Using the Scientific Method to develop new, evidence-based methods of Paralympic Classification (Part 2 of 2)

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The University Of Queensland AUSTRALIA
International Paralympic Committee
Classification Research Partner

Background

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- In support of their policy commitment to development of evidence-based methods of classification, the IPC are developing an audio-visual resource that aims to facilitate improvement of Paralympic classification through science by fostering meaningful functional collaborations among key stakeholders – International Sports Federations, Classifiers (including Heads of Classification), coaches, athletes and researchers
- Features:
    - Delivered by suitable qualified person
    - Modular - easily adjusted so that the presenter can make it relevant for a wide range of sports at different stages of development;
    - Accessible (i.e. easily understood by a wide range of audiences)

100 YEARS AHEAD

Aim of this presentation

- This presentation is Part 2 of 2. The aim is to briefly review the framework on which the audiovisual presentation will be based and emphasise those aspects that will lead to the development of new classification structures and the translational research required
- Your role: Focus on form. Is it modular? Is it accessible? What could make it more useful as a tool.

4-Part Framework

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1. Purpose and conceptual basis
2. Improving current methods
   i. Eligibility criteria
   ii. Class allocation
3. Developing new methods and structures
4. Translating new methods and structures into practice

100 YEARS AHEAD

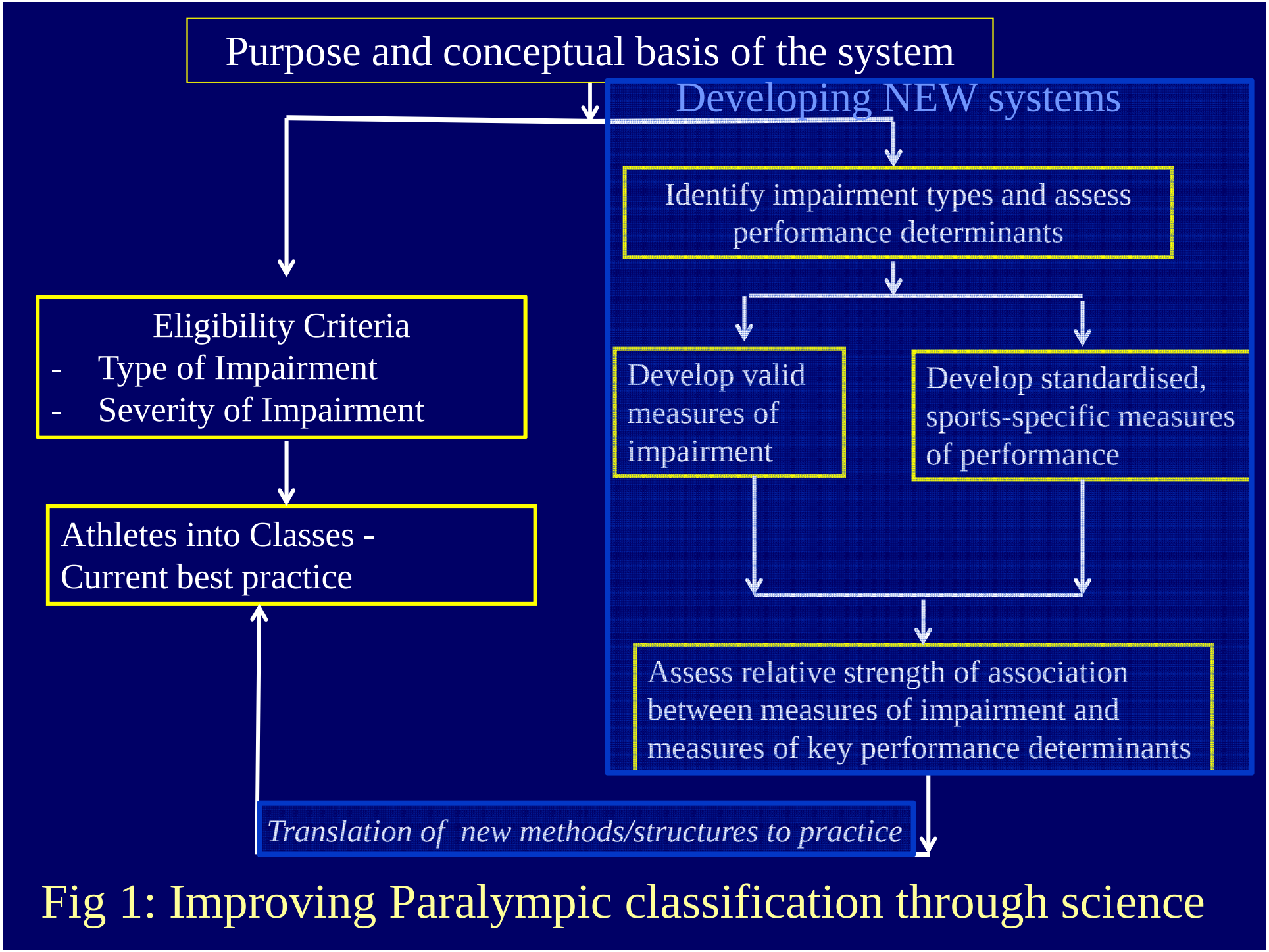

Fig 1: Improving Paralympic classification through science

Supplementary publications

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- Tweedy, S. M., & Vanlandewijck, Y. C. (2011). International Paralympic Committee Position Stand - Background and scientific principles for Classification in Paralympic Sport. *Br J Sports Med*; 45, 259-270.
- Tweedy, S.M., Beckman, E.M., and Connick, M.J., (2014) Paralympic Classification – Conceptual basis, Current Methods and Research Update, *PM&R, ,* 6 (8)s11-s17
- Tweedy, SM, Mann, DL, Vanlandewijck, Y.C (accepted) Research Needs for the Development of Evidence-based Systems of Classification for Physical, Vision and Intellectual Impairments, In Vanlandewijck, Y.C. and Thompson, WR, Training and Coaching the Paralympic Athlete, Blackwell Publishing ltd

100 YEARS AHEAD

Part 3: Developing and validating new structures or novel methods of assessment

Overview of the appro

(Tweedy & Vanlandewijck, 2011)

- Identify eligible impairments – vision impairme impairment types?
- Develop valid, reliable measures impairment (e of movement, coordination)
- Develop standarized measures of key performa
- Conduct studies that evaluate the relative stren between impairment and performance using mu
- These are conventional scientific methods – tra address these questions

Organisational requirements

- Two common responses from classifiers and sports:
  - Overwhelmed
  - Threatened
- Therefore it is important that:
  - Paralympic sports have Classification manual with statement of purpose and description of conceptual basis
  - engage with research sector – Universities and research centres.
  - Set realistic timeframes – studies are conceptually challenging and transition process must be carefully planned and implemented (years, not months).
  - Encourage stakeholder involvement (athletes, coaches, administrators)

3 main areas covered in Part 3

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1. Novel, sport-specificmethods of impairment assessment that have been published:
   i. Physical impairment assessment
      a. Range of movement
      b. Coordination - Connick MJ, et al (2015) How Much Do Range of Movement and Coordination Affect Paralympic Sprint Performance? *Medicine and science in sports and exercise*
      c. Strength - *Beckman, E.M et al. (2014) Novel Strength Battery to Permit Evidence-based Paralympic Classification, Medicine, 93(4), e31
   ii. Intellectual impairment – developed by IPC Classification Partner , Intellectual impairment
   iii. Vision impairment developed by IPC Classification Partner , Intellectual impairment

100 YEARS AHEAD

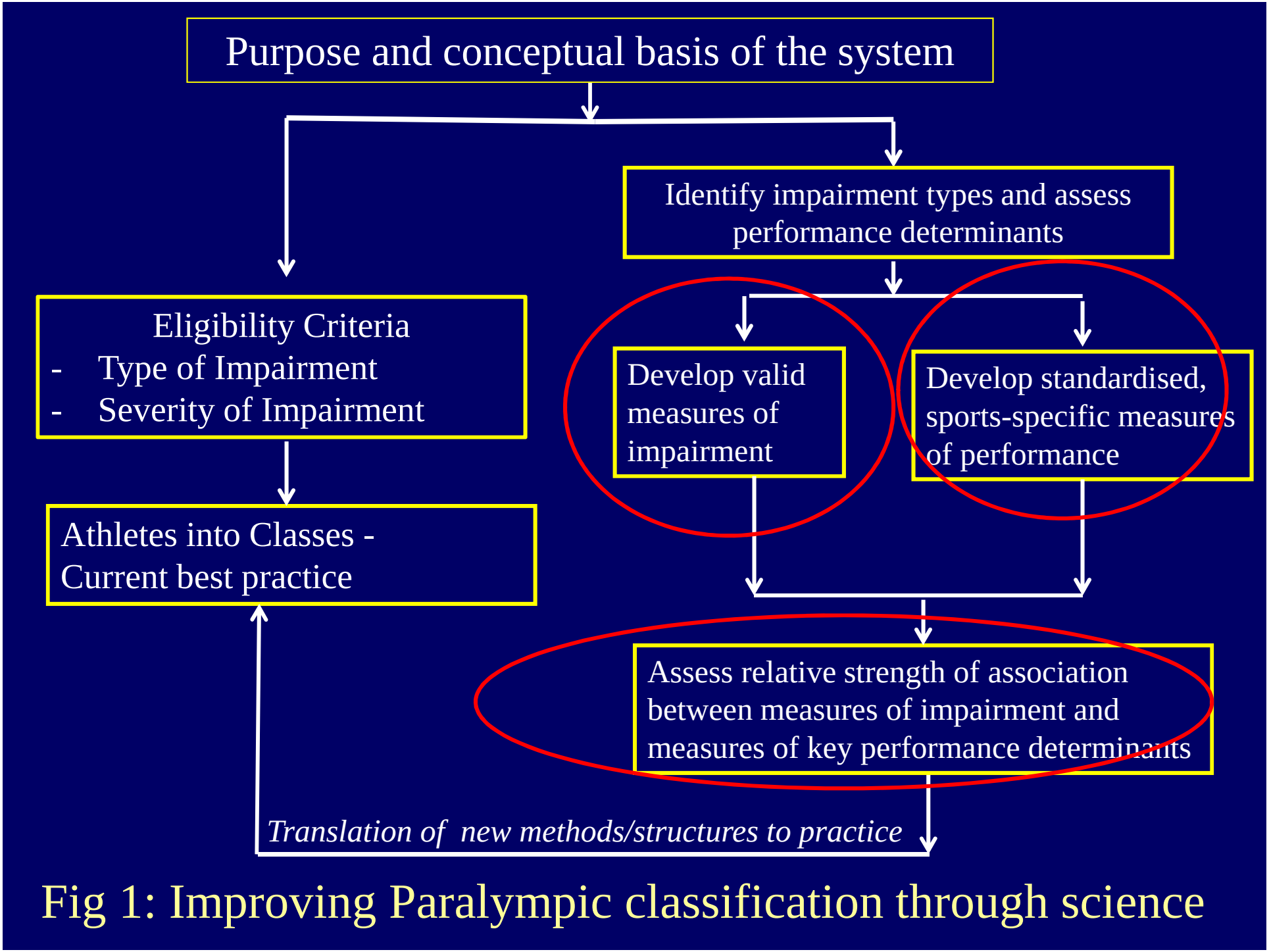
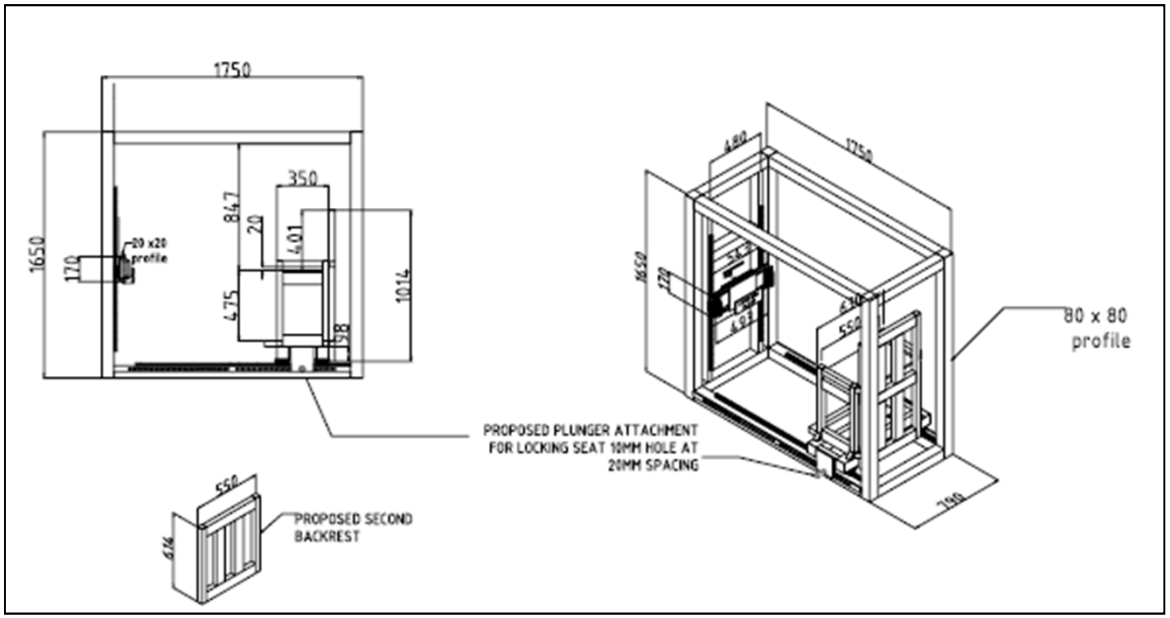


Fig 1: Improving Paralympic classification through science

Part 3: Developing and validating new structures or novel methods of assessment



Beckman, E.M., Newcombe, P., Vanlandewijck, Y.C., Connick, M.J., and Tweedy, S.M., (2014) Novel Strength Battery to Permit Evidence-based Paralympic Classification, Medicine, 93(4), e31

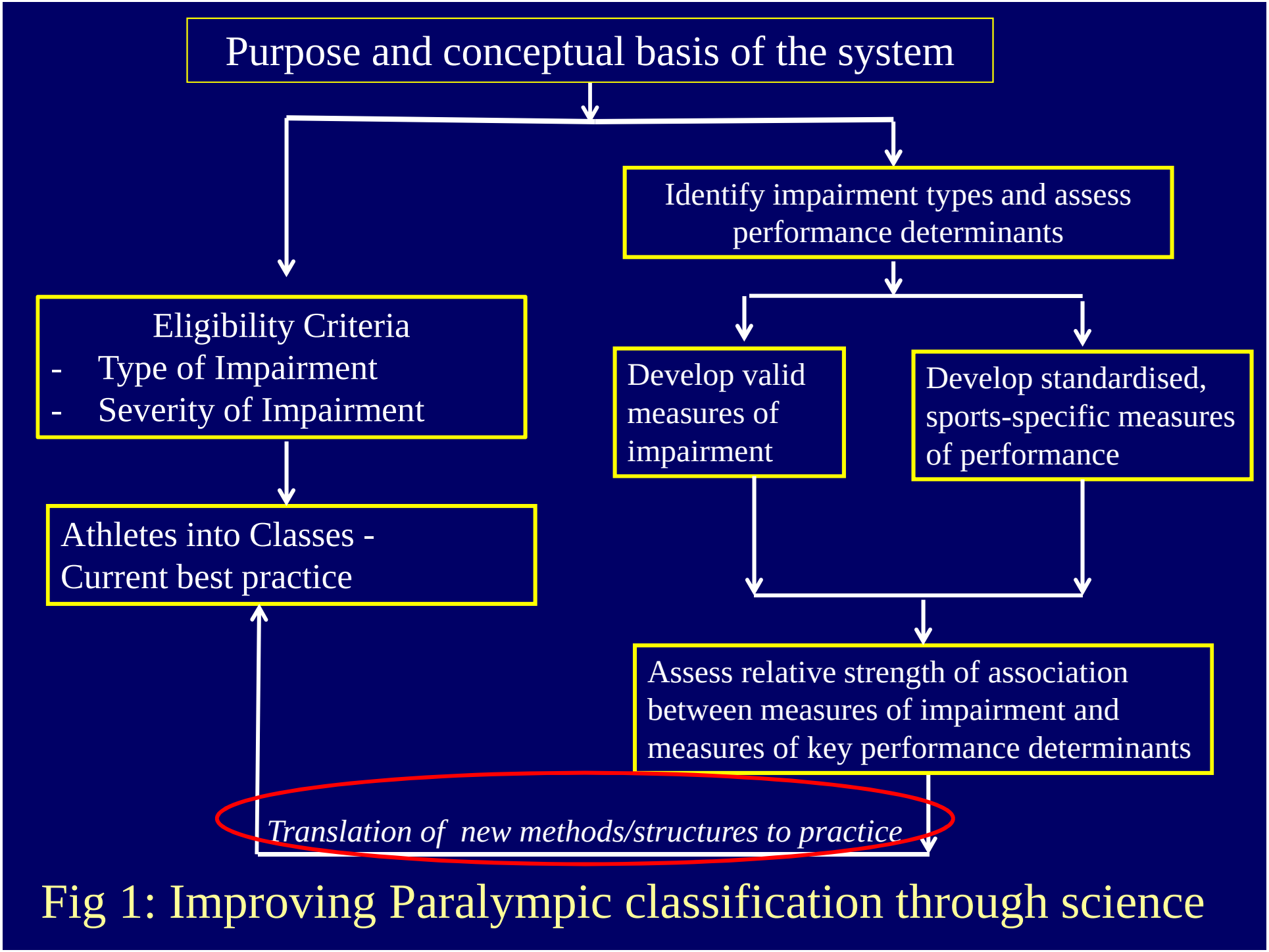


Fig 1: Improving Paralympic classification through science

Part 4: Translating research outcomes into practice

1. Important to recognise that decisions around adoption and implementation of new structures and measures reside with the Ifs;
2. Athlete impact and input is critical
3. Translational Research frameworks exist and may be able to be adapted/applied to IPC (e.g., RE-AIM – Reach, Effectiveness, Adoption, Implemetation and Maintenance)

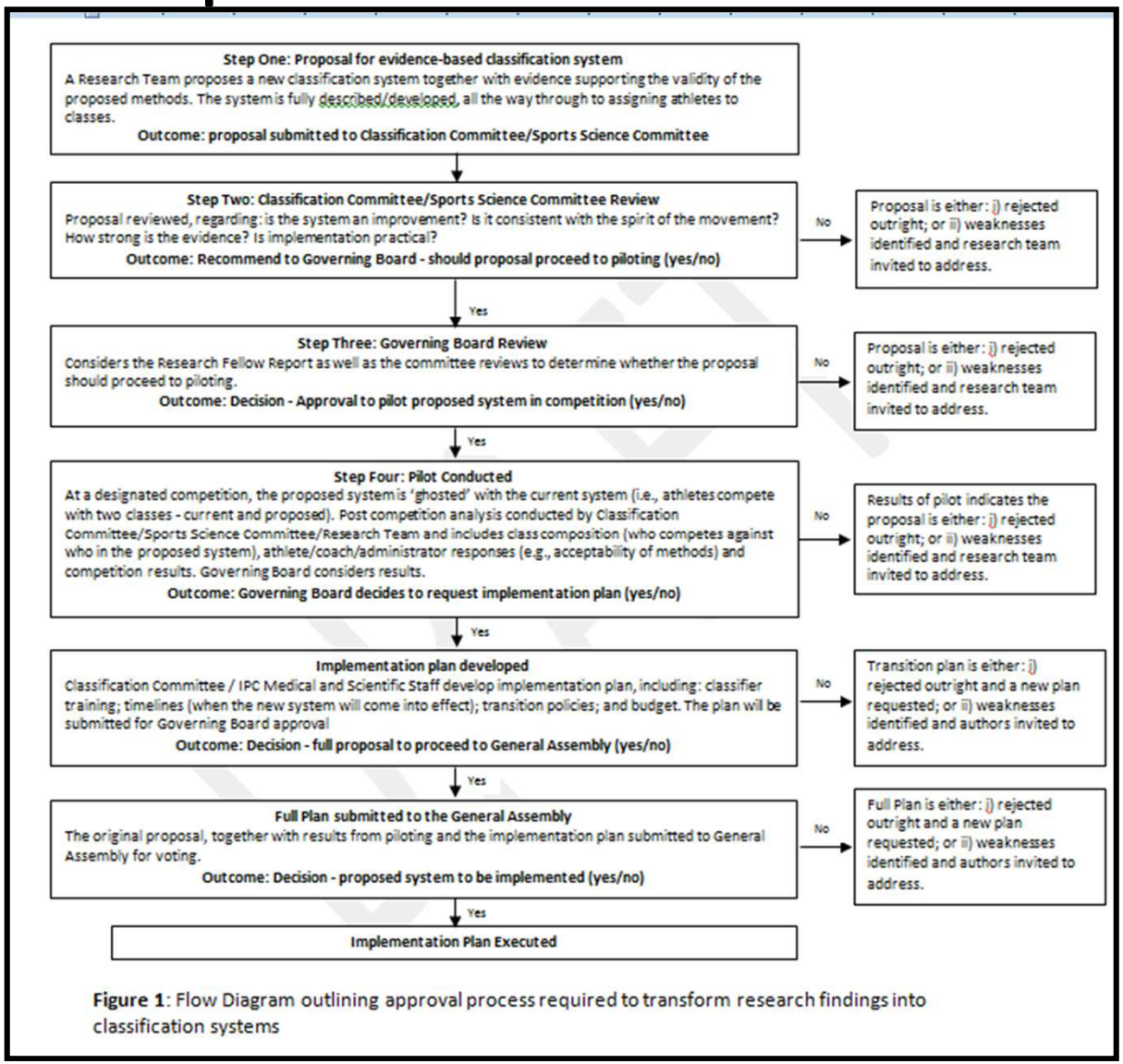


Figure 1: Flow Diagram outlining approval process required to transform research findings into classification systems

Conclusion

- This 2 part presentation described an IPC initiative to develop an audio-visual resource that aims to facilitate improvement of Paralympic classification through science.
- Features of the presentation include:
  - Delivery by suitable qualified person
  - Modular - easily adjusted so that the presenter can make it relevant for a wide range of sports at different stages of development;
  - Accessible (i.e. easily understood by a wide range of audiences)
- Feedback is welcome!