

Predicting older people's fitness to drive using DriveSafe



**The
University
of Sydney**

Lynnette Kay
Anita Bundy
Lindy Clemson

Background

- Driving is essential for older people¹
 - Maintenance of independence
 - Social integration
 - Mental and physical health

Background

- Ageing process results in reduction in skills required for safe driving
- Chronological age is not an accurate predictor
- Balancing individual and community needs

Context

- Model Licence Re-assessment Procedure for Older and Disabled Drivers (Austroads)²
- Screening test with following criteria:
 - Face validity
 - Predictability
 - Cost-effective
 - Able to be used in licensing office
 - User-friendly

DriveSafe

- 15 images
- Vehicles and pedestrians vary in position & number
- View for 3 seconds
- Report details



Current Research

- Purpose of the study was to use Rasch Modelling³ to:
 - Examine construct validity and internal reliability of DriveSafe
 - Determine if the test accurately predicts on-road driving performance of older drivers

Participants

- Retrospective analysis of 284 older drivers
 - Aged 65 years and over
 - Referred for an Occupational Therapy Driving Ax
 - Completed DriveSafe
 - Completed on-road driving assessment
 - 60 minutes
 - Standard vehicle and route
 - Driving Instructor and Occupational Therapist
- Ethics approval granted by two centres

Participants

- 284 older drivers
- 78% male and 22% female
- Mean age 76 years (65-93, SD=6.4 years)
- 88% had cognitive or neurological diagnoses
- On-road outcome:
 - Fail: 41%
 - Learner's Licence: 35%
 - Pass: 24%

Results

- Strong evidence for construct validity
 - DriveSafe measures one construct
 - DriveSafe assesses best those people below the mean i.e. least competent drivers
 - Some redundant items
- Strong evidence for internal reliability

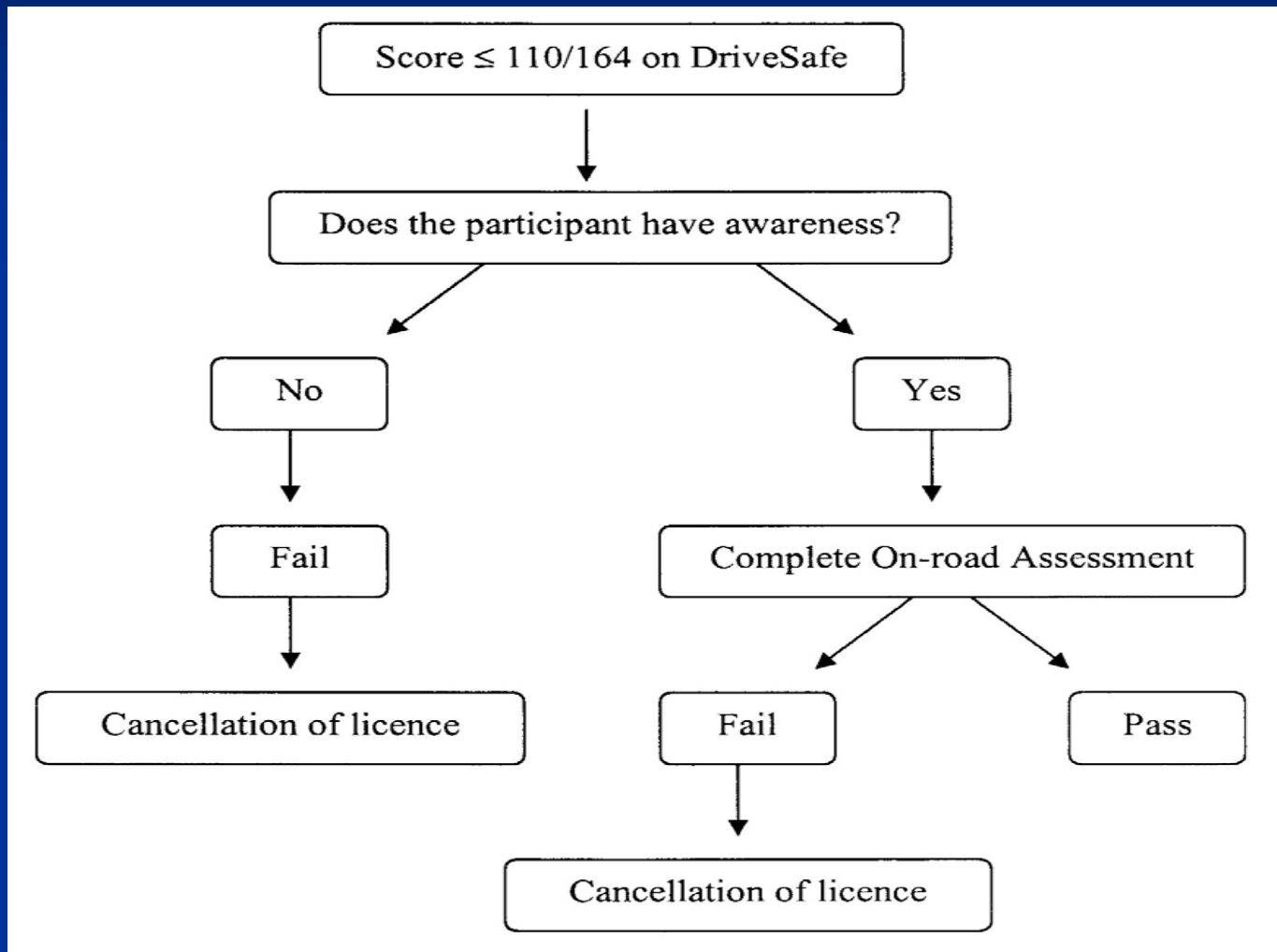
Predictability

	DriveSafe <95/164
Sensitivity Fail test + on-road	87%
Specificity Pass test + on-road	69%
Positive Predictive Value	66%
Negative Predictive Value	89%

Predictability

	DriveSafe <95/164	DriveSafe + No Awareness 110/164
Sensitivity Fail test + on-road	87%	90%
Specificity Pass test + on-road	69%	99%
Positive Predictive Value	66%	98%
Negative Predictive Value	89%	94%

Flow Chart



Limitations

- Judgement of driver's level of awareness of deficits based on both clinical and on-road assessments
- Clinicians conducting on-road assessments were not “blind” to performance in clinical tests
- On-road performance of drivers was not correlated with crash statistics

Conclusions

- Original Criteria:
 - Evidence for face and construct validity of DriveSafe
 - DriveSafe has good predictability
 - Drivers who score $<110/164$ on DriveSafe and have no awareness of their deficits will fail an on-road Ax
 - DriveSafe could be used as a screening test for all older drivers to identify those who require further assessment (OT driving assessment)

Future

- Develop and test a measure for awareness of deficits⁴
- Develop a computer-based version of DriveSafe that can be self-administered and used in a licensing authority office
- Prospective study including crash statistics⁵
- Identify those drivers who “at risk” before an accident happens⁶

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- Older drivers who participated in this study

References

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