



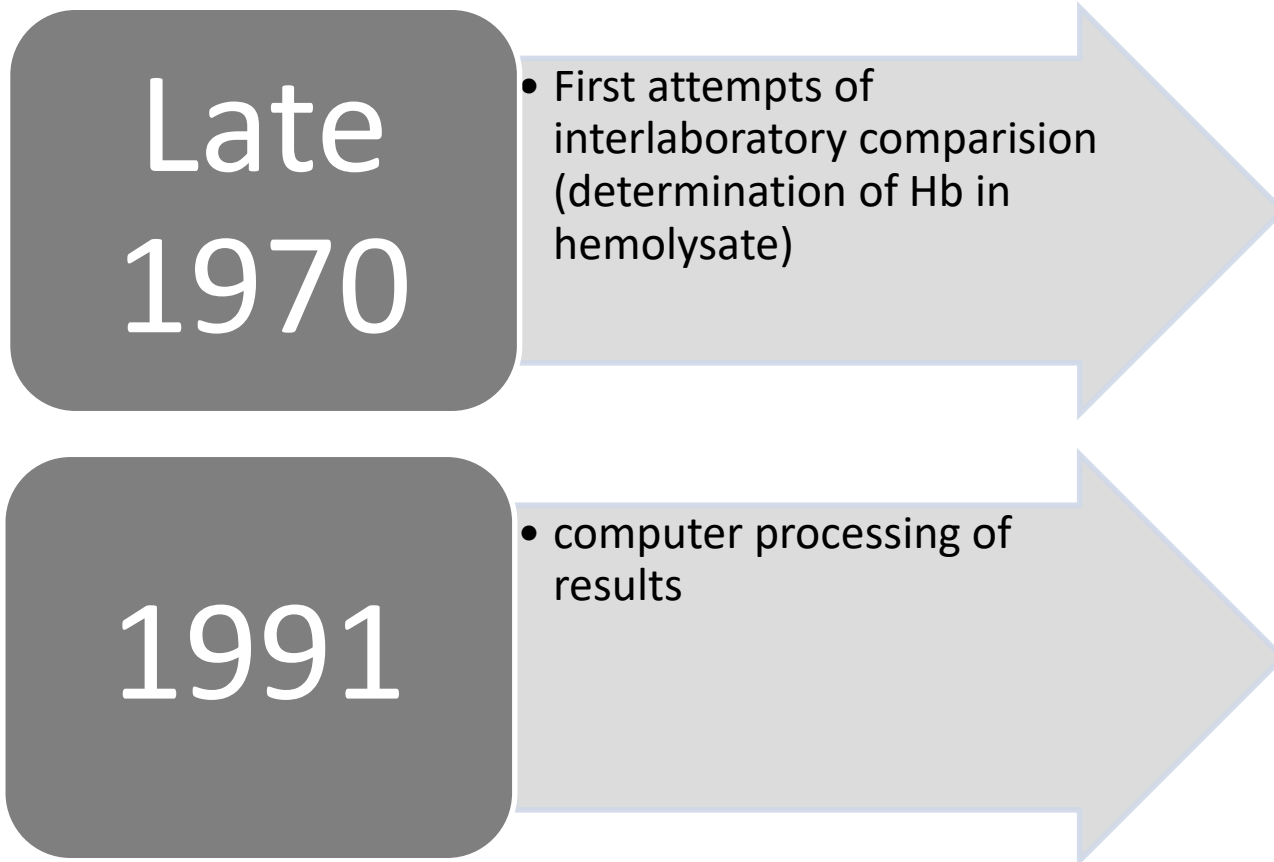
Slovenian National External Quality Assessment Scheme

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SNEQAS – milestones in the development of the scheme



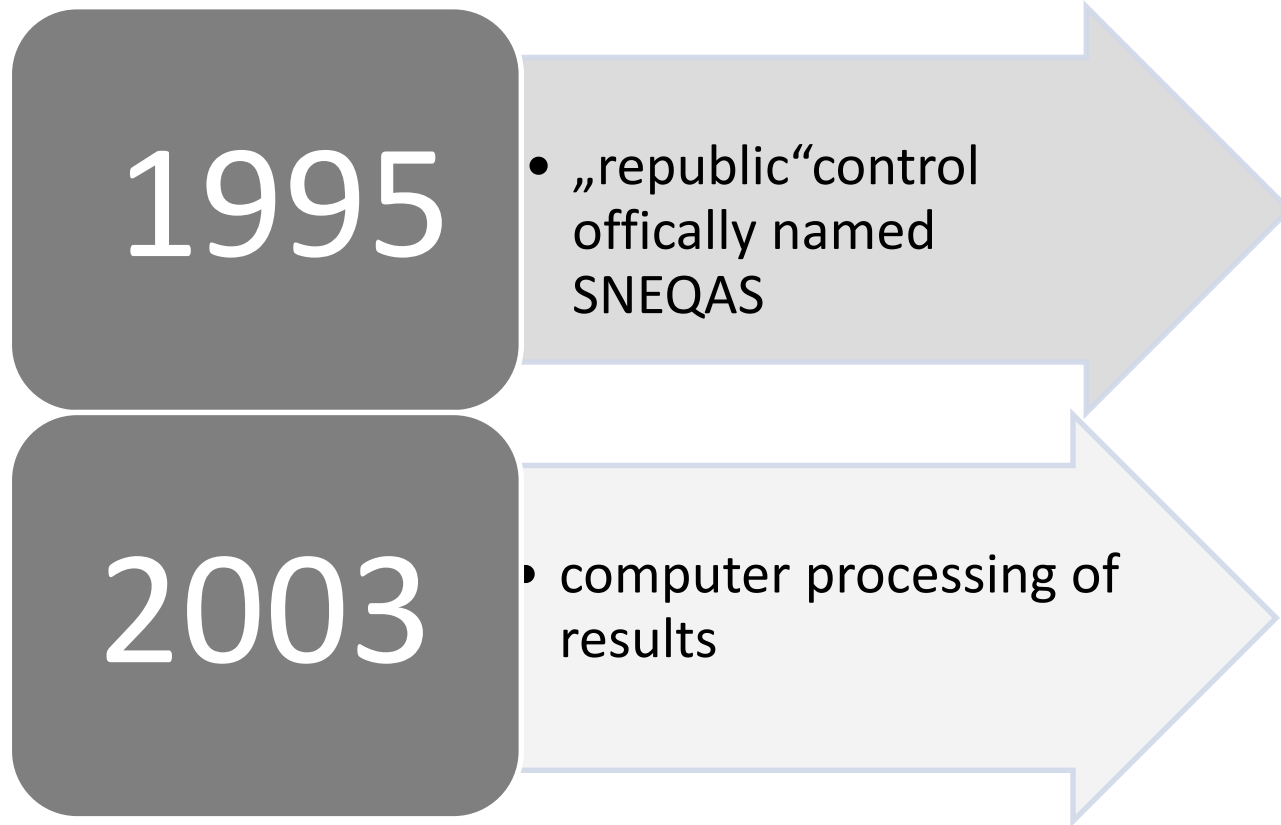
Computerized data processing in 1991

Pošiljamo vam rezultate kontrole kvalitete dela.
Za hemoglobin je dovoljeno odstopanje +/- 5%

	Min. vr.	Ref. vr.	Max. vr.
Obseg +/- 5 %	139.65	147.00	154.35
Število rezultatov v dovoljenih mejah je	118		
Vaš rezultat 151.00 je dober, ker odstopa	2.72 % od ref. vrednosti.		

	manjše od -5.00 %	139.65	*****
	- 5.00 %	139.65 - 141.12	*****
	- 4.00 %	141.12 - 142.59	*****
	- 3.00 %	142.59 - 144.06	*****
	- 2.00 %	144.06 - 145.53	*****
	- 1.00 %	145.53 - 147.00	*****
	referentna vrednost	147.00	*****
	1.00 %	147.00 - 148.47	*****
	2.00 %	148.47 - 149.94	****
151.00 ->	3.00 %	149.94 - 151.41	*****
	4.00 %	151.41 - 152.88	**
	5.00 %	152.88 - 154.35	*****
	večje od 5.00 %	154.35	**

SNEQAS – milestones in the development of the scheme



PREGLED REZULTATOV KONTROLE

Kontrola: 4/06

Z dne: 20.11.2006

Število sodelujočih: 194

Kontrolni vzorec: CRP 4/06

Metoda Statistične obdelave

☒ Normalna

☐ Neparometrična

Preiskave kontrolnega vzorca

CRP (CRP)

Preiskava

CRP (CRP)

Št. rezultatov: 138 (in- 128)

Mediana: 36

Srednja vrednost: 36,8

Standardna deviacija: 5,665

%KV: 15,39

Xmin: 12,08

Xmax: 71

Št. razredov: 13

Širina razreda: 4,91

Kor.št. rezultatov: 134 (in- 128)

Kor. Mediana: 36

Kor.Sr. vrednost: 36,4

Kor.St. deviacija: 3,205

Korigiran %KV: 8,81

Kor.Xmin: 25,5 Kor.Xmax: 51,91

Ciljna vrednost: 36 (29 do 44)

Metoda

Št. rezultatov:

Mediana:

Srednja vrednost:

Standardna deviacija:

%KV:

Xmin:

Xmax:

Kor.št. rezultatov:

Kor. Mediana:

Kor.Sr. vrednost:

Kor.St. deviacija:

Korigiran %KV:

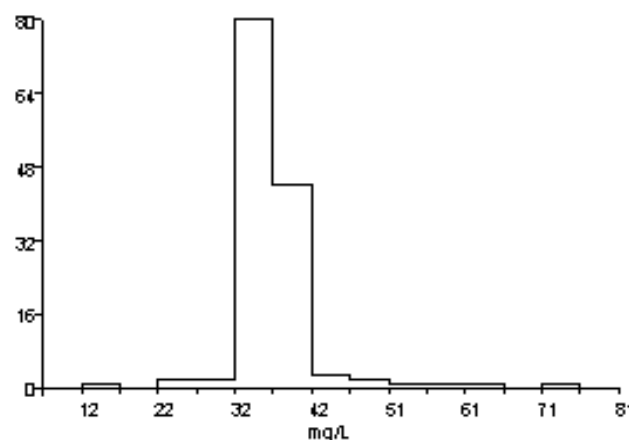
Kor.Xmin:

Kor.Xmax:

Ciljna vrednost:

Sif.Lab - rezultat

In 088	-	12
In 168	-	26
In 194	-	26
In 002	-	30
In 163	-	30
In 151	-	32
In 111	-	33
In 006	-	33
In 027	-	33
In 116	-	34
In 070	-	34
In 081	-	34
In 035	-	34
In 102	-	34
In 063	-	34



SHRANI STATISTIČNE REZULTATE

Osnovni Graf

Korigiran Graf

SNEQAS – milestones in the development of the scheme

2013

- introduction of new modules

2014

- new web application



Slovensko nacionalno shemo za zunanjo oceno kakovosti sestavljajo različni programi medlaboratorijskih primerjav s pomočjo katerih klinično kemijski laboratoriji, ob sočasnem učinkovitem izvajanju notranje kontrole kakovosti, zagotavljajo zanesljive in pravilne rezultate preiskav, ki jih izvajajo.

Programi **SNEQAS** so zasnovani tako, da v največji možni meri sledijo potrebam uporabnikov. Pri shemah, ki jih SNEQAS trenutno izvaja, gre v prvi vrsti za oceno analitične kakovosti, posredno pa so vključeni tudi posamezni vidiki pred in poanalitične ocene kakovosti (rokovanje z vzorci, izbor metode, podajanje rezultatov...). Na ta način lahko udeleženi laboratoriji zaznajo morebitne težave, slabosti in možnosti izboljšav.

SNEQAS je član evropske zveze za kakovost v laboratorijski medicini (**EQALM**) in sodeluje z drugimi evropskimi EQA organizatorji.

[Zakonske osnove za izvajanje programov zunanje ocene kakovosti](#)

[Kako se vključiti v SNEQAS?](#)

[Obveznosti uporabnikov SNEQAS](#)

[Pošiljanje vzorcev](#)

Domov

Laboratorij

Profil

Odjavi se!

Spremeni geslo

Naročilnica

Struktura obrazca

Statistika kontrol

Pozdravljeni na straneh SNEQAS!

Splošna navodila

Če tega še niste storili vas prosimo, da obvezno posodobite [podatke o laboratoriju](#).

Pred vsakim novim krogom kontrole obvezno preverite ustreznost podatkov o metodah s katerimi ste prijavljeni v oknu [aktiviranje obrazca za vnos rezultatov](#) in ga dopolnite z ustreznimi vnosi. Po pregledu (oziroma vnešenih spremembah) s klikom "potrdi obrazec" aktivirate obrazec s pravimi podatki za vnos rezultatov v meniju na levi strani (gumb "vnos rezultatov")

Currently over 250 laboratories participating in the scheme.

- laboratories from public primary health care
- secondary level (general hospitals)
- tertiary level (university clinics)
- doctor offices practicing POCT

The legal base for the implementation of the EQA programs is the national bylaw
“Rules on the conditions to be met by laboratories for carrying
out investigations in the field of laboratory medicine”

The bylaw is based on requirements of
ISO 15189: 2003 Medical Laboratories - Particular requirements for quality and
competence.

Participation in the scheme is mandatory for all medical laboratories and is subject
to an audit to obtain a working license.

SNEQAS covers various areas of laboratory medicine.

Currently we provide programs;

- biochemistry,
- CBC with differential blood count
- Differential blood count (smear)
- CRP
- coagulation (PT)
- qualitative analysis of urine
- urinary sediment using visual material
- quantitative analysis of proteins, albumin and creatinine in urine
- POCT (glucose)
- preanalytics

in collaboration with the experts from other health institutions :

- thyroid hormones,
- autoantibodies
- specific IgE .

Participants receive samples four times a year.

Processing of participants results

Target value

- Method peer mean

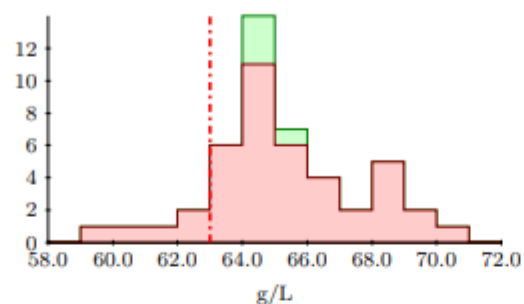
Acceptable range

- Fixed percentage of target value

Assessment criteria

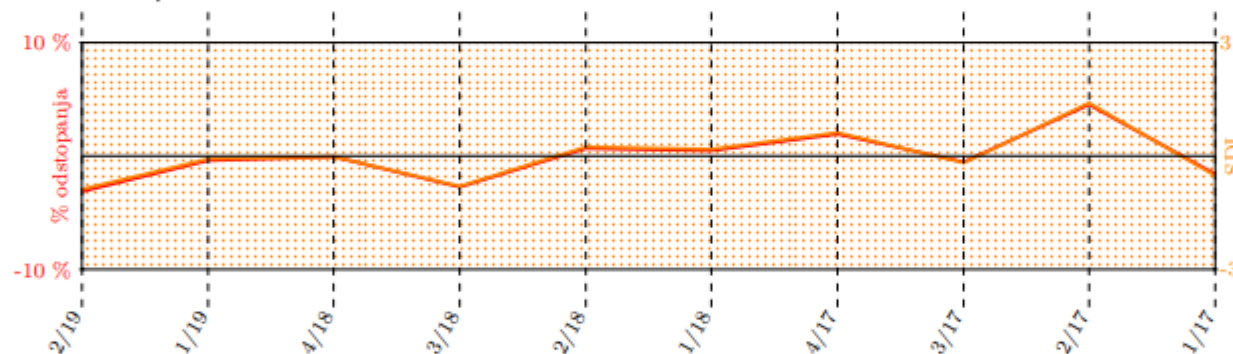
- % from target
- SDI

1.1.6 Celokupni proteini - Advia 1800



	Za vse razrede	Biuret brez slepe vzorca
Št. rezultatov	48	42
Mediana	64,65	64,7
\bar{X}	65,0	65,0
SD	2,2	2,3
KV%	3,5	3,6
% odstopanja	-3,0	-3,1
SDI		-0,88
Vaš rezultat	63 g/L	

Kontrola	Rezultat	Kontrolna vrednost	% odstopanja	SDI
2/19	63	65,0	-3,1	-0,88
1/19	43	43,2	-0,4	-0,09
4/18	65	65,0	0,0	-0,01
3/18	65	66,8	-2,7	-0,79
2/18	45	44,7	0,7	0,23
1/18	60	59,7	0,4	0,17
4/17	64	62,8	1,9	0,62
3/17	59	59,3	-0,5	-0,18
2/17	66	63,1	4,5	1,39
1/17	62	63,0	-1,6	-0,52



1.1.7 Albumin - Advia 1800

Limitations of a small scheme

- small number of participants in some method group and consequently weaker statistical power.

The key advantages

- direct communication between the participant and the organizer without language barriers
- comparison of the results in a real patient environment.
- use of fresh blood samples

Fresh blood from a healthy donor (usually our volunteer employee, pretested for HIV and hepatitis) is taken into transfusion bags with ACPD anticoagulant (Blood transfusion centre of Slovenia). The blood is brought to Clinical Centre of Clinical Chemistry and Biochemistry (SNEQAS) within an hour. The samples are distributed to SNEQAS participants via GLS express shipping company on the day of preparation

- **Emphasis on user education**

Manual differential blood count

- We evaluate the quality of the results of microscopic differentiation and morphological description of the cells
- Specimens with greater deviations from normal in differentiation and morphology are also included (chronic and acute leukemia, left shift, infectious mononucleosis, malaria, changes in red blood cells morphology,...)
- The educational role of this control is important in order to gain additional knowledge and experience in this field, especially for the primary level of health care

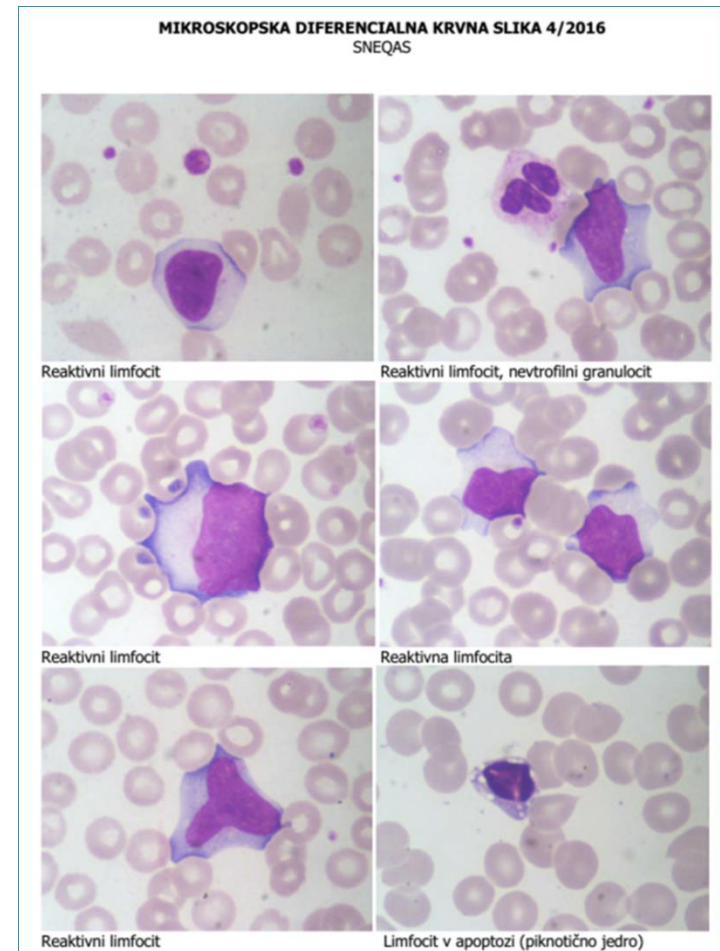
Manual differential blood count

- about 100 participants
- May-Grünwald-Giemsa stained smears and basic patient data (age, number of erythrocytes, leukocytes and platelets and haemoglobin concentration)
- Pretesting performed in ICCB laboratories by qualified staff with several years of experience in this field
- target values for each cell type, based on the results of pretesting and use of Rumke table

Manual differential blood count -report

The report include:

- Target value and target range for each individual cell type
- Summary of the participant results with number of participants with correct and false results
- Detailed description of cells and morphological changes
- We also reported and interpret the most common deviations
- Photo material with description



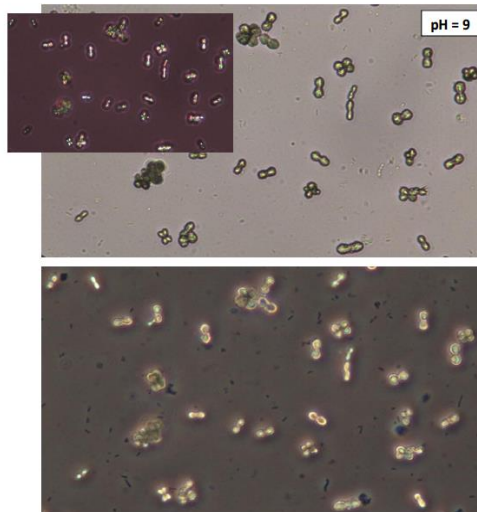
in 2018 an attempt to evaluate the quality of the results of a differential blood count with an unstained smear
The samples were methanol fixed. Laboratories were instructed to stain the smear according to their routine protocols.

The results were not evaluated due to the observed deviations. These may be due to different smear preparation processes. Based on the feedback and results provided so far, we do not identify any major benefits of such blood smears. In the future, we plan to continue even with the inclusion of more pathological blood smears, which will be a much bigger challenge and with which we will gain additional information

Program: Urinary sediment

- Based on particle identification
- One colour image of urinary sediment particle in each survey
- Brightfield and phase contrast microscopy (polarized for crystals and lipids)
- Results: a list of suggested answers

SNEQAS
KONTROLNI VZOREC: URINSKI SEDIMENT – SLIKA 1/16

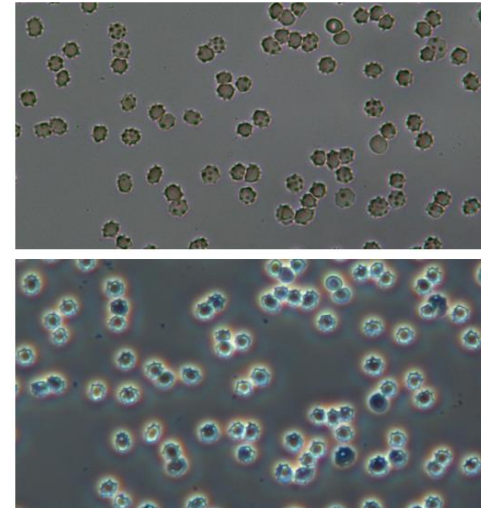


Slika: Posnetka sečne usedline: zgornja slika svetlobni mikroskop (400x) in polarizirana svetloba (originalna povečava 400x), spodnja slika faznokontrastni mikroskop (400x)

Example of
presented
urinary
particles:
isomorphic
erythrocytes

SNEQAS

KONTROLNI VZOREC: URINSKI SEDIMENT – SLIKA 1/18



Slika: Posnetka urinskega sedimenta: zgornja slika svetlobni mikroskop (400x), spodnja slika faznokontrastni mikroskop (400x)



Example of
presented
urinary
particles:
calcium
carbonate
crystals

Results for the identification of urine particles





The identification rates for the categories of urinary sediment particles from 2009 to 2019

Particles	<u>Answers, %</u>
	Correct and partially correct
Cells (N= 11)	87.7
Casts (N= 9)	72,1
Crystals(N= 13)	89,6
Lipids (N= 2)	96.8
Microorganisms (N=4)	99.2
Artifacts (N= 3)	79,6

Urinski sediment

Vzorec 1/11.		Vzorec 1/15.	
Vzorec 2/11.		Vzorec 2/15.	
Vzorec 3/11.		Vzorec 3/15.	
Vzorec 4/11.		Vzorec 4/15.	
Vzorec 1/12.		Vzorec 1/16.	
Vzorec 2/12.		Vzorec 2/16.	
Vzorec 3/12.		Vzorec 3/16.	
Vzorec 4/12.		Vzorec 4/16.	
Vzorec 1/13.		Vzorec 1/17.	
Vzorec 2/13.		Vzorec 2/17.	
Vzorec 3/13.		Vzorec 3/17.	
Vzorec 4/13.		Vzorec 4/17.	
Vzorec 1/14.		Vzorec 1/18.	
Vzorec 2/14.		Vzorec 2/18.	
Vzorec 3/14.		Vzorec 4/18.	
Vzorec 4/14.		Vzorec 2/19.	

Diferencialna krvna slika

DKS 1/11.		DKS 1/15.	
DKS 2/11.		DKS 2/15.	
DKS 3/11.		DKS 3/15.	
DKS 4/11.		DKS 4/15.	
DKS 1/12.		DKS 1/16.	
DKS 2/12.		DKS 2/16.	
DKS 3/12.		DKS 3/16.	
DKS 4/12.		DKS 4/16.	
DKS 1/13.		DKS 1/17.	
DKS 2/13.		DKS 2/17.	
DKS 3/13.		DKS 3/17.	
DKS 4/13.		DKS 4/17.	
DKS 1/14.		DKS 1/18.	
DKS 2/14.		DKS 2/18.	
DKS 3/14.		DKS 4/18.	
DKS 4/14.			
DKS 3/18.			
DKS (1,2)-1/19.			

Program: Preanalytics

- Till now 5 circles
- From 131 to 142 participant laboratories
- Free of charge
- Educational program
 - Real cases with description
 - Predefined possible answers about probable preanalytical errors and actions
 - Statistical results with comments and case explanation

Undoubtedly there is still room for improvement of SNEQAS;

- use of a commutable control samples
- accreditation of the scheme

However we believe SNEQAS has during years become a recognizable scheme that plays an important role in improving the quality of laboratory performance in Slovenia.

THANK YOU

