



**BOARD OF HEALTH**

**Monthly Meeting: February 25, 2022 – 10:00 a.m.**

Evergreen Resort

7880 Mackinaw Trail, Cadillac

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**A G E N D A**

- I. Call to Order.....Jim Maike, Chair
- II. Roll Call
- III. Review and Approval of the Agenda
- IV. Review and Approval of Board of Health Meeting Minutes.....January 28, 2022
- V. Public Comment
- VI. Committee Reports
  - A. Executive Committee.....Jim Maike
  - B. Finance Committee.....Ray Steinke
    - 1. *Finance Report*
    - 2. *Approve January Accounts Payable and Payroll*.....Action Item
  - C. Personnel Committee.....Shelley Pinkelman
  - D. Legislative Committee.....Shelley Pinkelman
- VII. Administration Reports
  - A. Medical Director.....Dr. Jennifer Morse, MD
  - B. Deputy Health Officer .....Sarah Oleniczak
  - C. Health Officer.....Kevin Hughes
- VIII. Public Health Comments
- IX. Other Business
- X. Next Board of Health Meeting: Friday, March 25, 2022, at 10:00 a.m.
- XI. Adjournment



## **BOARD OF HEALTH**

### **Meeting Minutes**

*January 28, 2021*

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I. **Call to Order:** Jim Maike, Chair, called the meeting to order at 10:01 a.m.

II. **Roll Call**

**Members Present – In Person:** Shelley Pinkelman, Phil Lewis, Robert Baldwin, James Sweet, Betty Dermeyer, Dawn Martin, Pauline Jaquish, Richard Schmidte, Ron Bacon, Nick Krieger, Tom O’Neil, Ray Steinke, Roger Ouwinga, Star Hughston, Bryan Kolk, Jim Maike, Paul Erickson, Gary Taylor

**Staff In Person -** Kevin Hughes, Sarah Oleniczak, Christine Lopez, Dr. Jennifer Morse, Stephanie Jacobs, Christy Rivette, Anne Bianchi, Anne Young, Mick Kramer

**Members – Online:**

**Members Excused:** Martha Meyette, Judy Nichols

III. **Approval of the Agenda.** Motion by Bryan Kolk, seconded by Ray Steinke to approve the meeting agenda.

Motion carried.

IV. **Approval of the Meeting Minutes.** Motion by Betty Dermeyer, seconded by Shelley Pinkelman to approve the minutes of the December 17, 2021, meeting.

Motion carried.

V. **Public Comment:** Dawn Martin discussed some issues with the Mason County Water Lab.

VI. **Committee Reports**

A. Executive Committee – did not meet.

B. Finance Committee: Christine Lopez, Administrative Services Director, reviewed the financial report for, November & December. fund balance, \$8.3 million, increase of 140k. total accounts payable, \$1672,868.80. Payroll \$993,451.60. Expenses are on target

**Approve Accounts Payable and Payroll.** Motion by Ray Steinke, seconded by Ron Bacon, to approve the December accounts payable and payroll.

**Roll Call**

Shelly Pinkelman	Yes	Pauline Jaquish	Yes	Roger Ouwinga	Yes
Phil Lewis	Yes	Richard Schmidt	Yes	Star Hughston	Yes
Robert Baldwin	Yes	Ron Bacon	Yes	Bryan Kolk	Yes
James Sweet	Yes	Nick Krieger	Yes	Jim Maike	Yes
Betty Dermeyer	Yes	Tom O’Neil	Yes	Paul Erickson	Yes

Dawn Martin

Yes Ray Steinke

Yes Gary Taylor

Yes

Motion Carried

- C. Personnel Committee – did not meet. Hughes to send out invite for March 11<sup>th</sup>, meeting to discuss recommendations on benefits and retention plans.
- D. Legislative Committee – Ken Wharton has asked to be on next months agenda to familiarize himself with DHD #10

**VII. Board Presentation – COVID 19 & the death rate, Jordan Powell**

Weekly update on hospitalizations was discussed, the death rate by county was shared, 60% in the hospital are unvaccinated. The vaccinated rate in patients is climbing, the hospitals are seeing more vaccinated admitted to the hospital, to the ICU and on a ventilator.

**VIII. Committee Reports**

- A. **Community Health** – the Substance Abuse program is has begun. DHD #10 is partnering with the National Kidney Foundation on diabetes prevention. There will be no cost to DHD #10. A handout was given on Tobacco and Maternal Health.
- B. **Environmental Health** – Quarterly report was shared. Currently working on timelines for well/septic permits. There were 9 complaints in the last quarter in the Food Program.
- C. **Family Health Clinical Division** – Anne Bianchi shared the Immunization Data for DHD #10.
- D. **Family Health Visiting Program/WIC** - NPH order was extended with waivers to be extended until July, the program must offer phone visits and in person visits if there is lab work that needs to be completed. Congress has approved an increase in fruit and vegetables. Blood lead testing has resumed, the state lab is conducting the analysis. The transition of Similac has been bumpy, there is a shortage of the formula in the stores, DHD #10 does have some in the offices. Healthy Families is very full, working on increasing MIHP. Hearing and Vision has conducted screenings for 4000 school age children and 2000 preschoolers.

**IX. Administration Reports**

- A. Medical Director. Dr. Jennifer Morse shared updates on Radon Testing. January is national radon testing month. 1-4 homes in Michigan have elevated Radon.

*Recommendation: Get your home tested for Radon, home should be tested every 2 years.*

Approve recommendations – Motion was made y Dawn Martin to approve Dr. Morse's recommendation for Radon testing, 2<sup>nd</sup> by Ray Steinke

Motion Carried

- B. Deputy Health Officer. Sarah Oleniczak reported that the Rural Health Network grant has ended. We are aligned for more funding this summer. Oleniczak shared a virtual event from North Central Community Health Innovation Region, she will assist with registration if needed. Shire funding report was shared. The MITHrive flyer shared last month was a draft and has not been finalized. AHC update given.
- C. Health Officer Kevin Hughes shared the 6 COVID testing sites are still operating, researching the potential of putting a site in Manistee. PFAS update provided, 2 new sites, Wexford/Missaukee CTC Center, 16 homes affected, filtration systems have been offered and

plumbing services will be handled by DHD #10. Oceana/Newaygo biosolids spread on the ground, 20-25 homes being tested, waiting on results, DHD #10 will address if they are positive. Discussion and questions on filters were answered by Hughes. Landsite in Newaygo County near Kent Lake was tested, unacceptable drinking water, the deep well was then tested resulted in non-detection. Investigation conducted in Crawford County on lead exposure, EPA is also involved. Potential dates for health summit, April 22<sup>nd</sup>, May 6<sup>th</sup>, May 13<sup>th</sup>, more to come.

X. **Other Business** -Discussion on potential partnership with Honeywell or other program to replace old thermostats. Dr. Morse to contact EGLE on potential program. Dr. Morse provided article on Mercury attached on following page. Contract Tracing program was explained.

XI. **Public Comment** – Five Cap is giving away 2 free testing kits and KN95 masks at their offices.

XII. **Next Meeting**

The next regular meeting of the Board of Health is scheduled for Friday, February 25th, at 10:00 a.m. at the Cadillac Office.

XIII. **Adjournment** – Motion by Betty Dermeyer and seconded by Ray Steinke to adjourn meeting.

Motion Carried

Jim Maike adjourned the meeting at 11:45am

District Health Department #10  
Balance Sheet  
January 31, 2022

Prepared by:  
Christine Lopez, MBA  
Administrative Services Director

ASSETS

Current Assets

Cash	11,518,622.98
Due from State	1,885,522.13
Due From Others	<u>615,476.27</u>
Total Current Assets	14,019,621.38

Other Assets

Inventory	259,623.00
Prepaid Expense	<u>228,049.42</u>
Total Other Assets	<u>487,672.42</u>

Total ASSETS	<u>14,507,293.80</u>
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LIABILITIES

Current Liabilities

Accounts Payable	76,157.64
Payroll Taxes/Deductions Due	358,172.07
Accrued Wages	<u>344,568.97</u>
Total Current Liabilities	778,898.68

Other Liabilities

Deferred Revenue	<u>5,175,836.99</u>
Total LIABILITIES	5,954,735.67

FUND BALANCE

Fund Balance, Preliminary	8,186,685.43
Increase in Fund Balance	<u>365,872.70</u>
Total FUND BALANCE	<u>8,552,558.13</u>

LIABILITIES AND FUND BALANCE	<u>14,507,293.80</u>
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District Health Department #10  
Statement of Revenues and Expenditures  
From 01/01/2022 Through 01/31/2022

	Current Month	YTD Actual	Budget	Percent Budget Remaining	Total Budget Variance
<b>Revenues</b>					
State & Federal Funding					
Adolescent Health Center - Lake City Clinical	22,046.92	35,949.94	135,000	(73.37)%	(99,050.06)
Adolescent Health Center - Mason County Eastern	33,361.17	104,227.88	135,000	(22.79)%	(30,772.12)
Beach Monitoring	-	556.07	11,500	(95.16)%	(10,943.93)
Beach Monitoring - Other	-	732.63	-	0.00%	732.63
Breast Cervical Cancer Control Program	5,391.09	25,699.24	74,800	(65.64)%	(49,100.76)
Brethren High School Mental Health Grant	13,085.60	48,672.40	100,000	(51.33)%	(51,327.60)
CCL HUB	-	-	256,755	(100.00)%	(256,755.00)
CHA Needs Assessment	-	-	18,681	(100.00)%	(18,681.00)
Childrens Special Health Care Services	34,326.54	128,633.60	298,541	(56.91)%	(169,907.40)
Chippewa Hills School Mental Health Grant	5,830.17	27,629.14	100,000	(72.37)%	(72,370.86)
CHIR - Communications	-	-	22,284	(100.00)%	(22,284.00)
CJS Alliance	5,354.82	8,730.58	23,466	(62.79)%	(14,735.42)
Communicable Disease	38,830.01	149,286.33	359,030	(58.42)%	(209,743.67)
Community Health	-	-	10,000	(100.00)%	(10,000.00)
COVID MI Supplemental Funding	24,401.49	176,503.92	1,185,790	(85.12)%	(1,009,286.08)
Cross Jurisdictional Sharing Admin	-	-	44,530	(100.00)%	(44,530.00)
CSHCS Care Coordination Case Mgmt	19,518.50	19,518.50	110,000	(82.26)%	(90,481.50)
CSHCS Vaccine Initiative	2,093.86	5,277.52	21,321	(75.25)%	(16,043.48)
Dental Partnering for Heart Health	28,102.00	48,186.00	69,329	(30.50)%	(21,143.00)
Dental Sealants	5,738.41	12,202.87	30,000	(59.32)%	(17,797.13)
Drinking Water	88,435.44	216,405.53	448,757	(51.78)%	(232,351.47)
ELC Contact Tracing and Wraparound	66,075.67	250,619.16	755,142	(66.81)%	(504,522.84)
ELC COVID Infection Prevention - CELC	1,906.67	2,631.96	90,000	(97.08)%	(87,368.04)
Emergency Preparedness	19,110.34	59,418.36	161,987	(63.32)%	(102,568.64)
Family Planning	61,012.92	329,909.00	401,579	(17.85)%	(71,670.00)
Food Service	-	270,791.00	270,791	0.00%	-
General EH - Campgrounds	925.00	925.00	5,950	(84.45)%	(5,025.00)
General EH - DHHS Inspection	1,180.00	10,560.00	41,000	(74.24)%	(30,440.00)
General EH - Pools & Spas	-	-	5,400	(100.00)%	(5,400.00)
Grayling Water Recovery	391.91	3,651.78	70,233	(94.80)%	(66,581.22)
Harm Reduction Support	4,873.95	12,209.97	90,000	(86.43)%	(77,790.03)
Hart High School Mental Health Grant	11,245.32	43,596.61	100,000	(56.40)%	(56,403.39)
Hearing	13,359.36	44,885.49	70,808	(36.61)%	(25,922.51)
HFA FFPSA Lake County	14,669.65	53,799.67	130,000	(58.62)%	(76,200.33)
HIV Prevention	563.96	5,199.12	45,000	(88.45)%	(39,800.88)
Imms VFC/INE	150.00	4,800.00	15,000	(68.00)%	(10,200.00)
Immunizations	-	207,484.00	207,484	0.00%	-
Immunizations IAP	14,490.17	43,604.30	108,280	(59.73)%	(64,675.70)
Immunizations Vaccine Quality Assurance	12,164.46	28,289.32	54,660	(48.24)%	(26,370.68)
Interconnected MH System-Mason	-	-	39,605	(100.00)%	(39,605.00)
Lead Home Visiting	-	-	500	(100.00)%	(500.00)
MCH Women	3,093.75	14,986.70	78,000	(80.79)%	(63,013.30)
MCIR	17,191.62	62,435.92	175,000	(64.32)%	(112,564.08)
Medicaid Outreach	3,626.27	144,918.52	395,799	(63.39)%	(250,880.48)
MI Home Visiting IRE (HFA)	59,120.17	215,400.85	569,651	(62.19)%	(354,250.15)
MI Safer Schools	117,713.20	350,752.16	1,206,708	(70.93)%	(855,955.84)
Non Community Water	15,041.00	60,164.00	180,492	(66.67)%	(120,328.00)
On-Site Sewage - Septic Systems	67,148.40	226,694.18	387,374	(41.48)%	(160,679.82)
PFAS Rothbury	-	332.20	18,982	(98.25)%	(18,649.80)
Prosperity Grant/CLPP	4,720.59	16,577.86	40,000	(58.56)%	(23,422.14)
Regional Perinatal Care System	-	2,469.89	170,000	(98.55)%	(167,530.11)
Rotary Charities	-	-	2,887	(100.00)%	(2,887.00)
Rural Health Network - CHIR	-	30,188.00	32,000	(5.66)%	(1,812.00)
STI Clinics	12,939.08	35,701.72	45,000	(20.66)%	(9,298.28)
Tobacco Grant	2,094.90	7,014.90	40,000	(82.46)%	(32,985.10)
Vision	15,571.46	56,985.29	70,808	(19.52)%	(13,822.71)
WIC Migrant	11,970.23	47,881.39	98,000	(51.14)%	(50,118.61)
WIC Peer Counselor	29,729.21	111,273.57	297,969	(62.66)%	(186,695.43)
WIC Resident	165,165.99	629,532.73	1,570,745	(59.92)%	(941,212.27)

District Health Department #10  
Statement of Revenues and Expenditures  
From 01/01/2022 Through 01/31/2022

	Current Month	YTD Actual	Budget	Percent Budget Remaining	Total Budget Variance
Wisewoman Coordination	<u>3,605.87</u>	<u>7,349.11</u>	<u>25,000</u>	<u>(70.60)%</u>	<u>(17,650.89)</u>
Total State & Federal Funding	1,077,367.14	4,401,245.88	11,522,618	(61.80)%	(7,121,372.12)
Other Funding					
Administration	-	-	5,055	(100.00)%	(5,055.00)
Adolescent Health Center - Crawford	17,009.00	62,374.00	155,000	(59.76)%	(92,626.00)
Adolescent Health Center - Lake City Clinical	-	42,407.50	-	0.00%	42,407.50
Adolescent Health Center - Wexford	20,486.00	85,034.00	215,000	(60.45)%	(129,966.00)
Adolescent Health Center Oceana	24,808.00	107,015.00	215,000	(50.23)%	(107,985.00)
Agnes Taylor Fund	-	-	4,215	(100.00)%	(4,215.00)
AHC COVID Immunization	6,430.00	17,442.00	180,647	(90.34)%	(163,205.00)
Beach Monitoring - Other	-	-	3,000	(100.00)%	(3,000.00)
Building Lease Cadillac	8,600.00	34,400.00	103,200	(66.67)%	(68,800.00)
Building Lease Hart	5,300.00	21,200.00	63,600	(66.67)%	(42,400.00)
CATCH Grant	2,176.64	3,175.45	10,000	(68.25)%	(6,824.55)
CC HUB NW	7,457.00	29,828.00	-	0.00%	29,828.00
CD Billing Counties	1,058.33	1,058.33	2,500	(57.67)%	(1,441.67)
CHA Needs Assessment	-	-	25,000	(100.00)%	(25,000.00)
CHIR - Communications	-	-	10,000	(100.00)%	(10,000.00)
CHIR BBO	769.00	4,421.00	25,000	(82.32)%	(20,579.00)
Communicable Disease	-	390.00	-	0.00%	390.00
Community Health	1,300.00	5,800.00	12,500	(53.60)%	(6,700.00)
COVID Prevention Missaukee	527.00	2,500.00	8,342	(70.03)%	(5,842.00)
COVID Prevention Wexford	1,102.00	3,912.00	17,389	(77.50)%	(13,477.00)
CSHCS Thorton Fund Kalkaska	823.02	1,406.10	5,977	(76.47)%	(4,570.90)
Dental Outreach	-	3,609.14	30,000	(87.97)%	(26,390.86)
Early On Oceana	-	118.44	1,248	(90.51)%	(1,129.56)
EPI	-	350.00	-	0.00%	350.00
Finance	17,336.00	42,336.00	113,352	(62.65)%	(71,016.00)
Gambling Disorder Prevention Project Grant	1,791.00	7,212.00	23,000	(68.64)%	(15,788.00)
Grayling School Mental Health	2,326.13	11,510.14	30,000	(61.63)%	(18,489.86)
Healthy Families America - Manistee/Missaukee	11,927.00	59,567.00	154,146	(61.36)%	(94,579.00)
Immunizations	-	-	305,500	(100.00)%	(305,500.00)
Interconnected MH System-Mason	5,759.26	27,205.70	250,000	(89.12)%	(222,794.30)
LiveWell for your Heart	3,139.28	9,298.37	54,689	(83.00)%	(45,390.63)
MCDC	15,210.00	124,710.86	400,000	(68.82)%	(275,289.14)
Oceana LEADS DFC	8,422.00	31,999.00	100,000	(68.00)%	(68,001.00)
Prevention	9,666.00	44,871.00	107,540	(58.28)%	(62,669.00)
Prevention Grant Missaukee	1,526.00	6,309.00	20,854	(69.75)%	(14,545.00)
Prevention Grant Wexford	4,590.00	17,088.00	43,472	(60.69)%	(26,384.00)
Rotary Charities	2,250.00	5,118.00	10,000	(48.82)%	(4,882.00)
Rx for Health	8,697.39	39,163.47	246,566	(84.12)%	(207,402.53)
School Wellness Center	20,246.00	67,283.00	170,000	(60.42)%	(102,717.00)
Snap Ed Full-Year	6,485.44	27,510.07	92,710	(70.33)%	(65,199.93)
State Opioid Response (SOR) Lake	213.00	6,928.00	10,000	(30.72)%	(3,072.00)
State Opioid Response (SOR) Mason	3,362.00	6,600.00	45,000	(85.33)%	(38,400.00)
State Opioid Response (SOR) Oceana	504.00	5,424.00	15,000	(63.84)%	(9,576.00)
Sub Abuse COVID Supplemental - Lake	501.00	4,166.00	5,260	(20.80)%	(1,094.00)
Sub Abuse COVID Supplemental - Mason	1,176.00	5,921.00	15,782	(62.48)%	(9,861.00)
Sub Abuse COVID Supplemental - Oceana	90.00	2,219.00	16,748	(86.75)%	(14,529.00)
Sub Abuse COVID Supplemental Lake21	1,711.00	3,084.00	-	0.00%	3,084.00
Sub Abuse COVID Supplemental Mason21	340.00	1,223.00	-	0.00%	1,223.00
Sub Abuse COVID Supplemental Oceana21	888.00	1,336.00	-	0.00%	1,336.00
Substance, Education and Awareness (SEA) Coalition -	2,810.00	10,810.00	8,500	27.18%	2,310.00
Tobacco/ENDS Education	-	-	1,000	(100.00)%	(1,000.00)
Vaccine Marketing	-	12,000.00	12,000	0.00%	-
WIC Resident	-	-	200	(100.00)%	(200.00)
Total Other Funding	228,812.49	1,007,333.57	3,343,992	(69.88)%	(2,336,658.43)

District Health Department #10  
Statement of Revenues and Expenditures  
From 01/01/2022 Through 01/31/2022

	Current Month	YTD Actual	Budget	Percent Budget Remaining	Total Budget Variance
<b>Billing Revenue</b>					
Adolescent Health Center - Crawford	159.00	3,245.29	40,000	(91.89)%	(36,754.71)
Adolescent Health Center - Lake City Clinical	208.24	6,631.64	50,000	(86.74)%	(43,368.36)
Adolescent Health Center - Mason County Eastern	25.00	25.00	50,000	(99.95)%	(49,975.00)
Adolescent Health Center - Wexford	3,811.58	17,687.25	90,000	(80.35)%	(72,312.75)
Adolescent Health Center Oceana	4,539.95	13,041.91	62,000	(78.96)%	(48,958.09)
BCCCP Direct	27.20	3,680.12	6,000	(38.66)%	(2,319.88)
Breast Cervical Cancer Control Program	60.00	569.89	5,000	(88.60)%	(4,430.11)
Brethren High School Mental Health Grant	-	438.54	30,000	(98.54)%	(29,561.46)
CC HUB NW	13,621.00	54,628.00	-	0.00%	54,628.00
CCL HUB	-	-	267,800	(100.00)%	(267,800.00)
Chippewa Hills School Mental Health Grant	6,615.15	17,821.87	47,000	(62.08)%	(29,178.13)
CJS Alliance	-	-	4,000	(100.00)%	(4,000.00)
Community Health	-	-	10,000	(100.00)%	(10,000.00)
COVID MI Supplemental Funding	113,572.98	423,403.22	-	0.00%	423,403.22
Dental Sealants	-	269.00	10,000	(97.31)%	(9,731.00)
Dental Varnish	-	40.00	25,000	(99.84)%	(24,960.00)
Family Planning	4,529.27	26,060.55	150,000	(82.63)%	(123,939.45)
Hart High School Mental Health Grant	1,414.58	3,604.69	40,000	(90.99)%	(36,395.31)
Hearing	1,235.40	9,207.20	16,000	(42.45)%	(6,792.80)
HIV Prevention	-	171.26	-	0.00%	171.26
Immunizations	26,753.53	121,569.54	500,000	(75.69)%	(378,430.46)
Lead Hemoglobin	290.77	532.53	12,000	(95.56)%	(11,467.47)
Maternal Infant Health Program	35,385.16	129,217.09	638,000	(79.75)%	(508,782.91)
School Wellness Center	284.89	11,209.93	32,312	(65.31)%	(21,102.07)
STI Clinics	367.78	1,135.59	5,000	(77.29)%	(3,864.41)
Vision	1,405.00	9,441.20	20,000	(52.79)%	(10,558.80)
Wisewoman Coordination	-	7,625.00	5,000	52.50%	2,625.00
<b>Total Billing Revenue</b>	<b>214,306.48</b>	<b>861,256.31</b>	<b>2,115,112</b>	<b>(59.28)%</b>	<b>(1,253,855.69)</b>
<b>Medicaid Cost Settlement</b>					
Medicaid Cost Report	375,000.00	375,000.00	2,000,000	(81.25)%	(1,625,000.00)
<b>Total Medicaid Cost Settlement</b>	<b>375,000.00</b>	<b>375,000.00</b>	<b>2,000,000</b>	<b>(81.25)%</b>	<b>(1,625,000.00)</b>
<b>Environmental Health Revenue</b>	<b>87,779.06</b>	<b>341,880.90</b>	<b>1,734,500</b>	<b>(80.29)%</b>	<b>(1,392,619.10)</b>
<b>Appropriations</b>	<b>247,873.30</b>	<b>991,493.38</b>	<b>2,974,480</b>	<b>(66.67)%</b>	<b>(1,982,986.62)</b>
<b>Other Revenue</b>					
MMRMA Distribution	-	32,291.00	32,291	0.00%	-
Workers Compensation Dividends	-	24,973.00	24,973	0.00%	-
Other	4,228.10	36,671.74	113,500	(67.69)%	(76,828.26)
<b>Total Other Revenue</b>	<b>4,228.10</b>	<b>93,935.74</b>	<b>170,764</b>	<b>(44.99)%</b>	<b>(76,828.26)</b>
<b>Total Revenues</b>	<b>2,235,366.57</b>	<b>8,072,145.78</b>	<b>23,861,466</b>	<b>(66.17)%</b>	<b>(15,789,320.22)</b>



District Health Department #10  
Statement of Revenues and Expenditures  
From 01/01/2022 Through 01/31/2022

	Current Month	YTD Actual	Budget	Percent Budget Remaining	Total Budget Variance
<b>Expenses</b>					
Wages	875,429.44	3,734,139.50	12,222,064	69.45%	8,487,924.50
Fringes	688,496.58	2,375,279.10	5,891,406	59.68%	3,516,126.90
Travel	22,890.49	119,173.54	590,121	79.81%	470,947.46
Supplies	60,683.77	331,544.61	1,441,129	76.99%	1,109,584.39
Contractual	91,606.17	164,315.82	929,211	82.32%	764,895.18
Communications	28,309.62	111,984.43	363,326	69.18%	251,341.57
Printing/Publishing	6,979.20	21,306.88	125,053	82.96%	103,746.12
Education/Training	2,964.01	8,012.01	71,685	88.82%	63,672.99
Liability Insurance	8,347.08	32,215.36	100,130	67.83%	67,914.64
Maintenance	53,479.26	120,029.40	517,447	76.80%	397,417.60
Space	107,601.96	434,574.51	1,294,162	66.42%	859,587.49
Capital Outlay	34,545.90	73,387.06	281,000	73.88%	207,612.94
County DSH/Dental	29,110.00	180,310.86	566,800	68.19%	386,489.14
Total Expenses	<u>2,010,443.48</u>	<u>7,706,273.08</u>	<u>24,393,534</u>	<u>68.41%</u>	<u>16,687,260.92</u>
Increase (Decrease) Fund Balance	<u>224,923.09</u>	<u>365,872.70</u>	<u>(532,068)</u>		

District Health Department #10  
Aged Receivable Report 01/01/2022 - 01/31/2022

	Balance	Current	31-60 Days	61-90 Days	91+ Days
<b>Due From County</b>	<b>25,351.58</b>	<b>24,293.25</b>	<b>1,058.33</b>	<b>-</b>	<b>-</b>
<b>Due From Other</b>					
Due From Adolescent Health Center Grant	31,284.00	20,486.00	10,798.00	-	-
Due From Adolescent Health Center Grayling Gran	23,624.00	17,009.00	6,615.00	-	-
Due From Adolescent Health Center Shelby Grant	53,265.00	24,808.00	27,420.00	1,037.00	-
Due From Basic Flex	73,586.78	-	-	13,586.78	60,000.00
Due From CCL Hub	29,828.00	7,457.00	7,457.00	7,457.00	7,457.00
Due From CHIR	4,421.00	769.00	1,421.00	843.00	1,388.00
Due From Early On	-	-	-	-	-
Due From Healthy Families Manistee/Missaukee	45,754.00	11,927.00	19,694.00	14,133.00	-
Due From Others	2,413.58	120.00	-	-	2,293.58
Due From PFS Mason	-	-	-	-	-
Due From PFS Oceana	-	-	-	-	-
Due From Prevention	9,666.00	9,666.00	-	-	-
Due From Prevention Grant Miss/Wex	6,116.00	6,116.00	-	-	-
Due From Dental Partnership	46,247.00	28,102.00	7,212.00	10,931.00	2.00
Due From CHA Needs Assessment	-	-	-	-	-
Due From CHIR Communications	-	-	-	-	-
Due From Gamblin Disorder Grant	7,212.00	1,791.00	2,323.00	1,194.00	1,904.00
Due From MMOOG	-	-	-	-	-
Due From CHIR Rotary Charities	3,973.00	2,250.00	1,723.00	-	-
Due From AHC - Lake City Clinical	-	-	-	-	-
Due From AHC - Mason County Eastern	59,227.88	49,813.51	9,414.37	-	-
Due From CHW Project - Meridian	13,621.00	13,621.00	-	-	-
Due from Tobacco/ENDS Education	199.00	-	-	-	199.00
Due From Grayling Mental Health Grant	5,411.57	2,326.13	3,085.44	-	-
Due From CHW Project - McLaren	4,935.00	-	-	-	4,935.00
Due From DFC Oceana LEADS	31,099.00	8,422.00	12,411.00	5,053.00	5,213.00
Due From PFAS Response Rothbury PRRM 1101	332.20	-	-	290.00	42.20
Due from School Wellness Grant	11,318.00	11,318.00	-	-	-
Due From Snap	27,266.70	6,485.44	6,246.04	5,801.59	8,733.63
Due From SA COVID Supplemental	17,873.00	4,706.00	8,862.00	3,068.00	1,237.00
Due From AHC COVID Immunization	17,264.00	6,430.00	5,329.00	3,553.00	1,952.00
Due From SEA Coalition - Manistee	2,810.00	2,810.00	-	-	-
Due From COVID Prevention	1,629.00	1,629.00	-	-	-
<b>Due From Other Sum</b>	<b>530,376.71</b>	<b>238,062.08</b>	<b>130,010.85</b>	<b>66,947.37</b>	<b>95,356.41</b>
<b>Due From State</b>	<b>1,945,270.11</b>	<b>1,748,683.59</b>	<b>79,071.23</b>	<b>75,720.76</b>	<b>41,794.53</b>
<b>Grand Total</b>	<b>2,500,998.40</b>	<b>2,011,038.92</b>	<b>210,140.41</b>	<b>142,668.13</b>	<b>137,150.94</b>
<b>Percentages</b>		<b>80.41%</b>	<b>8.40%</b>	<b>5.70%</b>	<b>5.48%</b>

District Health Department #10  
Cash Flow Analysis  
February 17, 2022

	February	March	April	May	June
Beginning Cash Balance	10,993,635	10,117,070	9,583,855	9,275,640	8,767,425
Receipts:					
State Funding	-	832,000	832,000	832,000	832,000
Billing Revenue	50,000	125,000	125,000	125,000	125,000
EH Fees	25,000	150,000	175,000	175,000	175,000
Appropriations	-	-	200,000	-	-
Other	<u>50,000</u>	<u>261,900</u>	<u>261,900</u>	<u>261,900</u>	<u>261,900</u>
Total	125,000	1,368,900	1,593,900	1,393,900	1,393,900
Expenses:					
Wages	462,932	925,864	925,864	925,864	925,864
Benefits	238,633	477,266	477,266	477,266	477,266
Other	<u>300,000</u>	<u>498,985</u>	<u>498,985</u>	<u>498,985</u>	<u>498,985</u>
Total	1,001,565	1,902,115	1,902,115	1,902,115	1,902,115
Total Cash & Investments	<u><u>10,117,070</u></u>	<u><u>9,583,855</u></u>	<u><u>9,275,640</u></u>	<u><u>8,767,425</u></u>	<u><u>8,259,210</u></u>

**DISTRICT HEALTH DEPARTMENT NO. 10**  
**Board of Health Listing**

**Accounts Payable**

	Amount	Date
21608 - 21690, 508398 - 508431	\$994,044.86	January - February
1291 - 1292		
Total Accounts Payable	\$994,044.86	

**Payroll**

68906 - 69394	\$676,751.36	January - February
Total Payroll	\$676,751.36	

**Total Expenditures**                      \$1,670,796.22

## Report to the Boards of Health

Jennifer Morse, MD, MPH, FAAFP, Medical Director

*Mid-Michigan District Health Department, Wednesday, , 2022*  
*Central Michigan District Health Department, Wednesday, , 2022*  
*District Health Department 10, Friday, , 2022*



### ***Post-COVID Conditions***

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Some people have new, ongoing, or recurring symptoms or health problems a month or more after their infection with COVID-19. These post-COVID conditions have been referred to by many names, including long COVID, post-acute COVID-19, long-term effects of COVID, post-acute COVID syndrome, chronic COVID, long-haul COVID, late sequelae, and others. In the area of research, the term post-acute sequelae of SARS-COV-2 infection (PASC) is typically used.

The frequency of long-term symptoms and health issues after COVID-19 ranges widely in research from 5 to 80%. It can be difficult to tell what symptoms are being caused by post-COVID conditions rather than other reasons. For those that were severely ill, there is a separate condition, known as post-intensive care syndrome, or PICS, that effects between 30 to 80% of people who stay in the ICU for any reason. This causes brain fog and weakness that can last more than a year. In addition, the social isolation from the pandemic and infection can lead to symptoms of depression, anxiety, and other mood issues. Since these post-COVID conditions still doesn't have a formal definition and our understanding of them is still changing as research continues, it is difficult for both patients and providers to diagnose and manage.

There are concerns that the huge numbers of infections caused by the recent Omicron surge will be followed by a second surge of people struggling with long term disability from post-COVID conditions. The majority of post-COVID conditions appear after mild cases of COVID-19, primarily because most cases of COVID-19 are mild. People may have symptoms cause by post-COVID conditions, but it is not recognized because they had no symptoms for their initial COVID-19 infection or tested negative for COVID-19 due to inaccurate or improper testing. Many people with post-COVID conditions are too ill to work or work as they once did. However, they are unable to qualify for disability or get disability in a timely manner.

Being fully vaccinated prior to COVID-19 infection has been shown to reduce your risk of developing post-COVID conditions by 2 to 10 times. It appears that unvaccinated people who get their first dose of vaccine within 12 weeks of being diagnosed with COVID-19 are likely to have post-COVID conditions compared to those that do not get vaccinated soon after their illness.

Post-COVID conditions have been found to affect the entire body, including the cardiovascular (heart and blood vessels), pulmonary (lungs and airways), renal (kidneys), dermatologic (skin), neurological (brain and nerves) and psychiatric (thinking and mood). These affects can be very serious, leading to many repeat hospitalizations, disability, and death. We don't know how long organ systems will be affected or how much this damage will affect people in the years to come.

The most commonly reported symptoms in people with post-COVID conditions have been:

- Shortness of breath or difficulty breathing
- Fatigue
- Poor endurance or post-exertional malaise (PEM) (which is the worsening of symptoms following

even minor physical or mental exertion; symptoms typically worsening 12 to 48 hours after activity and last for days or even weeks)

- “Brain fog,” or cognitive impairment
- Cough
- Chest pain
- Headache
- Palpitations and/or tachycardia
- Joint pain
- Muscle pain

- Numbness and tingling
- Abdominal pain
- Diarrhea
- Insomnia and other sleep difficulties
- Fever
- Lightheadedness
- Impaired daily function and mobility
- Pain
- Rash (e.g., urticaria)
- Mood changes
- Loss of smell or taste
- Menstrual irregularities

Below is a summary of the organ systems that can be effected, symptoms, and the suspected mechanisms causing these symptoms.

Organ Systems	Clinical Manifestations	Pathological features	Potential Underlying Biology
Respiratory system	<ul style="list-style-type: none"> <li>Chronic cough</li> <li>Shortness of breath (dyspnea), breathlessness</li> <li>Chest pain</li> <li>Reduced exercise capacity</li> <li>Acute respiratory diseases</li> <li>Fibrotic lung disease</li> <li>Bronchiectasis</li> <li>Pulmonary vascular disease</li> </ul>	<ul style="list-style-type: none"> <li>Congestive lungs with alveolitis</li> <li>Ground glass opacities</li> <li>Pulmonary lesions</li> <li>Mononuclear inflammatory cell (Monocyte and macrophage) and fibrinous exudate</li> <li>Inflammatory edema in respiratory mucosa and alveolar wall</li> <li>Platelet-fibrin thrombi</li> <li>Necrotising bronchiolitis, diffuse alveolar damage (DAD), hyaline membrane formation</li> </ul>	<ul style="list-style-type: none"> <li>Direct viral invasion <i>via</i> ACE-2 expression in the upper airway(goblet and ciliated epithelial cells), lower respiratory tract epithelium (type II alveolar), and pulmonary vasculature (arterial smooth muscle), and endothelial cells</li> <li>Residual virus in lungs post recovery</li> <li>Cytokine storm</li> <li>Activation of the complement system</li> <li>Microthrombi and macrothrombi formation</li> </ul>
Cardiovascular system	<ul style="list-style-type: none"> <li>Chest pain</li> <li>Palpitations</li> <li>Ventricular dysfunction</li> <li>Myocardial injury</li> <li>Myocarditis</li> <li>Cardiomyopathy</li> <li>Cardiac arrhythmias</li> <li>Myocardial ischemia</li> <li>Thromboembolism</li> </ul>	<ul style="list-style-type: none"> <li>Cardiac</li> <li>Increased troponin levels</li> <li>Low-grade myocardial inflammation</li> <li>Hypertrophied cardiomyocytes with inflammatory infiltrates</li> <li>Focal edema</li> <li>Interstitial hyperplasia</li> <li>Fibrosis</li> <li>Degeneration, necrosis and signs of lymphocytic myocarditis</li> <li>Hematologic</li> <li>Edematous changes in alveolar capillaries</li> <li>Fibrin thrombi</li> <li>Perivascular inflammatory infiltrates</li> </ul>	<ul style="list-style-type: none"> <li>Direct viral invasion <i>via</i> ACE-2 receptor in cardiac tissue (pericytes, endothelial cells, cardiomyocytes, cardiofibroblasts, and epicardial adipose cells, and vascular cells)</li> <li>Cytokine storm</li> <li>Hyperinflammation</li> <li>Endothelial dysfunction</li> <li>Leucocyte infiltration</li> <li>Formation of microvascular thrombosis</li> </ul>
Nervous system	<ul style="list-style-type: none"> <li>Fatigue</li> <li>Myalgia</li> <li>Anxiety</li> <li>Depression</li> <li>PTSD</li> <li>Sleep disorders</li> <li>Headaches</li> <li>Taste and smell impairment (ageusia and anosmia)</li> <li>Cognitive impairment (brain fog)</li> <li>Mood swings Seizures</li> <li>Ischemic or hemorrhagic stroke</li> <li>Encephalitis</li> </ul>	<ul style="list-style-type: none"> <li>Brain lesions</li> <li>Hyperemia, edema and neuronal degeneration</li> <li>Demyelination</li> <li>Acute hypoxic ischemic injury</li> </ul>	<ul style="list-style-type: none"> <li>Proposed SARS-COV-2 viral invasion by breaching blood-brain barrier or through olfactory nerves</li> <li>Hypoxia</li> <li>Cytokine storm</li> <li>Hyperinflammation</li> <li>Coagulation abnormalities</li> <li>Endothelial dysfunction</li> </ul>
Urinary system/ Kidney	<ul style="list-style-type: none"> <li>Acute kidney injury</li> <li>Albuminuria</li> <li>Proteinuria</li> <li>Hematuria</li> </ul>	<ul style="list-style-type: none"> <li>Diffuse proximal tubule injury</li> <li>Protein exudate in balloon cavity and thrombus in capillaries</li> <li>Non-specific fibrosis with lymphocytic infiltrates</li> <li>Acute tubular necrosis</li> </ul>	<ul style="list-style-type: none"> <li>Direct viral invasion <i>via</i> positive ACE-2 expression in kidney tissue (proximal tubule epithelial cells, glomerular endothelial cells, podocytes and kidney vasculature)</li> <li>Cytokine storm</li> <li>Systemic hypoxia</li> <li>Activation of complement components (C5b-9)</li> <li>Abnormal coagulation</li> </ul>
Digestive system/Liver	<ul style="list-style-type: none"> <li>Acute liver injury</li> <li>Cholestasis</li> <li>Elevated serum liver biomarkers (aspartate aminotransferase (AST), alanine aminotransferase (ALT), bilirubin)</li> </ul>	<ul style="list-style-type: none"> <li>Hepatic cell degeneration</li> <li>Multi-focal necrosis, indicative of cirrhosis</li> <li>Biliary plugs in the small bile duct</li> <li>Atypical lymphocytic infiltration in the portal tract</li> <li>Increased number of portal veins</li> <li>Activated Kupffer cells</li> <li>Smooth muscle fragmentation of portal vein</li> </ul>	<ul style="list-style-type: none"> <li>Direct viral invasion <i>via</i> ACE-2 expression in the hepatobiliary system (cholangiocytes, hepatocytes and bile duct cells)</li> <li>Systemic inflammation</li> <li>Hypoxia</li> <li>Drug-induced damage</li> <li>Coagulation abnormalities</li> </ul>
Digestive system/ Gastrointestinal tract	<ul style="list-style-type: none"> <li>Diarrhea</li> <li>Decreased appetite</li> <li>Nausea/Vomiting</li> <li>Abdominal pain</li> <li>Gastrointestinal bleeding</li> <li>Anorexia</li> </ul>	<ul style="list-style-type: none"> <li>Stenosis of small intestine</li> <li>Segmental dilatation</li> <li>Degeneration, necrosis and shedding in the gastrointestinal mucosa</li> <li>Inflammatory infiltrates</li> </ul>	<ul style="list-style-type: none"> <li>Direct viral invasion <i>via</i> ACE-2 expression in digestive tract (small intestinal enterocytes)</li> <li>Alteration of intestinal microbial flora</li> <li>Cytokine storm</li> </ul>
Reproductive system/Testis	<ul style="list-style-type: none"> <li>Orchitis</li> <li>Infertility</li> <li>Sterility</li> </ul>	<ul style="list-style-type: none"> <li>Leucocyte infiltration</li> <li>Edematous testicular cells</li> <li>Destruction of the seminiferous tubules</li> <li>Reduced spermatogenesis</li> </ul>	<ul style="list-style-type: none"> <li>Direct viral invasion <i>via</i> positive ACE-2 and TMPRSS2 expression in testicular cells</li> <li>Hyperinflammation</li> </ul>
Dermatological system/Skin	<ul style="list-style-type: none"> <li>Hair loss</li> <li>Erythematous rash</li> <li>Dermatitis</li> <li>Pseudo-chilblains on fingertips and toes</li> <li>Urticaria</li> <li>Chicken pox-like vesicles*</li> </ul>	<ul style="list-style-type: none"> <li>Vasculitis</li> <li>Dermatological lesions in trunk, hands and feet</li> <li>Perivascular inflammatory infiltrates in the superficial dermis with extravasation of red blood cells and intraluminal thrombi</li> <li>Capillary thrombosis with diffuse hemorrhage</li> <li>Parakeratosis, acanthosis, dyskeratotic keratinocytes, necrotic keratinocytes, acantholytic clefts along with lymphocytes satellitisms</li> </ul>	<ul style="list-style-type: none"> <li>Direct viral invasion <i>via</i> positive ACE-2 expression in endothelium, stratum basale, sebaceous and eccrine cells</li> </ul>



Most post-COVID conditions can be diagnosed clinically and managed by a primary care provider. Centers that manage post-COVID conditions also exist, mainly in large or academic centers, however they are currently overwhelmed with patients and too far from most that need them.

## "Long covid" in primary care

Assessment and initial management of patients with continuing symptoms

Post-acute covid-19 appears to be a multi-system disease, sometimes occurring after a relatively mild acute illness. Clinical management requires a whole-patient perspective. This graphic summarises the assessment and initial management of patients with delayed recovery from an episode of covid-19 that was managed in the community or in a standard hospital ward.

### An uncertain picture



The long term course of covid-19 is unknown. This graphic presents an approach based on evidence available at the time of publication.

However, caution is advised, as patients may present atypically, and new treatments are likely to emerge

### Managing comorbidities

Many patients have comorbidities including diabetes, hypertension, kidney disease or ischaemic heart disease. These need to be managed in conjunction with covid-19 treatment. Refer to condition specific guidance, available in the associated article by Greenhalgh and colleagues

### Safety netting and referral

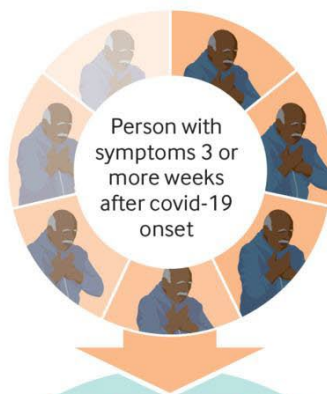
The patient should seek medical advice if concerned, for example:

- Worsening breathlessness
- $\text{PaO}_2 < 96\%$
- Unexplained chest pain
- New confusion
- Focal weakness

Specialist referral may be indicated, based on clinical findings, for example:

- Respiratory** if suspected pulmonary embolism, severe pneumonia
- Cardiology** if suspected myocardial infarction, pericarditis, myocarditis or new heart failure
- Neurology** if suspected neurovascular or acute neurological event

**Pulmonary rehabilitation** may be indicated if patient has persistent breathlessness following review



Person with symptoms 3 or more weeks after covid-19 onset

### Clinical assessment

**Full history**  
From date of first symptom

**Current symptoms**  
Nature and severity

Examination, for example:

- Temperature
- Heart rate and rhythm
- Blood pressure
- Respiratory examination
- Functional status
- Pulse oximetry
- Clinical testing

If indicated

Assess comorbidities

Social and financial circumstances

### Investigations

Clinical testing is not always needed, but can help to pinpoint causes of continuing symptoms, and to exclude conditions like pulmonary embolism or myocarditis. Examples are provided below:

#### Blood tests

- Full blood count
- Electrolytes
- Liver and renal function
- Troponin
- C reactive protein
- Creatine kinase
- D-dimer
- Brain natriuretic peptides
- Ferritin – to assess inflammatory and prothrombotic states

#### Other investigations

- Chest x ray
- Urine tests
- 12 lead electrocardiogram

### Social, financial, and cultural support

Prolonged covid-19 may limit the ability to engage in work and family activities. Patients may have experienced family bereavements as well as job losses and consequent financial stress and food poverty. See the associated article by Greenhalgh and colleagues for a list of external resources to help with these problems

### Medical management

- Symptomatic, such as treating fever with paracetamol
- Optimise control of long term conditions
- Listening and empathy
- Consider antibiotics for secondary infection
- Treat specific complications as indicated

### Self management

- Diet
- Sleep
- Quitting smoking
- Limiting alcohol
- Limiting caffeine
- Daily pulse oximetry
- Attention to general health
- Rest and relaxation
- Self pacing and gradual increase in exercise if tolerated
- Set achievable targets

### Mental health

In the consultation:

- Continuity of care
- Avoid inappropriate medicalisation
- Longer appointments for patients with complex needs (face to face if needed)

In the community:

- Community linkworker
- Patient peer support groups
- Attached mental health support service
- Cross-sector partnerships with social care, community services, faith groups



**Resources:**

- Excellent Collection of Information: <https://www.idsociety.org/covid-19-real-time-learning-network/disease-manifestations--complications/post-covid-syndrome/#guidelines>
- Find Post-COVID Clinics: <https://www.survivorcorps.com/pccc>

**Recommendations:**

1. Encourage COVID-19 vaccination as a way to prevent post-COVID conditions and long-term disability
2. Promote education of patients who have had COVID-19 of the possibility of post-COVID conditions and the need to follow up with their primary care provider should they continue to struggle with symptoms.
3. Promote continues research and education of healthcare providers regarding post-COVID conditions.

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**Report to the Boards of Health**  
Jennifer Morse, MD, MPH, FAAFP, Medical Director

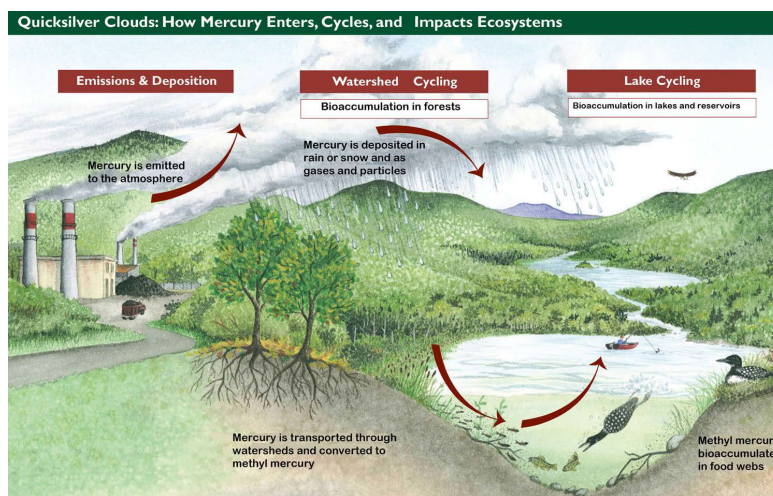


*Mid-Michigan District Health Department, Wednesday, December 18, 2019*  
*Central Michigan District Health Department, Wednesday, December 18, 2019*  
*District Health Department 10, Friday, December 20, 2019*

## Mercury

Mercury is a heavy liquid metal. Though we now know it has toxic properties, its many useful qualities have led to its use by humans for thousands of years. It has been used as a bright red pigment for paint, an aphrodisiac, contraceptive, sedative, laxative, treatment for syphilis, and detonator for explosives. It has been used in light bulbs, batteries, barometers, thermometers, thermostats, counter weights of clocks, and blood-pressure meters. In the 1800s, mercury was used to cure felt hats, exposing hat makers to mercury vapors for prolonged periods of time. This led to mercury poisoning characterized by severe and uncontrollable muscular tremors and twitching limbs, distorted vision, confused speech, hallucinations, and other psychotic symptoms. It is claimed this is where the term “mad as a hatter” comes from. A variety of other symptoms can occur from chronic mercury exposure, such as kidney failure, excessive salivation, rash, sweating, or gingivitis. When small children are exposed, acrodynia (“pink disease”) can occur, with body rash, swelling of arms and legs, irritated feelings in palms and soles, peeling of skin, irritability, sensitivity to light, fever, insomnia, and sweating. Acute poisoning, usually from inhaling large amounts of mercury vapor, can cause fatal lung irritation. Clinical signs of mercury poisoning appear when blood levels increase to 100 ug/L after methyl mercury poisoning. If a fetus is exposed to levels around 85 ug/L, there is a 5% increased risk of abnormal mental development.

Elemental mercury is released into the air when fossil fuels, such as coal, are burned. It is also released during the burning of solid waste and during smelting and mining. This mercury leaves the atmosphere and is deposited to the land and water. In the water, it is metabolized by microorganisms to create an organic form called methyl mercury. This methyl mercury bioaccumulates in bigger and bigger fish and becomes our main source of mercury exposure. Fish tested from 63 inland locations in Michigan were all found to be contaminated with mercury, ranging from 0.013 to 5.5 ppm (or 13 to 5500 ug/kg or 5.9 to 2494.76 mcg/pound). Concentrations in Coho and lake trout from Lake Michigan have been found to contain 20.6 to 139 ug/kg (or 9.34 to 63.05 ug/pound). Most commercial fish and seafood contain mercury as well.



Driscoll, C.T., D. Evers, K.F. Lambert, N. Kamman, T. Holsen, Y.-J. Han, C. Chen, W. Goodale, T. Butler, T. Clair, and R. Munson. Mercury Matters: Linking Mercury Science with Public Policy in the Northeastern United States. Hubbard Brook Research Foundation. 2007. Science Links Publication. Vol. 1, no. 3.

Thimerosal, also known as thiomersal, is an organic mercury compound that is metabolized to ethylmercury and thiosalicylate. If eaten, it is cleared from the body much more quickly than methyl mercury. Until 1999, thimerosal was used as a preservative in numerous licensed vaccines in the United States. It is required that a preservative be added to multi-dose vials of vaccines to prevent bacterial or fungal contamination. In the late 1990s, there was increasing controversy about thimerosal in vaccines being linked to autism and other neurodevelopmental disorders in children. Despite no evidence to support this claim, the U.S. Public Health Service recommended

thimerosal be removed from pediatric vaccines. Due to this recommendation, every childhood vaccine (except multi-dose influenza vaccine) that had an expiration date later than 2003 has not contained thimerosal.

In 2004, the National Academy of Sciences Institute of Medicine (now known as the National Academy of Medicine) reviewed a large body of evidence that found no support of a relationship between thimerosal-containing vaccines and autism. The European Medicines Agency also found no evidence of harm. Denmark eliminated thimerosal from vaccines in 1991, and actually saw increased rates of autism beginning several years later. Since thimerosal has been removed from childhood vaccines in the United States, autism prevalence has increased here as well; supporting that thimerosal is not related to the cause of autism.



Other possible causes of mercury exposure are inhalation of fumes. This can happen after an accidental spill or misuse of mercury (young person playing with elemental mercury, adults using it to recover gold or silver from jewelry, etc.). Mercury vapor is invisible, has no odor, and is readily absorbed by the lungs when inhaled. These things all make it very dangerous. Though the use of mercury has been discontinued in most products, many still have it in their homes. Dial thermostats, old thermometers, grandfather clocks, barometers, old blood pressure cuffs are just a few things we may have in homes that contain mercury. Many find jars of mercury in attics and basements of loved one's home or as they move into a new home. It is very important that this old mercury be handled properly. If mercury spills in your home, do not vacuum or sweep it up. Get all the people and pets out of the room; open doors and windows to allow ventilation of the vapor. Cover the

area with plastic if possible and call for more advice (see [www.mi.gov/mercury](http://www.mi.gov/mercury)).

### Blood Total Mercury (2003 – 2016)

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey (NHANES)

Categories (Survey Years)	Geometric Mean in µg/L
Age 1-5 years (2011 - 2012)	0.262
Age 6-11 years (2011 - 2012)	0.330
Age 12-19 years (2015 - 2016)	0.395
Age 20+ years (2015 - 2016)	0.810
Total population (2015 - 2016)	0.678

**Table 5-12. Estimated Average Daily Intake and Retention of Total Mercury and Mercury Compounds in the General Population**

Source of exposure	Elemental mercury vapor	Inorganic mercury compounds	Methylmercury
Air	0.030 (0.024)	0.002 (0.001)	0.008 (0.0064)
Food			
Fish	0	0.600 (0.042)	2.4 (2.3)
Non-fish	0	3.6 (0.25)	0
Drinking water	0	0.050 (0.0035)	0
Dental amalgams	3.8–21 (3–17)	0	0
Total	3.9–21 (3–17)	4.3 (0.3)	2.41 (2.31)

Note: Values given are the estimated average daily intake (in µg/day) for adults in the general population who are not occupationally exposed to mercury; the figures in parentheses represent the estimated amount retained in the body of an adult.

Source: WHO 1990, 1991

Thimerosal Content of Available FDA-Approved Seasonal Influenza Vaccines		
Vaccine	Tradename (Manufacturer)	Thimerosal Status Concentration**(Mercury)
Trivalent Influenza Vaccine	Afluria (multi-dose presentation) Seqirus Pty Ltd	0.01% (24.5 mcg/0.5 mL dose)
	Fluvirin (multi-dose presentation) Seqirus Vaccines Ltd	0.01% (25 mcg/0.5 mL dose)
	Fluvirin (single-dose presentation) Seqirus Vaccines Ltd	Trace (<1 mcg/0.5mL dose) <sup>1</sup>
	Afluria Quadrivalent (multi-dose presentation) Seqirus Pty Ltd	0.01% (24.5 mcg/0.5 mL dose)

Thimerosal Content of Available FDA-Approved Seasonal Influenza Vaccines		
Vaccine	Tradename (Manufacturer)	Thimerosal Status Concentration**(Mercury)
Quadrivalent Influenza Vaccine	FluLaval Quadrivalent (multi-dose presentation) vID Biomedical Corporation of Quebec	0.01% (25 mcg/0.5 mL dose) <sup>2</sup>
	Fluzone Quadrivalent (multi-dose presentation) Sanofi Pasteur Inc.	0.01% (12.5 mcg/0.25 mL dose, 25 mcg/0.5 mL dose) <sup>3</sup>
Japanese Encephalitis	JE-Vax (Single dose vial) Sanofi Pasteur	0.0007%
Meningococcal	Menomune-ACYW135 (Diluent for Multi-dose) Sanofi Pasteur	0.01% (24.5 mcg/0.5 mL dose)
Tetanus and Diphtheria Toxoids adsorbed	Td (Single dose vial) MassBiologics	* (≤0.3 mcg/0.5 mL dose*)

\*\*Thimerosal is approximately 50% mercury (Hg) by weight. A 0.01% solution (1 part per 10,000) of thimerosal contains 50 µg (micrograms) of Hg per 1 mL dose or 25 µg of Hg per 0.5 mL dose.

<sup>1</sup> The term "trace" has been taken in this context to mean 1 microgram of mercury per dose or less

<sup>2</sup> Individuals 6 months of age and older receive a full-dose of vaccine, i.e., 0.5 mL

<sup>3</sup> Children 6 months of age to less than 3 years of age receive a half-dose of vaccine, i.e., 0.25 mL; children 3 years of age and older receive 0.5 mL dose

\* This product should be considered equivalent to thimerosal-free products. This vaccine may contain trace amounts (<0.3 mcg) of mercury left after postproduction thimerosal removal; these amounts have no biological effect. JAMA 1999; 282(18) and JAMA 2000; 283(16).

## Resources

How to Replace a Mercury Thermostat [https://www.thermostat-recycle.org/hvac/how\\_to\\_replace\\_a\\_thermostat](https://www.thermostat-recycle.org/hvac/how_to_replace_a_thermostat)

Sign up to collect mercury thermostats for recycling <https://www.thermostat-recycle.org/signup/>

Mercury Spills and other information [www.mi.gov/mercury](http://www.mi.gov/mercury)

Advice about Fish (all), FDA <https://www.fda.gov/media/102331/download>

Michigan Eat Safe Fish [www.mi.gov/eatsafefish](http://www.mi.gov/eatsafefish)

## Recommendations

1. Pregnant and nursing woman as well as young children should be aware of the safe fish guidelines recommendations to limit their exposure to mercury.
2. Consider removing all sources of mercury in your home to prevent accidental spills.
3. There has never been evidence that thimerosal, a preservative used in multi-dose vaccines, causes autism or other neurological illness. As a precaution, it was removed from nearly every vaccine prior to 2003.

## References

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- Toxicological Profile for Mercury March 1999 <https://www.atsdr.cdc.gov/toxprofiles/TP.asp?id=115&tid=24>
- FDA <https://www.fda.gov/vaccines-blood-biologics/safety-availability-biologics/thimerosal-and-vaccines#cstat>
- Vaccine Safety Johns Hopkins Bloomberg School of Public Health <http://www.vaccinesafety.edu/thi-table.htm>
- Fourth National Report on Human Exposure to Environmental Chemicals, Updated Tables, January 2019 [https://www.cdc.gov/exposurereport/pdf/FourthReport\\_UpdatedTables\\_Volume1\\_Jan2019-508.pdf](https://www.cdc.gov/exposurereport/pdf/FourthReport_UpdatedTables_Volume1_Jan2019-508.pdf)
- Michigan Department of Environmental Quality Fish Contamination Monitoring Report: A Summary of Edible Portion Sampling Effort and Analytical Results with Recommendations for Updates to the Michigan Department of Community Health Eat Safe Fish Guide. December 2014 [https://www.michigan.gov/documents/deq/wrd-sw-as-fcmp-2014report\\_493073\\_7.pdf](https://www.michigan.gov/documents/deq/wrd-sw-as-fcmp-2014report_493073_7.pdf)
- Results of the Lake Michigan Mass Balance Study: February 2004. <https://www.epa.gov/sites/production/files/2015-08/documents/lmmbhg.pdf>

**District Health Department #10**

**BOARD OF HEALTH**

**Health Officer Report**

*February 25, 2022*

1. **COVID-19 Update:** Information on current case counts, vaccination efforts and changes to the Case Investigation/Contact Tracing processes will be shared at the meeting.
2. **PFAS Update:** Site specific updates will be shared at the Board meeting based upon recent and ongoing developments.
3. **Harm Reduction/SSP Stakeholder Meeting:** Facilitated a follow-up meeting with stakeholders in Manistee on expanding service through Harm Reduction Michigan including potentially implementing a SSP project in the community.
4. **CHNA/CHIP Planning:** Participated in a CHIP planning meeting for the MiThrive project as well as planning meetings for Spectrum Health Big Rapids, Gerber Memorial and Ludington hospitals.
5. **Ferris State University:** Reached out to FSU in an effort to foster and grow our professional relationship with the University. Exploring continuation of our Academic Health Department relationship as well as mentoring, staff development and workforce development opportunities for both DHD#10 staff and FSU staff and students.
6. **Proposed State Budget:** Governor Whitmer released her proposed budget plan earlier this month. An initial review doesn't reveal any funding directly proposed for local public health. There may be funding included in other categorical line items intended for LPH that will need to be identified in a deeper review.

*Respectfully submitted:*

Kevin Hughes, MA  
Health Officer



# Certificate of Appreciation

This certificate is presented to:

DISTRICT HEALTH DEPARTMENT #10

For continued participation and dedicated service to the State of Michigan  
SARS-CoV-2 Epidemiology – Wastewater Evaluation and Reporting Network

Awarded by:

Michigan Department of Health and Human Services

Date 1/28/22

Joe Coyle  
Joe Coyle, MPH  
Director, Bureau of Infectious Disease Prevention

Susan Peters  
Susan Peters, DVM, MPH  
Waterborne Disease Epidemiologist