University of Massachusetts Medical School

eScholarship@UMMS

2012-07-13

An Intervention to Monitor and Reduce Fall Rates Among Adults with Intellectual Disability (ID)

Courtney Noblett-Dutra
University of Massachusetts Medical School

Et al.

Let us know how access to this document benefits you.

Repository Citation

Noblett-Dutra C, Bonardi A, Lauer E, Oxx S. (2012). An Intervention to Monitor and Reduce Fall Rates Among Adults with Intellectual Disability (ID). Commonwealth Medicine Publications. https://doi.org/10.13028/940q-f152. Retrieved from https://escholarship.umassmed.edu/commed_pubs/68

An Intervention to Monitor and Reduce Fall Rates Among Adults with Intellectual Disability (ID)

Courtney Noblett-Dutra, MPA
Alexandra Bonardi, OTR/L MHA
Emily Lauer, MPH
Sharon Oxx, RN

2012 IASSID World Congress
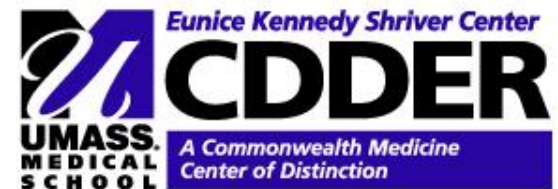
The ID Supports in Massachusetts

- 24,000 Adults with ID
- Electronic critical incident management system (examples)
- Allows for tracking of injury-related incidents
- Providers are mandated to report injuries that required an unexpected hospital visit
- In one analysis, 41% of unexpected hospital visits involving an injury, were related to a fall.

Screen Train Observe Prevent Falls

- Pilot initiative to track and assess all falls (regardless of injury) experienced by participants for six months

- Five state-operated and community-based provider agencies of varying sizes participated.

- 910 adult participants with ID

  - Almost evenly split male/female

  - Age range 18-85+

  - 90% received residential and/or day supports

- Implemented a multifactorial intervention

Intervention Components

Training

Risk Assessment

Incident Analysis
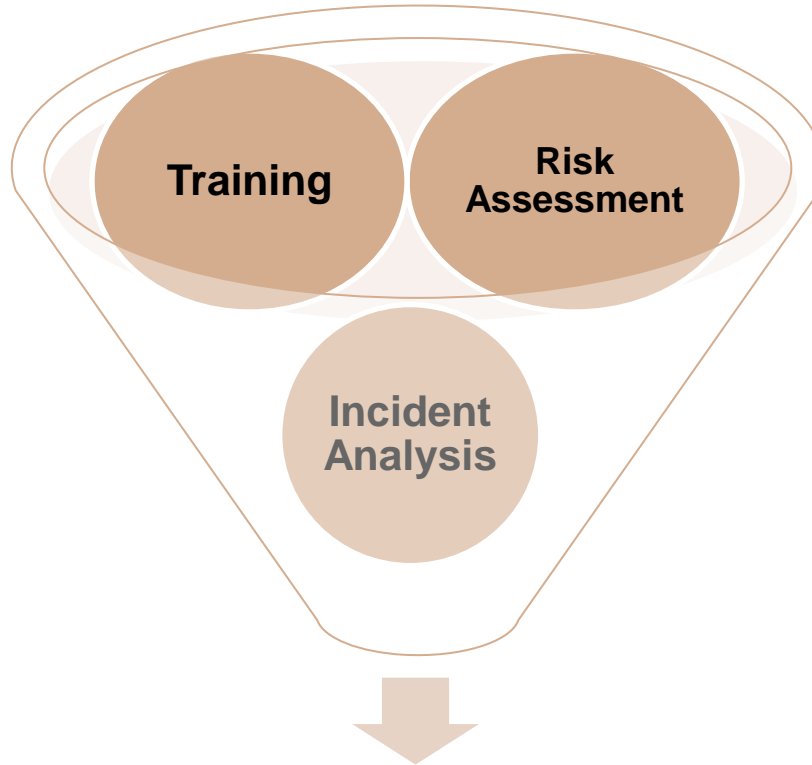
Primary Aim: Reduce Fall Rates

Secondary Aims

- Aggregate fall rates

- Correlated fall risk factors

- Analyze fall conditions

- Enhance falls awareness

Training

Phase I:
- Offered to all DDS staff with CD accompaniment.
- Topics: fall risk factors, universal prevention strategies, and risk assessment tools
- Train-the-trainer format (the CD with the trainers)

Phase II:
- Offered to pilot provider agencies.
- In-depth falls prevention training and orientation to pilot protocol., onsite.
- Targeted towards direct care staff and managers.
- Critically evaluate fall risk factors using pilot tools.
- Small group work and case study analysis.
- Pre/post knowledge measures conducted. (FIND DATA)

Risk Assessment & Fall Evaluation

Steps:

1. Baseline period: Falls Risk ChecklistDirect care professional or manager assessed individual fall risk using a **Falls Risk Checklist**
2. After each fall, direct care professionals evaluated the fall conditions that were present when the fall occurred using:
    *   Post-Fall Assessments (SPLATT)
    *   Environmental Assessments
3. Staff re-assess individual risk from baseline using Post-Fall Risk Screening Tool and individual patterns

Results

Aggregate fall incident rates

- A total of 473 falls were recorded among participants resulting in a rate of 51 falls per 100 people.

- About 24% of participants receiving residential or day supports experienced a fall
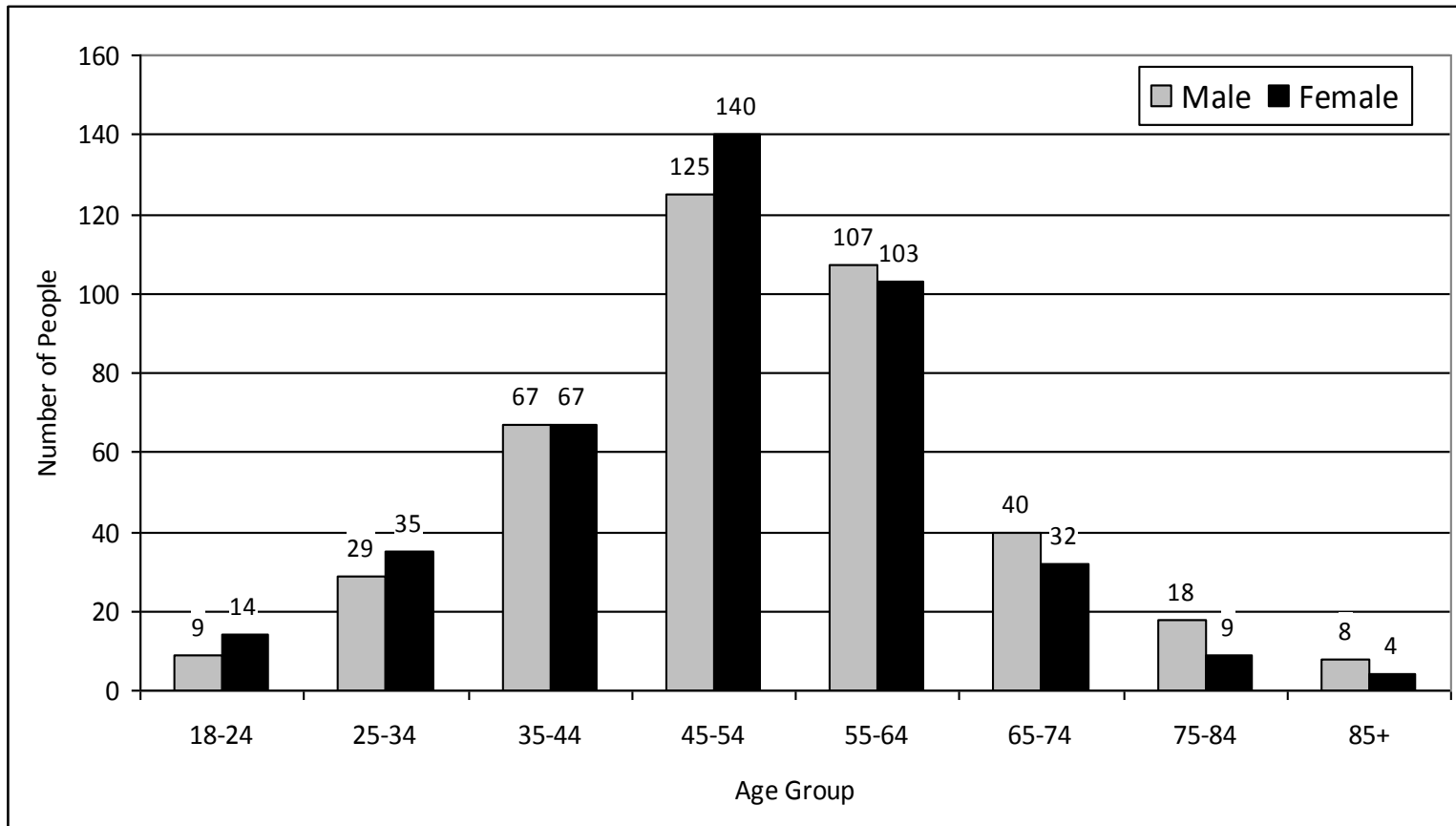
- About 10% experienced 2 or more falls

Age & Falls

- Average age

  No falls = 50.4 years

  One or more falls = 54.6 years

- T value -3.70, p-value <0.001

- Those who fell are, on average, older than those who did not

Rate of falls per age group

Residential and Day Programs Only
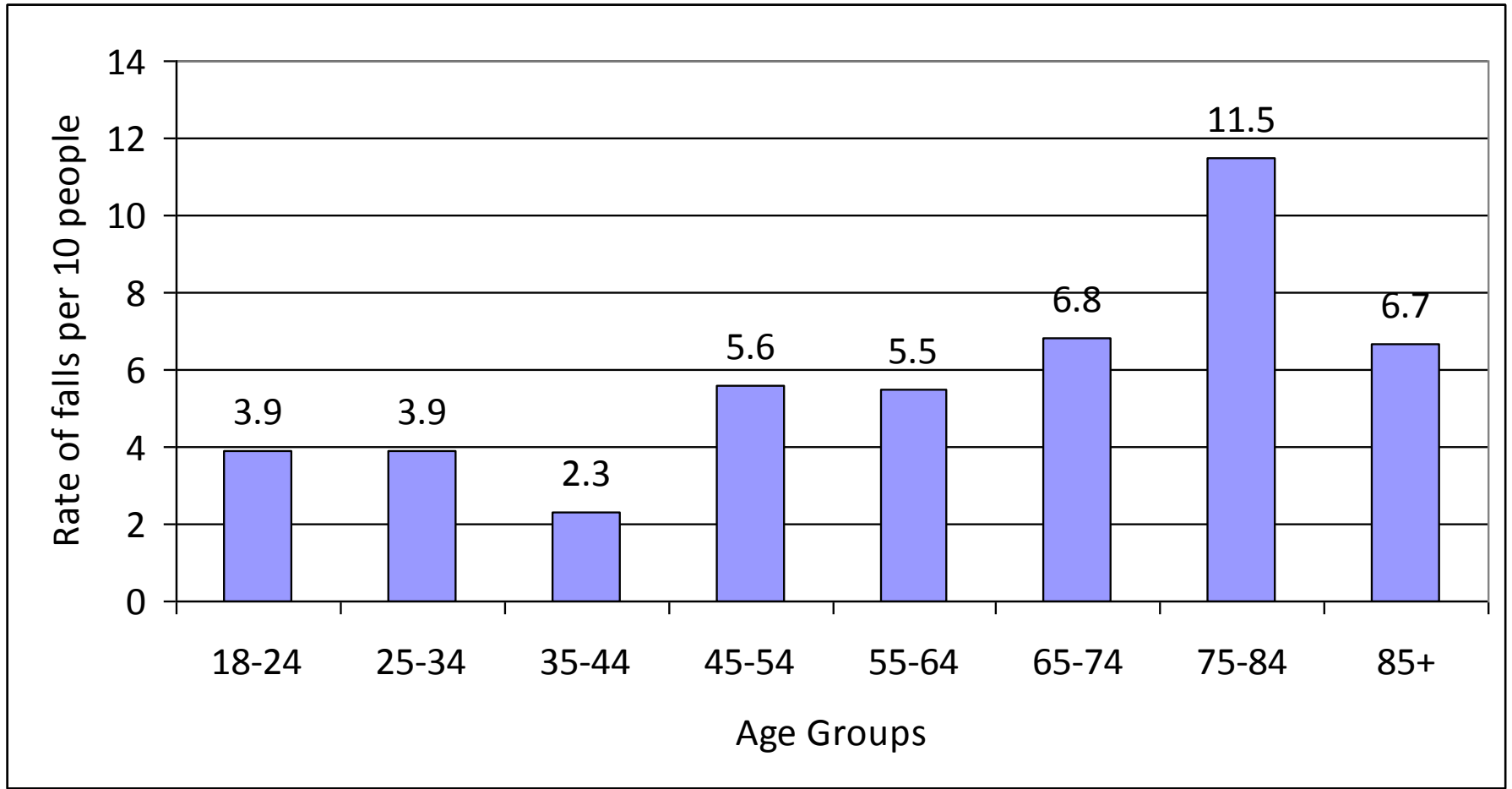
Age Distribution of People who fell: Residential & Day Programs

Fall Conditions

Symptom	N of falls	% of Falls
Loss of balance	130	31%
Unknown	75	18%
Trip/Slip	93	22%
Location	**N of falls**	**% of Falls**
Bedroom	73	18%
Bathroom	62	15%
Common Area	96	23%
Activity	**N of falls**	**% of Falls**
Ambulating	193	46%
Found on floor	34	8%
Toileting	30	7%

*Residential and
Day Programs Only*

Fall Conditions Cont.

Fall Prevention Device	N	Falls
None	303	73%
Gait Belts	38	9%
Other	49	12%
Environmental Factor	**N**	**Falls**
None	259	62%
Unknown	32	8%
Floor	29	7%
Improper footwear	18	4%

*Residential and
Day Programs Only*

Impact of Intervention on Fall Frequency

- Compared fall rates at baseline (first month) of the pilot with fall rates in the next 5 months.

- A statistically significant (Rate Ratio = 1.50, 95% confidence interval: 1.20, 1.87) decrease was observed in the rate of falls for adults in residential and/or day services

- Rate dropped from 12.3 falls/100 people in the first month to 8.2 falls/100 people in the remaining 5 months.

- This represents a 33% reduction in the monthly rate of falls between the pre-intervention period and the post-intervention period.

Impact of Intervention on Fall Frequency

- In addition, there was a statistically significant (Pearson chi-squared test. $\chi^2 = 4.32$, d.f. = 1, p=0.037) decrease in the proportion of people experiencing one or more falls in the first month, compared to the subsequent 5 months of the pilot.

- In the first month**, 8.9%** of adults in residential and/or day services enrolled in the pilot experienced one or more falls. In the next five months on average, **6.5%** of those enrolled experienced one or more falls.

Correlated Fall Risk Factors

Baseline information on 341 participants enrolled in the pilot examined in comparison with the number of falls per person experienced in the six month pilot period, compared to other adults with ID:

- **<u>Recent falls history</u>** = 5.0 times the risk of falling (95% Confidence Interval for Relative Risk: 3.37, 7.49). These adults also experienced a higher rate (1.4 times) of falls (95% Confidence Interval for Rate Ratio: 1.03, 1.95).

- **<u>Unsteady balance</u>**: 5.0 times the risk of falling (95% Confidence Interval for Relative Risk: 2.69, 9.32).

- **<u>Taking more than four prescription drugs</u>** = 2.4 times the risk of falling (95% Confidence Interval for Relative Risk: 1.21, 4.97).

- **<u>Alterations in urination</u>** (e.g. frequency, urgency or incontinence) had 1.7 times the risk of falling (95% Confidence Interval for Relative Risk: 1.08, 2.77).

Validation

- Match between injurious falls reported in the pilot with injurious falls reported in the DDS incident management system over the same time period.

- 8 injurious falls were reported in the DDS incident management system that were not reported during the pilot.

Residential and Day Programs Only

Conclusions

- Falls can be reduced in a community, ID supports

- Data collection & analysis was not burdensome for agencies (agencies continued tracking after the pilot)

- Limitations

  Limitations with staff-reported falls and definition of terms

  External fall reduction activities

- Additional research on the impact of balance and strength training and med used on falls reduction in this population.

Thank you and Acknowledgements

The Massachusetts Department of Developmental Services

NEXUS, INC

Southeastern Residential Services