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Prepared by QA Committee	of Contents	
Issued by: Laboratory Manager	Revision Date: 5/7/2024	
Approved by Laboratory Director:	Next Review Date: 5/7/2026	
Microbiologist-in-Chief		

#### **Uncontrolled When Printed**

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Nucleic Acid Extraction - Biomerieux NucliSENS easyMAG

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**Luminex Worksheets** 

#### **Specimen Testing Manuals**

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BK Virus Quantitative PCR Altona Bio-Rad CFX90

Carbapenemase PCR by Cepheid GeneXpert

Chlamydia trachomatis and Neisseria gonorrhoeae PCR by Cobas® 6800

Chlamydia trachomatis and Neisseria gonorrhoeae PCR by Cepheid GeneXpert

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Cytomegalovirus Qualitative PCR by Bio-Rad CFX96

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Epstein Barr Virus Quantitatve PCR Altona Bio-Rad CFX90

Hepatitis B, Hepatitis C, HIV Donor Screen NAT PCR by Cobas® 6800

Herpes Simplex Virus Varicella-Zoster PCR by Bio-Rad CFX96

Herpes Simplex Virus Varicella-Zoster PCR by Luminex ARIES®

Human Papilloma Virus (HPV) by Cobas 6800

Influenza A, B & RSV PCR by Luminex ARIES

Parvovirus B19 Qualitative PCR Bio-Rad CFX96

Pneumocystis jirovecii (PJP) Quantitative PCR Bio-Rad CFX96

Respiratory Pathogen Panel NxTAG RT-PCR by Luminex

VRE vanA and vanB PCR by Cepheid GeneXpert

West Nile Virus NAT PCR by Cobas® 6800

SARS-CoV-2 Virus PCR by Luminex Aries

SARS-CoV-2 PCR by AllplexTM Seegene

SARS-CoV-2 PCR by Roche Cobas 6800

SARS-CoV-2 PCR by Cepheid GeneXpert

SARS-CoV-2 Flu RSV PCR by Cepheid GeneXpert

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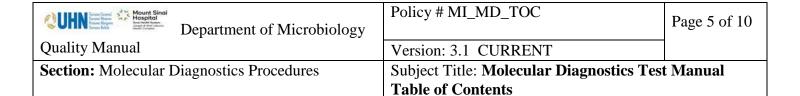
#### **Record of Edited Revisions**

Manual Section Name: Molecular Diagnostic Tests

Page Number / Item	Date of Revision	Signature of
		Approval
Molecular Testing - HBV DNA-Reporting Added Para.	October 10, 2003	Dr. T. Mazzulli
Annual Review	May 30, 2004	Dr. T. Mazzulli
Page 67 - Molecular Testing - Chlamydia Trachomatis &	May 20, 2005	Dr. T. Mazzulli
Neisseria gonorrhoeae		
Page 67 – urine but not more than 60 mL added	May 20, 2005	Dr. T. Mazzulli
Page 68 – specimen not lysedadded	May 20, 2005	Dr. T. Mazzulli
Page 68 – tubes may be blotted	May 20, 2005	Dr. T. Mazzulli
Page 70 – handling samples after lysing	May 20, 2005	Dr. T. Mazzulli
Page 71,72 Procedure change	May 20, 2005	Dr. T. Mazzulli
Page 72, interpretation of result - change MOTA score	May 20, 2005	Dr. T. Mazzulli
Page 73, reporting – indeterminate	May 20, 2005	Dr. T. Mazzulli
Page 76 – do not vortex working master mix	May 20, 2005	Dr. T. Mazzulli
Page 76 – specimen dilution protocol	May 20, 2005	Dr. T. Mazzulli
Page 77 – 80 procedure and reporting changed	May 20, 2005	Dr. T. Mazzulli
Page 81 – QC procedure changed	May 20, 2005	Dr. T. Mazzulli
Page 93 – procedure changed	May 20, 2005	Dr. T. Mazzulli
Page 86 – 88, instrument instructions	May 20, 2005	Dr. T. Mazzulli
Page 90 – WNV RT-PCR	May 20, 2005	Dr. T. Mazzulli
Page 92 – lysis buffer	May 20, 2005	Dr. T. Mazzulli
Page 93 – General Precaution section revised	May 20, 2005	Dr. T. Mazzulli
Page 94-100 – procedure revised	May 20, 2005	Dr. T. Mazzulli
Page 128 – Updated decontamination procedure	June 2, 2005	Dr. T. Mazzulli
Annual Review	May 30, 2006	Dr. T. Mazzulli
Added links to TGLN Procedures	March 21, 2007	Dr. T. Mazzulli
Revised HBV-DNA and HCV-RNA procedures with	May 11, 2008	Dr. T. Mazzulli
Ampliprep instructions		
Procleix Ultrio and WNV added	July 21, 2008	Dr. T. Mazzulli
Procleix Discriminatory Assay	July 21, 2008	Dr. T. Mazzulli
Annual Review	July 21, 2008	Dr. T. Mazzulli
CMV DNA Amplification and Detection Procedures	November 01, 2008	Dr. T. Mazzulli

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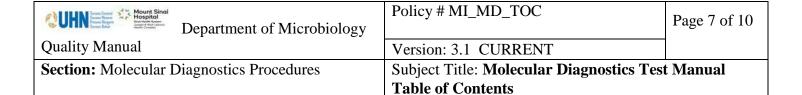
Page Number / Item	Date of Revision	Signature of Approval
updated		**
Molecular Testing – updated	November 01, 2008	Dr. T. Mazzulli
EBV DNA Amplification and Detection Procedures	November 01, 2008	Dr. T. Mazzulli
updated		
HSV DNA Amplification and Detection Procedures	November 01, 2008	Dr. T. Mazzulli
updated		
Parvovirus B19 DNA PCR Amplification and Detection	November 01, 2008	Dr. T. Mazzulli
Procedures updated		
Enterovirus RNA Amplification and Detection	November 01, 2008	Dr. T. Mazzulli
Procdeures added		
West Nile Virus RT PCR - Failed QC added	July 10, 2009	Dr. T. Mazzulli
Annual Review	July 31, 2009	Dr. T. Mazzulli
Annual Review	July 31, 2010	Dr. T. Mazzulli
Added revised easyMag	August 23, 2010	Dr. T. Mazzulli
Added revised CMV PCR	August 23, 2010	Dr. T. Mazzulli
Added revised BKV PCR	October 31, 2010	Dr. T. Mazzulli
GeneXpert C. difficile added	January 10, 2011	Dr. T. Mazzulli
Updated Procleix Ultrio	April 14, 2011	Dr. T. Mazzulli
Updated QC section of easyMag extraction	May 31, 2011	Dr. T. Mazzulli
Updated Influenza procedure	May 31, 2011	Dr. T. Mazzulli
Added Virology specimen accessioning guide link	May 31, 2011	Dr. T. Mazzulli
Deleted CMV DNA Amplification and Detection	May 31, 2011	Dr. T. Mazzulli
Procedures by Lightcycler		
Deleted VZV Amplification and Detection Procedures by	May 31, 2011	Dr. T. Mazzulli
Lightcycler		
Deleted HSV Amplification and Detection Procedures by	May 31, 2011	Dr. T. Mazzulli
Lightcycler		
Added HSV/VZV Detection (Altona Alpha herpes)	May 31, 2011	Dr. T. Mazzulli
Added Multiplex Respiratory virus detection	May 31, 2011	Dr. T. Mazzulli
Annual Review	May 31, 2011	Dr. T. Mazzulli
Parvovirus PCR revised	May 31, 2011	Dr. T. Mazzulli
RSV PCR added	May 31, 2011	Dr. T. Mazzulli
Replace Procleix with MPX	September 11, 2011	Dr. T. Mazzulli
Updated WNV PCR with Altona kits	June 13, 2012	Dr. T. Mazzulli
Annual Review	June 13, 2012	Dr. T. Mazzulli
Added Appendix VIII - epMotion procedure	June 13, 2012	Dr. T. Mazzulli



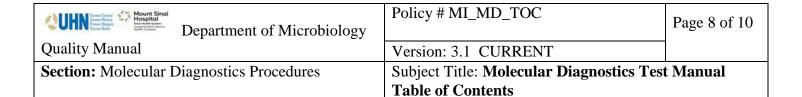
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		Approval
Added Appendix VII - Creating Standard Curve for	June 13, 2012	Dr. T. Mazzulli
Quantitative PCRs		
Added Links to RotorGene Worksheets and calculations	June 13, 2012	Dr. T. Mazzulli
and reports		
Chlamydia/Neisseria gonorrhoeae detection method	October 17, 2012	Dr. T. Mazzulli
changed to Roche COBAS 4800		
Appendix II to IV BD ProbeTec related documents	October 17, 2012	Dr. T. Mazzulli
removed		
Added HPV testing	December 12, 2012	Dr. T. Mazzulli
Added Focus Simplexa Flu A/B and RSV testing	December 12, 2012	Dr. T. Mazzulli
Moved RotorGene Flu and RSV tests to Appendix II and	December 12, 2012	Dr. T. Mazzulli
III for backup use		
Renumbered procedures	December 12, 2012	Dr. T. Mazzulli
Revised Positive C. diff resulting message	February 05, 2013	Dr. T. Mazzulli
Espanded C. diff resulting messages	April 18, 2013	Dr. T. Mazzulli
Realigned bullets and numbering format	July 31, 2013	Dr. T. Mazzulli
Added Appendix XI WNV PCR Procedure abbreviated	July 31, 2013	Dr. T. Mazzulli
Update QC & Maintenance for Focus Simplexa Flu A/B	July 31, 2013	Dr. T. Mazzulli
and RSV testing		
Annual Review	July 31, 2013	Dr. T. Mazzulli
MPX procedure updates	December 9th, 2013	Dr. T. Mazzulli
Simplexa Flu A/B and RSV reporting procedure updated	December 18,2013	Dr. T. Mazzulli
Simplexa Flu A/B and RSV testing procedure updated	January 15, 2014	Dr. T. Mazzulli
Addition of Appendix IV: Simplexa A/B/RSV worksheet	January 24, 2014	Dr. T. Mazzulli
Manual Creation: Cobas Ampliprep/TaqMan CMV PCR	February 21, 2014	Dr. T. Mazzulli
MI/MD/19/v01		
Reporting C.diff GeneExpert Updating	April 14, 2014	Dr. T. Mazzulli
C.diff reporting update, WNV PCR manual and WNV	May 28, 2014	Dr. T. Mazzulli
PCR appreviated appendix dry spin time update.		
Annual Review		
Removed Luminex, HBV DNA, HCV RNA procedure	November 3, 2014	Dr. T. Mazzulli
Updated MPX NAT to new version and in its own		
manual as well as WNV NAT		
Updated Virology accessioning chart to it's own manual		
Move Easymag manuals to Appendix		
Updated APPENDIX I - Molecular Diagnostic Tests		
Schedule		

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C. diff reporting update for results	November 12, 2014	Dr. T. Mazzulli
Addition of:	January 28, 2015	Dr. T. Mazzulli
Sputolysin Procedure and Stool preparation in	,	
Virology Accessioning tables split and updated		
Simplexa manual resulting updated.		
Parainfluenza and human Metapneumovirus procedure	February 18, 2015	Dr. T. Mazzulli
added		
Update C.diff comments	February 26, 2015	Dr. T. Mazzulli
Parainfluenza and human Metapneumovirus BIORAD	March 15, 2015	
procedure added		
Added C. diff with eSwab section	May 6, 2015	Dr. T. Mazzulli
Added links for BK/EBV to calculation excel worksheet	May 6, 2015	Dr. T. Mazzulli
p.8 BK general precautions modified	May 6, 2015	Dr. T. Mazzulli
Added introduction and specimen collection/transport to	May 6, 2015	Dr. T. Mazzulli
BKV section and updated materials section		
Adenovirus PCR by Rotorgene Section Added in	May 6, 2015	Dr. T. Mazzulli
Added:	June 15, 2015	Dr. T. Mazzulli
ROTORGENE QC		
Semi-Annual: Perform optical temperature verification		
Annual Review	June 15, 2015	Dr. T. Mazzulli
Added Appendix XI – Rotorgene Optical Temperature		
Verification (OTV) Procedure		
Added link in WNV PCR to OTV Procedure		
Added PCR ordering chart to accessioning section		
Updated BK Virus procedure	June 25, 2015	Dr. T. Mazzulli
Updated BK Manual section,	July 16, 2015	Dr. T. Mazzulli
Updated full EBV manual		
BK and EBV manual addition of summary information		
South West Health Ordering information added to PCR	August 12, 2015	Dr. T. Mazzulli
accessing chart.		
Virology specimen accessioning guide changes:	September 1, 2015	Dr. T. Mazzulli
-add tx pt to edta for hz,		
-add pleural to peritoneal/pericardial fluids (entero)		
-removed "if requested" Entero from BALs		
-removed adeno to PHL from eye specimens (done in		
house)		



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		Approval
Herpes simplex Virus Varicella-Zoster Virus PCR by	September 3, 2015	Dr. T. Mazzulli
Bio-Rad CFX96c added manual		
Influenza Simplexa section:	September 11, 2015	Dr. T. Mazzulli
- added report using virology worklist Respiratory PCR		
- Error EC500 retest 1:10		
- Add media PRABR if retesting simplexa sample		
- Add dates in media PCABR		
WNV Rotorgene:		
- Removed use of 72-well rotor parts		
- Document which rotorgene was used (blue or red)		
- Removed Red Channel RSV A (typo) p.172		
- Reporting section: note for positives to re-extract from		
original clot and re run, for donors repeat in duplicates &		
record CT values in PCWNV media.		
-Updated troubleshooting section Influenza Simplexa	September 25, 2015	Dr. T. Mazzulli
manual & added instructions for insufficient sample		
error.		
-Reorganize manuals alphabetically		
Under trouble shooting section of manuals: MPX NAT,	October 7, 2015	Dr. T. Mazzulli
WNV NAT, Chlamydia PCR added to the table if IC	0010001 7, 2013	DI. I. Muzzum
fails:		
First time: repeat		
Second time: result as invalid with result comment		
@SPIN "Likely due to specimen integrity, unable to		
obtain valid test result after repeated attempts."		
Added BK BIO RAD section		
Virology Accessioning Chart changes: Adeno request for	October 15, 2015	Dr. T. Mazzulli
stool send to PHL, parvo request on plasma: requires	0000001 13, 2013	Di. I. Mazzaiii
microbiologist approval		
Under Virology ordering chart added link to Send out	October 20, 2015	Dr. T. Mazzulli
Manual for processing specimens to be send for external	000001 20, 2013	21. 1. 1.1111111111
testing.		
cosing.		
Updated MPX NAT and WNV NAT to include storage	October 26, 2015	Dr. T. Mazzulli
temperature of reagents	,	
Updated WNV storage conditions of specimen		



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Added to PCR order entry chart:	October 30, 2015	Dr. T. Mazzulli
River Valley Health (Part of Horizon Health Network)		
Update Reporting positive for WNV NAT		
Manual sections converted into sepearte individual	December 2, 2015	Dr. T. Mazzulli
documents. Links provided here in TOC format.		
Remove/Archived sections:		
-WNV PCR by Rotorgene		
-Flu & RSV by Rotorgene appendix		
Mycobacterium tuberculosis & Rifampicin resistance	February 10, 2015	Dr. T. Mazzulli
PCR by Cepheid GeneXpert Added		
Virology worksheets Added		
Respiratory Panel Luminex manual added		
VRE Cepheid Added		
Annual Review	June 15, 2016	Dr. T. Mazzulli
Added Aries Manual Influenza	August 16, 2016	Dr. T. Mazzulli
Archived::	August 24, 2016	Dr. T. Mazzulli
BK Virus Quantitative PCR By Rotorgene		
Adenovirus Qualitative RTPCR by Rotorgene		
Added:		
Adenovirus Qualitative PCR Bio-Rad CFX96		
Epstein Barr Virus Quantitative PCR by Rotorgene	August 25, 2016	Dr. T. Mazzulli
Updated UHN/MSH logo		
Archived Cytomegalovirus Qualitative PCR by	August 30, 2016	Dr. T. Mazzulli
Rotorgene		
Inserted CMV Quantitative PCR by BIORAX CFX96		
Added Parvovirus B19 Qualitative PCR Bio-Rad CFX96		
Removed HZ Rotorogene PCR manual		
Removed Simplexa manual - no longer in use. Influenza	September 7, 2016	Dr. T. Mazzulli
AB & RSV PCR by Focus Diagnostics Simplexa <sup>™</sup>		
CRE PCR link added		
Annual Review	April 6, 2017	Dr. T. Mazzulli
Removed Enterovirus by Light Cycler and replaced with		
Enterovirus CSF by Cepheid Procedure.		
Addition of Cytomegalovirus Quantitative PCR by	May 29, 2017	Dr. T. Mazzulli
Cobas® 6800		
Clostridium difficile PCR by Luminex ARIES®	September 30, 2017	Dr. T. Mazzulli
Added VRE Roche PCR by Lightcycler	December 18, 2017	Dr. T. Mazzulli

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Added HZ by Lumined Aries	February 1, 2018	Dr. T. Mazzulli
Addition of WNV and Heptatis B, C, HIV NAT PCR by	February 5, 2018	Dr. T. Mazzulli
Cobas 6800 documents to table of contents.		
Archival of Hepatitis B, Hepatitis C, HIV Donor Screen	February 19, 2018	Dr. T. Mazzulli
NAT PCR by Hepatitis B, Hepatitis C, HIV Donor		
Screen NAT PCR by Cobas® s201 Ampliprep TaqMan		
& WNV by Cobas s201 Ampliprep TaqMan		
Archived CMV Quantitative by Ampliprep/TaqMan	March 6, 2018	Dr. T. Mazzulli
Annual Review	April 13, 2018	Dr. T. Mazzulli
Added Encephalitis (ME) Biofire manual		
Addition of Qualification for CFX96 Deep Well TM	June 15, 2018	Dr. T. Mazzulli
Real-Time System		
Addition of Pneumocystis jirovecii (PJP) Quantitative	December 5, 2018	Dr. T. Mazzulli
PCR Bio-Rad CFX96 manual		
Annual Review	January 20, 2019	Dr. T. Mazzulli
EBV and BK Altona manuals added		
Updated CTNG manual to 6800 procedures	December 13, 2019	Dr. T. Mazzulli
Annual Review	March 15, 2020	Dr. T. Mazzulli
Removal of VRE by Light Cycler		
Removed epimotion manual		
Addition of SARS-CoV-2 Manual		
Addition of SARS-CoV-2 Virus PCR by Luminex Aries	May 15, 2020	Dr. T. Mazzulli
SARS-CoV-2 PCR by Altona RealStar		

# Full document review included in all updates. Bi-annual review conducted when no revision had been made within 2 years.

Page Number / Item	Date of Revision	Edited by:
Addition of SARS-CoV-2 PCR by MGI and Roche	June 16, 2021	Jessica Bourke
Cobas 6800 procedures		
Addition of SARS RPP by luminex, removed RPP by	Jan 8, 2021	Jessica Bourke
luminex		
Addition of SARS VOC by MGI procedure	Feb 22, 2021	Oliver Li
Updated SARS VOC to include E484K gene procedure	April 12, 2021	Jessica Bourke
Added Cepheid genexpert for covid	Nov 9, 2021	Wayne Chiu
Added Abbott ID now for covid	Dec 24, 2021	Wayne Chiu
Added CTNG genexpert	Feb 1, 2021	Wayne Chiu
Added monkeypox procedure	May 27, 2022	Wayne Chiu

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Removed monkeypox procedure. Moved to individual	June 14, 2022	Jessica Bourke
Safety main protocol.		
Removed SARScov by Altona link	June 28, 2022	Wayne Chiu
Remove HPV by Cobas 4800	October 9, 2022	Jessica Bourke
Addition of HPV by Cobas 6800		
Renamed link for Clostridium difficile to C difficile	Nov 17, 2022	Wayne Chiu
Fixed hyperlinks for C difficile documents	Feb 2, 2023	Wayne Chiu
Removed IDnow hyperlink, test discontinued	Feb 28, 2023	Wayne Chiu
Addition of HHV6 PCR	July 28, 2023	Jessica Bourke
Removal of SARS by Altona PCR		
Fixed Respiratory Multiplex test link	February 6, 2024	Jessica Bourke
Removed (archived) SARS VOC procedure no longer		
performed.		
Removed TB/RIF by Cepheid link. Test archived.		
Fixed test links	February 15, 2024	Jessica Bourke
Updates SARS-CoV-2 Respiratory Pathogen Panel by		
NxTAg to Respiratory Pathogen Panel by NxTAg		
Added para-link of SARS-CoV-2 Flu RSV PCR by Cepheid	March 25, 2024	Qin Liu
GeneXpert		