EQA in POCT
The Norwegian experience

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Expectations from the patient

Right answer
..on the right constituent
..at right time
and then -right treatment

No matter if the care is in a hospital, in primary healthcare (GP) or in a nursing home
The challenge in GP in Norway

A LONG COLD LAND, almost without inhabitants

Norway: 14 inh/km² - England: 407 inh/km²
Træna
Inhabitants: 457
Analytical repertoire:
CRP
Glucose
Haemoglobin
Haematology
INR
Troponin T
D-dimer
FOB
Strep A
U-hCG
U-stix

Træna
Inhabitants: 457
Primary health care:
In average < 3 doctors, > 3 co-workers

Noklus was established to help laboratories outside hospitals:

- Give advice about analytical repertoire
- EQA for POCT
- Be someone to ask for help and advice
- Give advice about instruments to buy
- Secure correct interpretation of the results
More than 3000 participants
   1709 GPs offices (99,8%)
   859 (96 %) nursing homes
   544 others

Professional sections in Noklus dealing with POCT
   Course and education (Laboratory advisors)
   External quality assessment - EQAS
   Evaluation of POCT instruments – SKUP
   Selfmonitoring of INR
   Clinical use of the laboratory
   Norwegian diabetes registry
   Research and development
Course and education

53 Laboratory advisors (23 locations)

2016:
1730 of the participants have been visited
412 courses with 5361 participants
> 9000 participated in e-learning courses
Countless telephones and e-mails
Tools for the Laboratory advisors

Web based procedures
Tools for the Laboratory advisors

Results from
Section Evaluation of POCT-instruments

Skup give answers about FAQ from GPs:
- Is the quality good enough?
- Is the instrument robust enough?
- How long time will it take to analyse the samples.
- What are the costs and what is the reimbursement.
SKUP provides neutral and independent information about quality and user-friendliness of point of care instruments. SKUP is an organization that provides high quality evaluations of instruments for the manufacturers. The evaluations are performed both under controlled conditions in a hospital lab and by the users, e.g. the offices of GPs, nurses on the wards, diabetic patients for home testing.
Reports in English for more than 130 POCT instruments (and a short version in Scandinavian language)

Report from a full evaluation is always made public

Report from a pre-evaluation is made public if the instrument is launched in Scandinavian

www.skup.nu
Tools for the Laboratory advisors

Results and reports from EQAS

Follow up participants with “poor” evaluations
Tools for the Laboratory advisors

Results and reports from EQAS

Follow up participants with “poor” evaluations

Trends: Method deviation

Evaluation given each participant

Riktighet: Fasit: 12,44, Din verdi: 12,05
Vurdering: Meget god
Presisjon: Differansen mellom dine verdier: 0,1
Vurdering: Meget god
Vi har registrert følgende verdier: 12,0/12,1
Målemetode: HemoCue Hb 201+
External quality assessment
Number of participants for different surveys for POCT-instruments

Target: Reference method/Calculated from certified calibrator
Commutable
Improvements?

Glucose
% “Bad” trueness

Target value = Method median within instrument group for all instruments
2017 target value = Method median within instrument group for 50% of the instruments and calculated value for the other 50%
Effect of Participating in a Quality Improvement System over Time for Point-of-Care C-Reactive Protein, Glucose, and Hemoglobin Testing

Tone Bukve,1* Anne Stavelin,1 and Sverre Sandberg1,2,3

Fig. 1. Percentage of participants exhibiting good performance (A) and poor performance (B) related to the number of times they participated in the CRP (blue line), glucose (orange line), and Hb (green line) EQASs.

The number of participants participating 1 and 19 times were for CRP 2698 and 162, for glucose 2787 and 156, and for Hb 2694 and 324.
Independent factors associated with good performance were:

- Type of instrument
- Number of times performing EQA
- Performing internal QC weekly
- Performing 10 or more tests weekly
- Having laboratory qualified personnel to perform the tests.
EQA

Preanalytical survey

A main problem:

Are you sure this is the right sample from the right patient?
# Identification of patient/requisition

Percent that answered “yes”

<table>
<thead>
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<th>2015</th>
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<tbody>
<tr>
<td>Name and social security number</td>
<td>14</td>
<td>35</td>
</tr>
<tr>
<td>Name and date of birth</td>
<td>49</td>
<td>48</td>
</tr>
<tr>
<td>Name</td>
<td>23</td>
<td>13</td>
</tr>
</tbody>
</table>

If I do not know the patient, I usually ask the patient about:

- Name and social security number
- Name and date of birth
- Name

If I know the patient, I do not ask about identity. 54% in 2013, 20% in 2015.

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**Although we are old acquaintances**

I ALWAYS ask about your date of birth before I take your sample.
1) Together with the analytical control material, we distribute 1-2 case stories typical for general practice in which the result from the analytical EQAS shall be used. Advantage: The GP will see the direct clinical consequences of a wrong test result.

2) Case stories, asking for the critical values (significant differences between two results)
Advantage: Will increase the GPs knowledge of the importance of analytical and biological variation.
A 45 year-old, considerably overweight woman with 5 children. She is diagnosed with type II diabetes and takes tablets for that. She has a tight every-day schedule paying little attention to her diet and do not exercise.
Her blood-glucose varies between 7 and 16 mmol/L.

By consultation now the HbA$_{1c}$ is 9.1 % (DCCT)
You do what you find appropriate.
What should the HbA$_{1c}$ test result be at the next consultation to indicate poorer diabetes control?
In average:
9.8 5 (DCCT) ➔ Clinical difference 0,7 % (DCCT) ➔ CV$_{Analytical}$ ≈ 3%
Analytical CV for HbA1c-POCT
Results from Noklus EQA 2015 - 2017

- Afinion
- DCA (all models)
- HemoCue
- Quo-Test A1C
Thanks for your attention