Verein für **medizinische Qualitätskontrolle**
Association **pour le contrôle de Qualité médical**
Associazione **per il controllo di qualità medico**

Instructions for Survey MQ 2016-4

General:

Storage and preparation of samples

- Refrigerated samples must be removed from the refrigerator 15-30 minutes prior to analysis (exception are blood gas ampoules, 5 hours) so they are at room temperature.
- Ready-to-use samples only need to be mixed.
- Most of our samples are human origin. Please treat them with the appropriate security measures and dispose them according your local regulations.

Sample Analysis

- The samples must be analyzed using the same method that you also use for patient samples.
- Replicate measurements are permitted only if also performed with patient samples.
- Samples may not be transferred to other laboratories.

Submission of Results

- The results must be signed off by the responsible laboratory manager / physician.
- The results may only be discussed with colleagues from other laboratories once the survey is complete, i.e., the evaluation has been sent.

Administration

- IMPORTANT: Check that the information on the protocol sheet is accurate and complete. You can enter changes and additions on the form in hand writing.
- Do not send samples back to us. We can only reuse the plastic letter inlay cases and the slide cases.
- Please do not forget to retain a photocopy of your protocol sheet until you have received and checked the analysis. .

Estimated glomerular filtration rate (eGFR)

- To evaluate patient's renal function, plasma creatinine should be measured and the eGFR calculated. All the participants who are measuring creatinine will find an additional entry for eGFR in the protocol sheets. If you are not yet working with eGFR, you will find further information and a calculator on www.mqzh.ch.
  Patient: 25 years old men, white, 75 kg

H1/H9 - Hematology

Preparation	Rotate and tilt 2-3 minutes by hand until no more cells are stuck to the bottom of the vial.
Analyzes	Hemoglobin, hematocrit, leukocytes, platelets and erythrocytes.
Important	For hemoglobin, the only unit we accept is g/l.

H3 - Blood smear

Samples	2 slides, stained, with cover glass.
Analyzes	Microscopic differential of peripheral blood cells.

H4 - Parasites in blood

Samples	1 slide, stained, with cover glass
Analyzes	Identifikation of parasites and number of parasitaemia.

If you want the blood counts only for training purposes, please let us know.
Then, H3 differential blood count and H4 Parasitic hematology will not appear on your certificate.

H5 - Hematology Blood Gases

Samples	Vial with aqueus solution
Analyzes	Hemoglobin, Hematocrit
Preparation	The samples must be at least 5 h stored prior to use at room temperature (about 25 ° C). Mix the vial carefully.

H6 - Hemogram automatic 5-Part

Samples	0.8 ml fresh Blood (Sample has to be tested immediately, no alternate date possible.)
Analyzes	WBC, RBC, PLT, HK, lymphocytes, monocytes, neutrophils, basophils, eosinophils.

H7 - Reticulocytes automatic

Samples	0.8 ml fresh Blood (Sample has to be tested immediately, no alternate date possible.)
Analyzes	Reticulocytes

H10 - Erythrocyte sedimentation rate

Samples	5 ml Blood
Analyzes	Erythrocyte sedimentation rate

H11 – Malaria rapid test

Samples	5 µl Blood
Analyzes	*Plasmodium spp., P. vivax, P. falciparum*

G1 - coagulation, oral anticoagulation

Preparation	Pipette 1 ml of distilled water to the vial. Close the bottle again. Dissolve by careful rotation and allow to stand for 20 at room temperature. Carefully mix one more time by hand before measuring.
Analyzes	INR, PTT, fibrinogen.
Comment	Special Instructions for Hepato-Quick, capillary citrate method: Add 300 µl NaCl solution (0.9%) to the dissolved sample and mix Add 100 µl citrate buffer solution (pH 4.5) to a measurement vial and add 20 µl sample. Use the entire volume (120 µl) in the assay. Continue by following the usual instructions.

G2 - CoaguCheck Pro II

Preparation	You can find detailed instructions for measuring the internal quality control in the user instructions or at (www.mqzh.ch under "Instructions"). The survey specimen must be treated in the same way.
Analyzes	INR value, PTT.

G3 - Coagulation, no anticoagulation

Preparation	Pipette 1 ml of distilled water to the vial. Close the bottle again and mix gently. Let stand at room temperature for 10 minutes. Measure within 60 minutes.
Analyzes	Quick, PTT, fibrinogen, thrombin time.
Comments	If the Quick is above 100%, please only report values "> 100."

G4 - Clotting, heparin therapy

Preparation	Pipette 1 ml of distilled water to the vial. Close the bottle again and mix gently. Let stand at room temperature for 10 minutes. Measure within 60 minutes.
Analyzes	Quick, PTT, fibrinogen, thrombin time.

G5 - D-dimer NC

Analyzes	D-dimer
Instruments	Nyco Card, Check-1VedaLab, UltiMed and Simplify.

G6 - D-dimer

Analyzes	D-dimer
Comments	Participants with Vidas: With values > 1000, dilute the sample.

G11 - CoaguCheck XS Plus

Preparation	You can find detailed instructions for measuring the internal quality control in the user instructions or at (www.mqzh.ch under "Instructions"). The survey specimen must be treated in the same way.
Analyzes	INR value.

G12 - Hemochron Jr.

Preparation	You can find detailed instructions for measuring the internal quality control in the user instructions or at (www.mqzh.ch under "Instructions"). The survey specimen must be treated in the same way.
Analyzes	INR value
Important	Measure the survey specimen in a citrate cuvette. If you measure capillary blood in your practice you can order the citrate PT cuvettes for the survey test at Axon Lab.

G14 - Micro INR

Preparation	You can find detailed instructions for measuring the survey sample at (www.mqzh.ch under "Instructions")
Analyzes	INR value

G16 - Xprecia

Preparation	You can find detailed instructions for measuring the survey sample at (www.mqzh.ch under "Instructions")
Analyzes	INR value

I1/I6 - CRP

Analyzes	CRP
Comments	Quick Read: Treat sample the same as patient whole blood. NycoCard single test: for reading, set instrument to CRP plasma/serum. Microsemi: You can find detailed instructions for measuring survey specimens on our homepage at www.mqzh.ch.

I2 - Plasmaproteins

Analyses	IgA, IgG, IgM, IgE, C3, C4, α -1-Antitrypsin, α -1-Glycoprotein, Antistreptolysin, Haptoglobin, Transferrin, β -2-Mikroglobulin, Coeruloplasmin, Praealbumin.

I3 - Allergology

Comments	Participants with CAP or Immulite can perform the following analyzes: Total IgE, IgE multi-specific (sx1, rx2 and fx5), IgE specific (birch t3, peanut f13, cat epithelia e1) Participants with AllergyScreen fromTeomed or allergy tests from Intex can simply enclose the findings as before.

I5 - CRP / Lp (a)

Analyzes	CRP hs, lipoprotein (a)

K1 - Clinical Chemistry

Analyzes	Albumin, AP, amylase, PAmylase, bilirubin, calcium, chloride, cholesterol, HDL-cholesterol, CK, iron, GGT, glucose, uric acid, urea, potassium, creatinine, LDH, lithium, magnesium, sodium, phosphate, protein, AST/GOT, ALT/ GPT, triglycerides, fructosamine, lactate.
Comments	If you determine glucose only, you can order the sample K2 (liquid). Participants with Cholestech LDX, please set instrument to serum.

K2 - Glucose

Analyzes	Glucose
Comments	Only for glucometers.

K3/K18 - HBA1c

Analyzes	HbA1c
Comments	Please perform the measurements as soon as possible (fresh whole blood). If the NycoCard displays "Hb too low", you must add two capillaries to the dilution solution (R1/Reagent). If the NycoCard displays "Reduc. Hb conc "display, you must combine two tubes of reagent solution (R1) and add a capillary. There are two different samples (A and B). Please check that the labels on the protocol sheet match the label on your specimen.

K4/K9/K16 - blood gases

Analyzes	pO^2, pCO^2, pH, Na^+, K^+, $Ca^{++,}$ Cl^-, glucose, lactose.
Comment	For OPTI devices you need the control K7 OPTI or K9 OPTI CCA. Radiometer: Please refer to the instrument-specific instructions on our homepage. For creatinine, you need sample K1.
Preparation	The samples must be stored at room temperature for at least 5 h prior to use (approx. 25°C). Mix the ampoule vigorously. Prepare your analyzer. Break open the ampoule and measure immediately, as if it were a patient sample.

K5 - Cardiac Markers

Analyzes	Troponin I, troponin T, myoglobin, CK-MB Mass (Immunoassay)
Note	Participants with the following devices have to order special specimens: Cobas h232: K8; Triage: K26; Samsung IB10: K31

K6 - Hormones

Analyzes	TSH, T3, T4, fT3, fT4, Cortisol, LH, FSH, Prolactin (PRL), Testosteron, Insuline, Estradiol

K8 - Cobas h232/ Cardiac Reader

Analyzes	Troponine T, myoglobin, D-Dimer, pro BNP, CK-MB
Note	Cobas h232 / Cardiac Reader + TropT sensitive

K10 - Anemia

Analyzes	Ferritine,fFolate, vitamin B12

K12 - Neonatal Bilirubin

Analyzes	Bilirubin: total, direct, indirect and neonatal

K14 - Tumor Markers

Analyzes	PSA, free PSA, Alpa-1-fetoprotein (AFP), carcinoembryonic antigen (CEA), human chorionic gonadotropin (HCG) qn, CA 125, CA 19-9, CA 15-3, S100, NSE, CA 72-4, Cyfra 21-1, Thyroglobulins

K15 - CK-MB Activity

Analysis	CK-MB activity.

K17 - BNP / NT-pro BNP plasma

Preparation	Please dissolve the lyophilisate carefully in 1000 µl distilled water. Mix the sample every once in a while by hand for 20 minutes.
Analyzes	BNP, NT-proBNP.

K19 - CardioChek Lipidpanel

Analyzes	Cholesterol, HDL Cholesterol, Triglycerides

K20 - Procalcitonin

Analyzes	Procalcitonin (PCT)

K21 - PTH

Analyzes	Intact Parathyroid hormone (PTH), 25-OH Vitamin D, Osteocalcin

K22 - Osmolality

Analyzes	Osmolality, sodium, potassium, glucose, urea
Comment	Osmolality of specimen K1 is no longer evaluated because no reasonable values are measurable due to the presence of the stabilizers in K1.

K24 - Therapeutic Drug Monitoring

Analysis	Digoxin, valproic acid, carbamazepine, phenobarbital, phenytoin and others on demand.

K25 - Cystatin C

Analysis	Cystatin C

K11/K26 - Triage

Analysis	Troponin I, D-dimer, CK-MB Mass, myoglobin, BNP

K28 - Ethanol

Analysis	Ethanol, ammonia

K29 - calprotectin

Analyzes	Calprotectin
Important	The sample is shipped frozen. Please measure the sample immediately after thawing the specimen. If you cannot immediately measure the sample, please store at -20°C

K30 - Lipids Afinion and Cobas b101

Analyzes	Cholesterol, HDL cholesterol, triglycerides

K31 - Samsung IB 10

Analyzes	D-Dimer, Troponin I, NTproBNP

K32 - Homocystein

Analyzes	Homocystein

K34 - Clinical Chemistry 2

Analyzes	Lipase, cholinesterase, carbon dioxid, copper, zinc

K36 - CDT

Analyzes	CDT

K35 Cerebrospinal fluid

Analyzes	Glucose, lactate, protein, LDH, potassium, sodium, chloride, albumin, IgG, IgA, IgM.

K37 - CDT

Analyzes	CDT, tacrolimus, sirolimus

U1 - urine quantitatively

Analyzes	Quantitative: Amylase, calcium, chloride, glucose, magnesium, osmolality, pH, phosphate, potassium, protein, sodium, urea, uric acid.
Comments	Not suitable for urine test strips. For urinary albumin and creatinine in urine, the sample U5 must be used for all devices.

U2 - Urine test strips

Analyzes	Urine test strips and pregnancy test.
Important	For our analyses, we differentiate between the various types of test strips and devices. Please check that the information on the protocol sheet matches your strips and mark the result with a check mark. For example, if you use the 7-series test strips or no HcG test, simply do not check anything with the corresponding analysis. Then it also does not show up on your analysis.

U3 - urine drugs

Analyzes	Amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine, methadone, opiates, methaqualone, methamphetamine, LSD, tricyclic antidepressants, paracetamol, phencyclidine.
Comments	In all methods, only qualitative results (positive/negative) are evaluated.

U5 - Urine Creatinin / Microalbumin

Analyzes	Urine albumin (microalbumin) and urine creatinine

V1 - HIV rapid test

Analyzes	HIV screening with rapid tests.
Comment	Positive specimens are not infectious.

S1 - Fecal occult blood

Preparation	The simulated stool sample is ready for use, and is used in exactly the same way as a patient specimen.

B1 - Strep A

Preparation	Insert the swab as if it were fresh.
Analyzes	Strep A Rapid Test.
Comments	Please compare the name of the test cassette used with the information on the protocol sheet and correct if necessary. Users of QuickVue In-Line Tests: You can find detailed instructions at www.mqzh.ch under "Instructions".

B2 - Uricult

Preparation	You can find detailed instructions for dissolving the Uricult specimens (www.mqzh.ch "Instructions").
Analyzes	Only bacteria count needs to be reported.

B4 - Rubella

Analyzes	Rubella IgG, IgM

B5 - Toxoplasmosa

Analyzes	Toxoplasmosa IgG, IgM

B6 - Syphilis

Analyzes	Treponema IgG, IgM, TPHA/TPPA,RPR/VDRL

B7 - Cytomegaliovirus

Analyzes	Cytomegalie IgG, IgM

B8 - Varicella

Analyzes	Varicella IgG, IgM

B9 - Bacteriology

Samples	5 samples (2x resistance testing, 5x identification).
Analyzes	Chapter 3.2.2 of AL.
Important	Dissolve and process specimen in the safety cabinet only!
Preparation	Use scissors to carefully remove the inner small golden metal ring (cap in the center top). Disinfect the rest of the metal cap and the gray rubber. Reconstituted specimens with 0.5 ml 0.9% NaCl by injecting the liquid through the gray rubber with a sterile syringe. Remove the outer golden metal ring (outside top lid) only after the samples have completely dissolved.
Note:	Even if you forward the material, you must still process it for the survey.

B 10 – Gram stain

Samples	1 slide with clinical specimen after heat fixation
Analyzes	Gram-stain

B11 - B17 - GeneXpert

Samples	B11: Chlamydia trachomatis und Nesseria gonorrhoeae B12: Staphylococcus aureus (SA), MRSA B13: Clostridium difficile B14: Streptococcen Group B B15: Norovirus (GI and GII) B16: Influenzavirus/RSV (Influenza A, Influenza B, RSV), (also for Alere-i Influenza) B17: Mycobacterium tuberculosis (MTB)