

Integrating the Healthcare Enterprise

IHE LAB committee

Face to Face meeting in Tokyo

Japanese Activities

October 15-17 , 2013

IHE-Japan Laboratory Planning/Technical Committee

Self-Introduction

Osaka General Medical Center



NHK Staff and Me!!



Osaka

Tokyo

- **ICMT**(Infection Control Microbiological Technologist)
- Evaluator for **ISO 15189** Medical Laboratory Standards (ISO : International Organization for Standardization)

Study on Standardization of Various Masters in Microbiology

**© Kimiko Matsuoka¹⁾,
Shigeki Yokoyama²⁾, Takashi Noguchi³⁾,
Genichi Kato⁴⁾, Kazuyuki Nakayasu⁵⁾**

1) Osaka General Medical Center,

2) KD-ICONS Co.Ltd.,

3) Tokyo University,

4) Saiseikai Shigaken Hospital,

5) Ministry of Health, Labour and Welfare

Outline

1 st. Purpose of the Masters in Microbiology

**For Order and Result, furthermore,
For Infection Treatment,
Infection Control,
Epidemiology, etc.**

2nd. Classification Codes for

Various Masters in Microbiology

3rd. Research

**LOINC, SNOMED,
JLAC10, JANIS Codes**

Study on Standardization of Various Masters in Microbiology

1st.

Purpose of the Masters in Microbiology

**For Order and Result,
furthermore,**

**For Infection Treatment,
Infection Control,
Epidemiology, etc.**

Usage of Microbial + Large Classification

2005-2007 for 3 years : Number of Positive Microbes
=1,346/14,952 Blood Cultures (23.6%)

Microbes : Code No.

Staphylococci : 1837000000

Anaerobes : 1810000000

Enterobacteriaceae : 1834000000

Streptococci : 1842000000

GNFGNR : 1836000000

Enterococci : 1833000000

Yeast : 1916000000

Other GPR : 1830000000

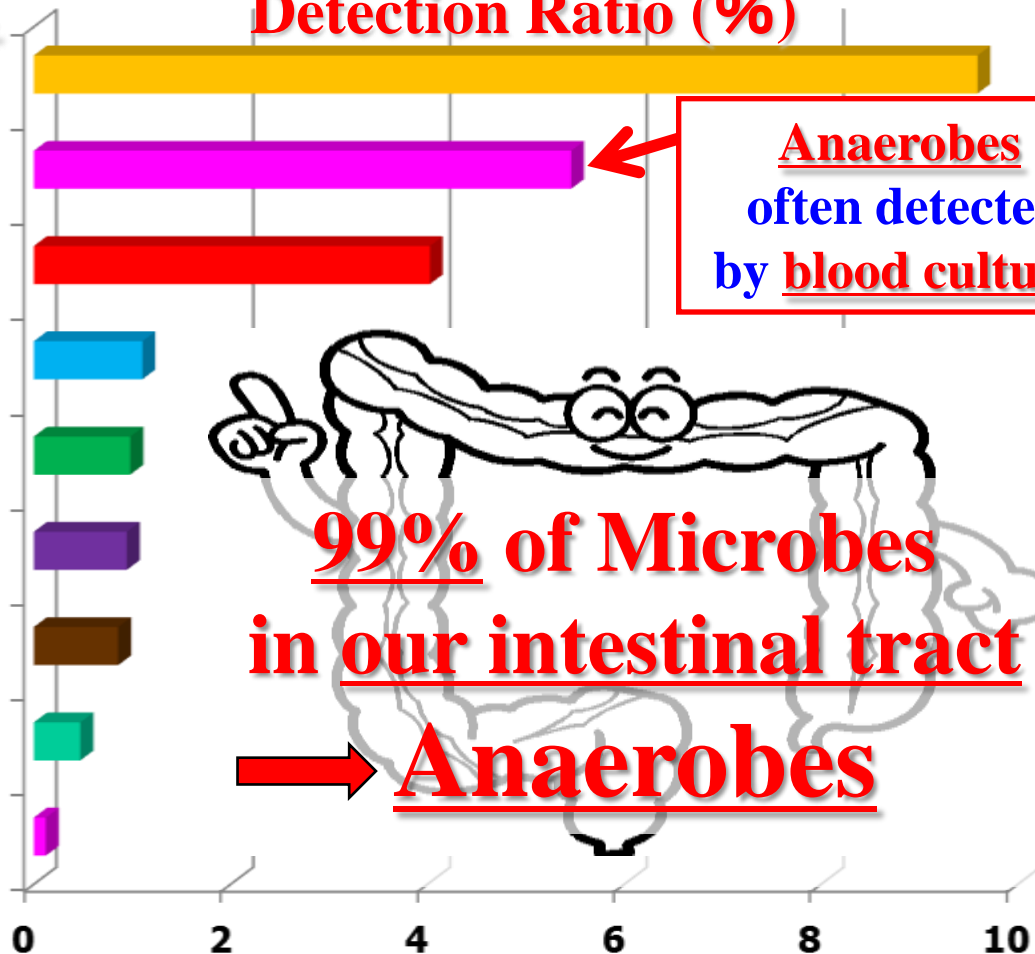
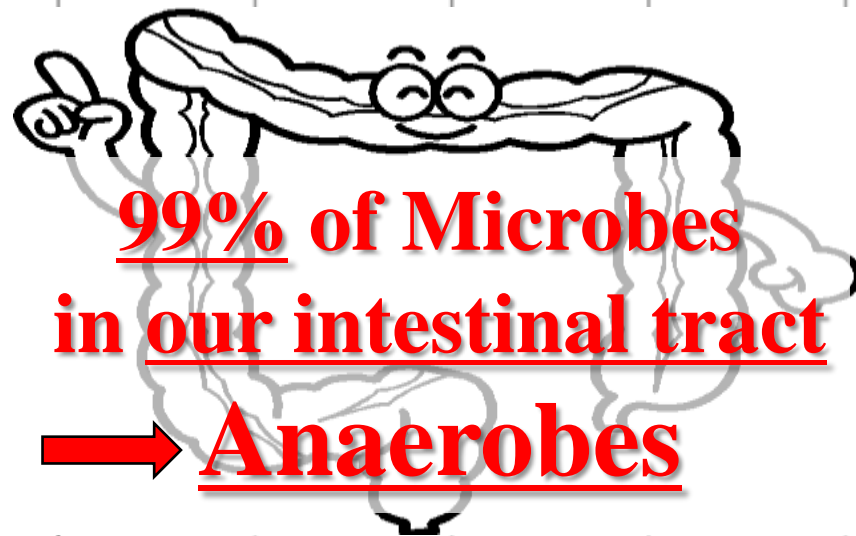
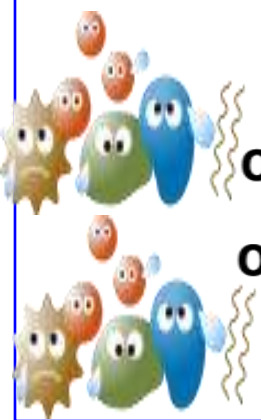
Other GNR : 1828000000

Detection Ratio (%)

Anaerobes
often detected
by blood culture.

99% of Microbes
in our intestinal tract

Anaerobes



4 Classification Levels on Master of Microbes Name

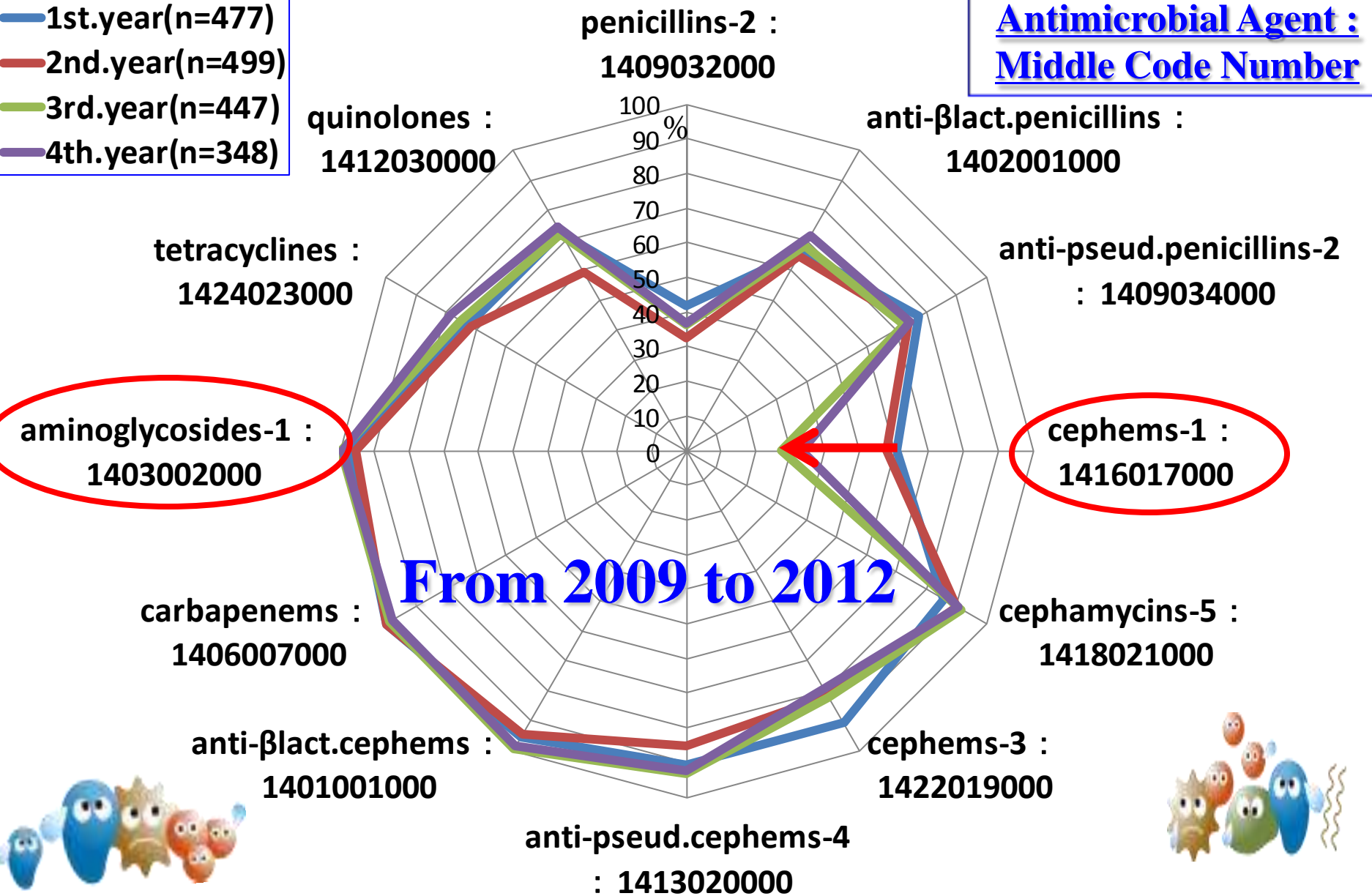
Microbial / Large / Middle / Small Classification

Microbiology Name	microbial full code	Micrlobial Classification	Large Classificaation	Middle Classificaation	SmallClassificaati on
	10 digits	2 digits	2 digits	3 digits	3 digits
Staphylococci	1837000000	18	37	000	000
		Bacteria	Staphylococci	—	—
Staphylococcus aureus	1837155073	18	37	155	073
		Bacteria	Staphylococci	Staphylococcus	aureus
Staphylococcus epidermidis	1837155173	18	37	155	173
		Bacteria	Staphylococci	Staphylococcus	epidermidis
Anaerobes	1810000000	18	10	000	000
		Bacteria	Anaerobes	—	—
Bacteroides fragilis	1810021201	18	10	021	201
		Bacteria	Anaerobes	Bacteroides	fragilis
Bacteroides thetaiotaomicron	1810021446	18	10	021	446
		Bacteria	Anaerobes	Bacteroides	thetaitaomicron
Enterobacteriaceae	1834000000	18	34	000	000
		Bacteria	Enterobacteriaceae	—	—
Escherichia coli	1834282533	18	34	282	533
		Bacteria	Enterobacteriaceae	Escherichia	coli
Klebsiella pneumoniae	1834089534	18	34	089	534
		Bacteria	Enterobacteriaceae	Klebsiella	pneumoniae

Middle Classification of Antimicrobial Agents: Yearly Change of Susceptibility on Enterobacteriaceae

**Antimicrobial Agent :
Middle Code Number**

- 1st.year(n=477)
- 2nd.year(n=499)
- 3rd.year(n=447)
- 4th.year(n=348)



Middle Classification: Microbial Substitution of Hospital-Acquired Pneumonia

Microbes of Hospital - acquired pneumonia

Early days

Middle days

Late days

Streptococcus spp. : 1842161000

Microbes: Middle Code No.

Haemophilus spp. : 1828081000

Staphylococcus spp. : 1837155000

Enterobacter spp. : 1834059000

Serratia spp. : 183147000,
Proteus spp. : 1834131000

Pseudomonas spp. : 1836134000

Acinetobacter spp. : 1836008000

Stenotrophomonas spp. : 1836157000

1

3

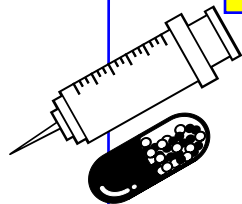
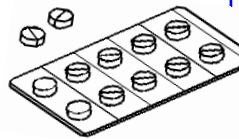
5

10

15

20

Days in Hospital



Infrequent Changes : Microbes Name, Antibiotic Substance etc.

Previous Name → **Current Name**

Bacteroides corporis → *Prevotella corporis*

Bacteroides corrodens → *Eikenella corrodens*

Bacteroides corrodens → *Bacteroides ureolyticus*

Pasteurella septica → *Pasteurella multocida ssp multocida*



Renewal of Year	Resistant Microbes	Target Microbes	Drug Titer of MIC $\mu\text{g}/\text{mL}$
2010	MDRP (Multiple Drug Resistant Pseudomonas)	<u><i>Pseudomonas aeruginosa</i></u> (Small Classification) →	AMK ≥ 32 and IPM ≥ 8 and CPFX ≥ 4
2000		<u><i>Pseudomonas aeruginosa</i></u> (Small)	CPFX ≥ 4
2010	ESBLs	All of <u>Enterobacteriaceae</u> (Large Classification) →	CPDX ≥ 8 , CAZ ≥ 2 , AZT ≥ 2 , CTX ≥ 2 , CTRX ≥ 2 have a choice
2000	ESBLs	All of <u>Enterobacteriaceae</u> (Large Classification) and GNFGNR (Large Classification)	CAZ, AZT, CTRX <u>have twice is</u> ≥ 2



Study on Standardization of Various Masters in Microbiology

2nd.

Classification Codes for

Various Masters in Microbiology

4 Classification Levels on Master of Microbes Name

Microbial / Large / Middle / Small Classification

Microbiology Name 50 characters	Bacterial code 10 digits	Microbial classification 2digits	Large classification 2digits	Middle classification 3digits	Small classification 3digits	Microbial classification	Large classification	Middle classification	Small classification
Staphylococcus aureus	1837155073	18	37	155	073	Bacteria	Staphylococci	Staphylococcus	aureus
Staphylococcus capitis	1837155120	18	37	155	120	Bacteria	Staphylococci	Staphylococcus	capitis
Staphylococcus intermedius	1837155254	18	37	155	254	Bacteria	Staphylococci	Staphylococcus	intermedius

Salmonella typhi	1834144453	18	34	144	453	Bacteria	Enterobacteriaceae	Salmonella	typhi
Salmonella typhimurium	1834144454	18	34	144	454	Bacteria	Enterobacteriaceae	Salmonella	typhimurium
Serratia marcescens	1834147295	18	34	147	295	Bacteria	Enterobacteriaceae	Serratia	marcescens
Morganella morganii	1834101315	18	34	101	315	Bacteria	Enterobacteriaceae	Morganella	morganii
Shigella boydii	1834149096	18	34	149	96	Bacteria	Enterobacteriaceae	Shigella	boydii
Shigella dysenteriae	1834149167	18	34	149	167	Bacteria	Enterobacteriaceae	Shigella	dysenteriae

Alcaligenes xylosoxidans ssp. xylosoxidans	1836016552	18	36	016	552	Bacteria	Glucose nonfermentans GNR	Alcaligenes	xylosoxidans ssp. xylosoxidans
Burkholderia cepacia	1836029553	18	36	029	553	Bacteria	Glucose nonfermentans GNR	Burkholderia	cepacia
Comamonas testosteroni	1836047561	18	36	047	561	Bacteria	Glucose nonfermentans GNR	Comamonas	testosteroni

Blastoschizomyces species	1916023413	19	16	023	413	Fungi	Yeast	Blastoschizomyces	species
Candida albicans	1916033047	19	16	033	47	Fungi	Yeast	Candida	albicans
Geotrichum penicillatum	1916072362	19	16	072	362	Fungi	Yeast	Geotrichum	penicillatum
Cryptococcus neoformans	1916050324	19	16	050	324	Fungi	Yeast	Cryptococcus	neoformans

Entamoeba histolytica negative	1312058487	13	12	058	487	Parasite	Protozoa	Entamoeba	histolytica
Giardia lamblia positive	1312199493	13	12	199	493	Parasite	Protozoa	Giardia	lamblia

Cytomegalo virus negative	1202053487	12	02	053	487	Virus	Virus	Cytomegalo virus	negative
Adeno virus negative	1202011487	12	02	011	487	Virus	Virus	Adeno virus	negative

4 Classification Levels on Master of Anti-Microbial Agents

Microbial / Large / Middle / Small Classification

Medical Agent name	Medical Agent codes 10 digits	Anti-Microbial codes 2 digits	Large classification codes 2 digits	Middle classification codes 3 digits	Small classification codes 3 digits	anti-Microbial	Large classification	Middle classification	Small classification
Sultamicillin	1402001146	14	02	001	146	anti-Bacteria	βLact.inhib. Penicillins	compound drug	Sultamicillin
Tazobactam/piperacillin	1402001148	14	02	001	148	anti-Bacteria	βLact.inhib. Penicillins	compound drug	Tazobactam/piperacillin
Amikacin	1403002002	14	03	002	002	anti-Bacteria	Aminoglycosides	Aminoglycosides-1	Amikacin
Arbekacin	1403002006	14	03	002	006	anti-Bacteria	Aminoglycosides	Aminoglycosides-2	Arbekacin
Panipenem/Betamipron	1406007122	14	06	007	122	anti-Bacteria	Carbapenems	Carbapenems	Panipenem/Betamipron
Ritipenem/acoxil	1406007134	14	06	007	134	anti-Bacteria	Carbapenems	Carbapenems	Ritipenem/acoxil
Vancomycin	1407009156	14	07	009	156	anti-Bacteria	Glycopeptides	Glycopeptides	Vancomycin
Chloramphenicol	1408010061	14	08	010	061	anti-Bacteria	Chloramphenicols	chloramphenicols	Chloramphenicol
Aciclovir	1110011001	11	10	011	001	anti-Virus	anti-Virus	Purine derivative	Aciclovir
Ganciclovir	1110011089	11	10	012	089	anti-Virus	anti-Virus	anti-Virus	Ganciclovir
Interfelon alfa	1110011094	11	10	013	094	anti-Virus	anti-Virus	anti-Virus	Interfelon alfa
Ethambutol	1311013078	13	11	013	078	anti-tuberculous	anti-tuberculous	anti-Tuberculous	Ethambutol
Ethinamide	1311013079	13	11	014	079	anti-tuberculous	anti-tuberculous	anti-Tuberculous	Ethinamide
p-aminosalicylic acid	1311013121	13	11	015	121	anti-tuberculous	anti-tuberculous	anti-Tuberculous	p-aminosalicylic acid
Amphotericin B	1534014004	15	34	014	004	anti-Fungi	anti-Fungi	Polyene macrolides	Amphotericin B
Fluconazole	1633042096	16	33	042	096	anti-Fungi	anti-Fungi	Triazoles	Fluconazole
Flucytosine	1633042133	16	33	042	133	anti-Fungi	anti-Fungi	Pyrimidines	Flucytosine
Itraconazole	1734043084	17	34	043	084	anti-Fungi	anti-Fungi	Triazoles	Itraconazole

4 Classification Levels on Master of Anti-Microbial Agents

Microbial / Large / Middle / Small Classification

Medical Agent name	Medical Agent codes 10 digits	Anti-Microbial codes 2 digits	Large classification codes 2 digits	Middle classification codes 3 digits	Small classification codes 3 digits	anti-Microbial	Large classification	Middle classification	Small classification
Sultamicillin	1402001146	14	02	001	146	anti-Bacteria	βLact.inhib. Penicillins	compound drug	Sultamicillin
Tazobactam/piperacillin	1402001148	14	02	001	148	anti-Bacteria	βLact.inhib. Penicillins	compound drug	Tazobactam/piperacillin
Amikacin									
Arbekacin									
Panipenem									etamipron
Ritipenem									oxil
Vancomycin									
Chloramphenicol									nicol
Aciclovir									
Ganciclovir									
Interferon α									a
Ethambutol									
Ethinamide									
p-aminosalicylic acid									lylic acid
Amphotericin B									n B
Fluconazole									
Flucytosine	1653042153	16	33	042	153	anti-Fungi	anti-Fungi	Pyrimidines	Flucytosine
Itraconazole	1734043084	17	34	043	084	anti-Fungi	anti-Fungi	Triazoles	Itraconazole

Medical Agent name	Medical Agent codes 10 digits	Anti-Microbial codes 2 digits	Large classification codes 2 digits	Middle classification codes 3 digits	Small classification codes 3 digits
Sultamicillin	1402001146	14	02	001	146
Vancomycin	1407009156	14	07	009	156
Chloramphenicol	1408010061	14	08	010	061
Amikacin	1403002002	14	03	002	002
Amphotericin B	1534014004	15	34	014	004
Aciclovir	1110011001	11	10	011	001

Intermission



ANAEROBE 2000 in Manchester, England

Study on Standardization of Various Masters in Microbiology

3rd.

Research

LOINC, SNOMED,

JLAC10, JANIS Codes

LOINC subset for test codes

● Chemistry	873 tests
● Hematology	284 tests
● Toxicology and drug monitoring	194 tests
● Virology and serology	374 tests
● Parasitology and micology	158 tests
● Bacteriology	387 tests
● Immunology and cell mark	278 tests
● Patient and specimen findings	30 measures

Alternatively other terminologies may be used:
SNOMED CT, national vocabs...

LOINC Test Codes Subset in Microbiology

Microbiology Component, System, Class, Method, etc.

IHE Laboratory Technical Framework, Vol. 4: LOINC Test Codes Subset

Code	Microbiology Component	System	Class	Method	Unit	Property	A/B
533-0	MYCOBACTERIUM SP IDENTIFIED	BLD	MICRO	ORGANISM SPECIFIC CULTURE		PRID	A
534-8	MYCOBACTERIUM SP IDENTIFIED	CSF	MICRO	ORGANISM SPECIFIC CULTURE		PRID	A
537-1	MYCOBACTERIUM SP IDENTIFIED	PRT	MICRO	ORGANISM SPECIFIC CULTURE		PRID	A
539-7	MYCOBACTERIUM SP IDENTIFIED	SPT	MICRO	ORGANISM SPECIFIC CULTURE		PRID	A
540-5	MYCOBACTERIUM SP IDENTIFIED	TISS	MICRO	ORGANISM SPECIFIC CULTURE		PRID	A
541-3	MYCOBACTERIUM SP IDENTIFIED	UR	MICRO	ORGANISM SPECIFIC CULTURE		PRID	A
543-9	MYCOBACTERIUM SP IDENTIFIED	XXX	MICRO	ORGANISM SPECIFIC CULTURE		PRID	A
9823-6	MYCOBACTERIUM SP IDENTIFIED	BRO	MICRO	ORGANISM SPECIFIC CULTURE		PRID	A
9824-4	MYCOBACTERIUM SP IDENTIFIED	GAST	MICRO	ORGANISM SPECIFIC CULTURE		PRID	A
14972-4	MYCOBACTERIUM SP DNA	CSF	MICRO	PROBE.AM P.TAR		ACNC	A
14973-2	MYCOBACTERIUM SP DNA	SPT	MICRO	PROBE.AM P.TAR		ACNC	A
14974-0	MYCOBACTERIUM SP DNA	XXX	MICRO	PROBE.AM P.TAR		ACNC	A
21405-6	MYCOBACTERIUM SP DNA	BRO	MICRO	PROBE.AM P.TAR		ACNC	A
23247-0	MYCOBACTERIUM SP DNA	TISS	MICRO	PROBE.AM P.TAR		ACNC	A
14484-0	MYCOPLASMA SP+UREAPLASMA SP	CVX	MICRO	ORGANISM SPECIFIC CULTURE		ACNC	A
14487-3	MYCOPLASMA SP+UREAPLASMA SP	URTH	MICRO	ORGANISM SPECIFIC CULTURE		ACNC	A

SNOMED Codes

(Systematized Nomenclature of Medicine, College of American Pathologists)

NOS: not otherwise specified → *spp.*

	132 Branhamella
E-1320	Branhamella, <u>NOS</u>
E-1321	Branhamella catarrhalis Neisseria catarrhalis
	134 Brucella
E-1340	Brucella, <u>NOS</u>
E-1341	Brucella melitensis
E-1342	Brucella abortus
E-1343	Brucella canis
E-1344	Brucella maritima
E-1345	Brucella melitensis sensu lato
E-1346	Brucella canis
	136 Calymmatobacterium
E-1360	Calymmatobacterium, <u>NOS</u>
E-1361	Calymmatobacterium granulomatis Donovania granulomatis
	137 Campylobacter
E-1370	Campylobacter, <u>NOS</u>
E-1371	Campylobacter fetus

E-1607	Salmonella typhimurium
E-1608	Salmonella salamae
E-1612	Salmonella arizonae Arizona arizonae Arizona hinshawii
E-1618	Salmonella houtenae
E-1620	Salmonella, unlisted species
E-1650	Shigella, <u>NOS</u>
E-1651	Shigella dysenteriae Shiga's bacillus Shigella schmitzii Shigella ambigua
E-1652	Shigella flexneri Flexner-Strong bacillus
E-1653	Shigella boydii
E-1654	Shigella sonnei
E-1680	Serratia, <u>NOS</u>
E-1681	Serratia marcescens
E-1684	Yersinia, <u>NOS</u>
E-1685	Yersinia pestis

SNOMED Codes seem to be classified by Non-Microbiologist??

SNOMED Codes

(Systematized Nomenclature of Medicine, College of American Pathologists)

NOS: not otherwise specified → *spp.*

132 Branhamella

- E-1320 Branhamella, NOS
- E-1321 Branhamella catarrhalis
Neisseria catarrhalis

134 Brucella

- E-1340 Brucella, NOS
- E-1341 Brucella melitensis
- E-1342 Brucella abortus
- E-1343 Brucella suis
- E-1344 Brucella neotomae
- E-1345 Brucella ovis
- E-1346 Brucella canis

136 Calymmatobacterium

- E-1360 Calymmatobacterium, NOS
- E-1361 Calymmatobacterium granulomatis
Donovania granulomatis

137 Campylobacter

- E-1370 Campylobacter, NOS
- E-1371 Campylobacter fetus

- E-1607 Salmonella typhimurium
- E-1608 Salmonella salamae
- E-1612 Salmonella arizonae

**Microbes with Clinical Similarities
have Similar Classification Codes??**

- E-1618 Salmonella houtenae
- E-1620 Salmonella, unlisted species
- E-1650 Shigella, NOS
- E-1651 Shigella dysenteriae
Shiga's bacillus
Shigella schmitzii
Shigella ambigua
- E-1652 Shigella flexneri
Flexner-Strong bacillus
- E-1653 Shigella boydii
- E-1654 Shigella sonnei
- E-1680 Serratia, NOS
- E-1681 Serratia marcescens
- E-1684 Yersinia, NOS
- E-1685 Yersinia pestis

4 Classification Levels on Master of Microbes Name

Microbial / Large / Middle / Small Classification

Microbial Full Name	Full Microbial code	Microbial Classification	Large Classification	Middle Classification	Small Classification
	10 digits	2 digits	2 digits	3 digits	3 digits
Campylobacter spp.	1834000000	18	34	000	000
Campylobacter fetus	1834031192	18	34	031	192
Campylobacter jejuni/ coli	1834031259	18	34	031	259
Brucella spp.	1828000000	18	28	000	000
Brucella abortus	1828158001	18	28	158	001
Brucella canis	1828158002	18	28	158	002

Structure of JLAC10

Masters of JLAC10

Classification of
Clinical Test

Out of Medical
Treatment Insurance

Test of Hematology,
Biochemistry and Pathology

Biopsy Test

Microbiology Test

Medical Treatment Fees

Medical Treatment

JLAC10

Masters of
Clinical Test

**Unsupported
by JLAC10**

Bacterial Codes: JANIS

(Japan Nosocomial Infections Surveillance)

JANIS Codes

Infectious agent code_ver4.0_20090925.xls

新コード	新菌名	2009.11
1011	Gram-positive cocci	
1012	Gram-positive bacilli	
1013	Gram-negative cocci	
1014	Gram-negative bacilli	
1015	Yeasts	
1100	<i>Streptococcus</i> sp.	
1101	α - <i>Streptococcus</i>	
1102	β - <i>Streptococcus</i>	
1103	γ - <i>Streptococcus</i>	
1111	<i>Streptococcus pyogenes</i>	
1114	<i>Streptococcus agalactiae</i>	
1117	C群 β - <i>Streptococcus</i>	
1120	F群 β - <i>Streptococcus</i>	
1123	G群 β - <i>Streptococcus</i>	
1131	<i>Streptococcus pneumoniae</i>	
1132	<i>Streptococcus pneumoniae</i> (PRSP)	
1133	<i>Streptococcus pneumoniae</i> (PISP)	
1134	<i>Streptococcus pneumoniae</i> (PSSP)	
1141	<i>Streptococcus mutans</i>	
1142	<i>Streptococcus sanguis</i>	
1143	<i>Streptococcus mitis</i>	
1144	<i>Streptococcus anginosus</i>	
1145	<i>Streptococcus intermedius</i>	
1146	<i>Streptococcus bovis</i>	
1147	<i>Streptococcus salivarius</i>	
1148	<i>Streptococcus equinus</i>	
1149	<i>Streptococcus uberis</i>	
1150	<i>Streptococcus constellatus</i> subsp. <i>constellatus</i>	
1151	<i>Streptococcus acidominimus</i>	
1200	<i>Enterococcus</i> sp.	
1201	<i>Enterococcus faecalis</i>	
1202	<i>Enterococcus faecalis</i> (VRE)	
1205	<i>Enterococcus faecium</i>	
1206	<i>Enterococcus faecium</i> (VRE)	
1209	<i>Enterococcus avium</i>	
1210	<i>Enterococcus avium</i> (VRE)	
1213	<i>Enterococcus durans</i>	
1214	<i>Enterococcus gallinarum</i>	
1215	<i>Enterococcus casseliflavus</i>	
1216	<i>Enterococcus casseliflavus/gallinarum</i>	
1217	<i>Enterococcus hirae</i>	

Bacterial Codes Master for B Company

Bacterial code	Bacterial name
citdiv	Citrobacter koseri
vcitdi	Citrobacter koseri (VITEK Supplemental QC)
entcla	E. cloacae (motility +)/E. asburiae (motility -)
enttay	Enterobacter cancerogenus
entrah	Enterobacter intermedius/Rahnella aquatilis
eschaf	Escherichia coli (indole +)/Hafnia alvei (indole -)
	Escherichia coli / Hafnia alvei
klepo	Klebsiella pneumoniae (indole -)/oxytoca (indole +)
nssy	Negative for Salmonella, Shigella and Yersinia
entagg	Pantoea agglomerans
pasaer	Pasteurella aerogenes
pashat	Pasteurella haemolytica/trehalosi
pastre	Pasteurella trehalosi
pedtar	Possible Edwardsiella tarda
pyentr	Possible Yersinia enterocolitica
psalsp	Presumptive Salmonella species
psalmn	Presumptive Salmonella species (LAC+)
psalty	Presumptive Salmonella species (typhi)
pshson	Presumptive Shigella sonnei
pshige	Presumptive Shigella species

Our Microbial Classification Codes (1988-1999)

Bacteroides fragilis
 Branhamella catarrhalis
 Burkholderia cepacia (P.cepacia)
 Candida albicans
 Candida guilliermondii
 Candida krusei
 Candida parapsilosis
 Candida tropicalis
 Chryseomonas meningosepticum
 Citrobacter freundii
 Citrobacter kosen (C.diversus)
 Clostridium perfringens
 Coryn.sp (C.diphtheriae以外)
 Enterobacter aerogenes
 Enterobacter cloacae
 Enterococcus avium (Str.avium)
 Enterococcus durans
 Enterococcus faecalis
 Enterococcus faecium
 Escherichia coli

Bacterial code 3 digits	Classification
001-099	Staphylococci
100-299	Enterobacteriaceae
300-399	GNF-GNR
400-499	Anaerobes
500-599	Streptococci
600-699	Other GN
700-799	Other GN
800-899	Fungi
900-999	Comment atc.

Our Anti-Microbial Agents Classification Codes (1988-1999)

1PCG	2PCV	3PEPC	4PPPC	5ABPC	6IPABPC	7ACPC	8AMPC
9無	10PVPC	11BAPC	12DMPPC	13MPIPC	14MCIPC	15MDIPC	16MFIPC
20PIPC	21APPC	22MZPC	23CBPC	24SBPC	25LAPC	30LAPC	31CET
28ASPC	29SBTPC	30LAPC	38CXM	39CPZ	40CTM	46CTRX	47CFX
36CEC	37CMD	38CXM	46CTRX	47CFX	48CMZ	54CEG	55CEX
44CPM	45CAZ	46CTRX	62CXM-AX	63CFS	64LMOX	70FMOX	71SM
73AKM	74DKB	75GM	76TOB	77AMK	78RSM	79PRM	80LYDM
81FRM	82SISO	83NTL	84MCR	85ASTM	86SPCM	87EM	88OL
89LM	90APM	91JM	92MDM	93LOM	94RKM	95CLDM	96MKM

Summary

1 st. Purpose of the Masters in Microbiology

**For Order and Result, furthermore,
For Infection Treatment,
Infection Control,
Epidemiology, etc.**

2 nd. Classification Codes for

Various Masters in Microbiology

3 rd. Research

**LOINC, SNOMED,
JLAC10, JANIS Codes**



Suggestion??
Comments ??





Appendix : Problem Solutions

Problem Solutions for Microbiology Tests (Order / Result)

© Kimiko Matsuoka¹⁾,
Shigeki Yokoyama²⁾, Takashi Noguchi³⁾,
Genichi Kato⁴⁾, Kazuyuki Nakayasu⁵⁾

- 1) Osaka General Medical Center,
- 2) KD-ICONS Co.Ltd.,
- 3) Tokyo University,
- 4) Saiseikai Shigaken Hospital,
- 5) Ministry of Health, Labour and Welfare

Appendix 1: Problems for Microbiology Tests

Comparison between Normal Clinical Tests and Microbiology Tests

Clinical Test Order / Result

One to One :

One Order  One Result.

Microbiology Test Order / Result

One to Multi (Combination) :

One Order  Multi Results (Combination)

Appendix 2: Features of Microbiology Tests

Identification Test Results :

- Microbes Names : 1 ~ 5, No Growth.

Susceptibility Test Results :

- S.I.R Category : S(Susceptible), I(Intermediate), R(Resistant)
- MIC (Minimum Inhibitory Concentration)
- E-Test ▪ Disk Diffusion

Combinations
of these results !

Microscopic Test Results :

Stained Microorganisms, Quality of Specimen.

Culture Test Results : Bacterial Volume (++, +, etc.)

As Consultants and Developers
of Microbiology Information System,
we believe that we can contribute
actively to solutions in these problem
for Microbiology tests (Order /Result).



Question & Answer

Q1: 日本では、JANISのコードは使っているのか？

A1: 厚生労働省に報告するときに使っている。

しかし、施設で使っているコードと異なっている。

各施設は、独自のコードを作って、運用している。

Question & Answer

Q2: 詳細分類で集計するとどのような支障があるのか？

A2: ・母集団の数が少なくなるので、傾向がつかみにくい。

- ・似かよった性質の持ったものは、グループにまとめて統計解析した方が、感染制御や感染管理に役立つ。

Question & Answer

Q3: グループにまとめて分析したらどういう意味があるのか？

A3: その母集団、例えば、菌の病原的意義や、抗菌薬の耐性傾向をすることが出来る。

Question & Answer

Q4: 菌名や耐性菌定義が変わったとき、その情報をどのように把握し、発信すれば良いか？

A4: ・菌命名委員会やCLSIなどとの強力や連携を取ることが出来ればいいですね。

Question & Answer

Q5: 10桁のコードはどのようにして作っているのか？

A5: エクセル関数を利用している。