USING THE MODEL OF QUALITY INDICATORS: A PILOT STUDY

Turkish Biochemical Society Working Group of Laboratory Errors and Patients Safety



Leading the fields of Clinical Chemistry and laboratory Medicine worldwide

Presentation	Congresses and Conferences	Publications and Comunications	Quality Indicators Project	Surveys	Login	Contacts
IFCC - Education a	and Management Divisi	on				
IFCC - Ed Working Gro	ucation and up: Laboratory E	Management rrors and Patient	Division Safety		In 2008	

9.3.8. Laboratory Errors and Patient Safety (WG-LEPS)

- The WG mission is
- to stimulate studies on the topic or errors in laboratory medicine,
- to collect available data on this topic and
- to recommend strategies and procedures to improve patient safety.



IFCC - Education and Management Division Working Group: Laboratory Errors and Patient Safety

9.3.8. Laboratory Errors and Patient Safety (WG-LEPS)

- The overall aim of the project is to create a common reporting system for clinical laboratories based on standardized data collection, and to define state-of-the-art and Quality Specifications (QSs) for each QI.
- As can serve external quality assurence program

Current projects

Improving awareness of laboratory professionals

• Implementing pilot studies

• Implementing projects for error reduction

Current projects

• Organizing meetings and scientific sessions

• Supporting the publications of papers on the topic of laboratory errors and patient safety

Quality indicators

 Quality indicators are major tools to quantify the quality of all operational processes by comparing it against a defined criterion (Plebani et al. 2014)

• Quality indicators improve the quality of patient care.

• The identification of reliable QIs is a key step to quantify the quality of laboratory services.

Quality indicators

Patient-centered to promote total quality and patient safety;

- All stages of the TTP, from initial pre-pre-analytical steps (test request and patient/sample identification) to post-postanalytical steps
- Consistent with the requirements of the ISO 15189

The measurement and monitoring of QIs in laboratory medicine

- Document the quality of the service provided
- Improve performance and patient safety

 Make comparison to benchmark over time between laboratories

Support accountability, quality improvement and accreditation.

Pilot study

• A working group established in the Turkish Biochemical Society, 2017

• In Turkey, two laboratories have started to submit their QI data since 2017.

 Istanbul Bağcılar Training and Research Hospital Central Laboratory is one of them.

• The laboratory reports more than 10 million tests per year

MODEL OF QUALITY INDICATORS (MQI)

International Federation of Clinical Chemistry and Laboratory Medicine Working Group "Laboratory Errors and Patient Safety"

MODEL OF QUALITY INDICATORS

The Model of Quality Indicators has been updated on the basis of the recent Consensor Conference "Harmonization of Quality indicators in Laboratory Medicane. Two years hate" held in Polora in the October 2016, and a pixelingt score was designed buildight the value of the individual (QI for assessing not only the quality of the service and possible effects on patient unly), but in the Bushality of data collections (other of protory): 1 - anadatory. 2 - supportar 3 - supgested. 4 - valued.)

		A Qeality D	EV PROCESSES (DICATORS – PRIORITY 1		
Quality Indicator	Code	Reporting Systems	Data Collection	Time	Explanatory Note
		P	RE-ANALYTICAL		
Minidentification errory	Por-MisR	Percentage of Number of minidentified requests / Total manber of requests.	a) count minimized requests b) count total mander of requests c) calculate percentage	Data collection: Every day: Input data: Monthly	
	Pre-Mis5	Percentage of Namber of misidentified samples / Total mamber of samples.	a) count musidentified samples b) count total musider of samples c) calculate percentage	Data collection: Every day: Input data: Monthly	
Test transcription errors	Per-Lab TDE	Protestage of: Number of requests with esconcous data entered by laboratory personnel / Total number of requests entered by laboratory personnel.	 a) count the requests with encodeous data entered by laboratory personnel b) Total annables of requests entered by laboratory personnel c) calculate percentage 	Data collection: Every day or a week per secenti; Input data: Mouthly	Laboratory personnel + personnel that are under the laboratory control
	Pre-OffTDE	Precentage of Namber of requests with encourses data entered by offlude personnel / Total number of respects entered by offlude personnel.	 a) count the requests with encourses data extend by officie personnel b) Total number of requests extered by officie personnel c) calculate personnel 	Data collection: Every day or a week per month; Input data: Monthly	Officite personant + personant that are not under the laboratory control
Incorrect cample type	Pre-Witt Ty	Percentage of Number of camples of wrong or angpropriate sample matrix (e.g. whole blood antend of plasma) / Total member of samples.	a) count samples of wrong or inappropriate type (i.e. whole blood instead of plasma) b) count total musiles of samples c) calculate percentage	Data collection: Every day; Input data: Monthly	
	Pre-WroCo	Percentage of Number of samples collected in strong container / Total number of samples.	a) count samples collected in wrong container b) count total number of samples c) calculate percentage	Data collection: Every day: logut data: Monthly	

Incorrect fill level	Pre-lasV	Percentage of Number of samples with numfleiner sample volume / Total number of samples.	 a) count samples with auxiElevial sample volume b) count issuit immber of samples c) calculate percentage 	Data collection Every day, Input data Monthly	Insufficient = when the sample volume is less than that requested independently of the possibility to perform the test. If has to measure the incorrect collection (volume aid/nicro flam, defined), independently of collected volume (30% or 10 % or 90%) Simples of paediance patients have to be excluded.
	Pre-SaAnt	Percentage of: Number of samples with mappropriate sample-anticoignilant volume ratio / Total number of samples with anticoagalant	a) count samples with inappropriate sample- anticoogulant volume satio b) count total sumbler of samples with anticoogulant c) calculate percentage	Data collection: Every day: Input data: Monthly	
Unsuitable camples for transportation and storage problems	Pre-NotRec	Percentage of: Number of samples not received / Total number of samples.	 a) count samples not received b) count total mamber of samples c) calculate percentage 	Data collection: Every day; Input data: Monthly	
	Pre-NotSt	Percentage of: Number of samples not properly stored before analysis / Total mamber of samples.	a) count samples not properly stored before enalysis b) count total mamber of samples c) calculate percentage	Data collection: Every day; Input data: Monthly	
	Pre-DamS	Percentage of Number of samples damaged during transportation / Total number of transported samples.	a) coust samples domaged during transportation b) coust total number of transported samples c) calculate percentage	Data collection: Every day, Input data: Monthly	
	Pre-InTem	Precentage of Number of samples transported at inappropriate temperature / Total number of samples.	 a) count samples transjorted at inappropriate framperature b) count total number of samples fir which the transport temperature is checked c) calculate percentage 	Data collection: Every day; Input data: Monthly	This QI has to be collected if the transportation temperature is measured through appropriate measuring device or a procedure that guarantees the detection of the temperature.
	Pre-ExcTim	Percentage of: Number of samples with excessive	a) count samples with excessive transportation	Data collection: Every	This QI has to be collected

		transportation time / Total number of samples.	turne b) count total maniber of samples for which the transport time is checked c) calculate percentage	input data: Monthly	appropriate measuring devices or a procedure that guarantees the detection of the times
Contaminated samples	Pre-MicCon	Percentage of Number of microbiological contaminated samples rejected / Total mander of microbiological samples.	a) count microbiological contaminated samples rejected b) count total number of microbiological samples c) calculate percentage	Data collection: Every day; Input data: Monthly	Microbiological samples: blood culture, unine, sputum, pliaryngeal, etc.
	Pre-Coat	Percentage of: Number of contaminated samples rejected / Total mumber of not microbiological samples.	a) count contaminated samples rejected b) count total number of blood culture samples c) calculate percentage	Data collection: Every day; Input data: Monthly	Contaminated samples = samples which are contaminated by influsion, drugs, anticoagulants (EDTA, catrate), parenteral instrition, X-ray contrast material, etc.
Haemoly sed sample	Pre-HemV	Percentage of Number of camples with free harmoglobin (Bb) >0.5 gL detected by visual impection / Total mutber of checked samples for harmolysis	 a) count samples with fire Hb=0.5 g.T. detected by visual impection b) count total number of checked samples for harmolysis c) calculate percentage 	Data collection: Every day; Input data: Monthly	Checked samples = sll samples verified for haemolysis have to be included (clinical chemistry, immunochemistry, congulation, etc.).
	Pre-Heml	Percentage of: Nomber of samples with free havenoglobm (Fb) > 0.5 gL, detected by automated havenolytic index / Total number of checked samples for havenolysis.	 a) count samples with free Hh=0.5 g/L detected by antenanted index haemobysis b) count total number of checked samples for haemobysis c) colculate percentage 	Data collection: Every day; Input data: Monthly	Checked samples = all camples verified for haemolysis have to be included (clinical chemistry, immunochemistry, congulation, etc.).
	Pre-HemR	Proceedage of: Number of samples rejected due to haemolysis / Total number of checked samples for haemolysis.	a) count samples rejected due to haemolysis b) count total monther of checked samples for haemolysis c) calculate percentage	Data collection: Every day; Input data: Monthly	Checked samples = all samples verified for haemolysis have to be included (climical chemistry, coagulation, etc.).
Clotted samples	Pre-Clot	Percentage of Number of samples clotted / Total mumber of samples with an anticoagulant checked	a) count samples clotted b) count total member of samples with an	Data collection: Every day:	Checked samples = all samples verified for clots

		fire clots.	naticongulant checked for clots c) calculate percentage	Input data: Monthly	have to be included (hisematology, congrintice clinical chemistry, etc.)
		INTRA	-ANALYTICAL PHASE		
Test uncovered by an IQC	Intra-JQC	Percentage of Number of tests without IQC / Total manber of tests in the mean.	a) count mamber of tests without IQC b) count total manber of tests in the mean c) calculate percentage	Data collection: Every year; laput data: December	IQC: Internal Quality Control.
Unarreptable performances in IQC	Intro-UnlQC	Percentage of Number of IQC results outside defined limits / Total master of IQC results	a) count manber of IQC secolts outside defined limits () count total snather of IQC results () calculate percentage	Data collection: Every day; Input data: Monthly	IQC: Internal Quality Control.
Test uncovered by an EQA-PT control	Inn-EQA	Percentage of: Number of tests wothout EQA- PT control / Total margine of tests in the mean.	a) count manher of tests without EQA-PT control b) count total number of tests in the laboratory mean c) calculate percentage	Data collection: Every year; Input data: December	EQA: External Quality Assessment, PT: Proficiency Testing
Unarceptable performances in EQA-PT schemes	Intra-Unac	Percentage of: Number of tanacceptable performances in EQAS-PT Schemen, per year / Total muster of performances in EQA Schemen, per year.	a) coust number of taxacoeptable performances in EQA Schemen b) coust total number of performances in EQA Schemen c) calculate percentage	Data collection: Every year; Input data: December	EQA: Enternal Quality Assessment, PT: Proficiency Testing
Data transcription errors	lates-En Tran	Percentage of Number of incorrect soulds for errores maximal transcription / Total mamber of sends that need maximal transcription.	 a) count incorrect results for erroneous manual transcription b) count results that need manual transcription c) calculate the percentage 	Data collection: Every day; Input data: Monthly	
	Intro-FullLIS	Percentage of: Number of incorrect sensits for information system problems / Total number of results.	a) count incorrect results for information system problems b) count total snather of results c) calculate the percentage	Data collection: Every day, leput data: Monthly	
		POST	ANALYTICAL PHASE		
Inappropriate turnaround times	Post-OutTime	Percentage of: Number of reports delivered outside the specified time / Total number of reports.	a) count reports delivered outside specified tass b) count total number of reports c) calculate the percentage	Data collection: Every day; Input data: Monthly	Specified time = this concerns the reports (not results)
	Post-ForTAT	Turnieronal tane (mantes), from sample securities in laboratory to selence of sensit, of Potassium (K) at 90 th percentile (STAT).	a) estimate all TAT (minutes)), from sample reception in laboratory to release of sends, of Portunions CTAT), released in the security	Data collection: Every day per a month - three	

		b)estimate the 50 th percentile	Input data: April - August - December	
Post-INRTAT	Turnacound time (minutes), from sample reception in laboratory to selease of sessilt, of International Normalized Ratio (INR) value at 10 ¹⁰ percentile (STAT)	ejestimate all TAT (minutes)), from sample reception in laboratory to release of secult, of International Normalized Ratio (INR) (STAT) released in the month	Data collection: Every day per a month - three months per year; Input data: April - Asamat - December	
Post-WBCTAT	Transcround time (minutes), from sample reception in Infontory to release of result, of White Blood Cell (WBC) count at 90 th percentile (STAT)	b) estimate the 90° percentile a) estimate all TAT (minutes)), from sample reception in liboratory to reliase of result, of White Blood Cell (WBC) count (STAT) released in the month b) estimate the 90 th percentile	Data collection: Every day per a month - three months per year; Input data: April - August - December	
Post-TaTAT	Turnaround time (minutes), from sample reception in laboratory to release of result, of Cardiac Troponin (Tal or TnT) at 90 th percentile (STAT).	 estimate all TAT (minutes)), from sample reception in laboratory to release of result, of Cardiac Troponin1 (Tail or TaT) (STAT) released in the month b) estimate the 90th percentile 	Data collection Every day per a month - three months per year; Input data: April - August - December	
Post-TATPoff	Percentage of Number of Potassium results (STAT) released after 1 houe/Total number of Potassium results (STAT)	 a) count number of Potassisan results (STAT) released after 1 hour b) count total number of Potassisan results (STAT) c) calculate the percentage 	Data collection: Every day: Input dets: Monthly	
Post-RectRep	Percentage of Number of sectified separts by Infocutory after the release / Total number of released reports.	 a) count number of rectafied reports after the release b) count total number of released reports c) calculate the percentage 	Data collection: Every day: Input data: Monthly	For example: Reports could be rectified for erromeous results or inappropriate initiated interpretative comments or wrong patient's details, etc.
Post-lasCR	Proceedings of Number of cosical sensity of minde parinety models after a cosemutally agreed time (from result validations to result communication to the clinical wavel). Total moder of critical results of inside patients to communicate.	a) count critical results of inside patients motified after a counterstably agreed insie (from clineal word) results frommarisation to the clineal word). b) count studi number of neural results of mode patients in communicate (c) calculate percentage	Data collection: Every day for a month - these months per year. Input date. April - August - December	Critical results = zetults that are as "extremely" showmin and are considered life threatening because they may be associated with a nightfoard dangerons event unless a modeloi action in promptly established Consensually agreed time time established by aboratory in which the critical result has to be efficiently recorded to the
	PeshDRTAT PeshNBCTAT PeshNBCTAT PeshTaTAT PeshTaTATPell PeshTaTATPell PeshTaTCATPell	Pan. DRTAT Tenserment tous (numeric), from single mergins in blocker of result, (D) where a first of the second seco	Instantiant for the second s	Image: constraint of the product of the pro

		R QUALITY I	EY PROCESSES NDICATORS – PRIORITY 4		
Quality Indicator	Code	Reporting Systems	Data Collection	Time	Explanatory Notes
		P	RE-ANALYTICAL		
Inappropriate test requests	Pre-OffReq	Percentage of: Number of inappropriate requests, with respect to clinical question (offide patients) / Number of requests reporting clinical question (offide patients)	a) select and count offside patients requests with chinical question b) count the selected requests with imppropriate texts in relation to clinical question and on the basis of guidelines and scientific recommendations (-) calculate percentage	Data collection: A week per month - taree months per year; Input data: April - August - December	Offiside patients = not hospitalized patients
	Pre-InsReq Number of Number of inappropriate requests, with request to clinical question (inside patients) / Number of requests reporting clinical question (inside patients)		a) select and count inside patients requests with clinical question b) count the selected requests with imppropriate tests in relation to clinical question and on the basis of guidelines and scientific recommendations (-) calculate percentage	Data collection: A week per month - three months per year; Input data: April - August - December	Inside patients = hospitalized patients
		PC	OST-ANALYTICAL		
Notification of critical results (TAT)	Post-InsCRT	Median value of time (from send) validation to rend) communication to the clancel ward) to communicate critical results of inside patients (minutes)	a) estimate the time (minutes) to communicate critical results of inside patients b) calculate the median value of estimated times	Data collection: Every day for a month - three months per year; Input data: April - August - December	Critical results = results that are so "extremely" abnormal and are consider life threatening because the may be associated with a significant dangerous even unless a medical action is promptly established. Inside patients = hospitalized Patients.
	Post-OffCRT	Median value of time (from result validation to result communication to the general practitioned) to communicate critical results of offlide patients (minutes)	 a) estimate the time (minute) to communicate critical results of Offiside patients b) calculate the median value of estimated times 	Data collection: Every day for a month - three months per year; Input data: April - August - December	Critical results = results that are so "extremely" abnormal and are considered information of the second of the may be associated with a significant dangerous event unless a medical action is promptly established. Offside patients = not hospitalized Patients

MODEL OF QUALITY INDICATORS

	Key Processes Quality Indicators – Priority 1							
Inter The Model of Quality Indicators has been updated hater" held in Padora in the October 2016, and a possible effects on panear safety, but also the flass	Quality Indicator	Code	Reporting Systems	Data Collection	Time	Explanatory Note	hdy Every hdy	measured through appropriate measuring devices or a procedure that guarantees the detection of the times. Microbiological samples: blood culture, unine, spottom, pharyngeal, etc.
Quality Code Re Indicator			Pi	RE-ANALYTICAL			Every bby	Contaminated samples = samples which are contaminated by influsion, drugs, anticoaguilants (EDTA, citrate), parentecal mitrition, X-ray contrast material, etc.
Michaedination Pre-MoR. Pre-entrye of No. errors Pre-MoR. Pre-entrye of No. Pre-MoR. Pre-starting of No. Total number of no. Test Pre-LaTDE Pre-entrye of No. Destermine of No. Pre-OUTER Pre-contract of No. Pre-entrye of No. Destermine of No.	Misidentification errors	Pre-MisR	Percentage of: Number of misidentified requests / Total number of requests.	a) count misidentified requestsb) count total number of requestsc) calculate percentage	Data collection: Every day; Input data: Monthly		Every hly Every hly	Checked surgets = all samples verified for heenolysis have to be included (clinical chemistry, immunochemistry, compilation, etc.). Checked samples = all samples verified for heenolysis have to be included (clinical chemistry, immunochemistry,
have stars by our of the stars by th		Pre-MisS	Percentage of: Number of misidentified samples / Total number of samples.	a) count misidentified samplesb) count total number of samplesc) calculate percentage	Data collection: Every day; Input data: Monthly		Every My I Every	coagnitation, etc. 5. Chacked samples = all samples verified for haemolysis have to be included (clinical chemistry, immunochemistry, coagnitation, etc.). Chacked samples = all samples verified for closs
	Test transcription errors	Pre-LabTDE	Percentage of: Number of requests with erroneous data entered by laboratory personnel / Total number of requests entered by laboratory personnel.	 a) count the requests with erroneous data entered by laboratory personnel b) Total number of requests entered by laboratory personnel c) calculate percentage 	Data collection: Every day or a week per month; Input data: Monthly	Laboratory personnel = personnel that are under the laboratory control		rigina 3 a 10
Tot movemed Into IQC Tot movemed Into IQC Yea RQC Treat movemed Conceptable Into IQC performance in Into IQC Personage of deford last SQC Personage of deford last SQL Tere successed Into IQC	d r r r d h	Pre-OffTDE	Percentage of: Number of requests with erroneous data entered by offside personnel / Total number of requests entered by offside personnel.	 a) count the requests with erroneous data entered by offside personnel b) Total number of requests entered by offside personnel c) calculate percentage 	Data collection: Every day or a week per month; Input data: Monthly	Offside personnel = personnel that are not under the laboratory control	A week e i. ber A week e	Explanatory Notes Officide patients = not hospitalized patients
Data regulate processorie ilso Inte-Line: Distance watering of transmittering Personage of processorie processorie dome, per solutione, per solu	Incorrect sample type	Pre-WroTy	Percentage of: Number of samples of wrong or inappropriate sample matrix (e.g. whole blood instead of plasma) / Total number of samples.	a) count samples of wrong or inappropriate type (i.e. whole blood instead of plasma)b) count total number of samplesc) calculate percentage	Data collection: Every day; Input data: Monthly		I- iber Every + three I- iber	hospitalized patients Critical results = results that are so "extremely" shormal and are considered may be associated with a may be associated with a promptly established. Inside patients =
Insproaches Inspro	4 4 9 9 9 9	Pre-WroCo	Percentage of: Number of samples collected in wrong container / Total number of samples.	a) count samples collected in wrong containerb) count total number of samplesc) calculate percentage	Data collection: Every day; Input data: Monthly		Every - three - i - ther	receptoREPG FARENTS. Critical results = neutin that are to "extremely" abnormal and are considered life threatening because they may be associated with a significant dangerous event unless a medical action is promptly established. Officide patients = not hospitalized Patients. Parana 9 ds 10

MODEL OF QUALITY INDICATORS

	Key Processes Quality Indicators – Priority 1							
The Model of Quality Indicators has been the first of the Padora in the October 2016, possible effects on parient safety, but also the	dates Quality and a find Indicator	Code	Reporting Systems	Data Collection	Time	Explanatory Note	Impropriet measured through appropriate measurements devices or a procedure that guarantees the detection of the times. Every Microbiogical samples: blood culture, since, sputum, pharyageal, etc.	
Quality Indicator Code	Re-ANALYTICAL							
Mickeastinian Per Mail: Perentage error Per Mail: Per Mail: Per Mail: Test Per Mail: Per Mail: Per Mail:	Misidentification	Pre-MisR	Percentage of: Number of misidentified requests / Total number of requests.	a) count misidentified requestsb) count total number of requestsc) calculate percentage	Data collection: Every day; Input data: Monthly		Every Checked samples wild hy memory of the samples version of the haemolysis have to be induced (chemistry, immoschemistry, complete, weißed for here the samples worded for hy heremolysis have to be induced in the same of the chemistry, and chemistry, and chemistry, complete chemistry, complete chemistry, com	
Becarret cauge Pre-Wolfy Pre-trage Pre-Wolfy Pre-trage Pre-Wind's Pre-trage Pre-Wind's Pre-trage BECCW0.1079 WERP. Brane L. Jones	The part of the pa	Pre-MisS	Percentage of: Number of misidentified samples / Total number of samples.	a) count misidentified samplesb) count total number of samplesc) calculate percentage	Data collection: Every day; Input data: Monthly		computation, etc.). Every Chacked samples = all samples verified for hy handlog the samples were commonly and the same commonly and	
	Test transcription errors	Pre-LabTDE	Percentage of: Number of requests with erroneous data entered by laboratory personnel / Total number of requests entered by laboratory personnel.	 a) count the requests with erroneous data entered by laboratory personnel b) Total number of requests entered by laboratory personnel c) calculate percentage 	Data collection: Every day or a week per month; Input data: Monthly	Laboratory personnel = personnel that are under the laboratory control	Pages 3 & 10	
Ter merceret Inn-3QC Percent by an BQC Inn-3QC Percent by an BQC Inn-3QQC Percent performance in Inn-3AQQC Percent by an EQC Inn-3QA Percent by an EQC PErcent	nege d' and and an and an and an and a	Pre-OffTDE	Percentage of: Number of requests with erroneous data entered by offside personnel / Total number of requests entered by offside personnel.	 a) count the requests with erroneous data entered by offside personnel b) Total number of requests entered by offside personnel c) calculate percentage 	Data collection: Every day or a week per month; Input data: Monthly	Offside personnel = personnel that are not under the laboratory control	Explanatory Note: A week Coffide patients = not Aweek A week Coffide patients A week Toulde patients	
Uname Inter-Since Percentation EQA-F1 scheme Percentation Percentation Percentation Data Inter-EntTenn Percentation Percentation Inter-Fail Inter-Fail Percentation Percentation	Incorrect sample type type type type type	Pre-WroTy	Percentage of: Number of samples of wrong or inappropriate sample matrix (e.g. whole blood instead of plasma) / Total number of samples.	a) count samples of wrong or inappropriate type (i.e. whole blood instead of plasma)b) count total number of samplesc) calculate percentage	Data collection: Every day; Input data: Monthly		beer hoopitalized patients beer Critical results = results - three that are so "testmarly" - the trace of testmarly" - the trace of testmarly of the source lay the second edge here spectra the testmark because they results and the testmark because they here spectra the testmark because they promptly settablished. Each patients = -	
Inappropriate terms read time Post-DerTime Post-PortAT Post-PortAT Post-PortAT Post-PortAT Post-PortAT Post-PortAT Post-PortAT Post-PortAT Post-PortAT	mpr.d. der ger met ta mit bå mit Bå J	Pre-WroCo	Percentage of: Number of samples collected in wrong container / Total number of samples.	a) count samples collected in wrong containerb) count total number of samplesc) calculate percentage	Data collection: Every day; Input data: Monthly		Inceptishand Patients. Every Crisical ersolfs – results - three that are so "extremely" - these that are so "extremely" - is abournal and are considered - life thereating because they ber supported to the source of the support of the source of the permpty established. Officie patients = not hospitalized Patients - Parina 9 d. 10	

MODEL OF QUALITY INDICATORS

KEY PROCESSES QUALITY INDICATORS – PRIORITY 1

PRE-ANALYTICAL

Misidentification errors	Pre-MisR	Percentage of: Number of misidentified requests / Total number of requests.	a) count misidentified requestsb) count total number of requestsc) calculate percentage	Data collection: Every day; Input data: Monthly
	Pre-MisS	Percentage of: Number of misidentified samples / Total number of samples.	a) count misidentified samplesb) count total number of samplesc) calculate percentage	Data collection: Every day; Input data: Monthly

QUALITY INDICATORS

KEY PROCESSES

OUTCOME MEASURES

SUPPORT PROCESSES







- MQI project does not force laboratories to use all QIs proposed.
- It seems suitable to include in the MQI all the indicators thought to be able to useful in monitoring critical activities
- The individual laboratory should be able to decide how many, and which, QIs are to be adopted.

 We have decided to use quality indicators that are suitable for the type of data which can be obtained from the laboratory information system.







IFCC WEB APPLICATION

	Leading the fields of Clinical Chemistry and laboratory Medicine worldwide								
Doc	Documents Reports Surveys Chat								
IFCC	- Education and Managemen	t Division							
Labo TR Bio Ista Ista Cih kuz	Laboratory TR008 Biochemistry Laboratory Istanbul Bagcilar Training and Education Hospital Istanbul TR Cihan Coskun kuzeycihan2012@gmail.com								
ID	Code	Description	Notes						
15	MQI - 1 (Rev. 1)	Key Processes Indicators - Priority 1 (Rev.	1) Insert your data starting since January 2017 Ed	dit Repository					
16	MQI - 2 (Rev. 1)	Key Processes Indicators - Priority 2 (Rev.	1) Insert your data starting since January 2017 E	dit Repository					
17	MQI - 3 (Rev. 1)	Key Processes Indicators - Priority 3 (Rev.	1) Insert your data starting since January 2017 Ed	dit Repository					
18	MQI - 4 (Rev.1)	Key Processes Indicators - Priority 4 (Rev.	1) Insert your data starting since January 2017 Ed	dit Repository					
19	MQI-Outcome (Rev.1)	Outcome Measures (Rev. 1)	Insert your data starting since January 2017 Ed	dit Repository					

Insert your data starting since January 2017

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MQI-Support (Rev.1)

Support Processes Indicators (Rev. 1)

Repository

Edit

IFCC WEB APPLICATION

	Leading the fields of Clinical Chemistry and laboratory Medicine worldwide								
Doc	Documents Reports Surveys Chat Logout								
IFCC	- Education and Manageme	nt Division	1						
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ID	Code	Descript	tion	Notes					
15	MQI - 1 (Rev. 1)	Key Proc	esses Indicators - Priority 1 (Rev. 1)	Insert your data starting since January 20	017 Edit	Repository			
16	MQI - 2 (Rev. 1)	Key Proc	cesses Indicators - Priority 2 (Rev. 1)	Insert your data starting since January 20	017 Edit	Repository			
17	MQI - 3 (Rev. 1)	Key Proc	esses Indicators - Priority 3 (Rev. 1)	Insert your data starting since January 20	017 Edit	Repository			
18	MQI - 4 (Rev.1)	Key Proc	cesses Indicators - Priority 4 (Rev. 1)	Insert your data starting since January 20	017 Edit	Repository			
19	MQI-Outcome (Rev.1)	Outcome	Measures (Rev. 1)	Insert your data starting since January 20	017 Edif	Repository			
20	MQI-Support (Rev.1)	Support	Processes Indicators (Rev. 1)	Insert your data starting since January 20	017 Edit	Repository			

International Federation of Clinical Chemistry and Laboratory Medicine

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Logout

IFCC - Education and Management Division

Back to the program selection

Choose your indicators... »

	am colo	otod	Period			
o gi	am sele	CIEG	renoa		Indicator	Pre-WroCo
MQI Key Prio	- 1 (Rev Process rity 1 (Re	v. 1) es Indicators - ev. 1)	2017_5 May 2017		Description Data collection	Percentage of: Number of samples collected in wrong container/ Total number of sample Every day
			× « «	3 33	Input data	Monthly
	-		Code	Description	Number of san	nples collected in wrong container
ear	Month	Description	Pre-WroCo	Pre-WroCo	30	
017	1	January 2017	Pre-InsV	Pre-InsV	Total number o	of samples
017	2	February 2017	Pre-HemR	Pre-HemR	Percentage	
017	3	March 2017	Pre-Clot	Pre-Clot	0.02	Verify
017	4	April 2017	Post-PotTAT	Post-PotTAT		
017	5	May 2017	Post- INRTAT	Post-INRTAT		
017	6	June 2017	Post-	Post-		
017	7	July 2017	WBCTAT	WBCTAT		
017	8	August 2017	Post-TnTAT	Post-TnTAT		
017	9	September 2017	Post- TATPotH	Post- TATPotH		
017	10	October 2017	-			
017	11	November 2017				
017	12	December 2017				

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Prog	ram sele	cted	Period	
MQI Key Prio	- 1 Pro rity 1	DATES	2017_5 May 2017	
			««	
0.0.			Code	Descriptio
Year	Month	Description	Pre-WroCo	Pre-WroC
2017	1	January 2017	Pre-InsV	Pre-InsV
2017	2	February	Pre-HemR	Pre-HemR
2017	3	March 2017	Pre-Clot	Pre-Clot
2017	4	April 2017	Post-PotTAT	Post-PotT
2017	5	May 2017	Post-	Post-INRT
2017	6	June 2017	Post	Post
2017	7	July 2017	WECTAT	WBCTAT
2017	8	August 2017	Post-TnTAT	Post-TnTA
2017	9	September 2017	Post- TATPotH	Post- TATPotH
2017	10	October 2017		
2017	11	November 2017		
2017	12	December 2017		
	I			

	Indicator	Pre-WroCo
	Description	Percentage of: Number of samples collected in wrong container/ Total number of samples.
	Data collection	Every day
20-20	Input data	Monthly
tion	Number of san	nples collected in wrong container
oCo	Total number of	
v	196950	/ samples
nR	Percentage	
t	0.02	Verify
tTAT		
RTAT		
т		
TAT		
.		
н		

-	Internat of Clinic and Labo	ional Federation al Chemistry pratory Medicine						Lea	ding the fiel	ds of Clinical Cl	hemistr	y and labora	atory Medicine	e worldwide
														Logout
IFCC - E	Educatio	n and Managen	nent Division	1										
												Back to th	ne program sele	ction
												Ch	hoose your ind	icators »
Prog MC « 2017 2017 2017 2017 2017	Month 2 3 4 5	ected (1) FES (2) (2) (2) (2) (2) (2) (2) (2)	Code Pre-WroCo Pre-InsV Pre-HemR Pre-Clot Post-PotTAT Post- INRTAT	HOSE ICAT(Description Pre-WroCo Pre-InsV Pre-HemR Pre-Clot Post-PotTAT Post-INRTAT	N DRS Input dat Numbe 36 Total nu 196950 Percent 0.02	tion a mber o tage	Pre-WroCo Percentage of Every day Monthly mples collected in of samples	f: Number	of samples of tainer	collected in wro	ong con	tainer/ Total	number of sa	mples.
2017 2017 2017 2017 2017 2017 2017	6 7 8 9 10 11 12	June 2017 July 2017 August 2017 September 2017 October 2017 November 2017 December 2017	Post- WBCTAT Post-TnTAT Post- TATPotH	Post- WBCTAT Post-TnTAT Post- TATPotH										



SUMMARY OF PREVIOSLY ENTERED DATA

International Federation of Clinical Chemistry Leading the fields of Clinical Chemistry and laboratory Medicine worldwide and Laboratory Medicine Logout IFCC - Education and Management Division Back to the program selection Print Choose your indicators... » Program selected ndicator MQI - 1 (Rev. 1) Pre-WroCo Key Processes Indicators -Percentage of: Number of samples collected in wrong container/ Total number of samples. Priority 1 (Rev. 1) 400.400 -30 39.39 --46.40

Code	Description
Pre-WroCo	Pre-WroCo
Pre-InsV	Pre-InsV
Pre-HemR	Pre-HemR
Pre-Clot	Pre-Clot
Post-PotTAT	Post-PotTAT
Post-INRTAT	Post-INRTAT
Post-WBCTAT	Post-WBCTAT
Post-TnTAT	Post-TnTAT
Post-TATPotH	Post-TATPotH

40.40

Period	Number	Total Numb	Percentage	Week
May 2017	36	196950	0.02	0
June 2017	29	169095	0.02	0
July 2017	31	195016	0.02	0
August 2017	35	183905	0.02	0
September 2017	33	190095	0.02	0
October 2017	22	208520	0.01	0
November 2017	42	207868	0.02	0
December 2017	50	206616	0.02	0
January 2018	36	212366	0.02	0
February 2018	55	197802	0.03	0
March 2018	25	210250	0.01	0
April 2018	33	211236	0.02	0
May 2018	47	211556	0.02	0
June 2018	31	180844	0.02	0
July 2018	42	198891	0.02	0



QUALITY INDICATORS

Post-TATPotHPercentage of: Number of Potassium results (STAT) released after 1 hour / Total number of Potassium results (STAT)

Laboratory Code: TR008

Laboratory Group: Turkish Laboratories

Laboratory Institution: Biochemistry Laboratory

- Istanbul Bagcilar Training and Education Hospi - Istanbul

Statist	ical Data of	Laboratory R	esults	Statis	tical Data of	f Category Re	sults	Sta	atistical Dat	a of All Resul	ts	
Data Number	Mean (%)	Median (%)	Sigma Mean	 Data Number	Mean (%)	Median (%)	Sigma Mean	Data Number	Mean (%)	Median (%)	Sigma Mean	
11	16,69	17,39	2,47	11	16,69	17,39	2,44	87	10,72	7,38	2,95	Ī

Laboratory Data

Participants Data

	Laboratory Value (%)	Laboratory Sigma	Confidend Sig	ce Interval jma
			Min.	Max.
oruary 2018	18,45	2,40	2,37	2,43
arch 2018	17,39	2,44	2,41	2,47
pril 2018	17,83	2,42	2,39	2,45
av 2018	18,65	2,39	2,36	2,42
une 2018	20,01	2,34	2,31	2,37
lv 2018	15,91	2,50	2,47	2,53
igust 2018	15,67	2,51	2,48	2,54
ptember 2018	17,91	2,42	2,39	2,45
tober 2018	15,18	2,53	2,50	2,56
ovember 2018	10,99	2,73	2,69	2,76
ecember 2018	15,55	2,51	2,49	2,54

IFCC Working Group "Laboratory Errors and Patient Safety"

Participants Report: Year 2018 (December)

QUALITY INDICATORS

Post-TATPotHPercentage of: Number of Potassium results (STAT) released after 1 hour / Total number of Potassium results (STAT)

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Laboratory Group: Turkish Laboratories

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- Istanbul Bagcilar Training and Education Hospi - Istanbul

Statis	tical Data of	Laboratory R	esults	Statis	tical Data of	f Category Re	sults		Sta	atistical Dat	a of All Resul	ts	
Data Number	Mean (%)	Median (%)	Sigma Mean	Data Number	Mean (%)	Median (%)	Sigma Mean		Data Number	Mean (%)	Median (%)	Sigma Mean	
11	16,69	17,39	2,47	 11	16,69	17,39	2,44	-	87	10,72	7,38	2,95	Ī

Laboratory Data

Participants Data

Laboratory Value (%) Laboratory Sigma Confidence Interval Sigma Group Sigma Min. Max. Value N. February 2018 18,45 2,40 2,37 2,43 2,40 1 March 2018 17,39 2,44 2,41 2,47 2,44 1 April 2018 17,83 2,42 2,39 2,45 2,42 1 May 2018 18,65 2,39 2,36 2,42 2,39 1
Min.Max.ValueN.Min.Max.February 201818,452,402,372,432,4012,372,43March 201817,392,442,412,472,4412,412,47April 201817,832,422,392,452,4212,392,45May 201818,652,392,362,422,3912,362,42
arch 2018 18,45 2,40 2,37 2,43 2,40 1 2,37 2,43 arch 2018 17,39 2,44 2,41 2,47 2,44 1 2,41 2,47 bril 2018 17,83 2,42 2,39 2,45 2,42 1 2,39 2,45 av 2018 18,65 2,39 2,36 2,42 2,39 1 2,36 2,42
Iarch 201817,392,442,412,472,4412,412,41pril 201817,832,422,392,452,4212,392,45Jay 201818,652,392,362,422,3912,362,42
pril 201817,832,422,392,452,4212,392,45lav 201818,652,392,362,422,3912,362,42
lav 2018 18,65 2,39 2,36 2,42 2,39 1 2,36 2,42
une 2018 20,01 2,34 2,31 2,37 2,34 1 2,31 2,37
IV 2018 15,91 2,50 2,47 2,53 2,50 1 2,47 2,53
aust 2018 15,67 2,51 2,48 2,54 2,51 1 2,48 2,54
ptember 2018 17,91 2,42 2,39 2,45 2,42 1 2,39 2,45
tober 2018 15,18 2,53 2,50 2,56 2,53 1 2,50 2,56
ovember 2018 10,99 2,73 2,69 2,76 2,73 1 2,69 2,76
cember 2018 15,55 2,51 2,49 2,54 2,51 1 2,49 2,54

IFCC Working Group "Laboratory Errors and Patient Safety"

Participants Report: Year 2018 (December)

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Post-TATPotHPercentage of: Number of Potassium results (STAT) released after 1 hour / Total number of Potassium results (STAT)

Laboratory Code: TR008

Laboratory Group: Turkish Laboratories

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Statist	ical Data of	Laboratory Re	esults		Statistical Data	a of Category	Results	Sta	atistical Dat	a of All Resul	ts	
Data Number	Mean (%)	Median (%)	Sigma Mean	Da Num	ta Mean Iber (%)	Median (%)	Sigma Mean	Data Number	Mean (%)	Median (%)	Sigma Mean	
11	16,69	17,39	2,47	1	1 16,69	17,39	2,44	87	10,72	7,38	2,95	

Laboratory Data

Participants Data

	Laboratory Value (%)	Laboratory Sigma	Confiden Sig	ce Interval jma
			Min.	Max.
18	18,45	2,40	2,37	2,43
rch 2018	17,39	2,44	2,41	2,47
1 2018	17,83	2,42	2,39	2,45
av 2018	18,65	2,39	2,36	2,42
une 2018	20,01	2,34	2,31	2,37
ulv 2018	15,91	2,50	2,47	2,53
ugust 2018	15,67	2,51	2,48	2,54
eptember 2018	17,91	2,42	2,39	2,45
October 2018	15,18	2,53	2,50	2,56
ovember 2018	10,99	2,73	2,69	2,76
ecember 2018	15,55	2,51	2,49	2,54

IFCC Working Group "Laboratory Errors and Patient Safety"

Participants Report: Year 2018 (December)

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Post-TATPotHPercentage of: Number of Potassium results (STAT) released after 1 hour / Total number of Potassium results (STAT)

Laboratory Code: TR008

Laboratory Institution: Biochemistry Laboratory

Laboratory Group: Turkish Laboratories

Istanbul Bagcilar Training and Education Hospi - Istanbul

Statistical Data of Laboratory Results				Statistical Data of Category Results					Statistical Data of All Results						
Data Number	Mean (%)	Median (%)	Sigma Mean		Data Number	Mean (%)	Median (%)	Sigma Mean		Data Number	Mean (%)	Median (%)	Sigma Mean		
11	16,69	17,39	2,47	ノ	11	16,69	17,39	2,44		87	10,72	7,38	2,95		
			Laboratory	Data						Participants	Data				
	Labora Value	tory (%)	Laboratory Sigma	Confid	lence Interval Sigma		Group S	Sigma	Confiden Group	ce Interval Sigma	Overall Si	gma Con C	fidence Interval Verall Sigma		
				Min.	Max.		Value	Ν.	Min.	Max.	Value	N. M	in. Max.		
			2.40	0.07	2.42	_	2.40		2.27	2 42	2.07	7 2	89 3.24		

February 2018	18,45	2,40	2,37	2,43	2,40	1	2,37	2,43	3,07	7	2,89	3,24
March 2018	17,39	2,44	2,41	2,47	2,44	1	2,41	2,47	3,10	7	2,90	3,28
April 2018	17,83	2,42	2,39	2,45	2,42	1	2,39	2,45	3,39	10	2,93	3,27
May 2018	18,65	2,39	2,36	2,42	2,39	1	2,36	2,42	3,18	7	2,99	3,36
June 2018	20,01	2,34	2,31	2,37	2,34	1	2,31	2,37	3,27	7	3,06	3,46
July 2018	15,91	2,50	2,47	2,53	2,50	1	2,47	2,53	3,11	7	2,91	3,30
August 2018	15,67	2,51	2,48	2,54	2,51	1	2,48	2,54	2,89	8	2,77	3,04
September 2018	17,91	2,42	2,39	2,45	2,42	1	2,39	2,45	2,98	6	2,81	3,14
October 2018	15,18	2,53	2,50	2,56	2,53	1	2,50	2,56	3,22	7	2,59	2,92
November 2018	10,99	2,73	2,69	2,76	2,73	1	2,69	2,76	3,37	7	2,77	3,08
December 2018	15,55	2,51	2,49	2,54	2,51	1	2,49	2,54	3,02	8	2,88	3,16

IFCC Working Group "Laboratory Errors and Patient Safety"

Participants Report: Year 2018 (December)

QUALITY INDICATORS

Post-TATPotHPercentage of: Number of Potassium results (STAT) released after 1 hour / Total number of Potassium results (STAT)

Laboratory Code: TR008						Laboratory Group: Turkish Laboratories										
Labor	ratory Institution:	Biochemist	ry Laboratory	,		- Istar	nbul Bagcila	r Training an	d Education H	lospi -	Istanbul					
Statistical Data of Laboratory Results						Statis	sults	Statistical Data of All Results								
	Data Number	Mean (%)	Median (%)	Sigma Mean		Data Number	Mean (%)	Median (%)	Sigma Mean		Data Number	Mean (%)	Median (%)	Sigma Mean		
	11	16,69	17,39	2,47		11	16,69	17,39	2,44		87	10,72	7,38	2,95		

	Laboratory Data				Participants Data							
	Laboratory Value (%)	Laboratory Sigma	Confiden Sig	ce Interval jma	Group	Sigma	Confiden Group	ce Interval Sigma	Overall	Sigma	Con	fide vera
			Min.	Max.	Value	<i>N</i> .	Min.	Max.	Value	N .	Mi	n.
ebruary 2018	18,45	2,40	2,37	2,43	2,40	1	2,37	2,43	3,07	7	2,8	39
March 2018	17,39	2,44	2,41	2,47	2,44	1	2,41	2,47	3,10	7	2,9	ю
April 2018	17,83	2,42	2,39	2,45	2,42	1	2,39	2,45	3,39	10	2,9	3
May 2018	18,65	2,39	2,36	2,42	2,39	1	2,36	2,42	3,18	7	2,99	9
June 2018	20,01	2,34	2,31	2,37	2,34	1	2,31	2,37	3,27	7	3,06	5
July 2018	15,91	2,50	2,47	2,53	2,50	1	2,47	2,53	3,11	7	2,91	1
August 2018	15,67	2,51	2,48	2,54	2,51	1	2,48	2,54	2,89	8	2,77	
September 2018	17,91	2,42	2,39	2,45	2,42	1	2,39	2,45	2,98	6	2,81	
October 2018	15,18	2,53	2,50	2,56	2,53	1	2,50	2,56	3,22	7	2,59)
November 2018	10,99	2,73	2,69	2,76	2,73	1	2,69	2,76	3,37	7	2,77	
December 2018	15,55	2,51	2,49	2,54	2,51	1	2,49	2,54	3,02	8	2,88	3

IFCC Working Group "Laboratory Errors and Patient Safety"

Participants Report: Year 2018 (December)



QUALITY INDICATORS

Post-TATPotHPercentage of: Number of Potassium results (STAT) released after 1 hour / Total number of Potassium results (STAT)



Conclusion

• There are too many quality indicators.

• One of the biggest challenges is the difficulty in understanding some indicators.

 Quality indicators should be translated to all languages and there should be more detailed explanation and calculation methods.

Conclusion

- Due to difficulties in obtaining data from laboratory information system, a common midware is needed.
- MQI covers all total testing processes.

THANK YOU FOR YOUR PATIENCE