

Small Area Population Estimates for Scotland

Lessons from pooling information

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Outline

- Background
- Comparison of small area population estimates with other sources of data
- Current developments



Background

- 6,505 data zones in Scotland
- Developed by SG for Scottish Neighbourhood Statistics
- Population estimates at data zone level produced every year 2001-2006, by age and sex
- Average population \approx 780 people
- Use cohort-component method to obtain population estimates



Cohort-component method

- 'Base' population sex/age structure
- Remove 'special' populations (armed forces, prisoners)
- 'Age-on' remainder by 1 year
- Apply births, deaths, migration
- Replace updated 'special' populations
- Constrain to mid-year LA estimates



Administrative sources of data (1)

- All ages
 - Community Health Index 2001-2006
 - Currently Registered Patients (source: ISD)
- Children aged 5-14
 - Child Benefit Database 2001-2006 (source: HMRC)
 - School Population 2003–2006
 - School Census (source: Scottish Government)
 - Estimated independent school pupils (source: 2001 Census)



Administrative sources of data (2)

- Adults aged 65+
 - Older Persons Database 2001-2006 (source: DWP)
- Other data
 - Dwelling counts 2003-2006 (source: LAs / GROS)
 - Student term-time data 2006 (source: GROS)
 - Postcode address file 2001-2006 (source: GROS)
 - Data zone births, deaths, migration (source: GROS)



Some results of SAPE v Administrative Data Comparison

- Total population (SAPE v CRP)
- Children aged 5-14 (SAPE v CBD v SP)
- Adults aged 65 and over (SAPE v OPD)

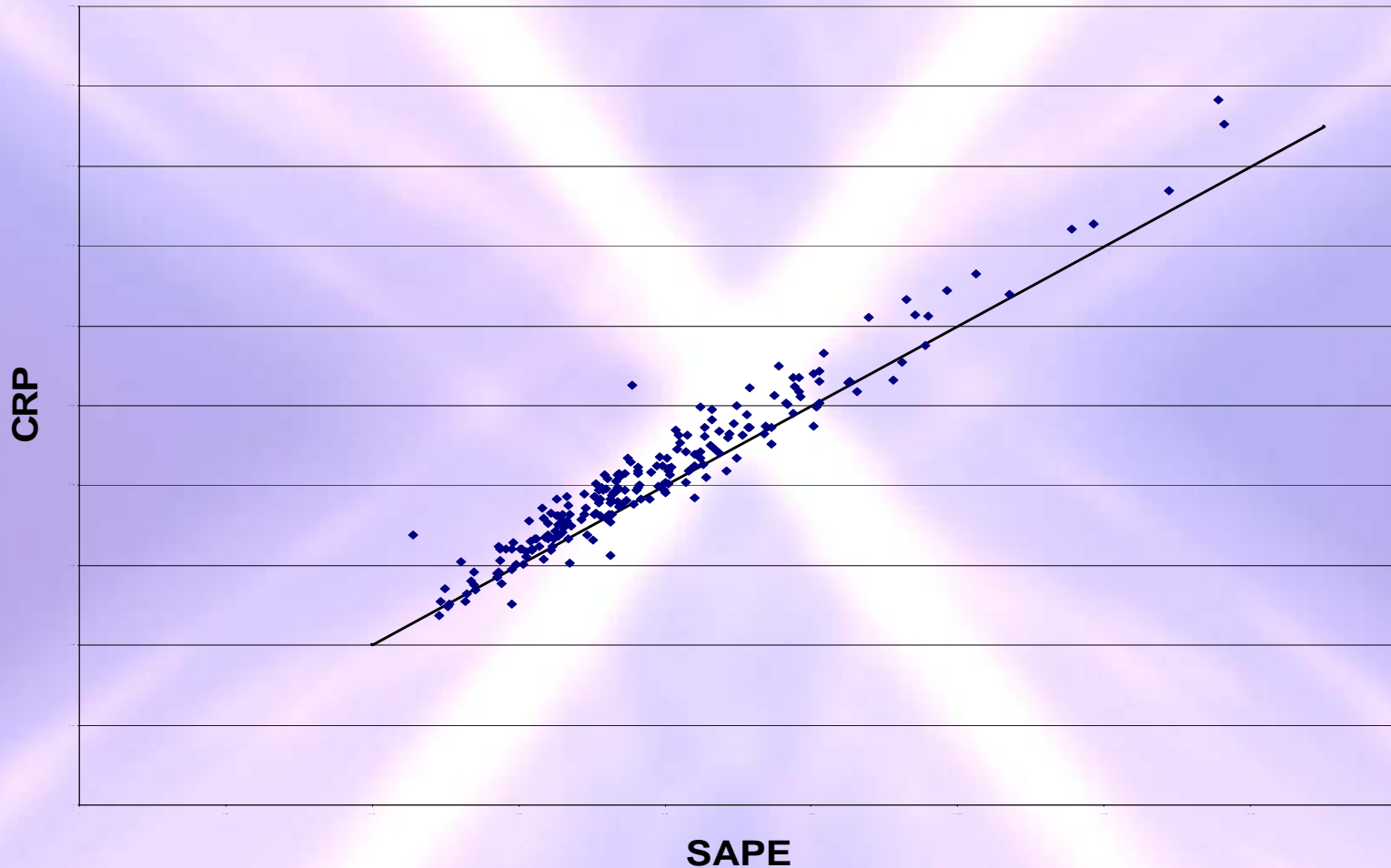


Total population SAPE v Currently Registered Patients

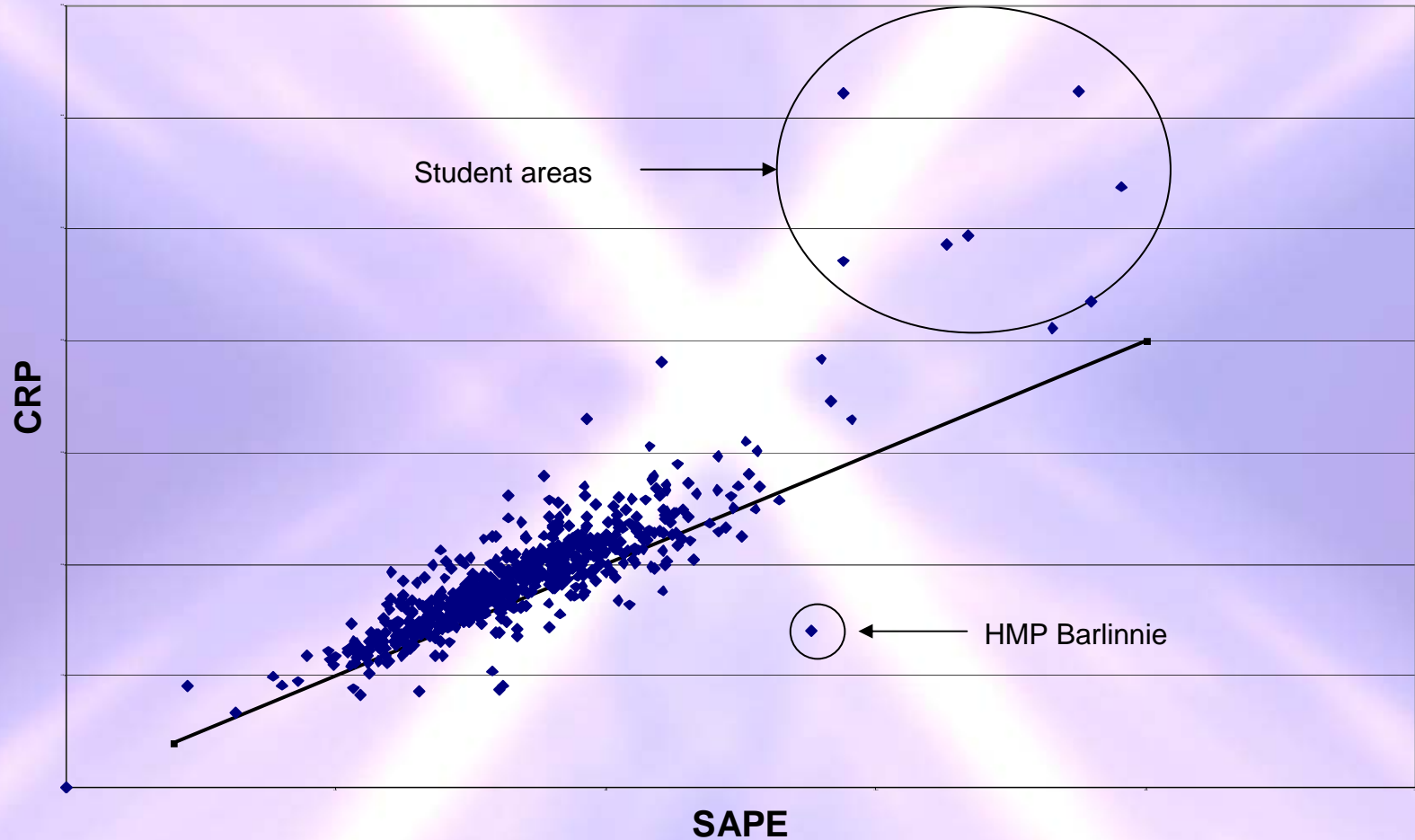
- CRP derived from Community Health Index (CHI)
- Used in production of mid-year population estimates, so SAPE and CRP not independent
- List inflation – CRP exceeds population estimates
- Duplicate records, failure to register/re-register
- Localised high list inflation – student areas



SAPE v Currently Registered Patients, West Lothian 2006



SAPE v Currently Registered Patients, Glasgow 2006

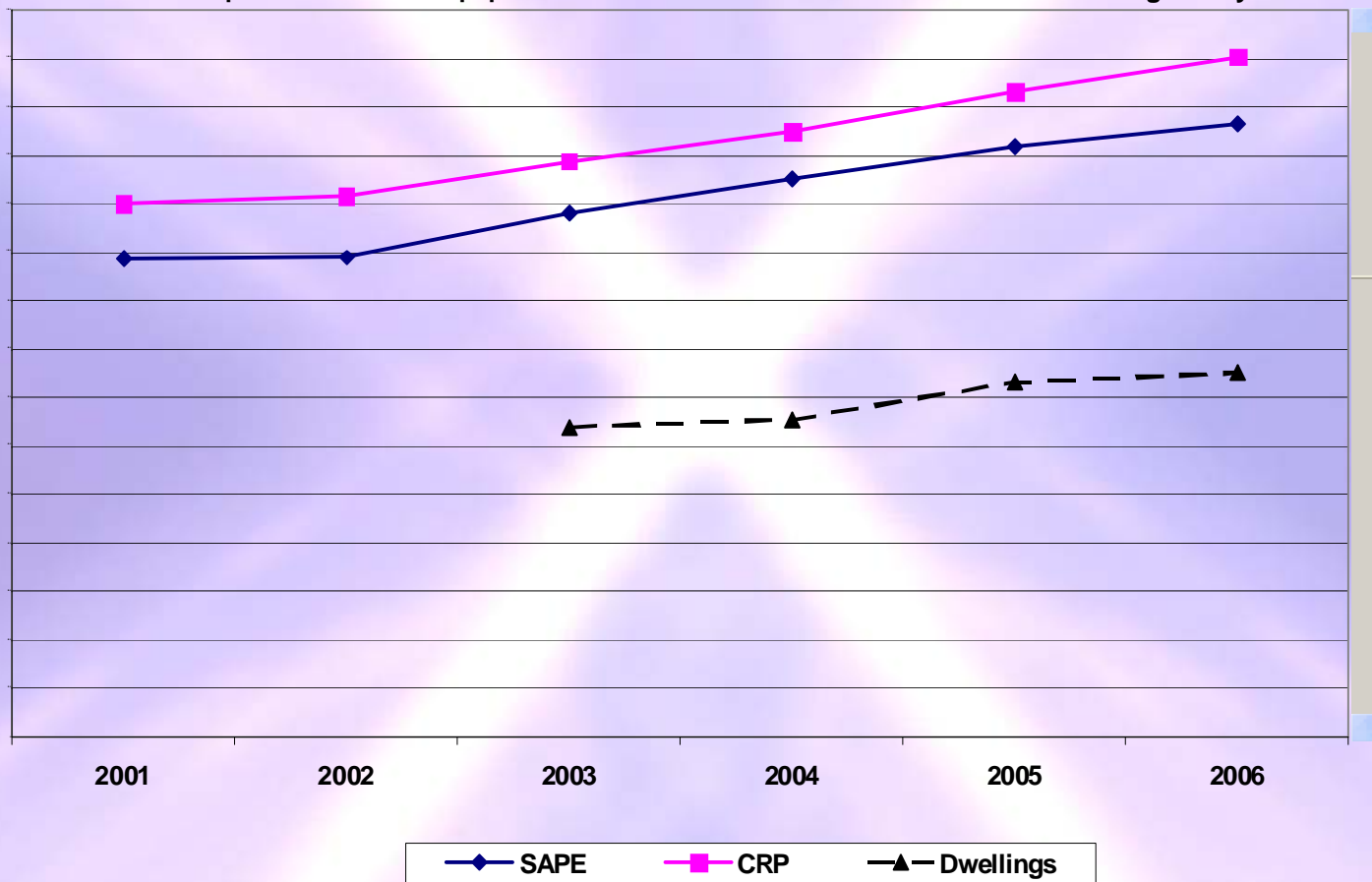


SAPE v CRP, 2001-2006, Data zone S01003272

SAPE / CRP Comparison : Data zone population 2001 - 2006

S01003272

Glasgow City



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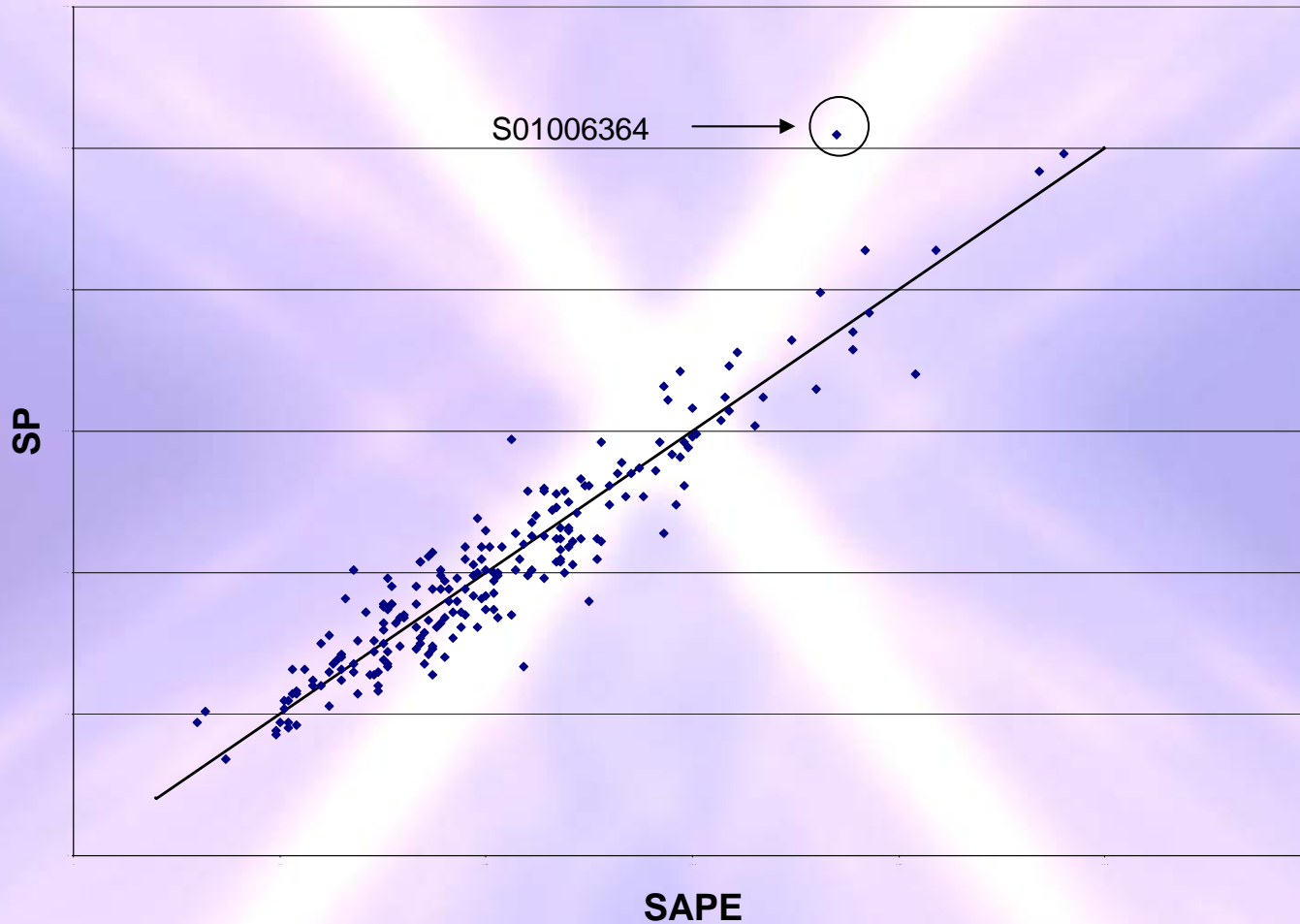
Ages 5-14

SAPE v Child Benefit v School Pop'n

- 2 sources of administrative data
- CB and SP counts give good coverage for this age group
- SP = School Census + adjustment for independent school pupils



SAPE v School Population, Ages 5-14, West Lothian 2006

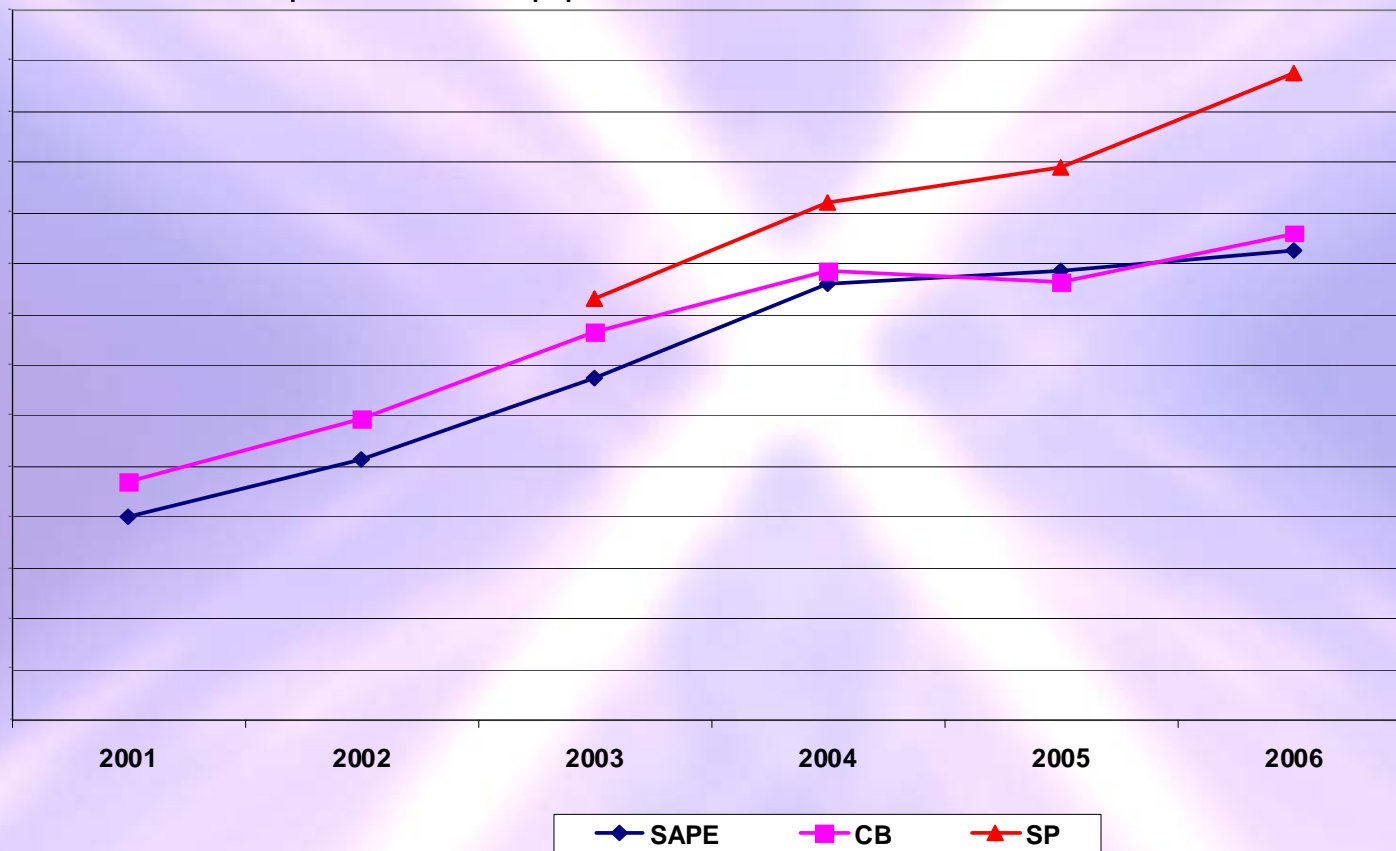


Different growth rates in areas of development SAPE v CB v SP, Ages 5-14, Data zone S01006364

SAPE / CB / SP Comparison : Data zone population 2001 - 2006

S01006364

West Lothian



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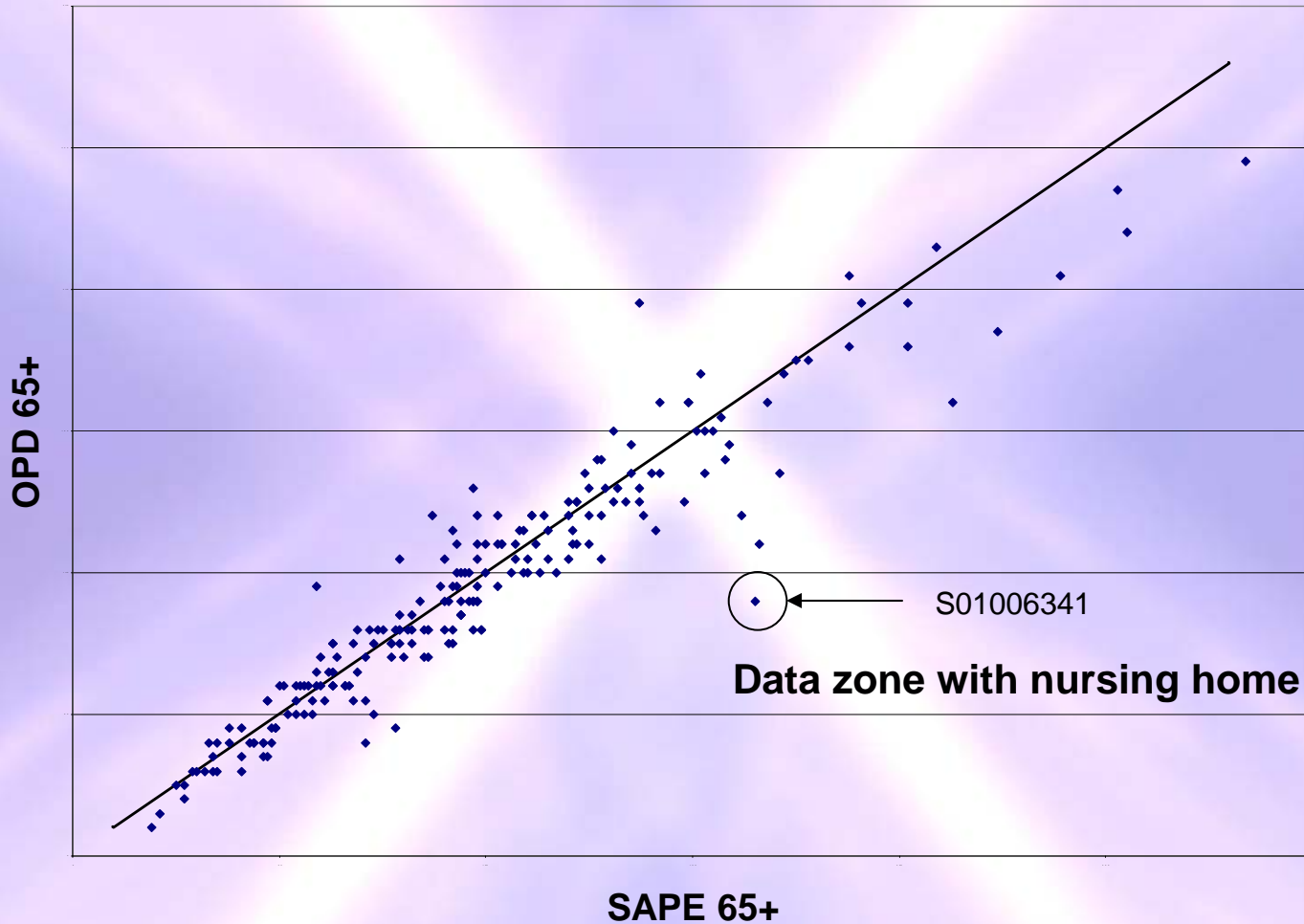
Ages 65 and above

SAPE v Older Persons Database

- OPD derived from DWP databases for State Pension, Attendance Allowance, Disability Living Allowance, Widows Benefit, Incapacity Benefit, Winter Fuel Payment and Minimum Income Guarantee
- OPD counts give good coverage for this age group



SAPE v Older Persons Database, Ages 65+, West Lothian 2006



Nursing Homes

- Three nursing homes in Livingston data zones S01006341, S01006351, S01006395.

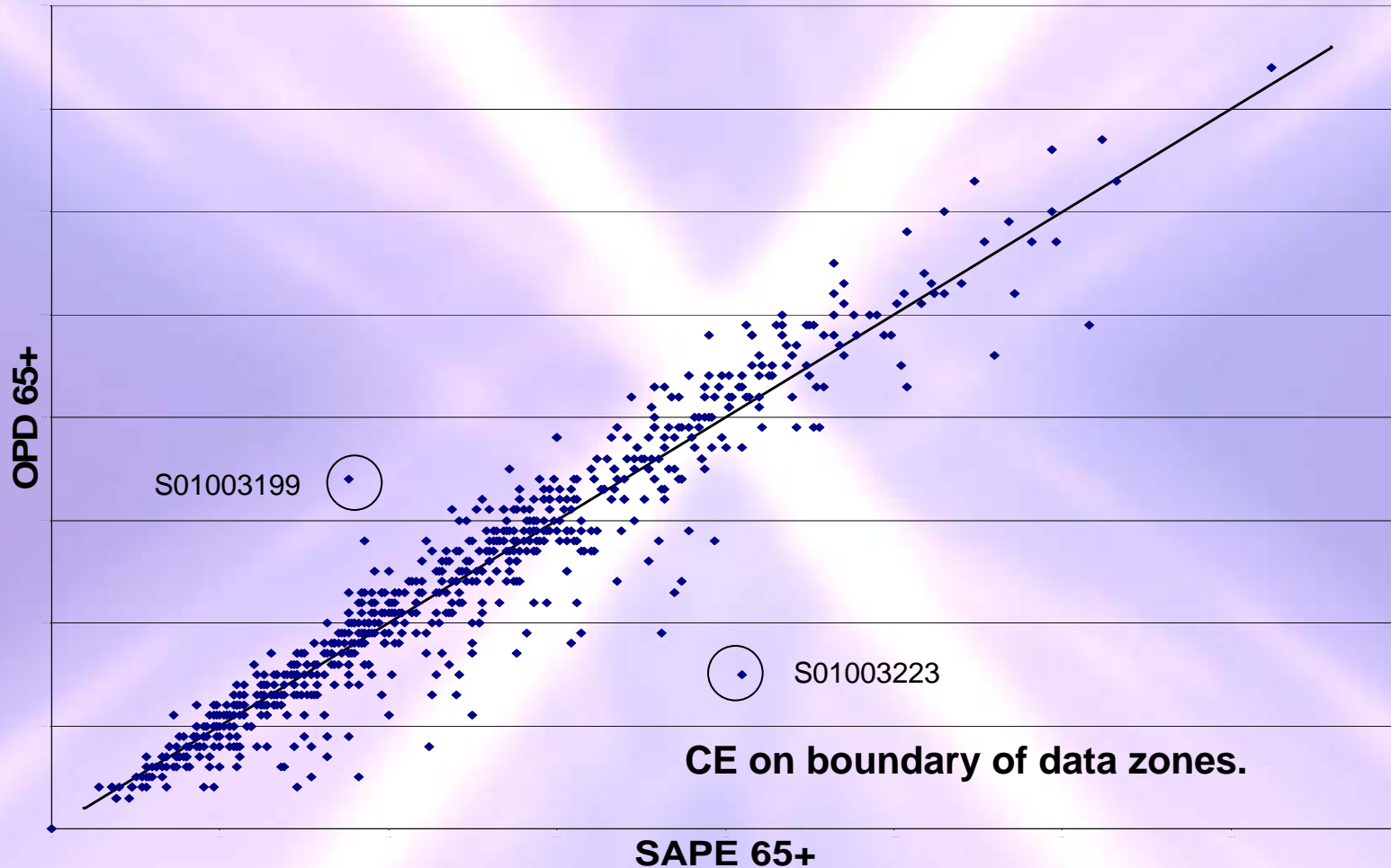
Total for period 2001-2006, Age 65+

Data zone	Deaths	Net Migration
<u>S01006341</u>	32	107
S01006351	148	140
S01006395	102	102

- Deaths in S01006341 under-reported?



SAPE v Older Persons Database, Ages 65+, Glasgow 2006



Geography problems

Data zones S01003199 and S01003223.

Adjacent to each other.

Nursing home on the boundary between the data zones.

→ Nursing home residents counted in wrong data zone.

Similar problems may arise where communal establishments are near data zone boundaries.



Conclusions

Mostly, no major discrepancies, but some issues ...

- Errors carried forward from one year to next
- Student areas – high migration
- Communal establishments
- Geography
- Administrative data
- Census 2001 data



Current & Future Developments

- Continue to monitor estimates using administrative data
- Collect student term-time addresses (2007: GROS, 2009 onwards: HESA)
- Establish communal establishments database
- Validating geography, using MatchCode software
- Sponsoring PhD Student to work on SAPE
- Visiting local authorities
- 2011 Census & beyond



Next Steps

- SAPE Working Group
- Revisions?



2007 SAPE

Published **Thursday 6th November** on:

GROS website - [www.gro-scotland.gov.uk/
statistics/publications-and-data/small-area-
population-estimates/index.html](http://www.gro-scotland.gov.uk/statistics/publications-and-data/small-area-population-estimates/index.html)

Scottish Neighbourhood Statistics -
www.sns.gov.uk



Thank you

Questions?



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