



NATIONAL BLOOD
AUTHORITY

International and National Intravenous Immunoglobulin Use

Past, Present & Future

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NBA General Manager

Saturday 29 July 2006

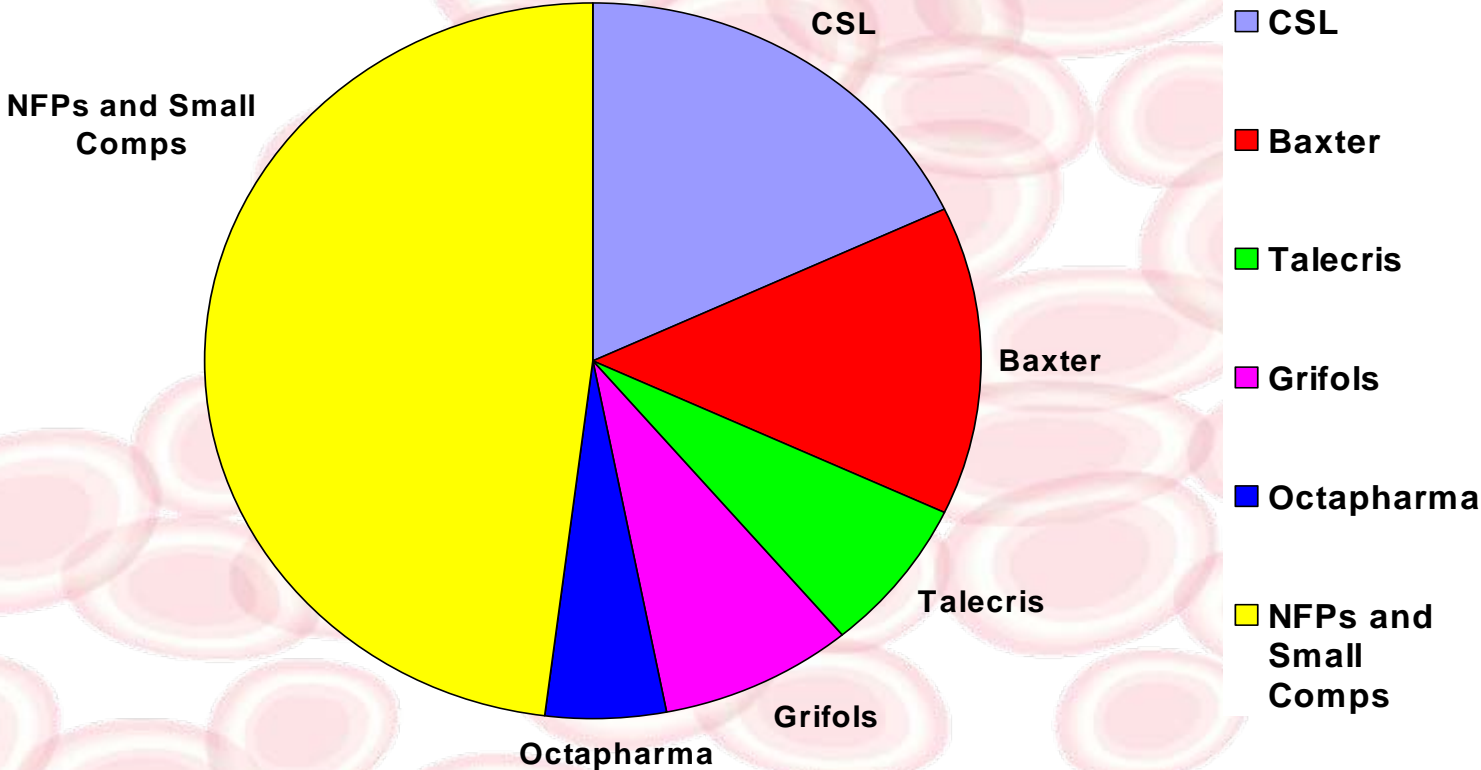
- **Global fractionation capacity**
- Evolution of IVIg and its use
- Demand and Pricing
- Supply Security
- IVIg in Australia - current
- IVIg in Australia - future

PLASMA FRACTIONATORS- MERGERS AND ACQUISITIONS, 1999–2004

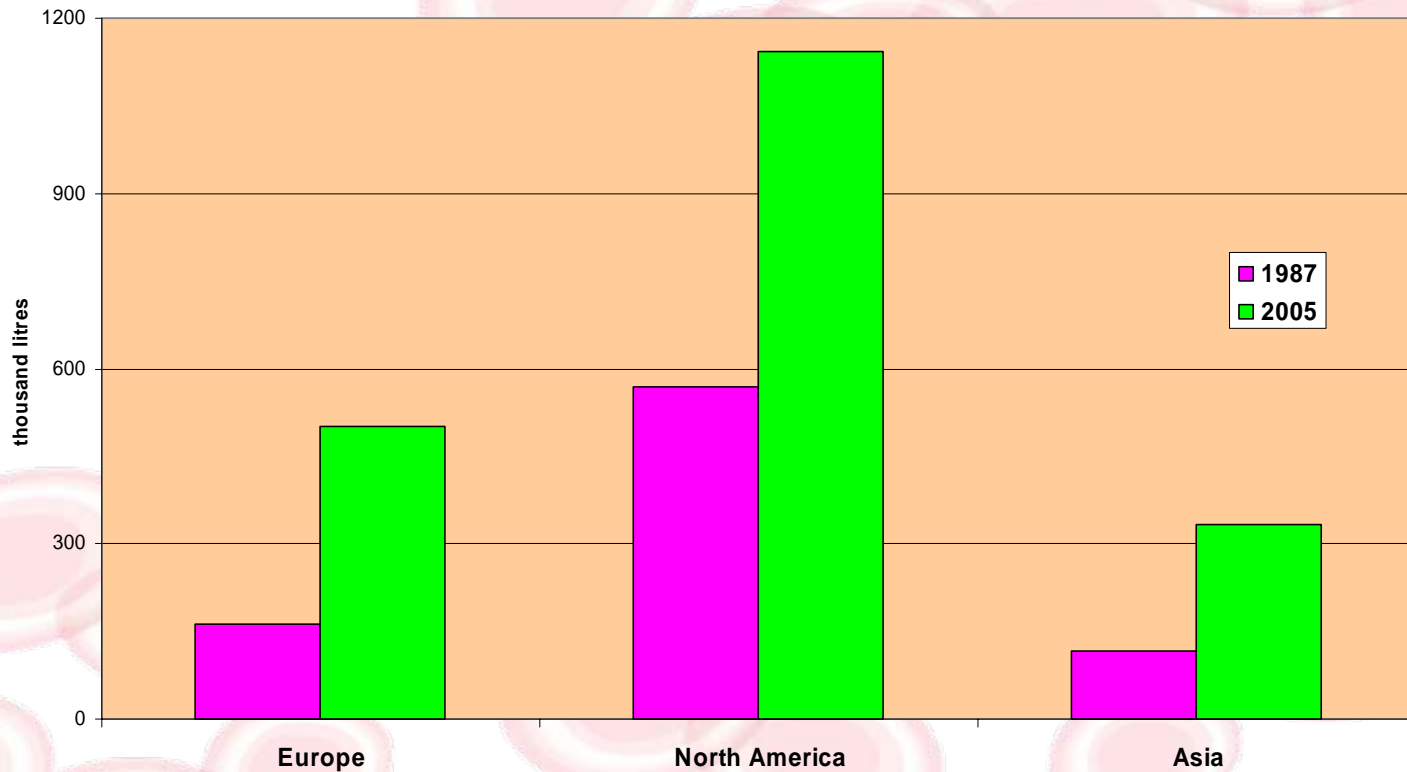
Percent share of world capacity indicated in parentheses



GLOBAL FRACTIONATION CAPACITY BY MAJOR GROUPS AS AT 2004



AVERAGE FRACTIONATION PLANT CAPACITY 1987 AND 2005 ('000s litres)

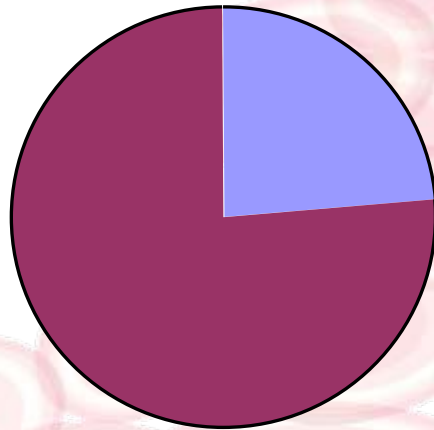


Source: IBPN March 2005

CHANGED OWNERSHIP OF US PLASMAPHERESIS COLLECTION CENTRES*

Fractionators have taken a larger role in collection

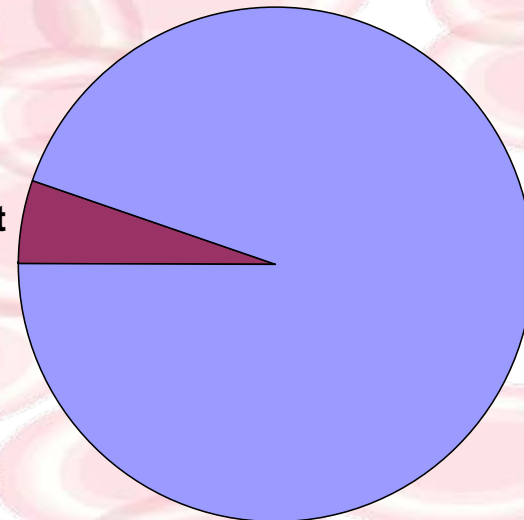
1999



Independent

Fractionator
owned

2005

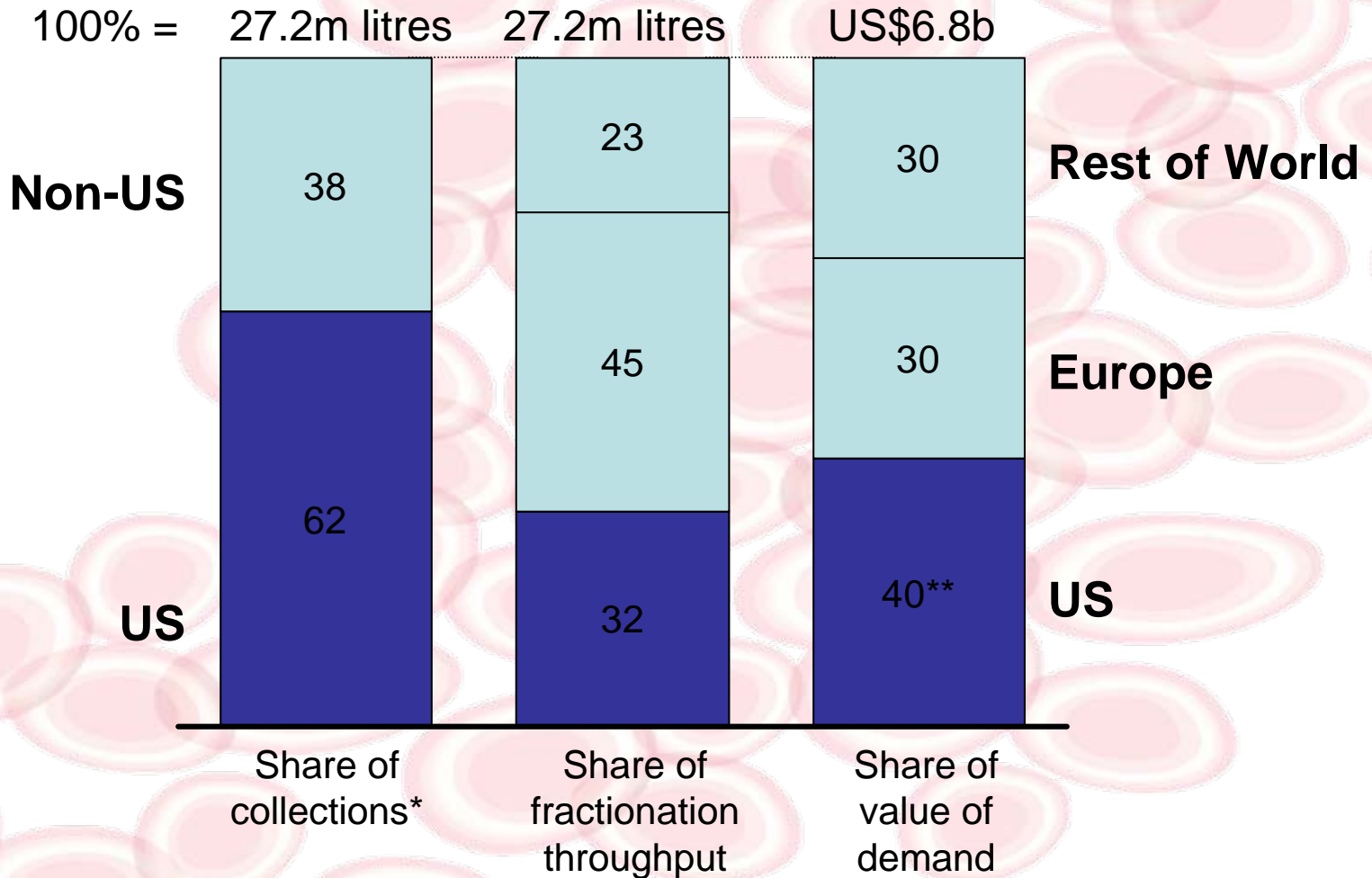


Independent

Fractionator
owned

US vs REST OF WORLD

Percent, 2002



* Based on Morgan Stanley estimate of 2002 US plasma collection as base of 2002 world throughput

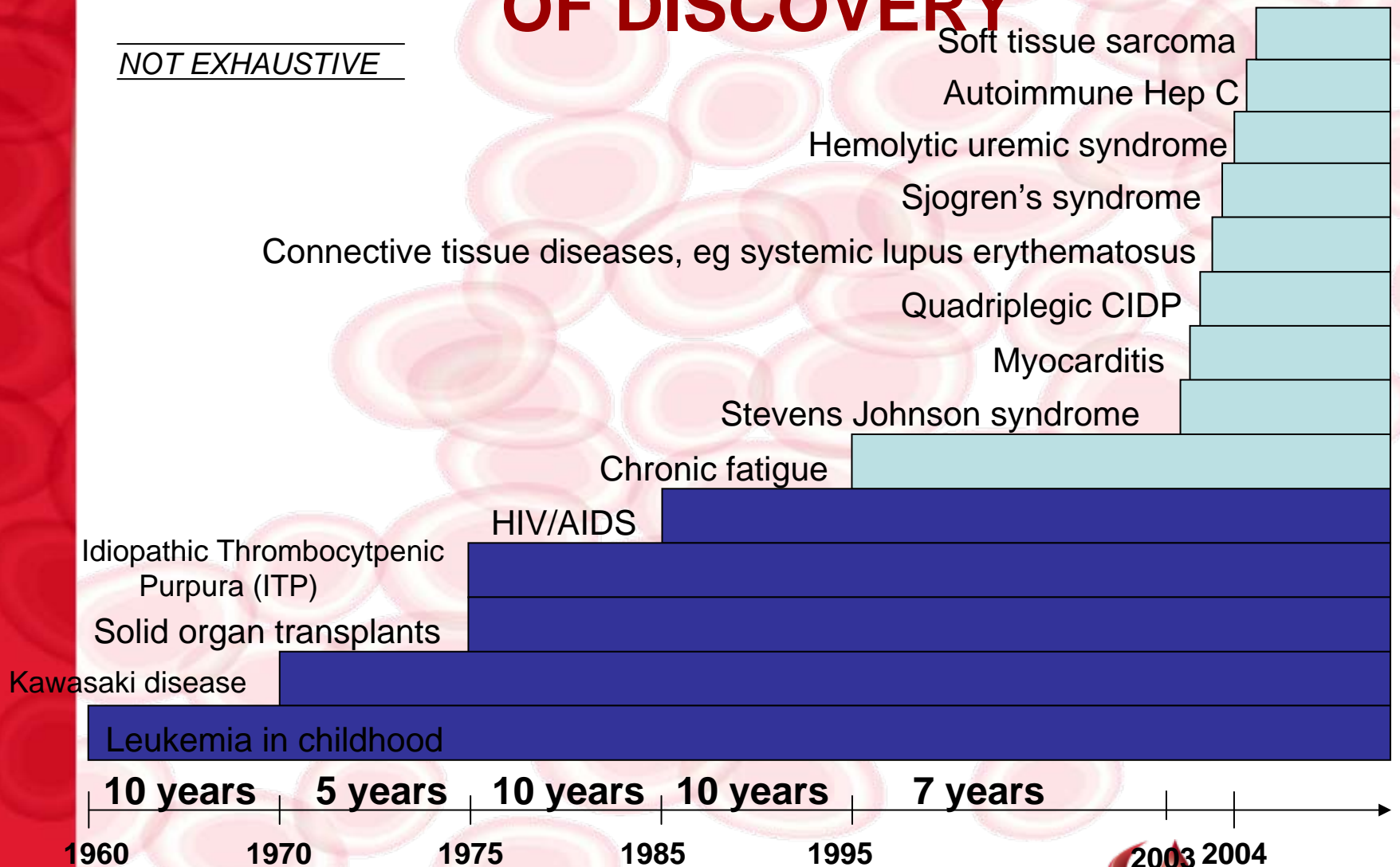
** Including Canada

Global IVIg Supply Challenges

- **Capacity**
 - Fractionation plants, high-level capital investment and long lag times to realise investment
 - Variations in yield
- **Collection\Supply of plasma**
 - Need to meet higher donor collection standards
 - Move from CBD to rural areas
- **Profitability of IVIG**
 - Return from other products
 - Price volatility

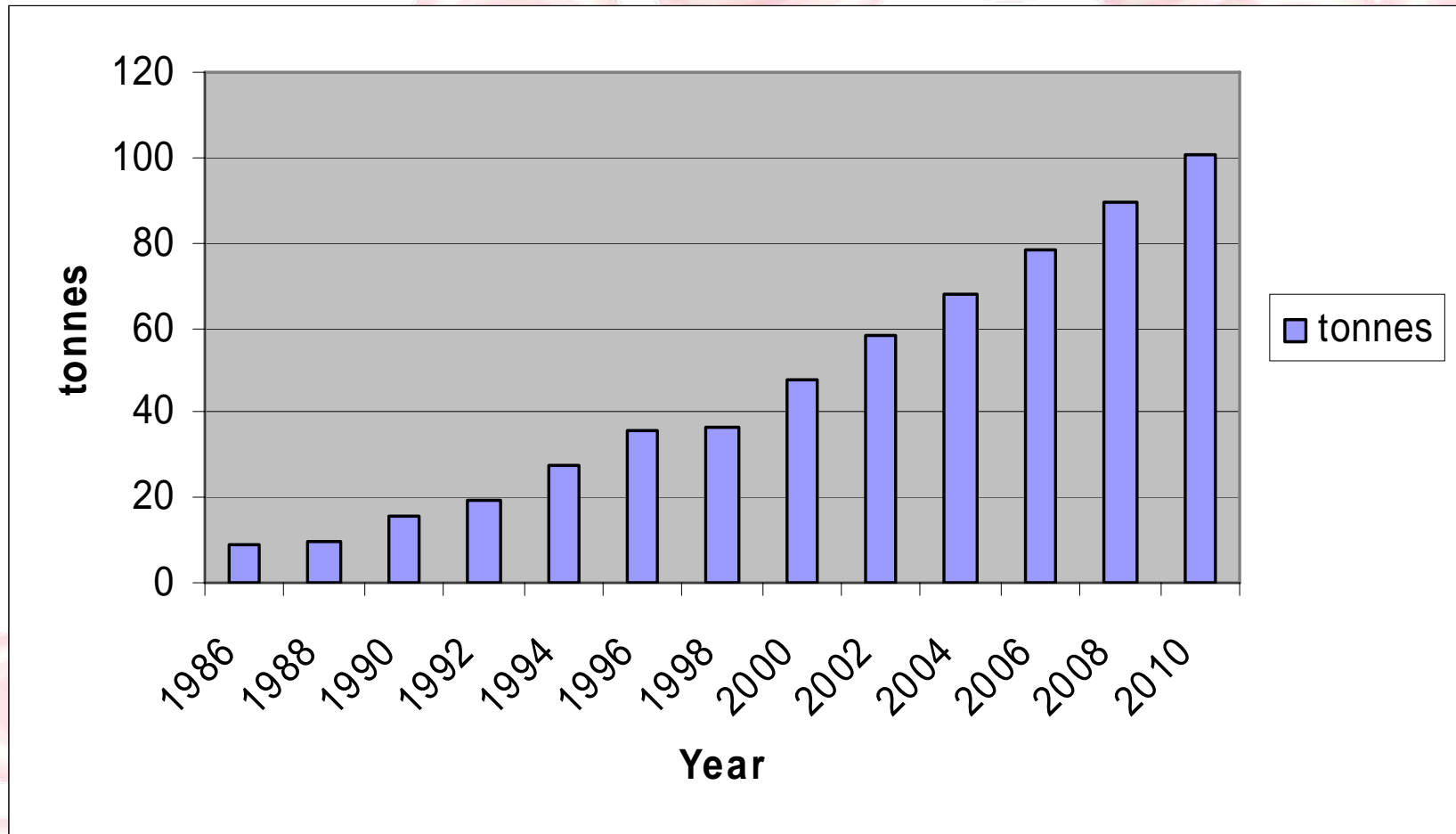
IVIG TREATABLE INDICATIONS BY DATE OF DISCOVERY

NOT EXHAUSTIVE



Source: 1. International Journal of Oncology 20; 839-843, 2002; 2. BioDrugs 2004 18(1):63-70; 3. J Jeprol 2003 Sep-Oct 16 (5):735-5; 4. Neurology 2003 Sep 23, 61(6) 873; 5. Rheumatol Int 2004 Jan 14; 6. Neurology 2004, Jan 13 6-2(1) , 55-6; 7. Am J Med Sci Dec 326 (6) 369-74; 8. Pediatrics, 2003 Dec 112 (6P+1) 1430-6

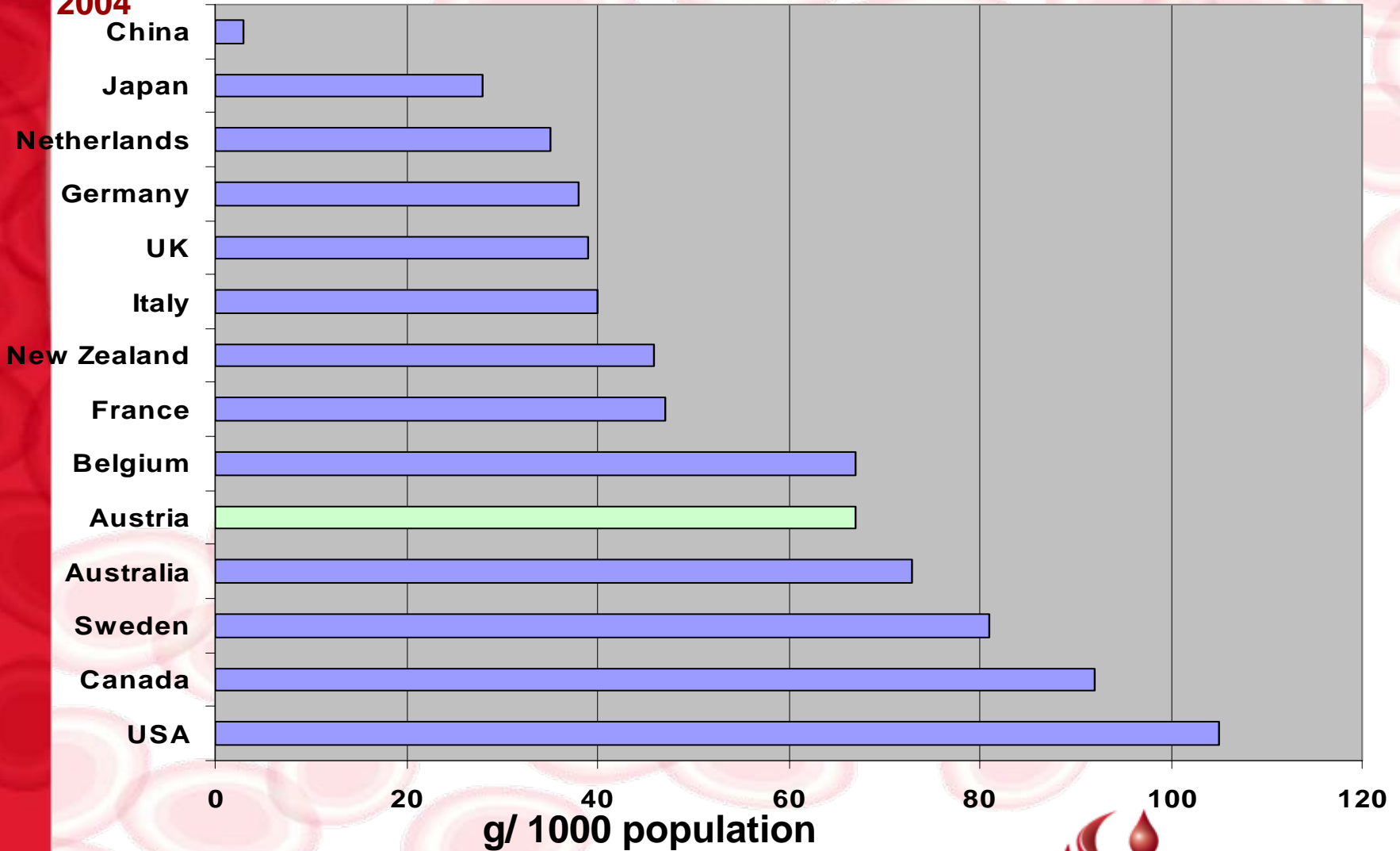
WORLDWIDE DEMAND FOR IVIG



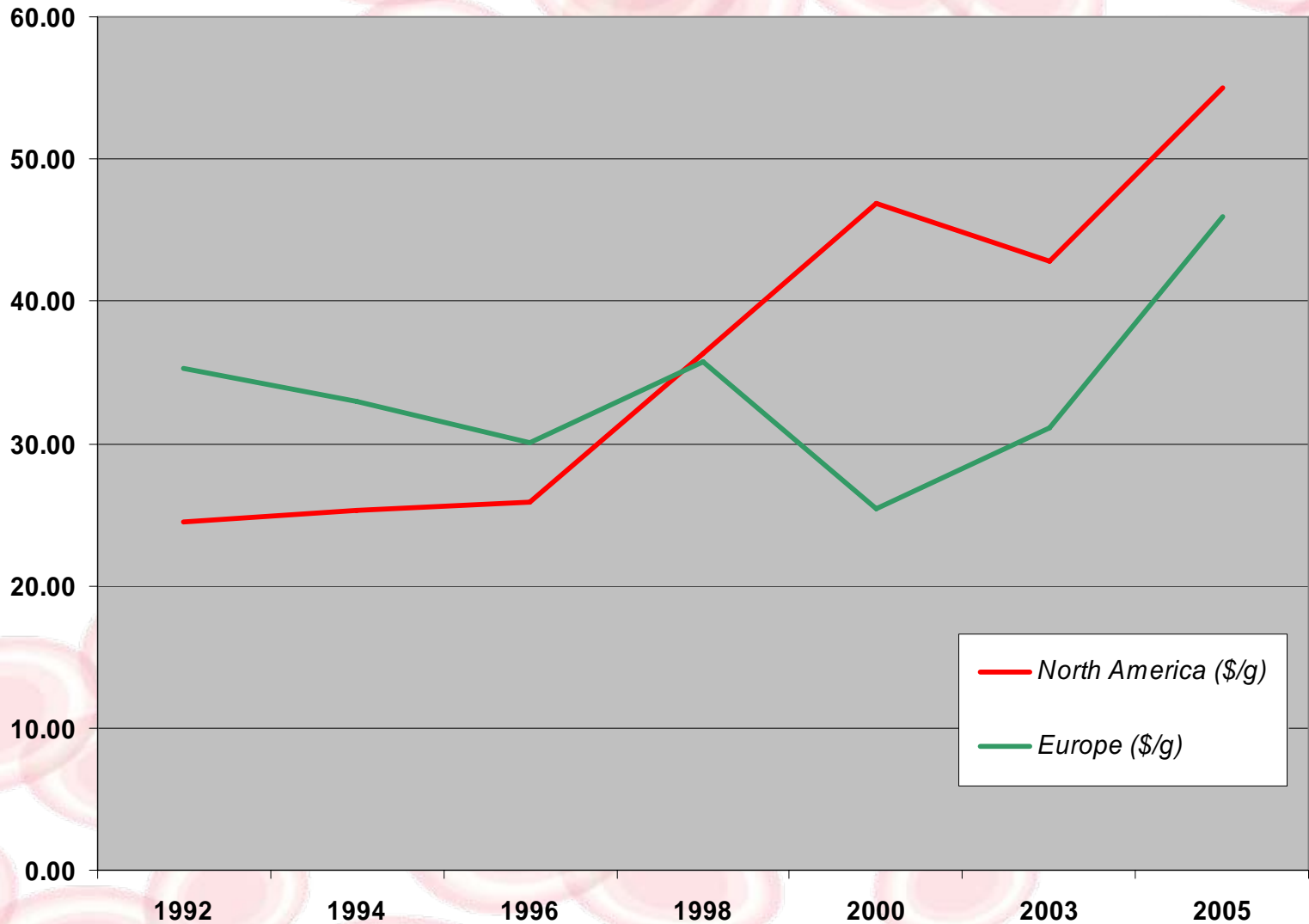
Source: NBA analysis; Industry publications; 'An Analysis of the Factor VIII Market'; Bank of America Securities, October 2003

GEOGRAPHIC DEMAND INTENSITY

2004



IVIg Prices-\$US



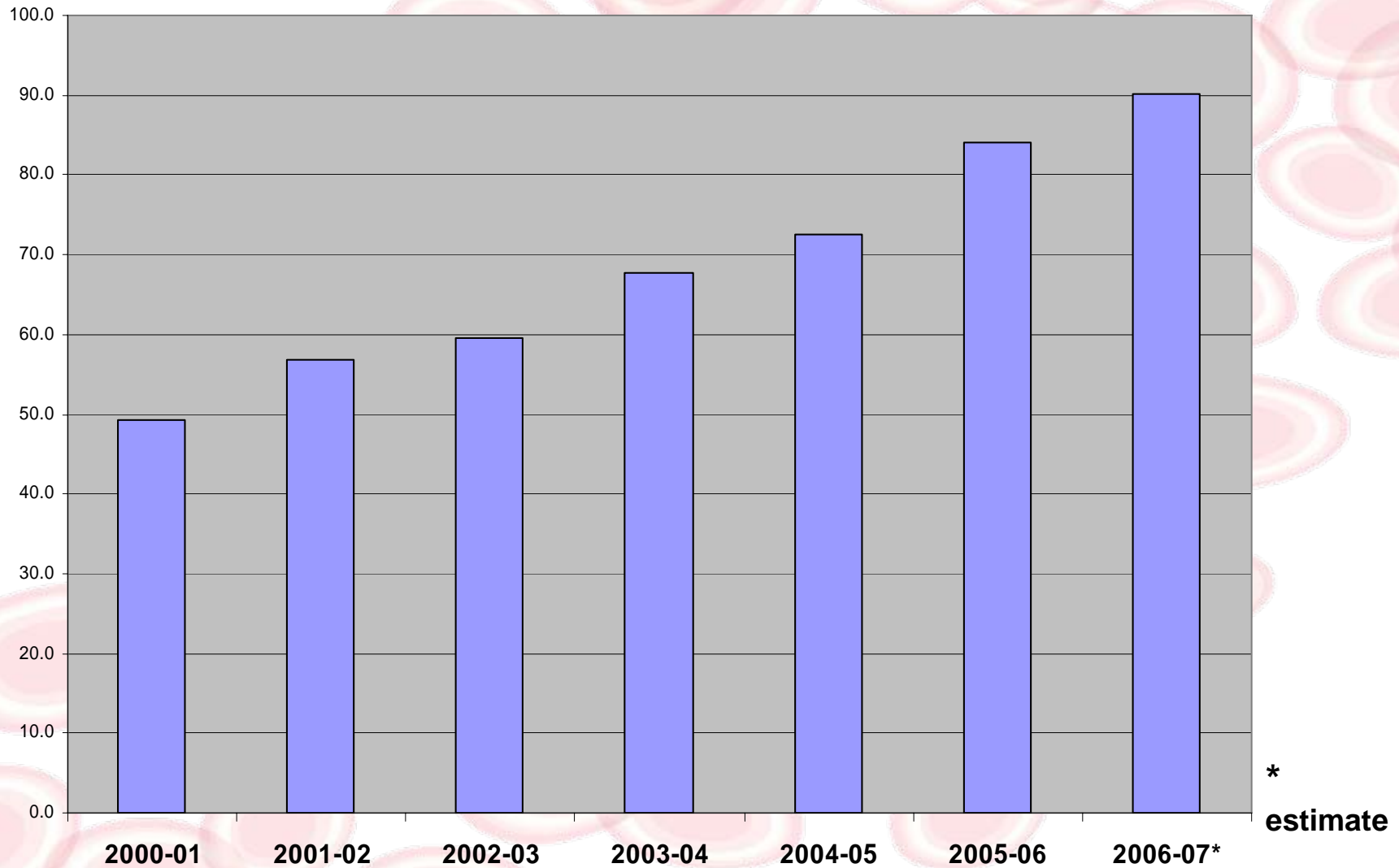
ENSURING GLOBAL SUPPLY SECURITY

- Internationally, most countries have commercial/domestic mix or multiple commercial suppliers
- Plasma collection centres owned by either fractionators or plasma supply contracts.
- Multiple fractionation sites for a company.

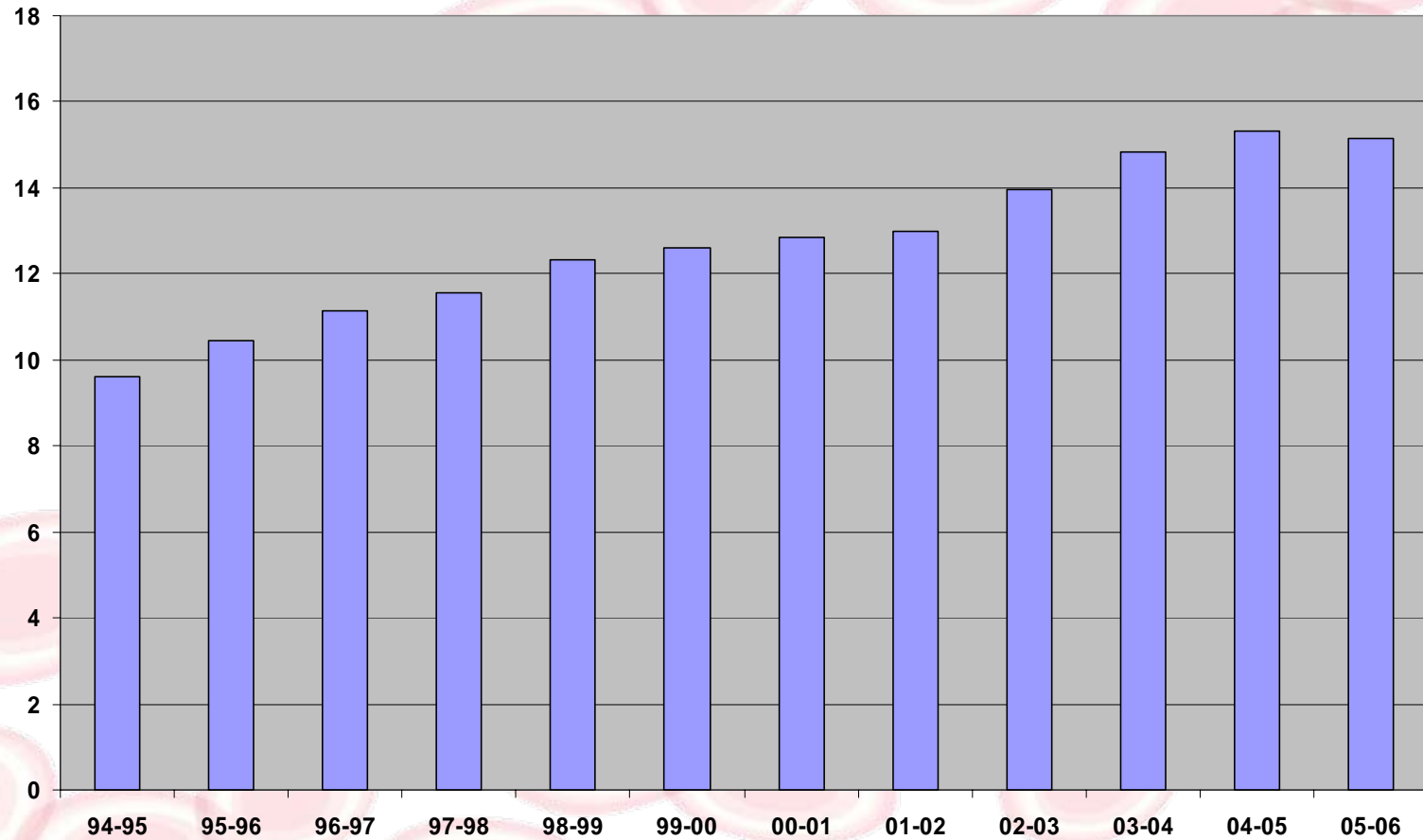
SUPPLY SECURITY IN AUSTRALIA

- Major risk is production failure.
- Risk mitigation through
 - Minimum yields
 - Performance guarantees
 - In country reserves
 - Additional commercial contracts with supply guarantees

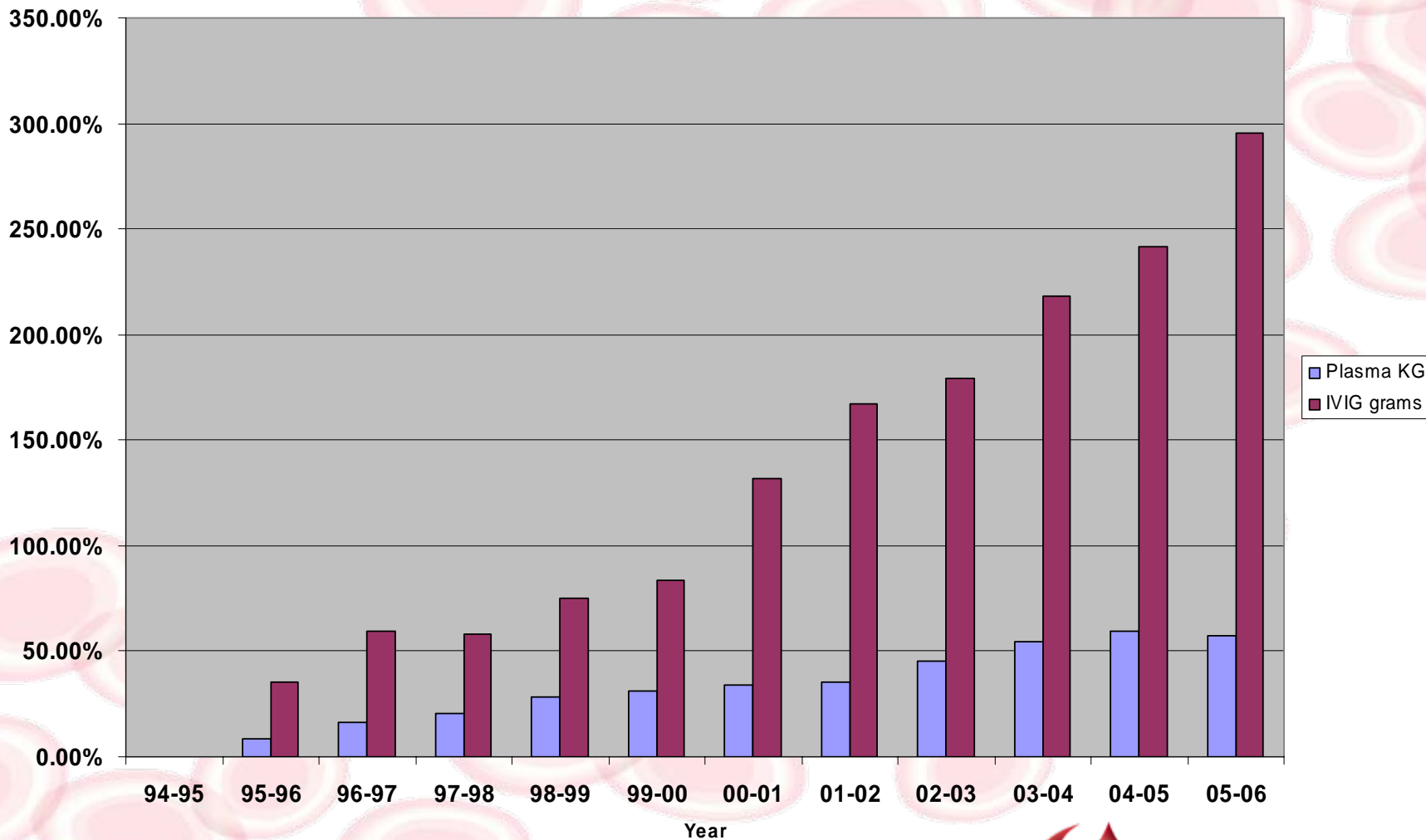
GRAMS OF IVIG PER 1000 AUSTRALIANS



Kg of plasma collected per 1000 Australians



Increase in plasma collection versus increase in issues of IVIG in Australia since 1994



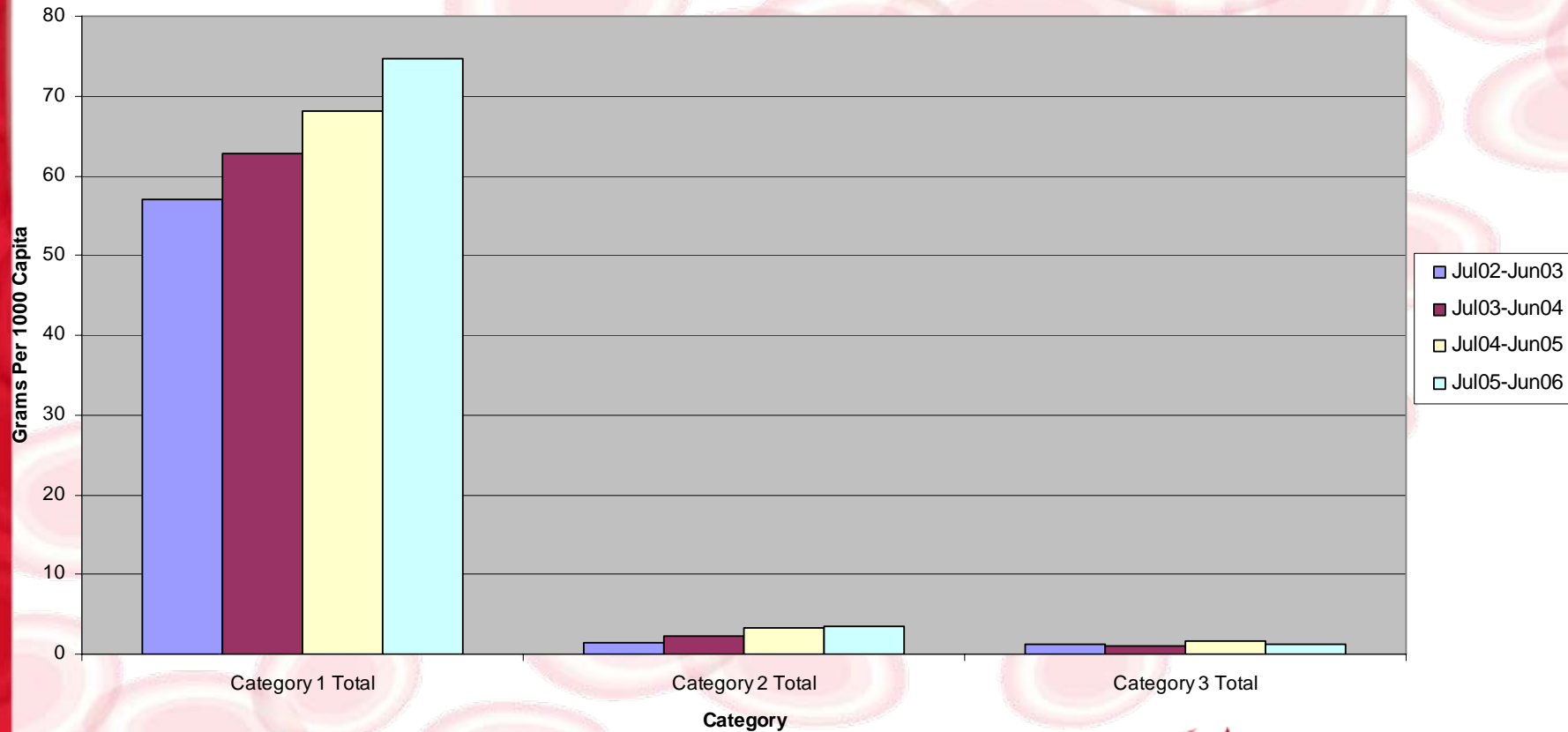
AHMAC IVIg TREATABLE INDICATIONS - AUSTRALIA

- **Category 1 (total of 20), high quality RCTs shows benefit, eg**
 - ITP Adult
 - CVID
 - CIDP
- **Category 2 (total of 32), Mixed evidence for benefit, eg**
 - Evans Syndrome (AHA)
 - Transplant-solid Organ
 - ‘Stiff--Person’ Syndrome
- **Category 3, (total of 8) Evidence for ineffectiveness, eg**
 - Miscellaneous- no diagnosis recorded

Some conditions not included in any category

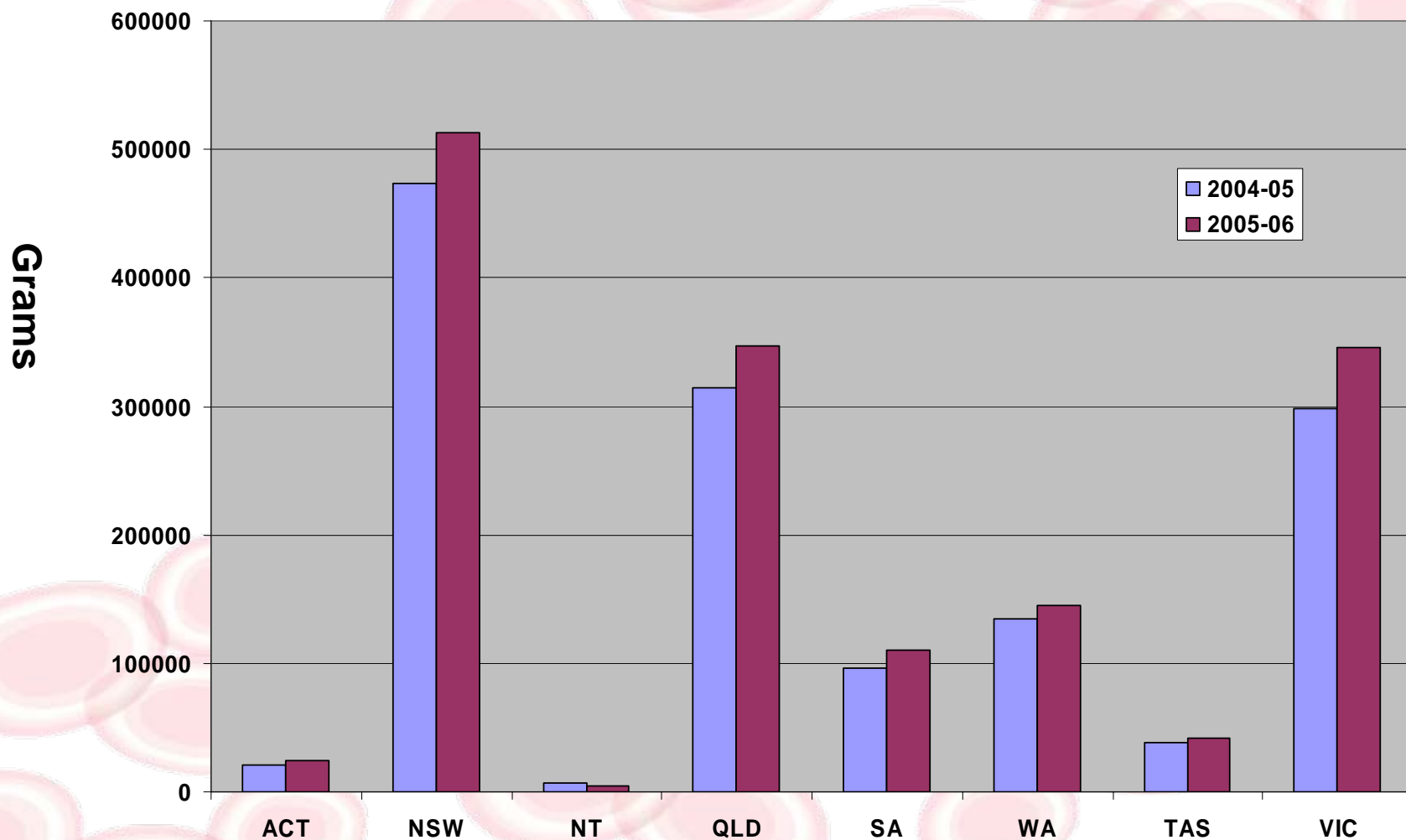
IVIg Use by Category and year

Comparison of the Grams Per 1000 Capita Values For Category Totals Between Jul02-Jun06



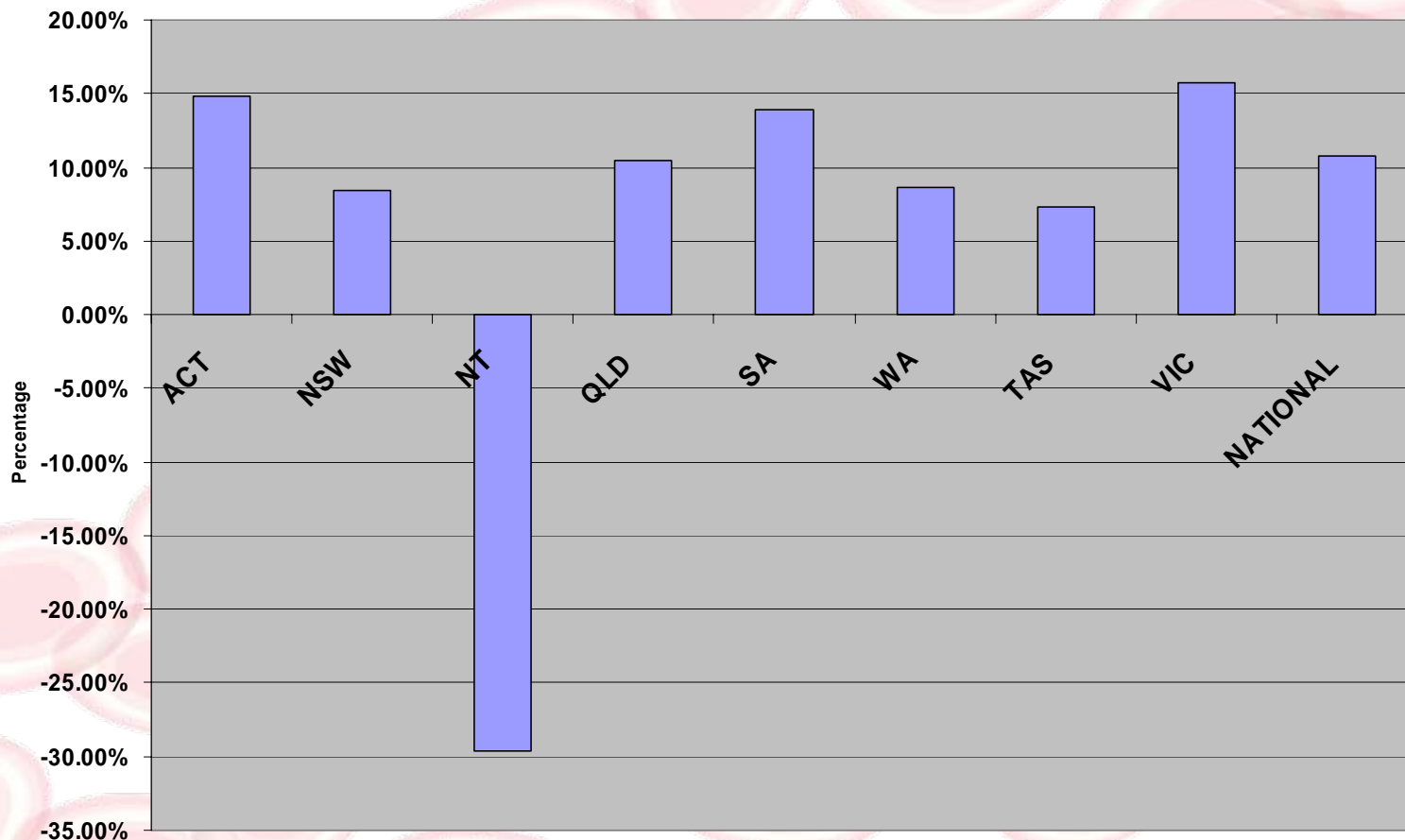
*2005-06 figures projected based on first 9mths data

USE OF IVIG FOR CATEGORY 1 INDICATORS FOR 2004-05 AND 2005-06



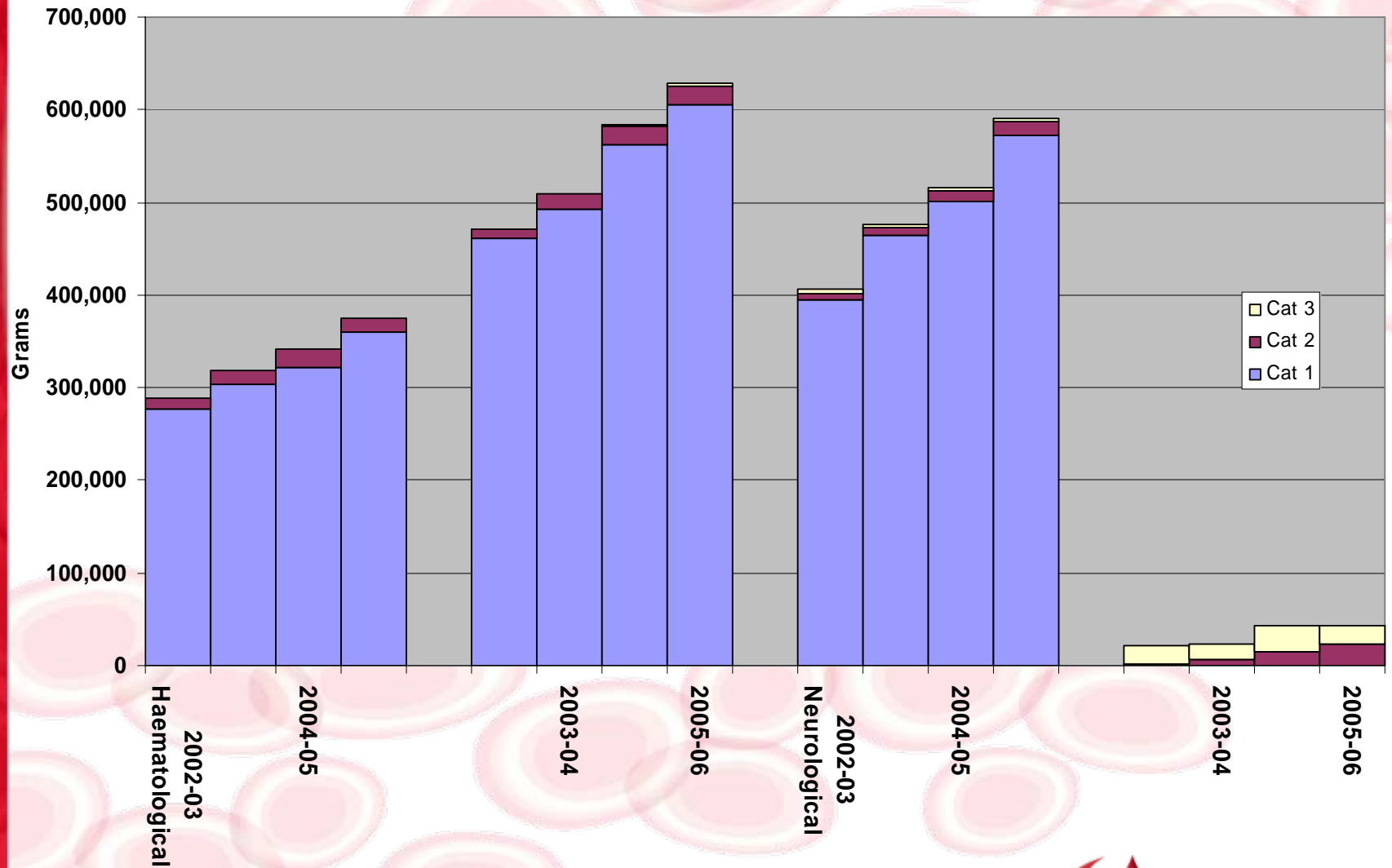
*2005-06 figures projected based on first 9mths data

INCREASE/DECREASE IN USAGE OF IVIG FOR CATAGORY 1 INDICATORS BETWEEN 2004-05 AND 2005-06



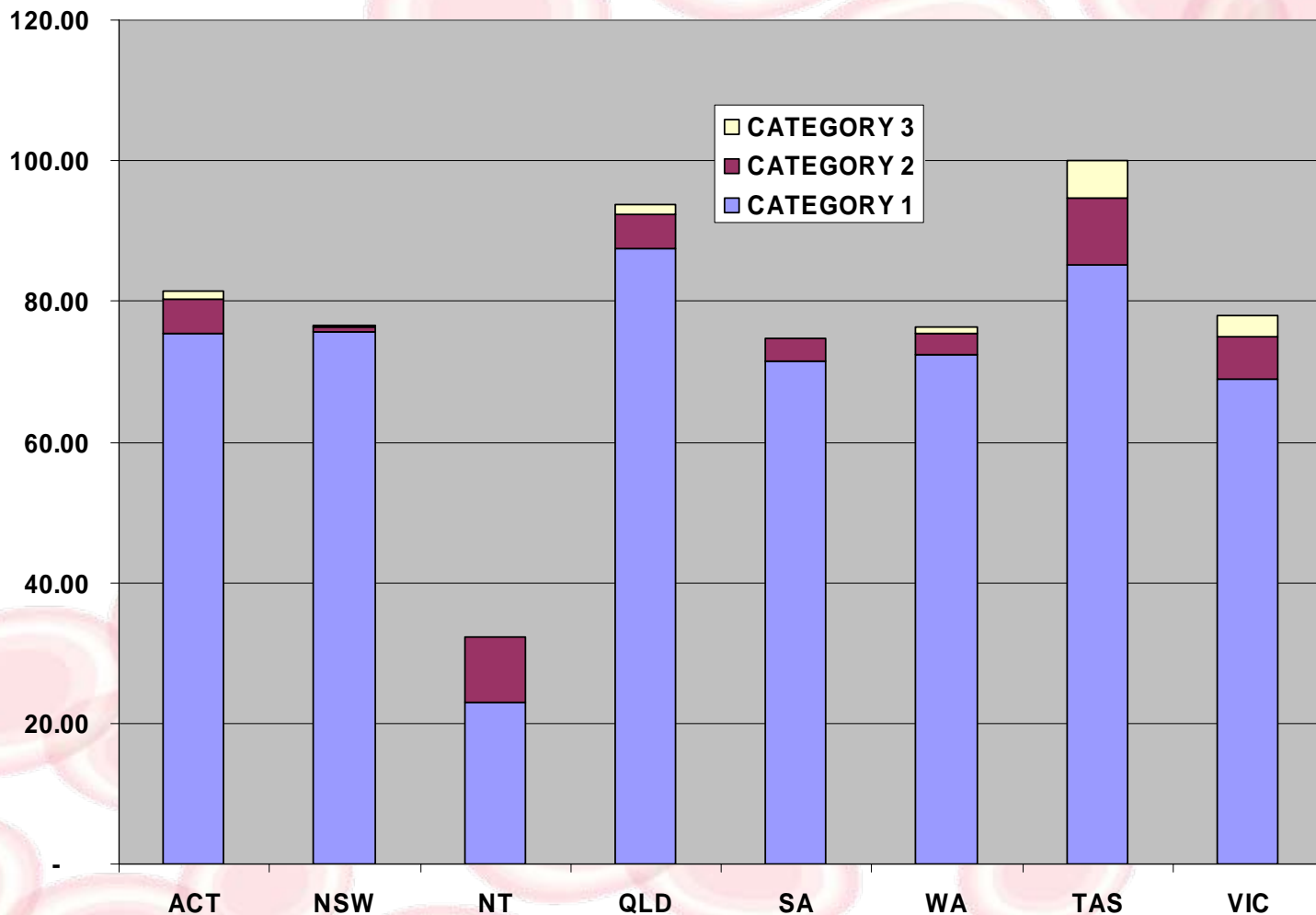
*2005-06 figures projected based on first 9mths data

IVIG USE BY SPECIALITY, YEAR AND CATEGORY (2005-06)*



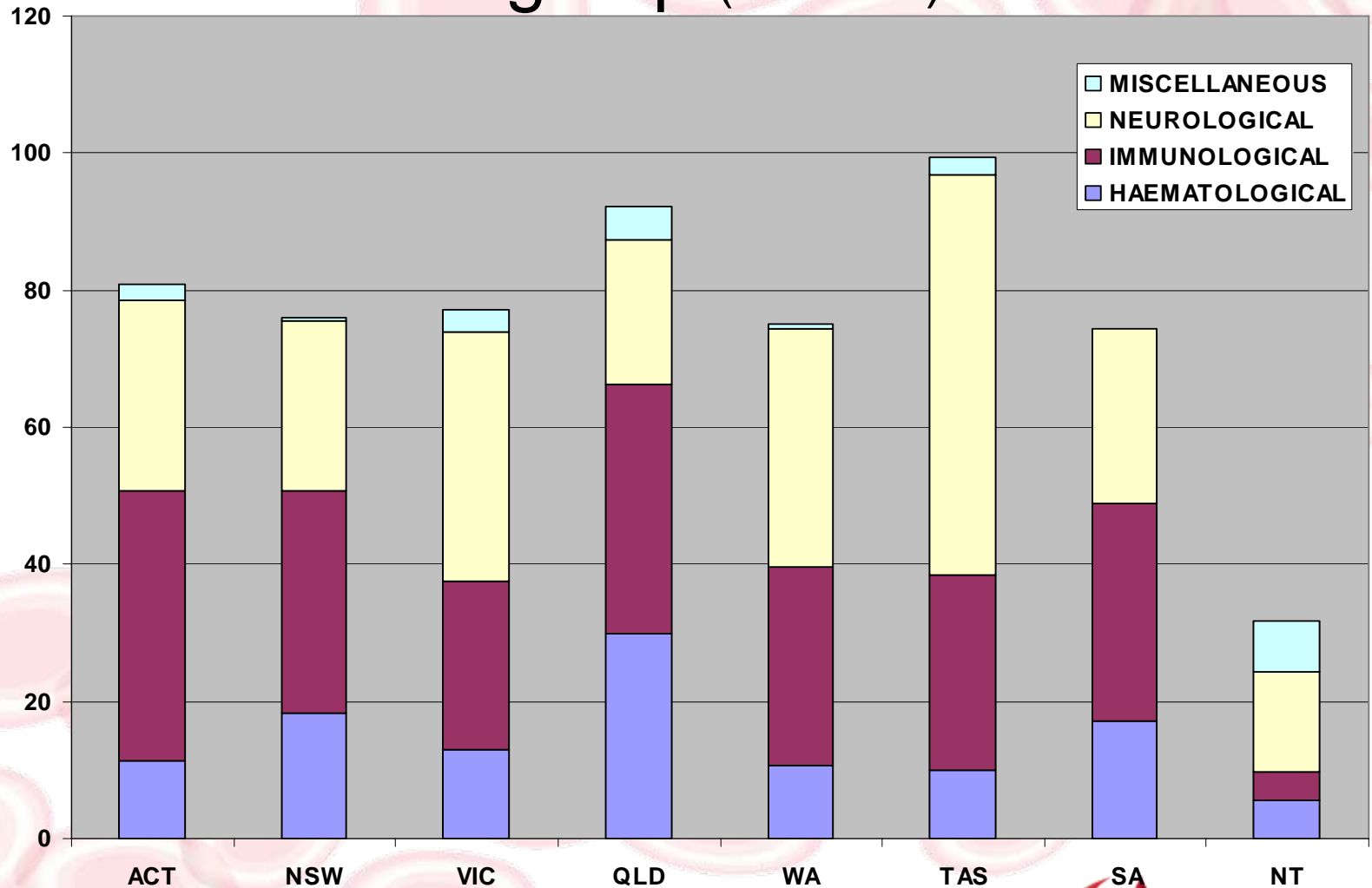
*2005-06 figures projected based on first 9mths data

GRAMS OF IVIG PER 1000 Pop FOR ALL INDICATORS FOR 2005-06 *



*2005-06 figures projected based on first 9mths data

Grams of IVIg per 1000 pop by Indicator Subgroup (2005/6*)

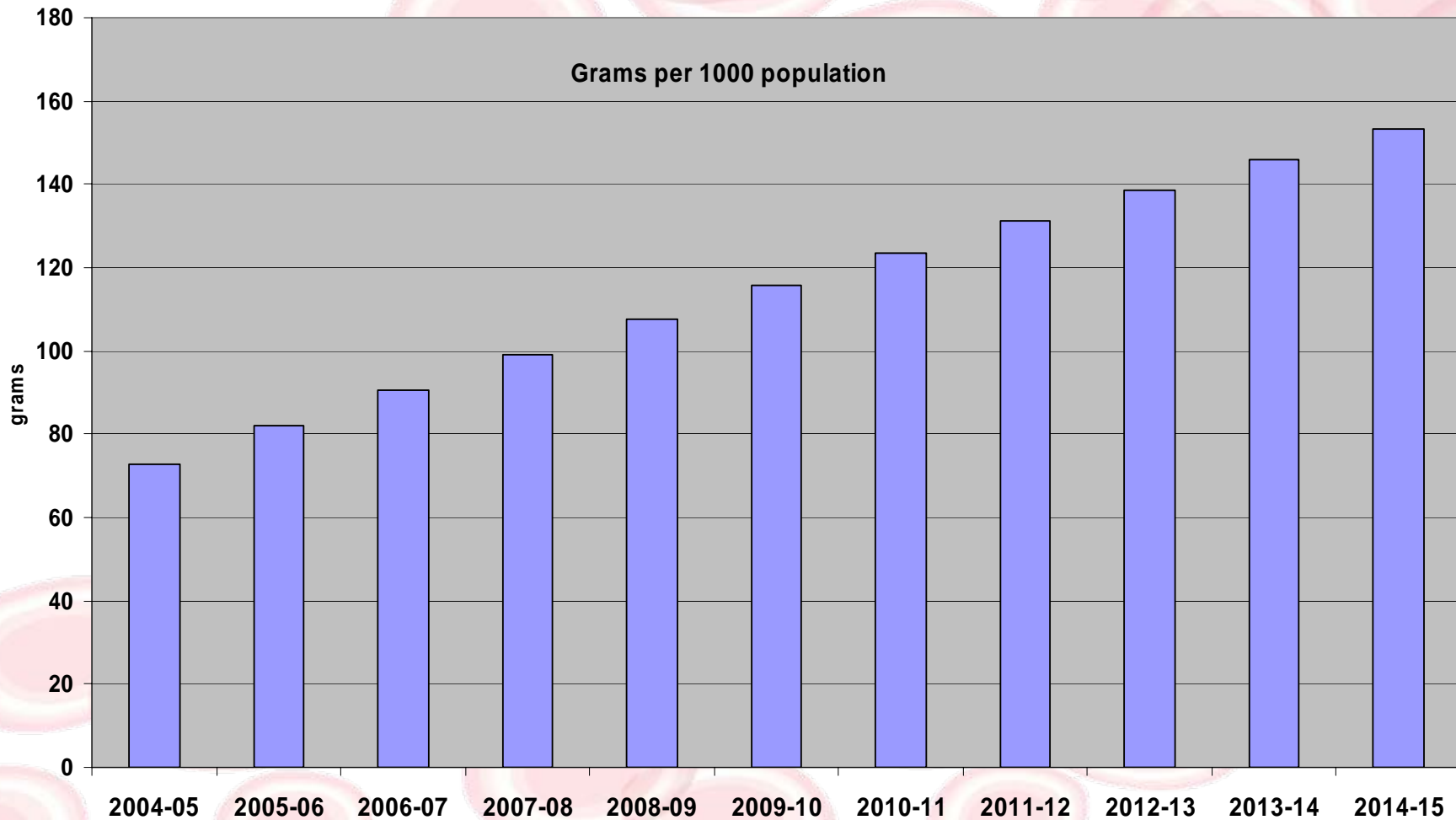


*2005-06 figures projected based on first 9mths data

FUTURE INTERNATIONAL USE INFLUENCED BY:

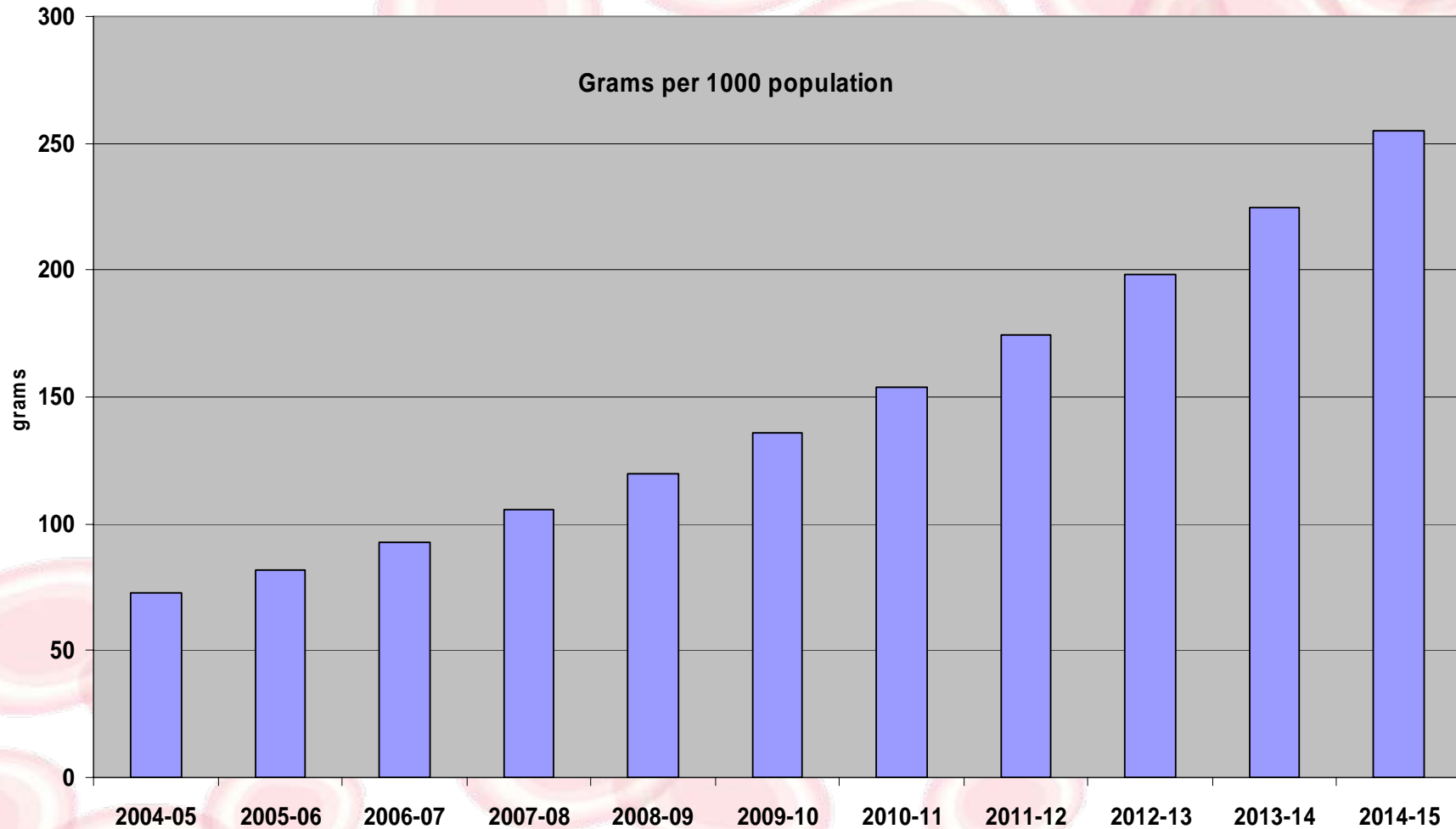
- Industry promotion
- Reimbursement policies
- Product developments
- Clinical evidence, supporting/not supporting
- Demand modifiers, e.g. clinical guidelines, authorisation processes
- Demographics

SCENARIO 1: NBA BEST ESTIMATE



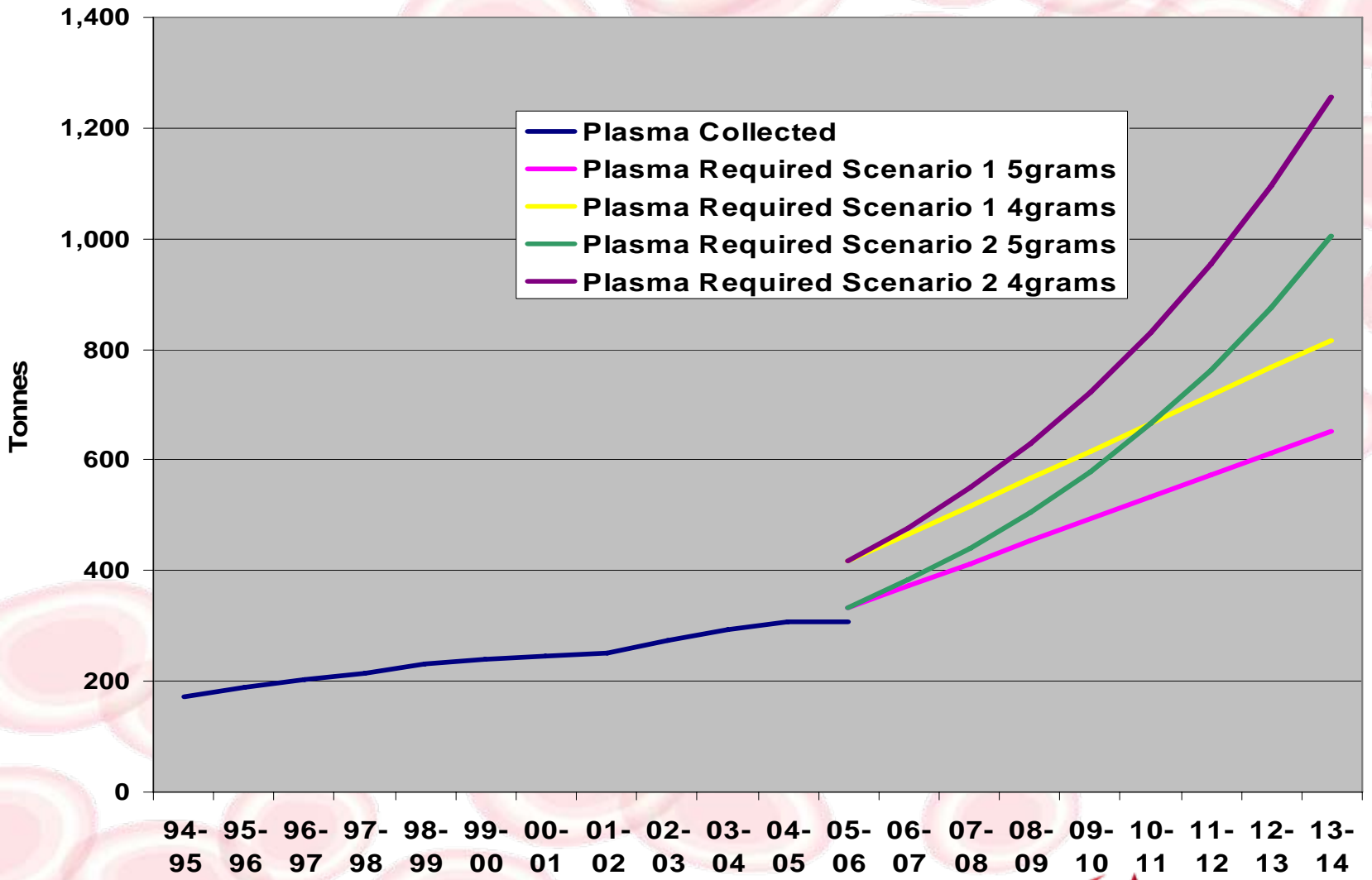
Based on increase by 200 kg. per year

SCENARIO 2: ESTIMATED INCREASE IN DEMAND of 14.8%* PER YEAR



* Average growth over the last 10 years

ACTUAL TONNES PLASMA COLLECTION AND ESTIMATED PLASMA REQUIRED TO MEET DEMAND



IVIG is

Global commodity under control of a few.

Supply limited, but ability to pay may determine usage globally.

Clinical flavor or saviour?

Clinical sufficiency will require importation based on current trends