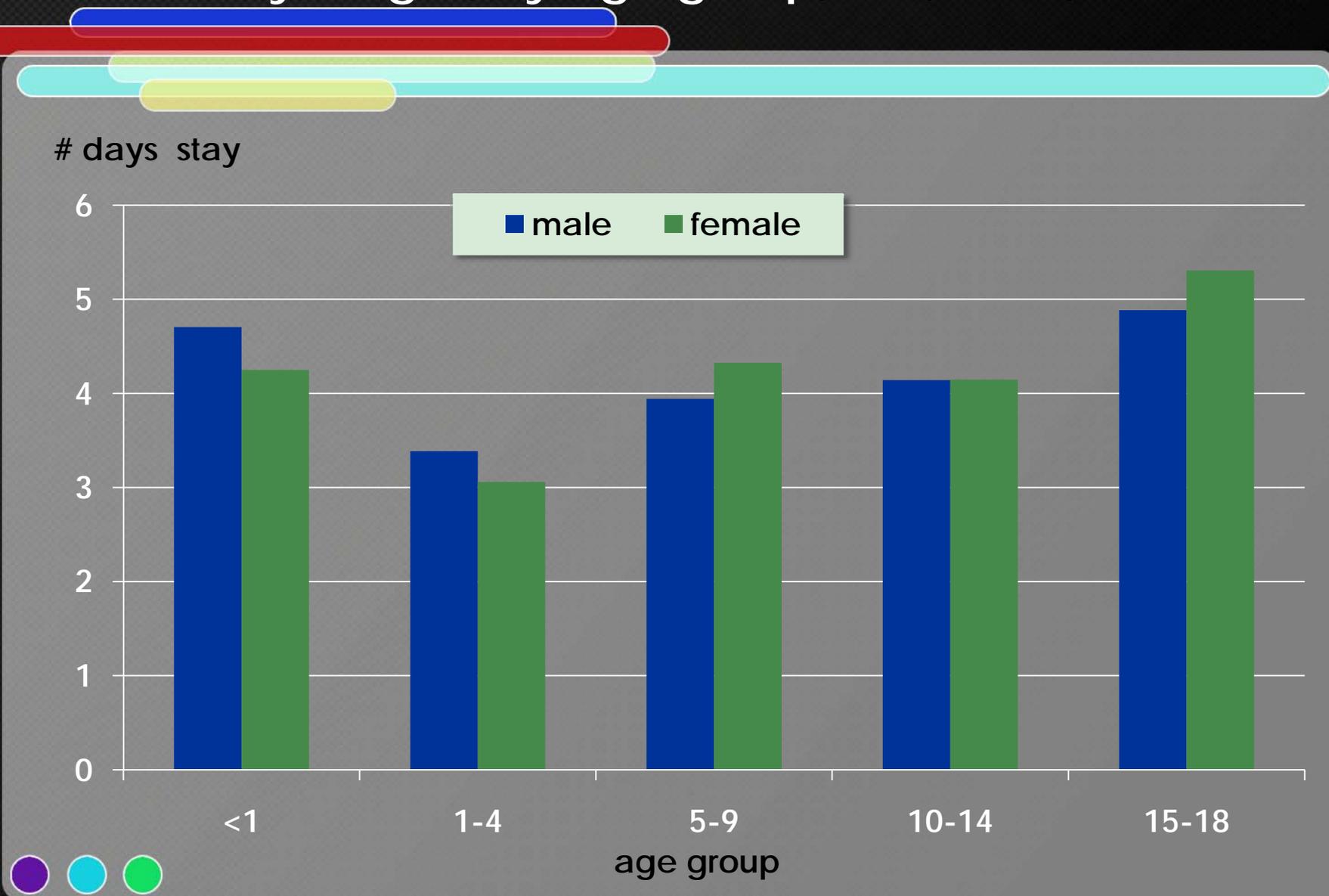


²Source: Ohio Hospital Association

¹traumatic brain injury



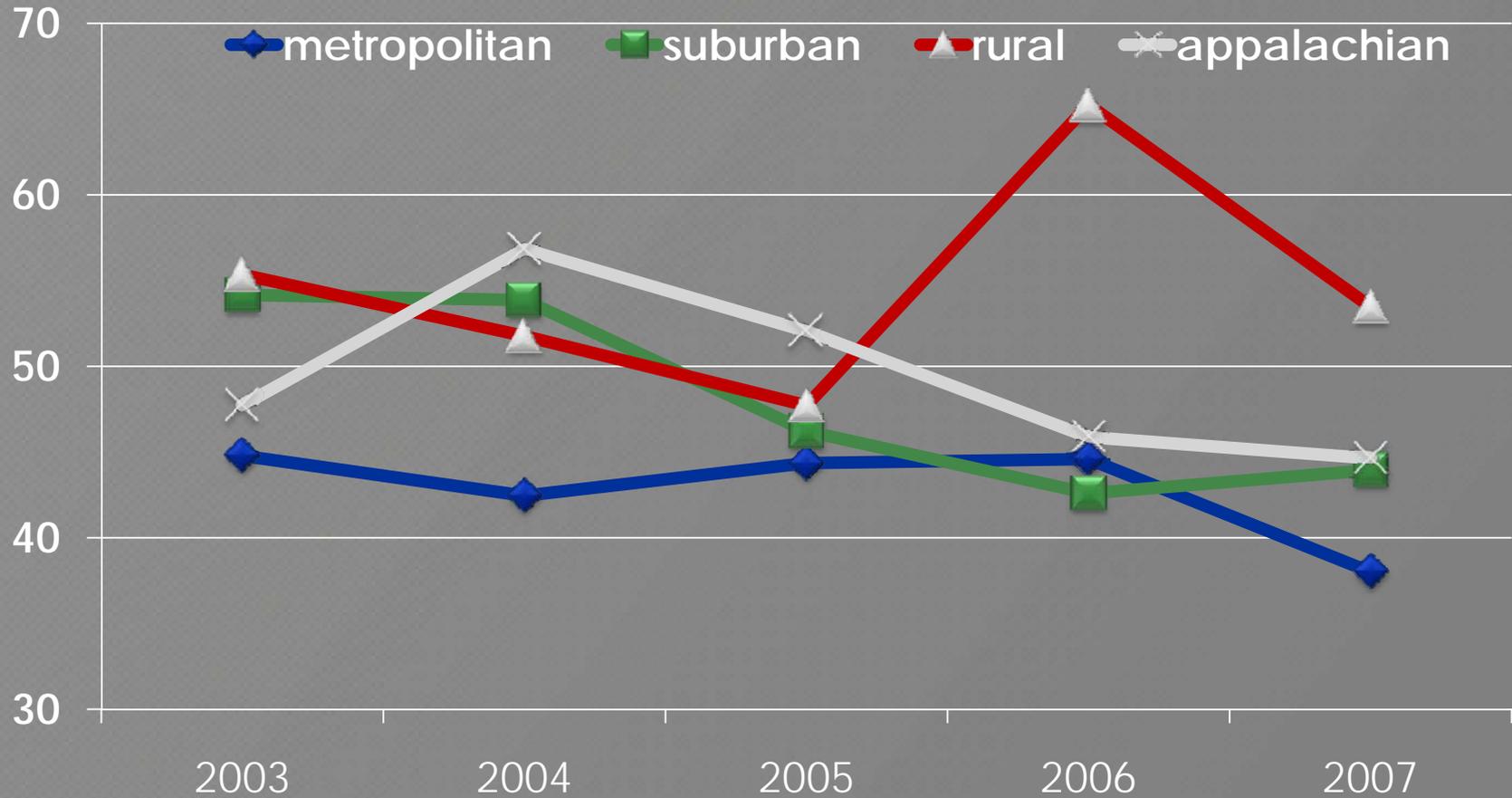
Mean length of stay for TBI¹-related treatment, for 18 or younger, by age group, sex, Ohio, 2003-07²



²Source: Ohio Hospital Association

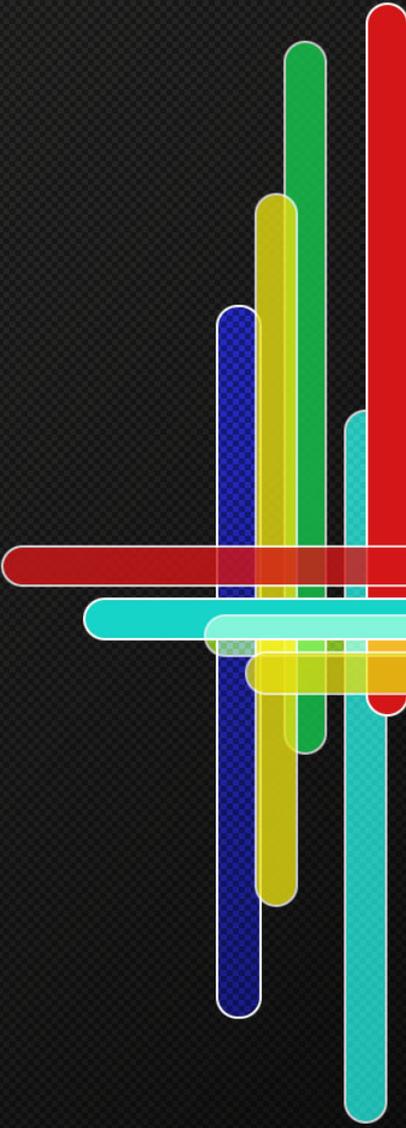
¹traumatic brain injury

TBI¹-related discharge rates² for 18 and younger, by urbanality of resident county, year, Ohio, 2003-07³



²Source: Ohio Hospital Association

¹traumatic brain injury



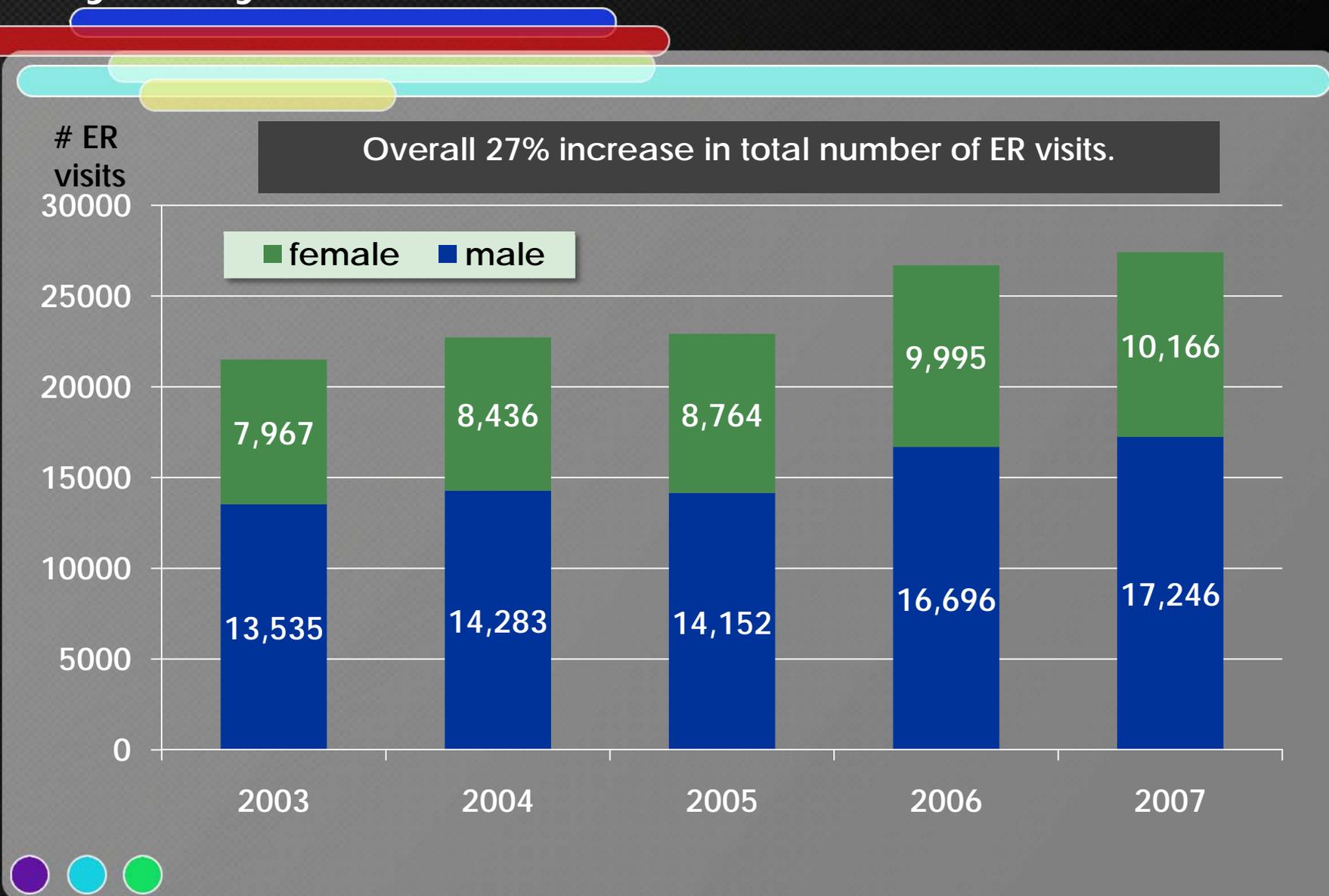
traumatic brain injuries
among the young

emergency room visits





Number of TBI¹-related ER visits among 18 or younger, by sex, year, Ohio 2003-07²



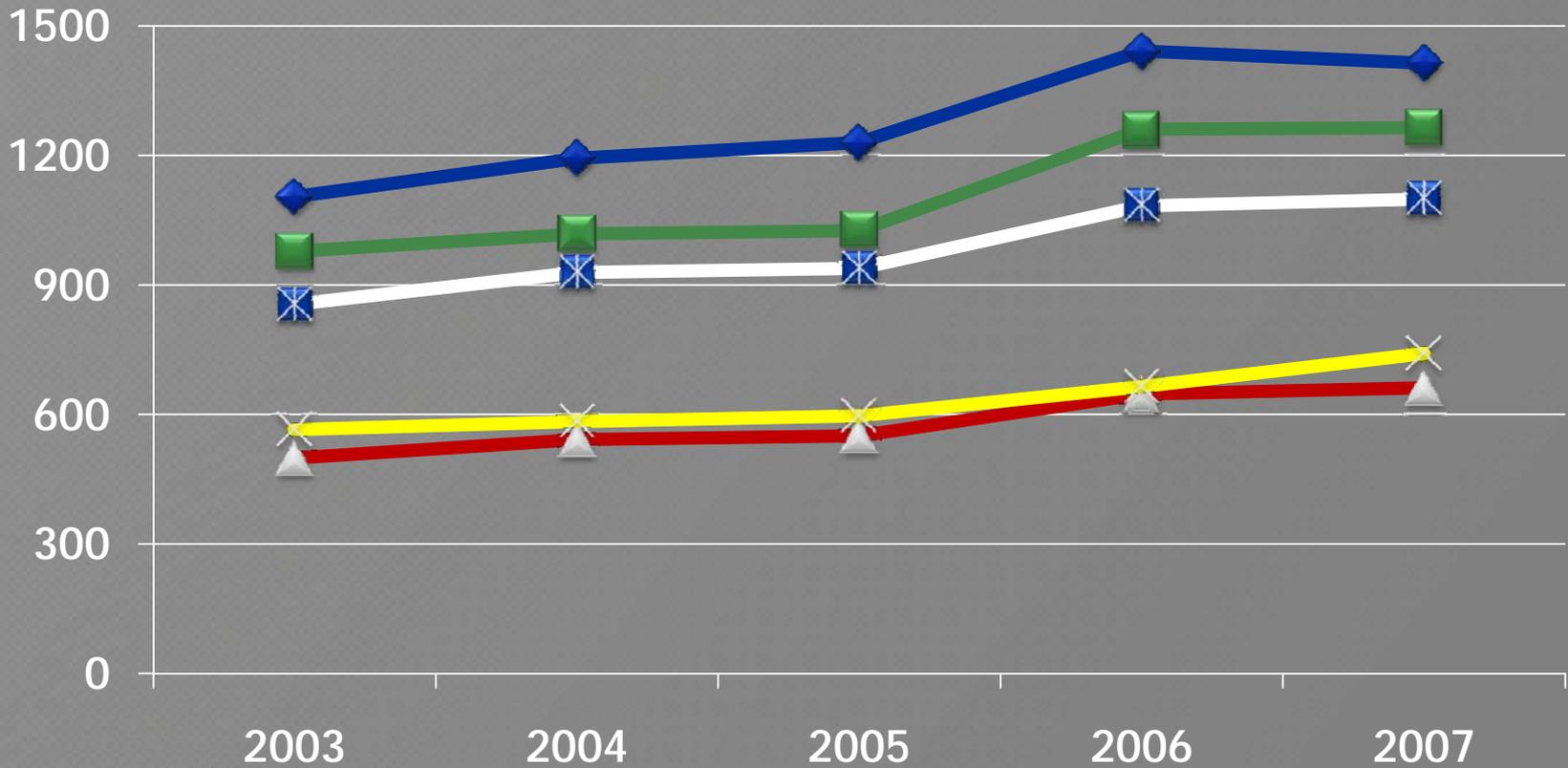
²Source: Ohio Hospital Association

¹traumatic brain injury



TBI¹- related ER visit rates² for 18 and younger, by age group, year, Ohio, 2003-07³

rate per 100,000



²Source: Ohio Hospital Association

¹traumatic brain injury

Average annual rate¹ of TBI²-related ER visits, by age group, sex, Ohio, 2003-07³

¹rate per 100,000

1500

1200

900

600

300

0

<1

1-4

5-9

10-14

15-18

age group

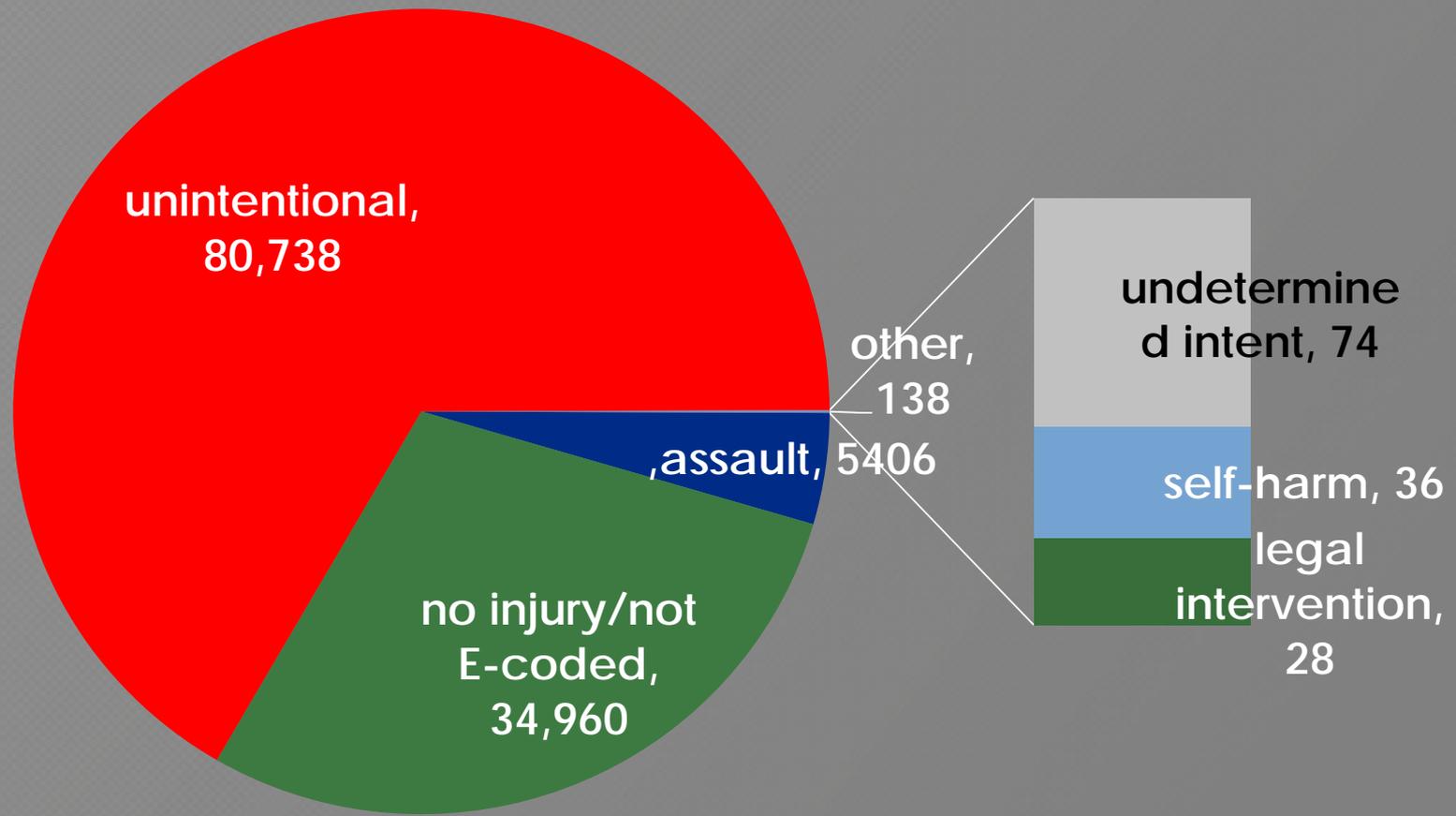
◆ male
■ female



³Source: Ohio Hospital Association

²traumatic brain injury

Distribution of intent for TBI¹-related ER visits among Ohioans 18 or younger, 2003-07²



²Source: Ohio Hospital Association

¹traumatic brain injury

Summary



- Children aged **0-4** and youth **15-19** are most likely to sustain a TBI.
- Rates are higher for **males**, and highest for **black males**.
- **Falls** are the leading cause of non-fatal TBI. Rates are highest for children 0-4.
- **MV traffic** is the leading cause of TBI-related death for all age groups. Rates are highest for adolescents.
- Infants are at high risk for TBI, with the leading cause being **assault/homicide**.





Summary

- **Fatal rates and hospitalizations have been decreasing but ER visits have been steadily climbing.**
- **Overall, MV traffic is the most costly mechanism of TBI to treat with annual hospital treatment charges (\$15.7 million) 4.6 times higher than for falls (\$3.4 million).**
- **Overall, annual charges for the treatment of TBI among Ohio's youth is at least \$27.15 million.**
- **Prevention of TBIs is highly cost effective.**



Help Them Reach their Full Potential

