Using cohort performance data to explore inclusive design of a medical curriculum for a diverse student body
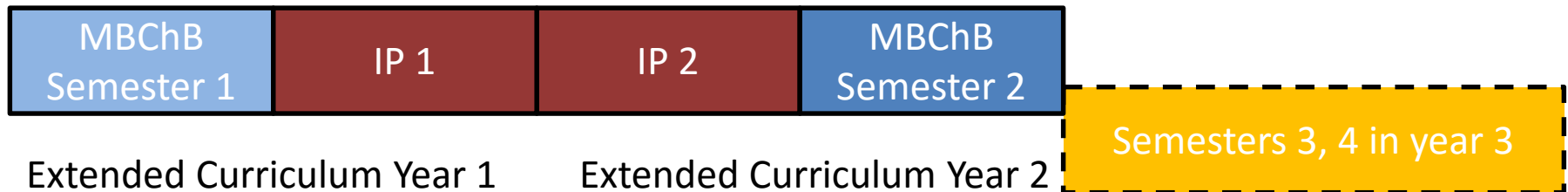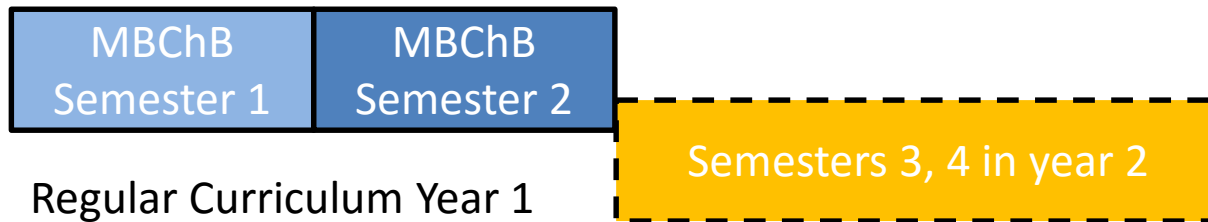
Ermien van Pletzen, Jane Hendry, Elmi Badenhorst,

Busayo Ige, Riashna Sithaldeen

Universtiy of Cape Town: Academic Development Programme (Centre for Higher Education Development), Institutional Planning Department, Department of Health Sciences Education

MBChB Intervention Programme (IP)
DHET funded Extended Curriculum

MBChB Semester 1	MBChB Semester 2

Semesters 3, 4 in year 2

Regular Curriculum Year 1

MBChB Semester 1	IP 1	IP 2	MBChB Semester 2

Semesters 3, 4 in year 3

Extended Curriculum Year 1   Extended Curriculum Year 2

Background and aims

- Critiques of extended programmes
  - racially discriminatory
  - stigmatising – imposing deficit notions on students instead of on education system
- Culmination of criticism during student activist period starting in 2015
- Prompted review of intervention programme
- Aims:
  - To analyse student performance
  - To assess whether intervention programme is most appropriate way of providing support
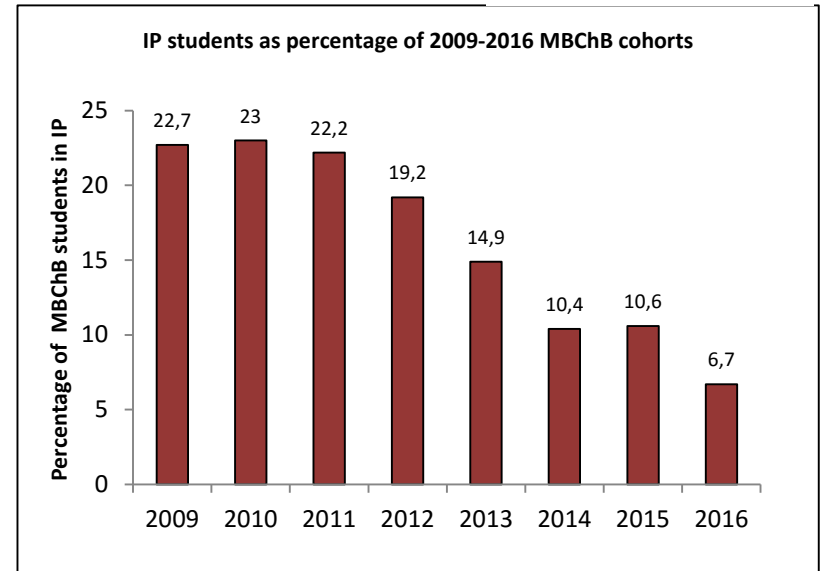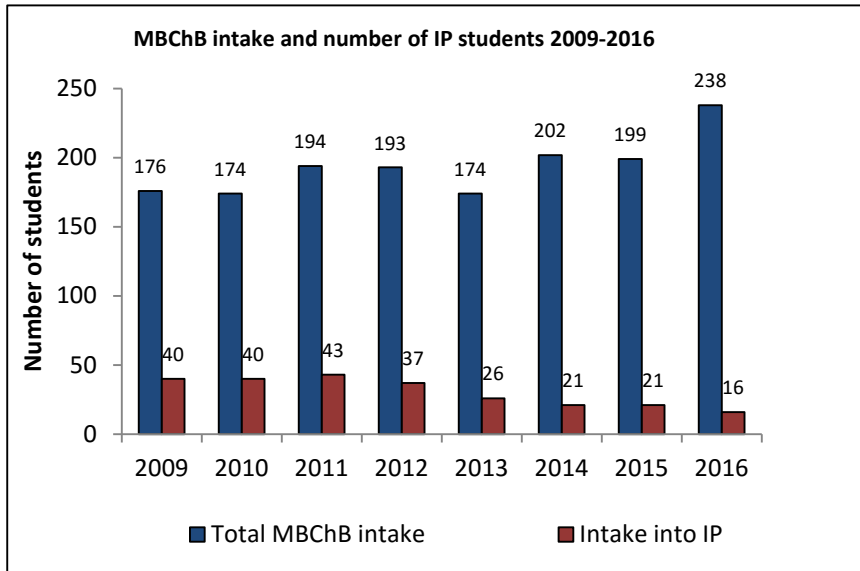 - To design alternatives

Methodology

- Throughput data for 2009-2016 cohorts drawn from SAP Business Objects / PeopleSoft

- n=244 students on intervention programme

- n=238 controls–selected from regular programme; GPA on or below the lowest performance quintile in each cohort

- Measures
  - Completion and potential completion rates for 2009 and 2010 cohorts
  - Time to completion for 2009 and 2010 IP and control cohorts
  - Progression rates of students in 5 IP and control cohorts (2009-2013) over first 4 years of registration
  - Rates of transfer to other directions of study in 5 IP and control cohorts (2009-2013) over first 4 years of registration
  - Exclusion, drop-out and overall attrition in 5 IP and control cohorts (2009-2013) over first 4 years of registration
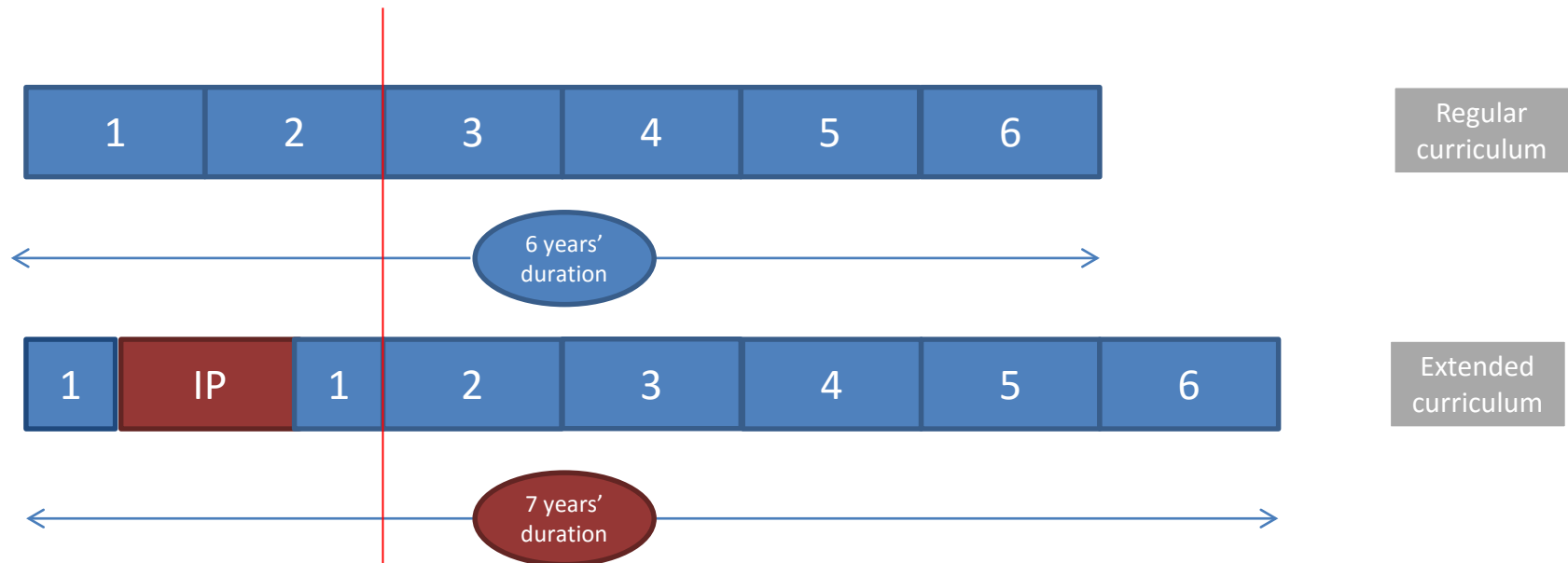
Intervention programme students as proportion of total MBChB intake

MBChB intake and number of IP students 2009-2016

Number of students

	2009	2010	2011	2012	2013	2014	2015	2016
Total MBChB intake	176	174	194	193	174	202	199	238
Intake into IP	40	40	43	37	26	21	21	16

■ Total MBChB intake   ■ Intake into IP

IP students as percentage of 2009-2016 MBChB cohorts

Percentage of MBChB students in IP

2009	2010	2011	2012	2013	2014	2015	2016
22,7	23	22,2	19,2	14,9	10,4	10,6	6,7

- 1550 students enrolled for MBChB from 2009-2016

- 244 students (15.7%) entered the intervention programme; class sizes ranged from 43 to 16

- Drop in numbers and % of students entering the intervention programme – max of 23% of MBChB class; min of 6.7%

Minimum time to completion

Regular curriculum

| 1 | 2 | 3 | 4 | 5 | 6 |

6 years' duration

Extended curriculum

| 1 | IP | 1 | 2 | 3 | 4 | 5 | 6 |

7 years' duration

- Minimum time to completion for regular curriculum = 6 years
- Minimum time to completion for intervention programme = 7 years
- For this analysis only 2009 and 2010 IP cohorts had enough time to complete by 2016
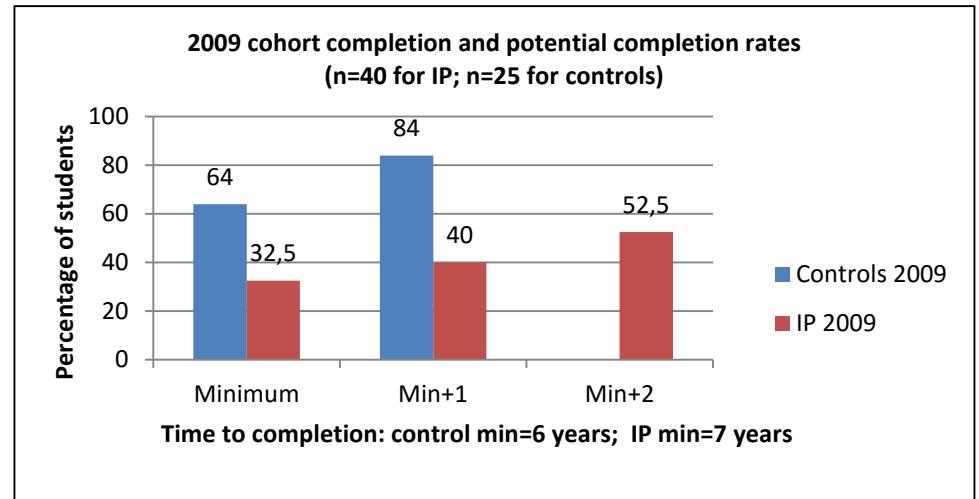- Analysis includes potential completion rates for 2017 to allow for minimum + 2 years for these two cohorts

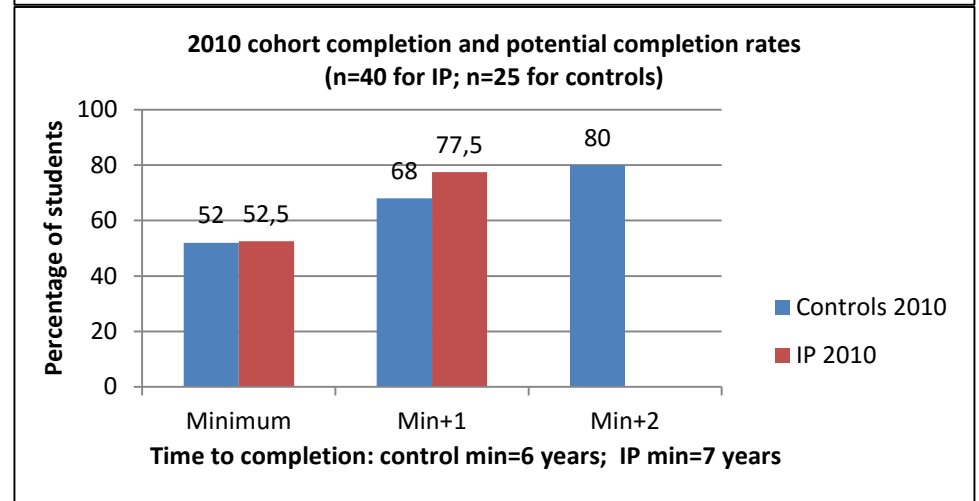# Completion and potential MBChB completion rates 2009 and 2010 cohorts

2009 IP (n=40)

2009 Controls (n=25)

2010 IP (n=40)

2010 Controls (n=25)

2009 cohort completion and potential completion rates (n=40 for IP; n=25 for controls)

Percentage of students

- Controls 2009
- IP 2009

Minimum: 64, 32,5
Min+1: 84, 40
Min+2: 52,5

Time to completion: control min=6 years; IP min=7 years

2010 cohort completion and potential completion rates (n=40 for IP; n=25 for controls)

Percentage of students

- Controls 2010
- IP 2010

Minimum: 52, 52,5
Min+1: 68, 77,5
Min+2: 80

Time to completion: control min=6 years; IP min=7 years

Progression in MBChB post intervention (2009-2013 cohorts)

- To track progression of MBChB students <u>post intervention</u> – 2009-2013 cohorts selected and time period reduced to 4-5 years of registration
- Lower proportion of students from IP cohorts progress from level to level
- Similar trend – most difficulty with progression from 2000 to 3000 level
- Course at 2000 level identified that impedes progression

Note: <u>Only MBChB</u> students included in analysis

Progression through academic levels over 4 years of registration (cohorts 2009-2013)
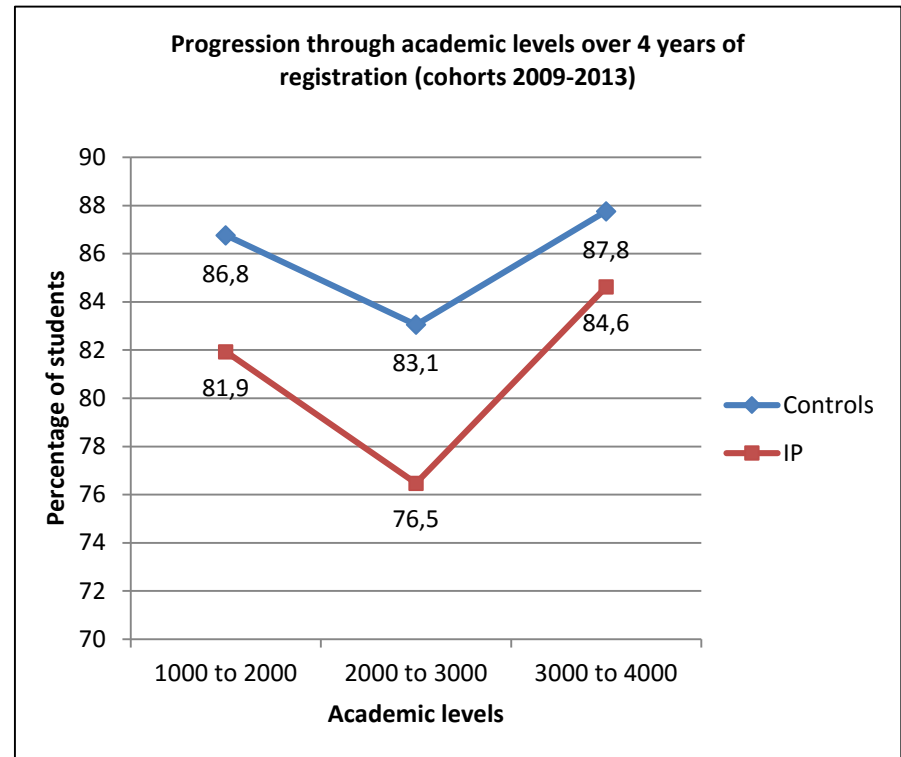
Transfers to other directions of study (2009-2013 cohorts)
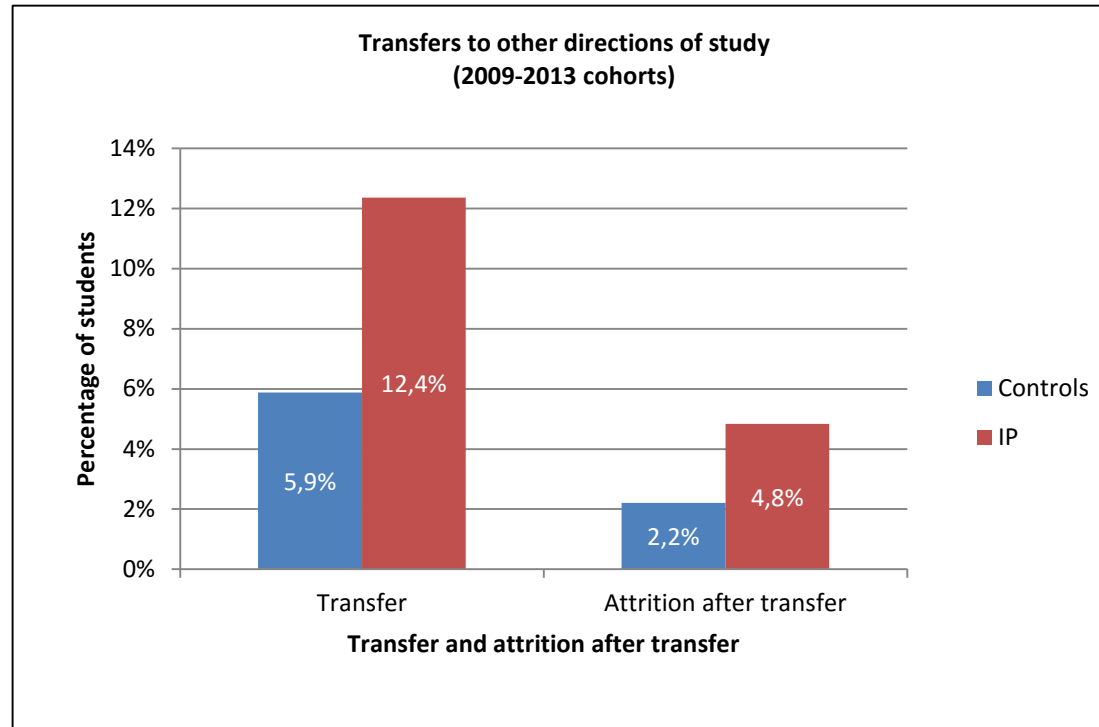
- IP students twice as likely to transfer as controls
- Transfer most likely during 2nd and 3rd years of registration
- High attrition among transfers (approximately 40%)

Student retention over 4 years of registration (2009-2013 cohorts)


Retention rates over 4 years of registration (2009-2013 cohorts)
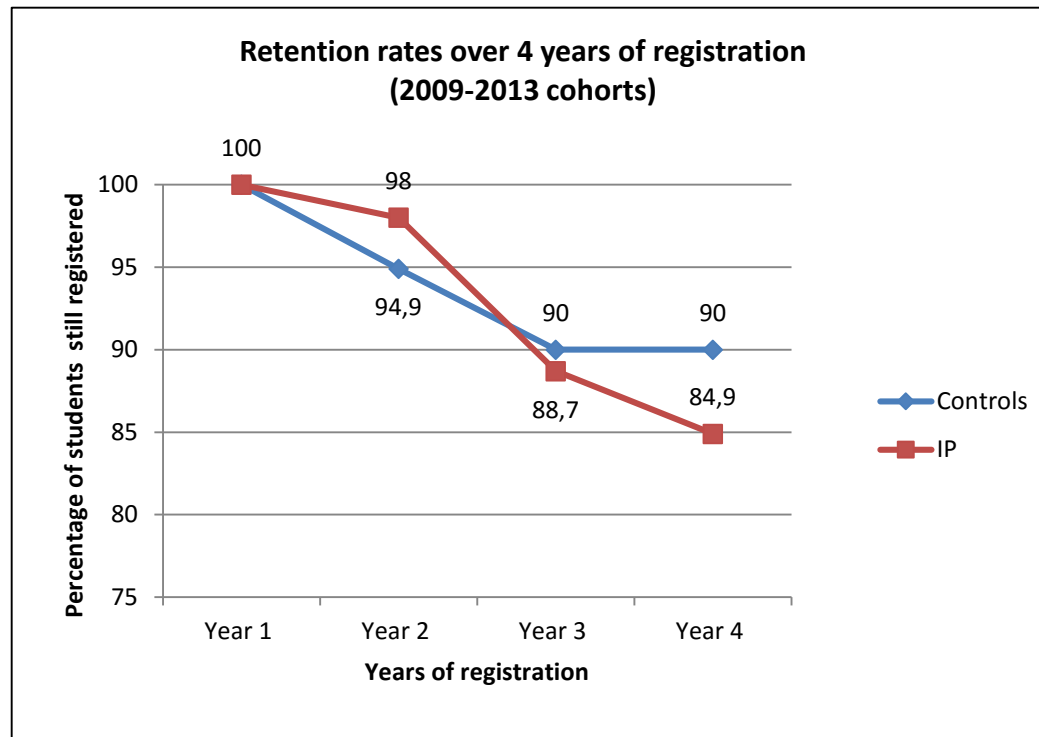
- Analysis includes transfers
- Retention was better for students in IP cohorts than for controls during the first two years of registration
- By 3nd year of registration IP students were less successful at remaining in the system than controls

Exclusion and drop out rates from MBChB over 4 years of registration (2009-2013 cohorts)
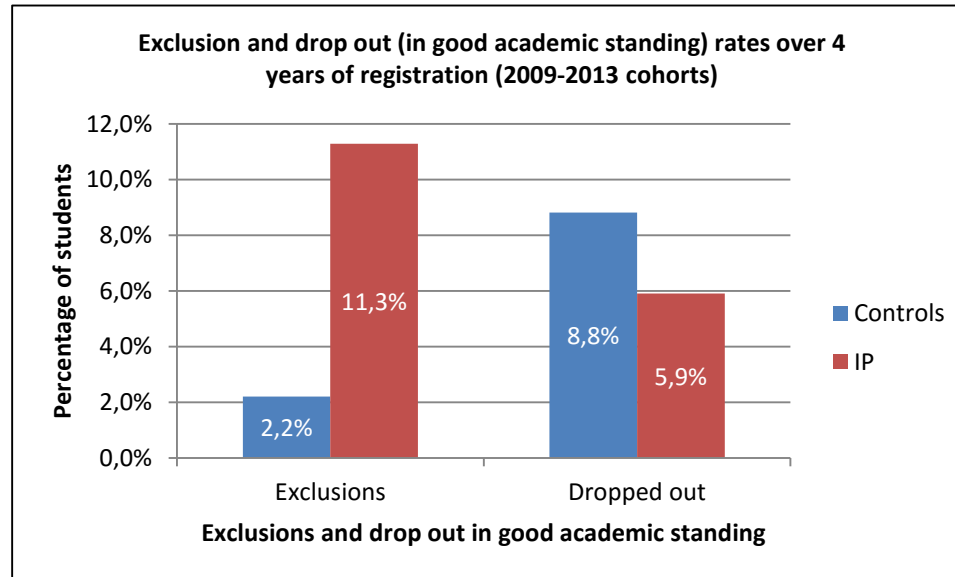
- 11.3% from the 2009-2013 IP cohorts were excluded over 4 years of registration compared to 3 controls.

- Most of the exclusions among IP students occurred during the 2nd year of registration.

- More controls dropped out in good academic standing than IP students: 8% of controls versus 5.9% of IP students.

Overall loss to the system over 4 years of registration (2009-2013 cohorts)

Exclusion, drop-out and overall attrition rates over 4 years of registration (2009-2013 cohorts)
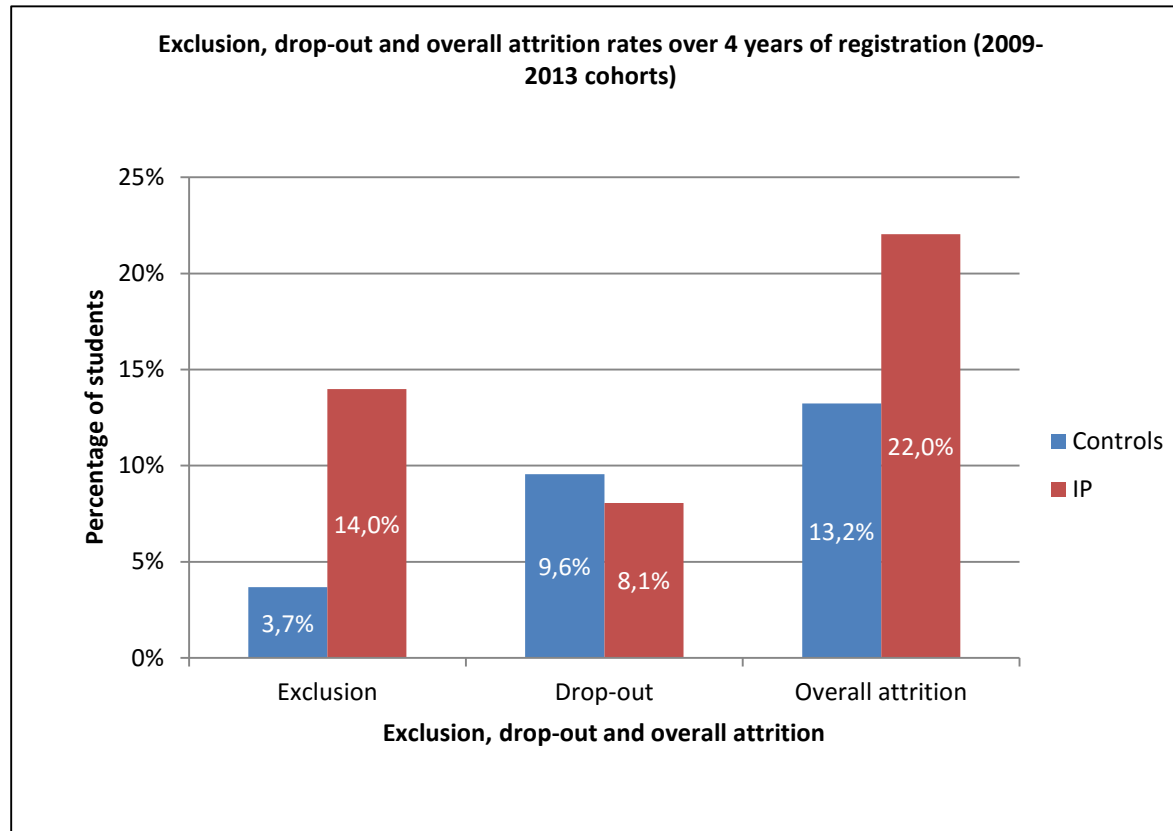
- The overall loss of students from the system was higher for IP students than for controls

Discussion

- Notion that only a few students "need support" **aggravates stigma**.

- High overall **attrition**: 22% – almost fifth of students in 2009-2013 cohorts.

- Evidence that Intervention programme improved retention in years 1 and 2; **not lasting effect**.

- IP students who **'survived'** system tended to perform well from 4th year onwards.

- Performance of controls suggested that **<u>many more students needed support</u>**, and needed support **further up the curriculum**.

- **Transition higher up in the curriculum problematic** for many. **Attrition** rate of 13.3% for controls still high given strenuous selection process.

- Students from 2009 to 2013 IP cohorts more likely to **transfer** to other directions of study. High transfer in 2nd year.

- Controls in 2009-2013 cohorts had higher **drop out** rate in good academic standing than students in IP cohorts.

Design for diversity

- **Diversity is a given** – targeting small groups increases stigma
- Design for **flexibility, multiple pathways, augmented** rather than extended curriculum – will new **DHET Foundation Provision Policy** support flexible design???
- Identify **courses that impede progress throughout curriculum**
- **Unload curriculum** – identify sections of regular curriculum that can be taken 'out of sequence' (e.g. summer/winter breaks)
- **Harness facilitated educational technology** to deliver 'out of sequence' offerings
- Make **all support accessible to all students.**
- Design **reliable diagnostic assessments** to guide curriculum choices
- Design strong **curriculum and career development advising services**