

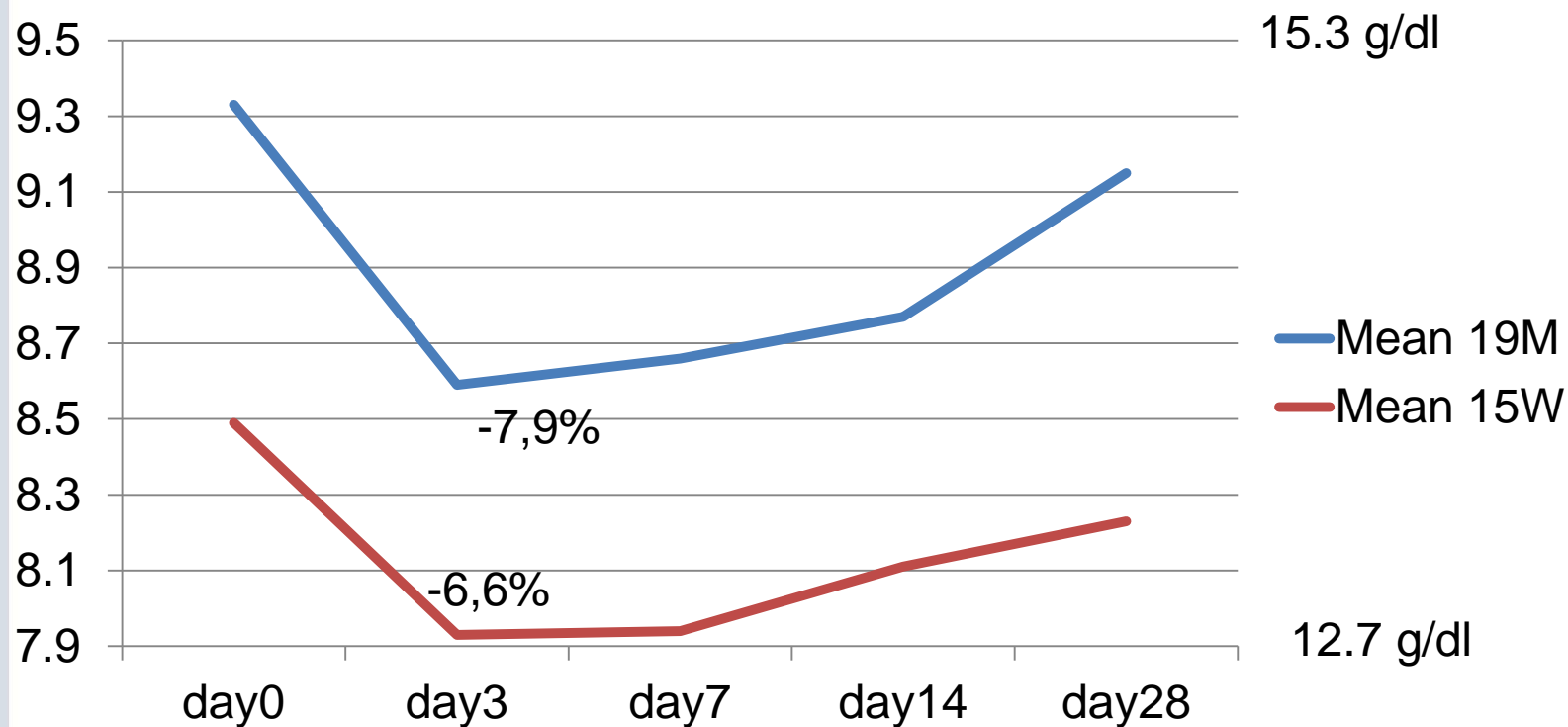
Iron depletion in blood donors

Corrective & Preventive Actions

15th International Haemovigilance Seminar, Brussels 21st February 2013
Karin Magnussen, Centre for Donor -haemoglobin and -iron
Rigshospitalet, Copenhagen, Denmark

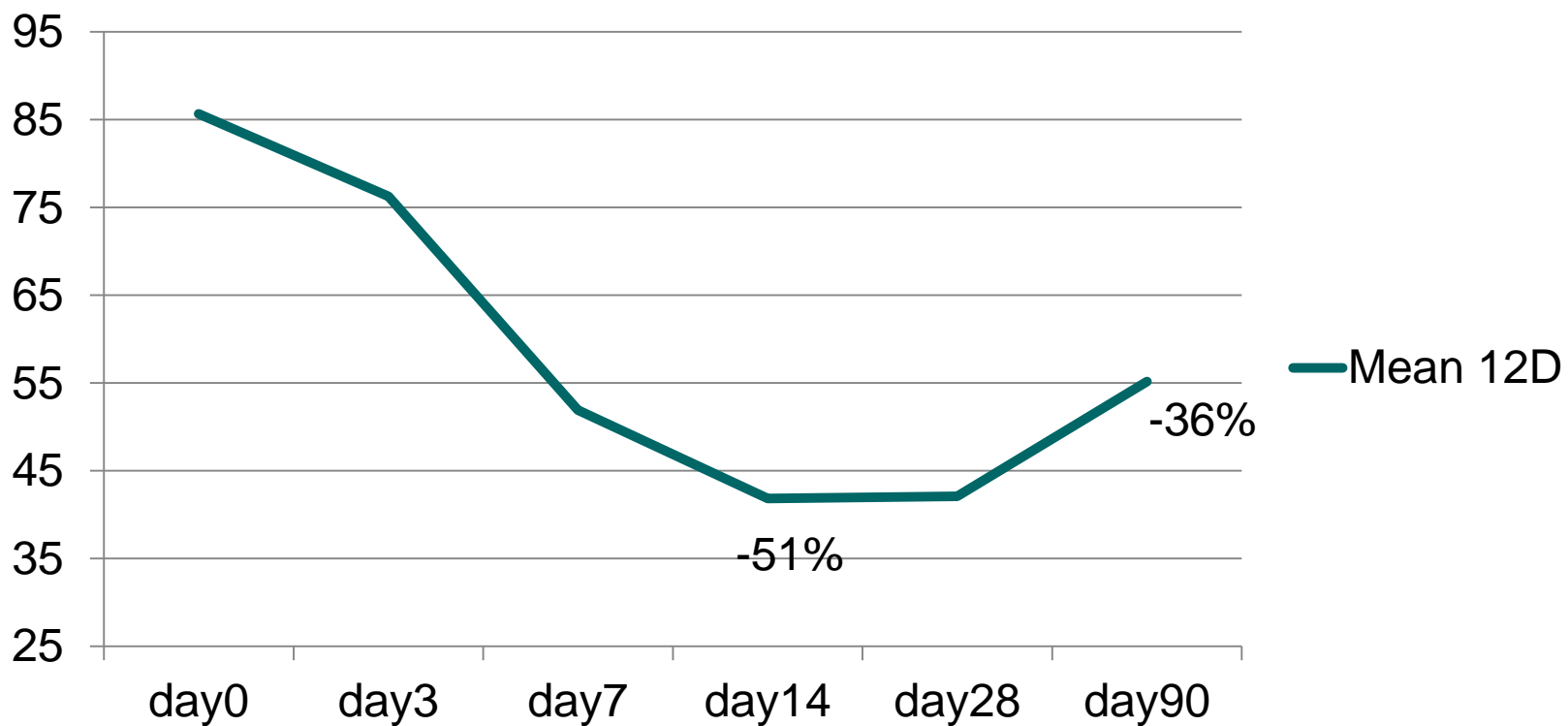
Haemoglobin mmol/l

Men and women



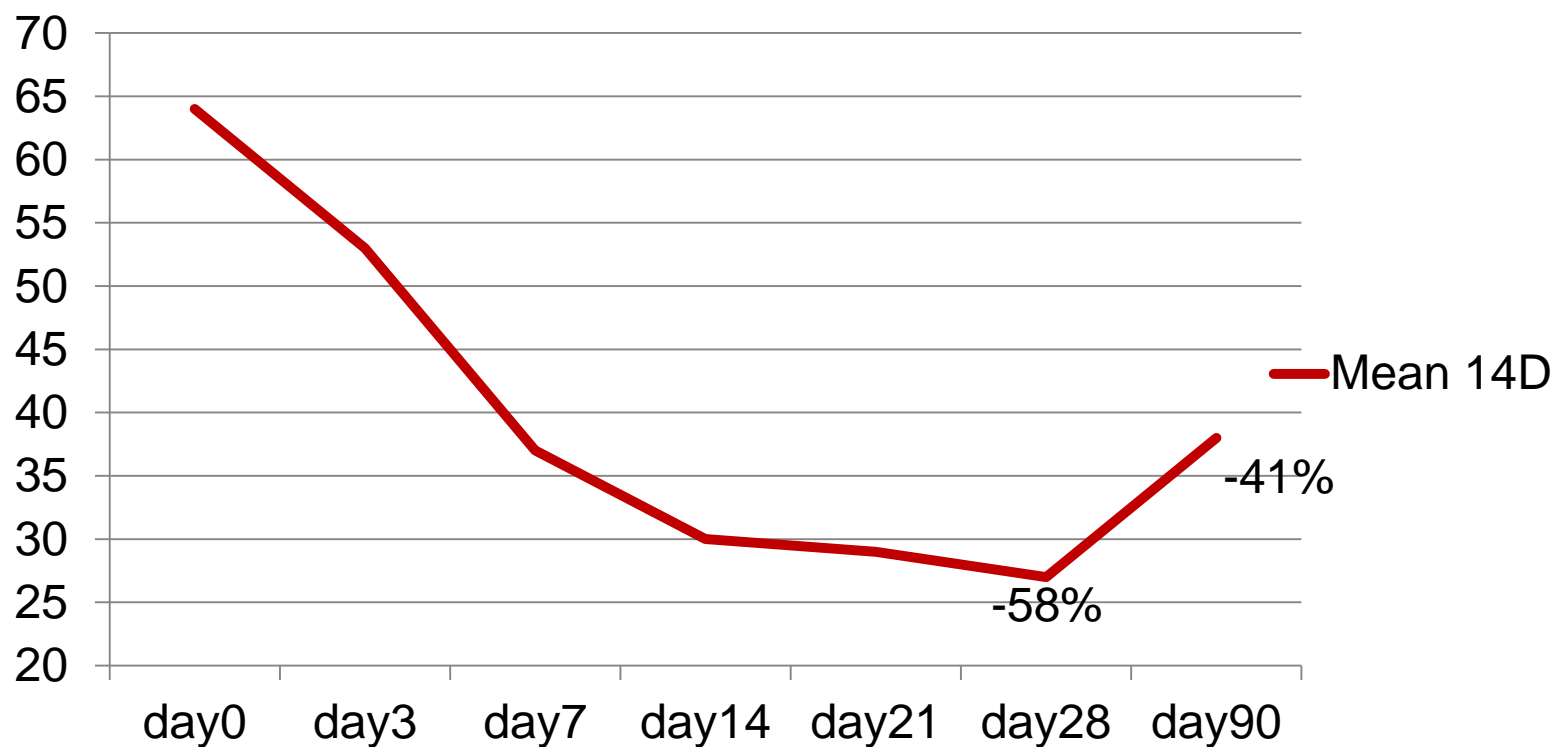
Ferritin $\mu\text{g/l}$

Men



Ferritin $\mu\text{g/l}$

Women



Corrective & preventive actions

- Regular donors
- Centralisation
- Creation of a team of specially trained staff, to take care of interpretation of lab results and to advice donors with aberrant results etc.

What is measured?

- With every donation
Hemoglobin, Hct, RBC, MCV, MCH, MCHC, RDW and Platelet- and leukocyte count
- First time, every 10th donation and as needed
 - Ferritin chosen as the best marker for iron stores in blood donors because:
 - Direct measure to diagnose iron deficiency in healthy people (blood donors)
 - The fact that it is an acute phase reactant enables us to find donors at risk of disease

No Action

Hb normal: > 7.8/8.4 mmol/l 12.5/13.5 g/dl

Ferritin normal: 60 - 300 µg/l

- *Around 80%*
- *Man 24 years old 12 donations AB+*
- *Hb 9.9 mmol/l/ 16.0 g/dl and ferritin 98 µg/l*

Preventive actions

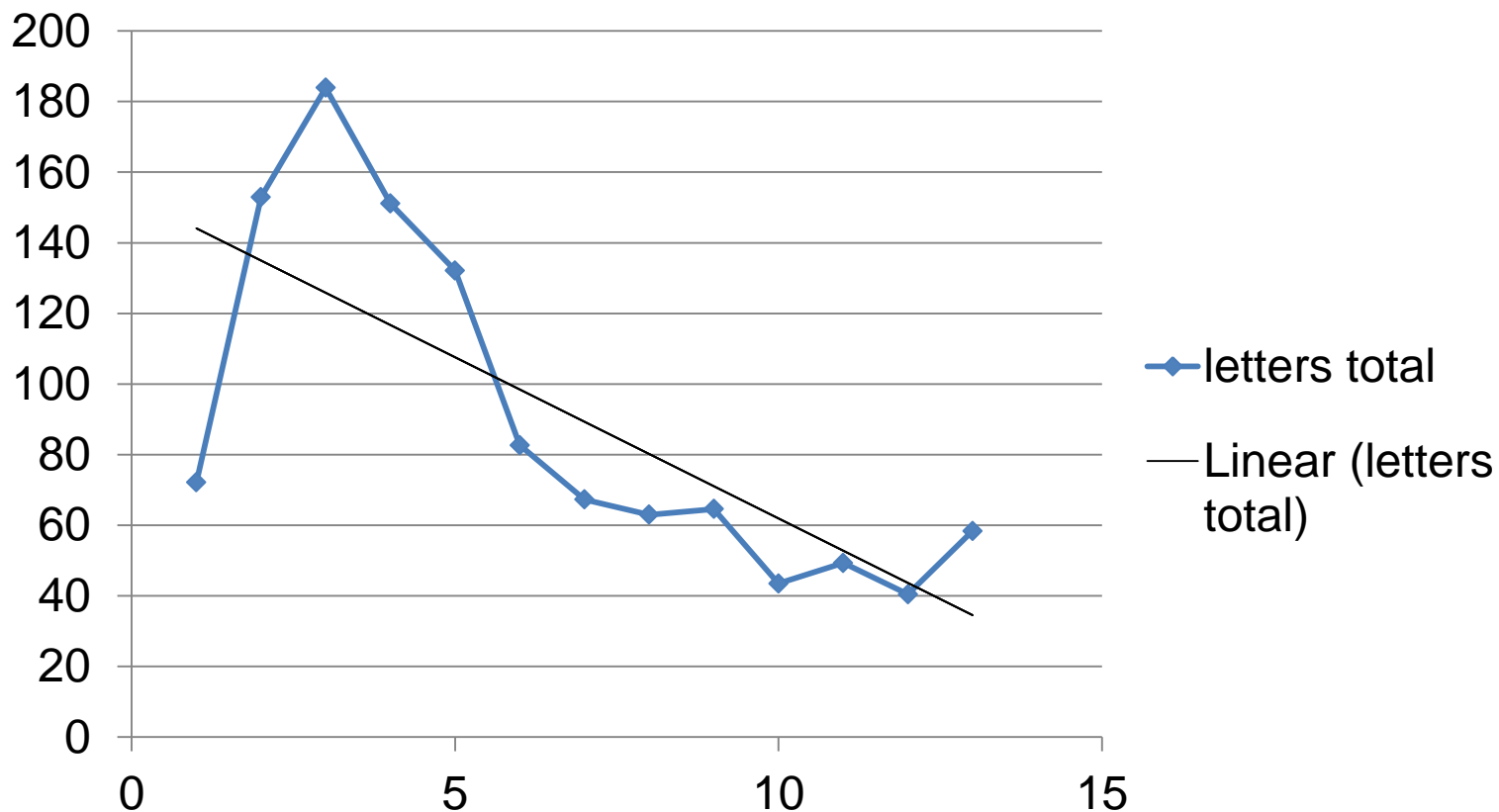
Hb normal: $> 7.8/8.4$ mmol/l $12.5/13.5$ g/dl

Ferritin low normal: $30 - 60$ $\mu\text{g/l}$

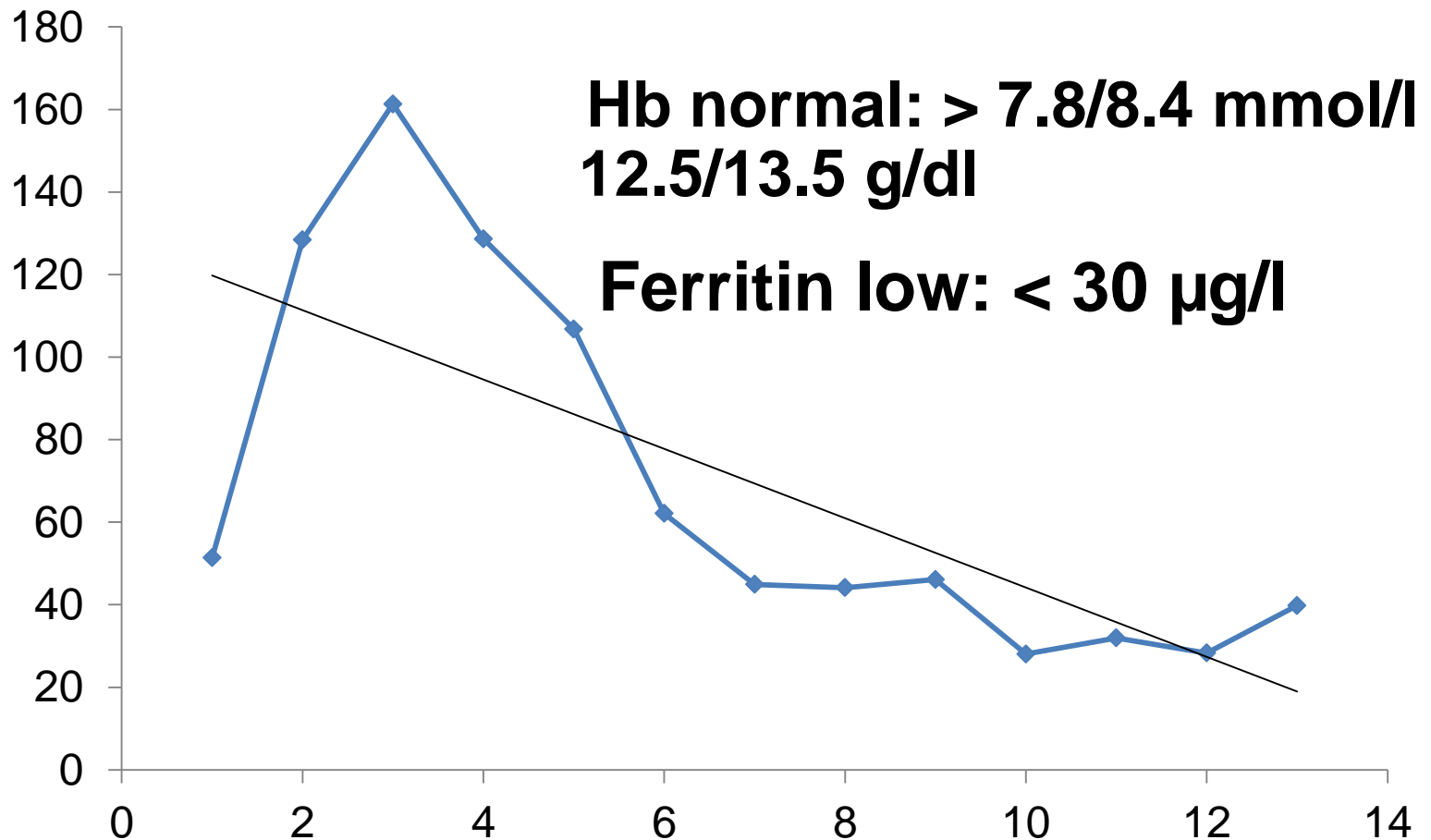
- *Around 10%*
- *Woman 55 years old 42 donations 0+*
- Hb 9.0 mmol/l/ 14.5 g/dl, Ferritin 45 $\mu\text{g/l}$
 - Note "20 Iron" (tablets) (with future donations)

Letters to donors with aberrant Hb or ferritin

9486 letters ~ 9% of donors



Preventive letters for donors with normal Hb and low ferritin inkl. 60 iron-tablets



Preventive action

Woman 62 years 110 donations A+

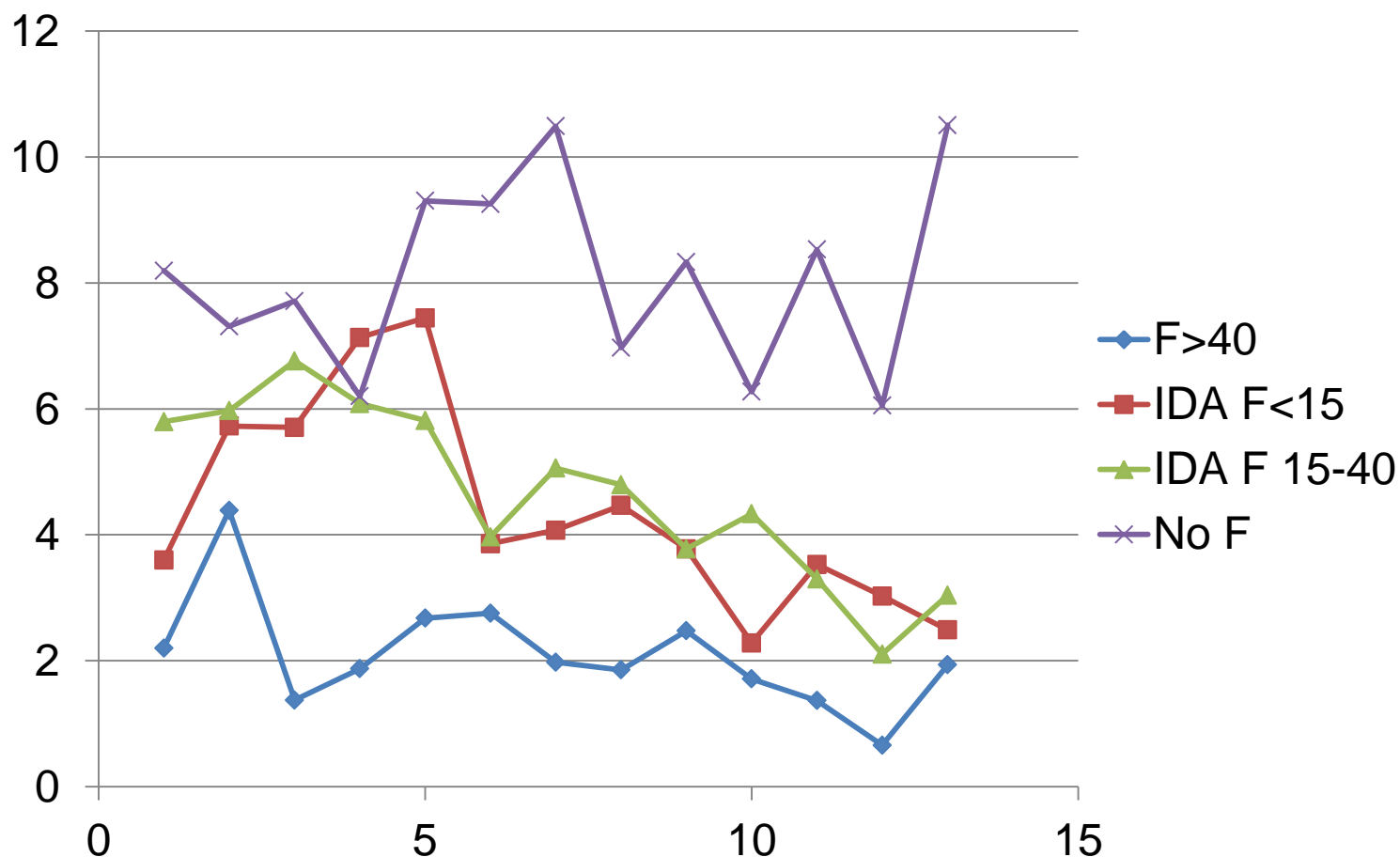
2011: Hb 8.2 mmol/l / 13.2 g/dl, ferritin 17 µg/l



Letter + ironfolder +60
iron tablets + 20 iron
with future donations

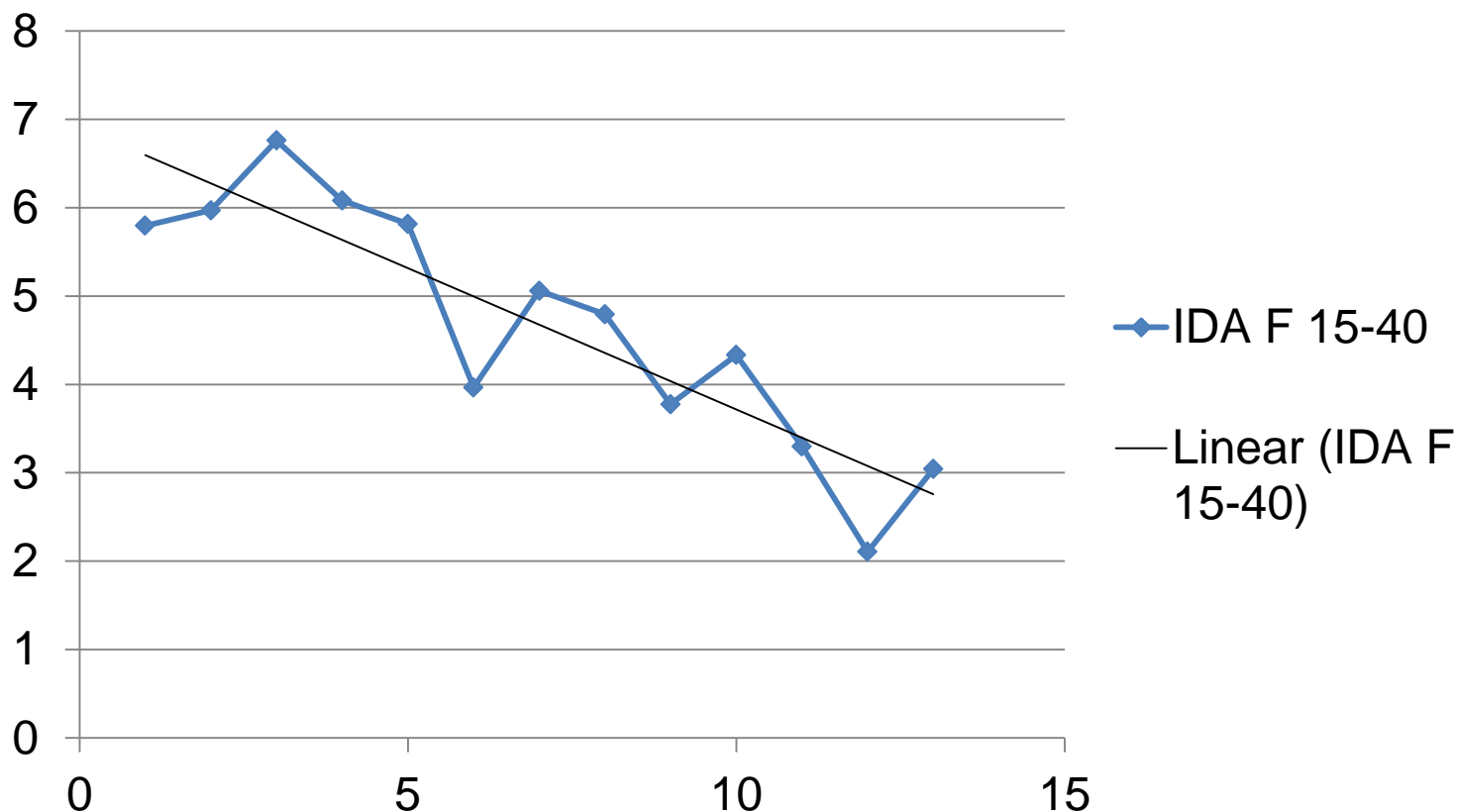
Now: 114 donations, Hb 8.4/13.5, F 55

Corrective letters to low Hb donors



Corrective letters to low Hb donors

IDA F 15-40



Corrective letters to low Hb donors

Man 23 years 11 donations 0+

Hb 8.0 mmol/l/12.9 g/dl, ferritin 20 μ g/l, MCV 79 fl

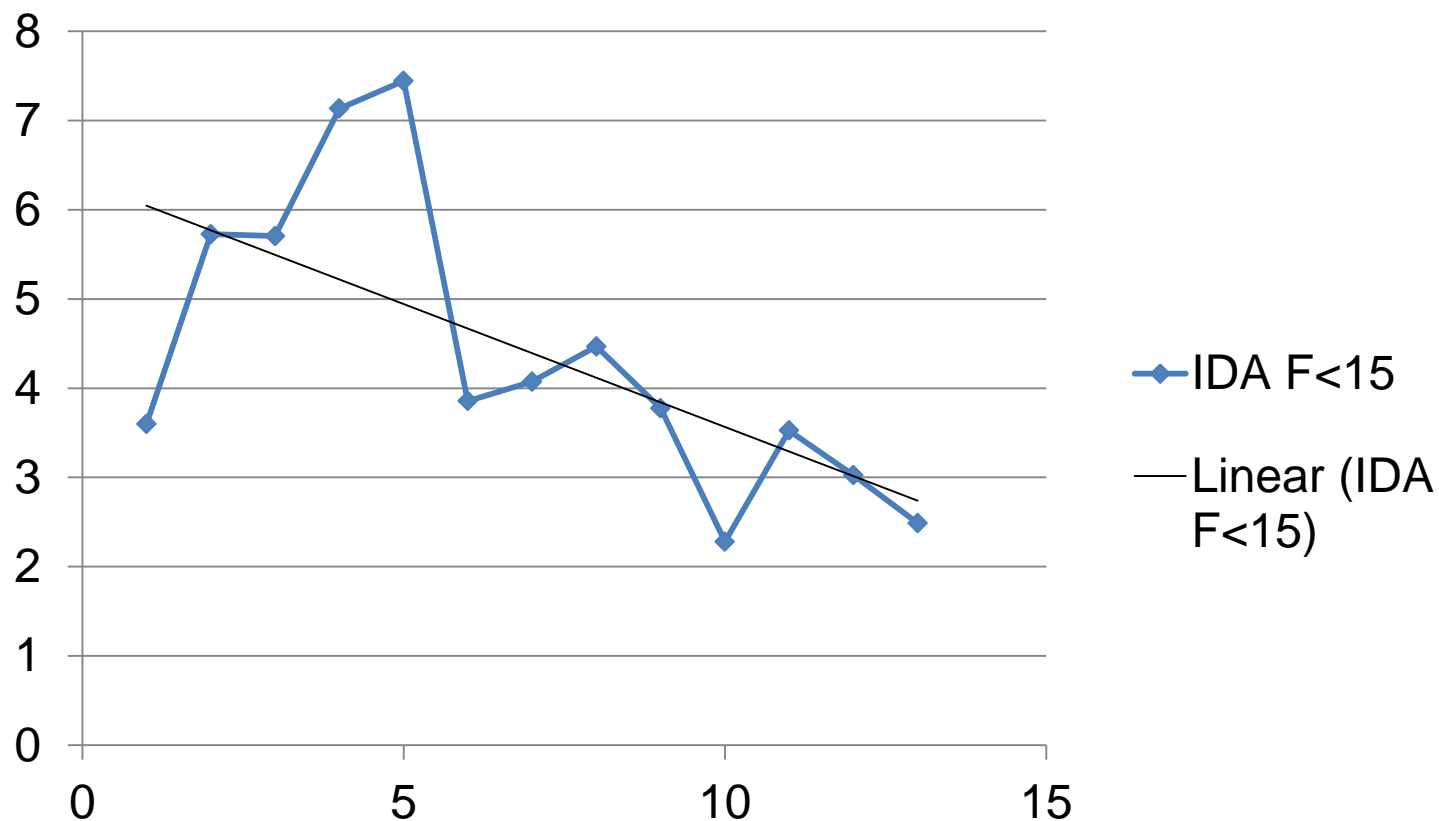


Call+ Letter + ironfolder + 60
iron tablets + 20 iron at future
donations

Now: 15 donations, Hb 9.2/14.8, ferritin 34, MCV 85

Corrective letters to low Hb donors

IDA F<15



Corrective letters to low Hb donors

Woman 47 years 41 donations 0-

Hb 7.5 mmol/l / 12.1 g/dl, ferritin 10 µg/l



Call +Letter + ironfolder +100 iron tablets + 20 iron with future donations

Now: 45 donations, Hb 8.9/14.3, F 37 µg/l

What we see regularly early in the program

Woman 60 years 64 donations A-

Hb 7.1 mmol/L/11.4 g/dl, F 7 μ g/l, MCV 76



Call + Letter + ironfolder + 100 iron tablets + 20 iron with future donations

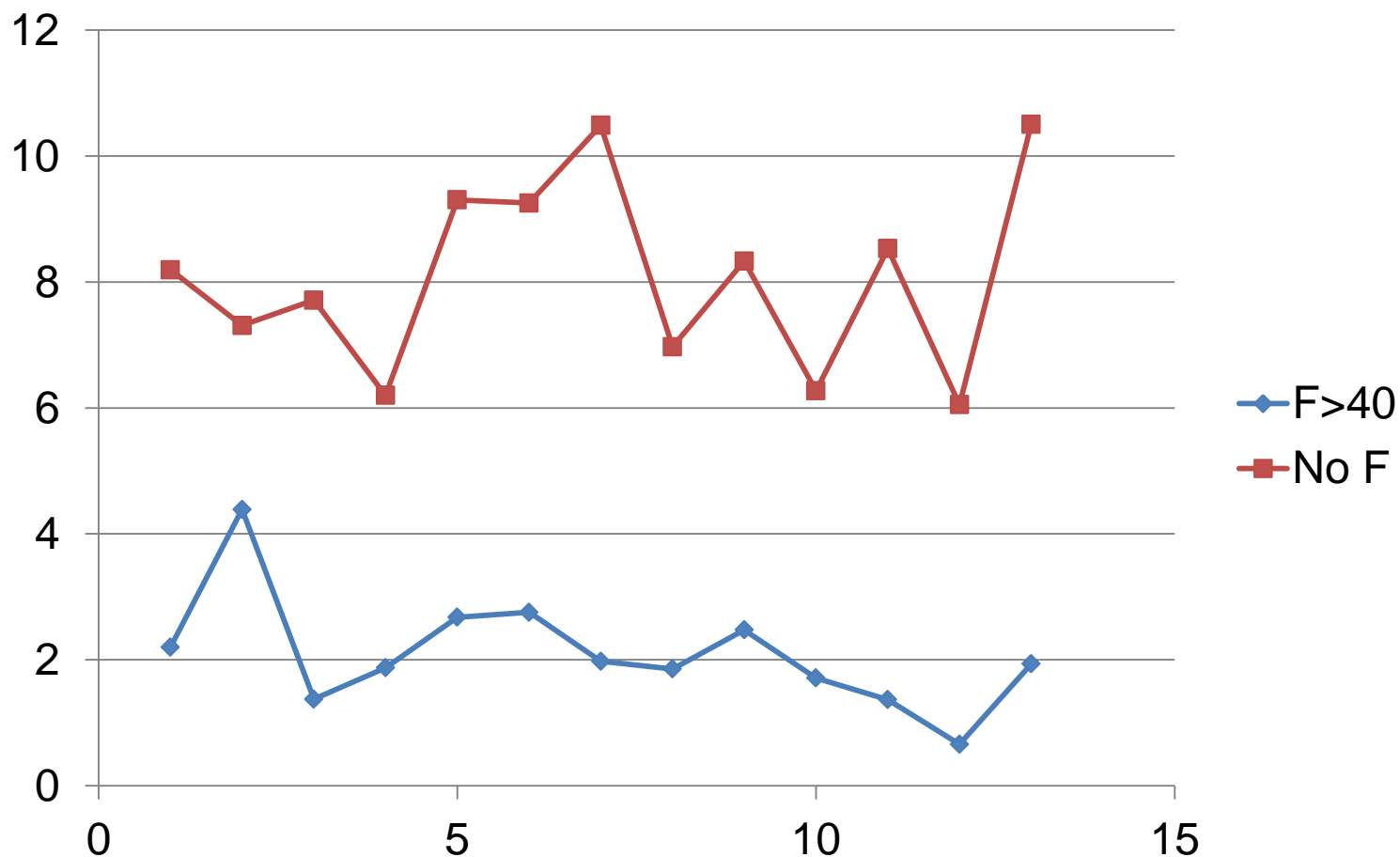
Hb 9.1 mmol/l/14.7g/dl, F16 μ g/l, MCV 80



Call + Letter + ironfolder + 60 iron tablets

Now: 66 donations, Hb 9.2/14.8, F15, MCV 85

Recommendation to consult physician



Hb low: < 7,8 / 8,4 mmol/l 12.5 / 13.5 g/dl
Ferritin more than 40 µg/l or not done



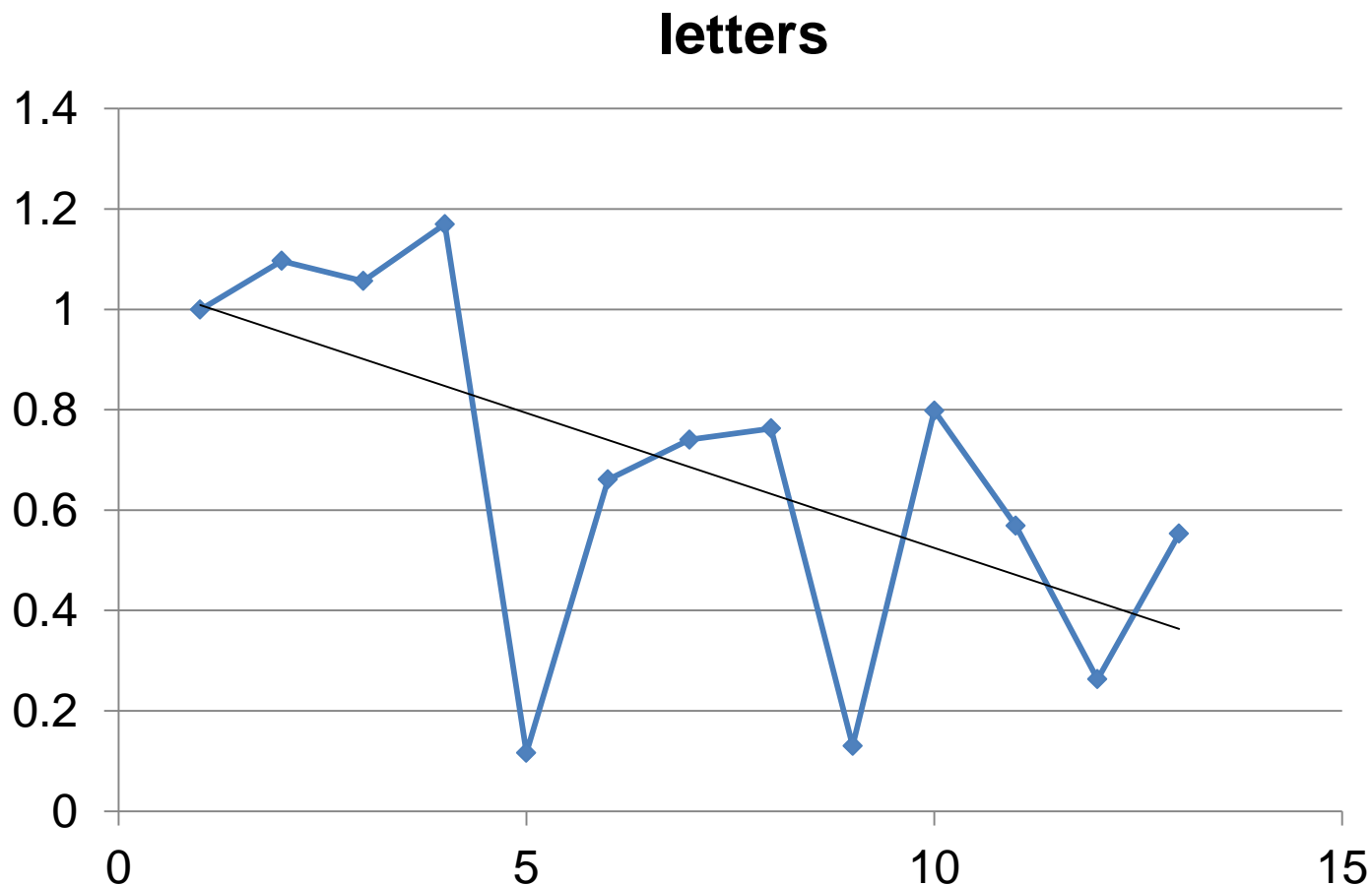
Phone call with recommendation
to see GP and letter to donor with
lab results

Most have habitual low normal Hb

2 donors diagnosed with cancer

6 diagnosed with disease (diagnose unknown to bb)

Letters for donors with no anemia and ferritin > 400µg/l



Letters for donors with no anemia and ferritin $> 400\mu\text{g/l}$



Phone call with recommendation to see GP and letter to donor with lab results

- Six diagnosed with hemochromatosis
- One with hereditary hyperferritinemia cataract syndrome

Other findings over 4 years

- Four with polycythemia vera
- One mild α -thalassaemia ($\alpha^{3.7} \alpha^{3.7}$)
- Four heterozygous α -thalassaemia
- Eight heterozygous β -thalassaemia
- One compound heterozygous α , β -thalassaemia
- Two heterozygous hemoglobin E
- One heterozygous sickle cell anemia

Summary

- Around 80% of the donors needs no extra action
- Around 20 % are offered iron tablets
 - IronC (100mg iron) or Iron bisglycinate (25mg iron)
- Around 10% are offered 20 iron tablets with future donations
- 7% with normal Hb and low ferritin
 - Possibly 3-4% next year
- 2% with IDA
 - Possibly 1% next year
- 1% referred to GP

The Capital Region of Denmark

Part of the resource team

REGION



Your attention is appreciated

