WEEKLY EPIDEMIOLOGICAL REPORT

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Ministry of Health
231, de Saram Place, Colombo 01000, Sri Lanka
Tele: + 94 11 2695112, Fax: +94 11 2696583, E mail: epidunit@sltnet.lk
Epidemiologist: +94 11 2681548, E mail: chepid@sltnet.lk
Web: http://www.epid.gov.lk

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The success story of a Melioidosis clinic in a developing country: The Galle experience Part I

This is the first article of two in a series on "The success story of a melioidosis clinic in a developing country"

Melioidosis is caused by the Gram-negative bacterium, *Burkholderia pseudomallei*, which is an opportunistic pathogen. The disease is hyperendemic in Malaysia, Thailand, Singapore and northern Australia, while Sri Lanka is also considered endemic now, reporting a rising number of cases, mostly due to increased awareness among clinicians and microbiologists. Melioidosis is acquired by occupational or recreational exposure to surface water and mud and mostly affects high-risk groups with poorly controlled diabetes, chronic kidney disease, alcoholism, smoking, corticosteroid therapy, thalassaemia etc.

Sri Lanka was one of the first countries to report melioidosis, with a case of fatal sepsis in a European tea broker resident in Sri Lanka, in 1927. This was the first case from the Indian subcontinent and led to the country being identified as a possibly endemic area. However, this early account was not followed by any further cases due to limited surveillance. National surveillance for melioidosis was instituted after 2008 and is now being carried out in many centres.

The Galle experience

The Galle database of melioidosis patients started with a patient with septic arthritis who was culture-positive for *Burkholderia pseudomallei* in December 2014. Since then, 102 culture-positive patients and 55 serological-positive patients have been diagnosed. The rule of diagnosis was to suspect melioidosis on clinical grounds and send appropriate cultures and serology, even if the working diagnosis was another febrile illness of similar presentation, such as leptospirosis or tuberculosis. In our experience, we noted that treating patients with suspected leptospirosis initially and only considering melioidosis when there was poor response to therapy led to delayed diagnosis and excess case fatality. However, results of serology should be interpreted cautiously in endemic areas, where local populations may have raised melioidosis antibody levels. Therefore, serology should be compatible with the clinical picture while other possibilities are ruled out.

The specimens that were culture-positive for *B. pseudomallei* are shown in Figure 1.

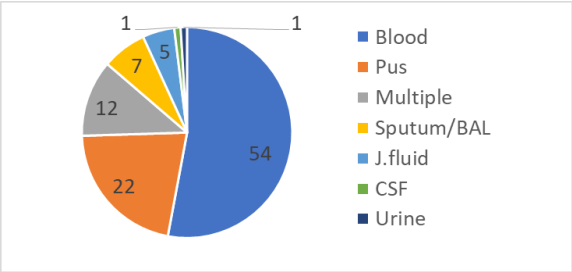

Figure 1 – Specimen types positive for *Burkholderia pseudomallei* (n=102)

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Epidemiology of culture-positive patients

When considering the culture-positive patients (n=102), males (78, 76%) and the 41-60 years age group (52, 51%) were affected, predominantly (Figure 2). Since the hospital is in Karapitiya, almost all the patients (bar three) were from the three districts of the Southern Province. The case fatality rate was 20% (20/102). Eight died before culture positivity, of whom four had been admitted multiple times for an undiagnosed febrile illness. Seventy-eight (76%) were discharged to clinic follow-up.

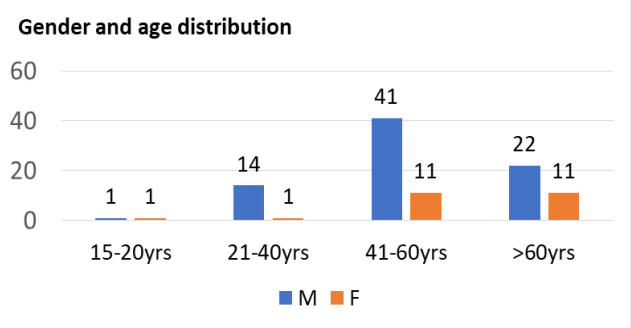

Figure 2 – Gender and age distribution

There were patients with abscesses including deep-seated ones (n=40), pneumonia (n=27), septic arthritis (n=8), pyelonephritis (n=8), and others including endocarditis (n=2). (Figure 3)

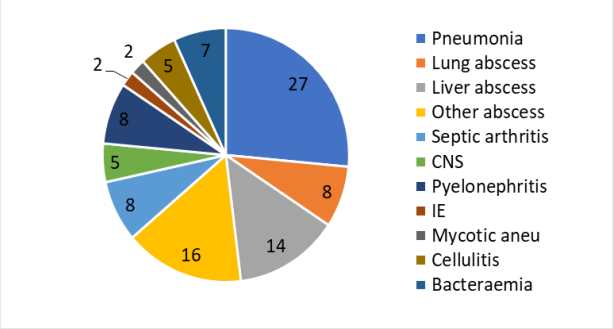

Figure 3 – Clinical presentations of culture-positive patients (n=102)

Exposure to soil was reported by 69 (68%) being farmers, estate or manual workers (n=22, n=24), gardening (n=18) or playing in mud (n=4). There were six fishermen, six retired soldiers who fought on the war front >10 years back, four tsunami victims in 2004 and twelve flood victims. There were eight tractor or lorry drivers involved in sand loading and transport of soil-contaminated goods. Two acquired the disease after near-drowning. Two chefs denied any sort of exposure to soil or contaminated water. (Figure 4).

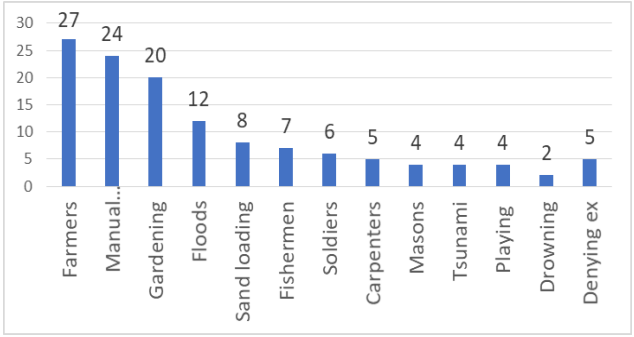

Figure 4 – Exposure to mud/soil/water

Compiled by:

Dr.Bhagya Piyasiri,
Consultant Microbiologist
TH Karapitiya

Dr. Krishantha Jayasekera
Consultant Physician
TH Karapitiya

Dr. Enoka Corea
Professor of Microbiology
Faculty of Medicine
Colombo

References:

- Corea EM, de Silva AD, Thevanesam V. Melioidosis in Sri Lanka. Trop Med Infect Dis. 2018 Feb 21;3(1):22. doi: 10.3390/tropicalmed3010022. PMID: 30274420; PMCID: PMC6136624

Table 1 : Water Quality Surveillance
Number of microbiological water samples September 2024

District	MOH areas	No: Expected *	No: Received
Colombo	18	108	**28**
Gampaha	15	90	**NR**
Kalutara	13	78	**54**
Kalutara NIHS	2	12	**23**
Kandy	23	138	**39**
Matale	13	78	**1**
Nuwara Eliya	13	78	**3**
Galle	20	120	**150**
Matara	17	102	**51**
Hambantota	12	72	**9**
Jaffna	14	84	**156**
Kilinochchi	4	24	**20**
Mannar	5	30	**0**
Vavuniya	4	24	**49**
Mullatvu	6	36	**2**
Batticaloa	14	84	**33**
Ampara	7	42	**10**
Trincomalee	12	72	**0**
Kurunegala	29	174	**45**
Puttalam	13	78	**NR**
Anuradhapura	23	138	**3**
Polonnaruwa	9	54	**3**
Badulla	16	96	**0**
Moneragala	11	66	**26**
Rathnapura	20	120	**64**
Kegalle	11	66	**18**
Kalmunai	13	78	**0**

* No of samples expected (6 / MOH area / Month)
NR = Return not received

To be Continue....

Table 1: Selected notifiable diseases reported by Medical Officers of Health 05th – 11th Oct 2024 (41st Week)

RDHS	Dengue Fever		Dysentery		Encephalitis		En. Fever		F. Poisoning		Leptospirosis		Typhus F.		Viral Hep.		H. Rabiies		Chickenpox		Meningitis		Leishmania-		Tuberculosis		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	172	9552	2	35	0	11	1	48	0	22	14	431	0	8	0	9	0	0	9	467	0	35	0	2	59	1749	**100**	**100**
Gampaha	120	4491	0	37	2	33	0	14	0	77	26	654	0	11	0	9	0	0	8	370	5	119	0	23	21	981	**86**	**100**
Kalutara	44	2369	0	29	0	2	1	34	1	37	27	703	0	8	0	10	0	1	10	529	0	54	0	1	0	493	**100**	**100**
Kandy	59	3811	0	34	0	5	0	9	2	59	5	218	0	29	0	11	0	2	13	350	0	13	8	54	16	528	**96**	**100**
Matale	32	692	1	14	0	1	0	8	1	26	3	88	1	5	1	8	0	0	3	134	6	19	14	292	2	104	**100**	**100**
Nuwara Eliya	4	310	2	123	0	7	0	10	2	204	0	150	1	39	0	9	0	0	5	218	1	17	0	1	7	223	**100**	**100**
Galle	35	1812	0	45	1	22	0	12	3	98	40	750	2	107	0	10	0	1	18	686	6	79	0	3	13	367	**90**	**100**
Hambantota	11	736	2	28	1	4	0	5	0	46	11	417	0	46	0	6	0	2	5	273	1	27	2	425	0	131	**100**	**100**
Matara	46	965	1	10	0	6	0	2	2	28	19	449	0	24	2	18	0	0	7	317	1	69	5	101	3	142	**100**	**100**
Jaffna	10	5271	0	58	0	2	0	26	0	35	1	18	4	469	0	7	0	1	8	203	1	29	0	1	9	218	**93**	**93**
Kilinochchi	0	290	0	17	0	0	0	2	0	2	0	18	0	11	0	0	0	2	1	12	0	6	0	1	0	25	**100**	**100**
Mannar	2	282	2	13	0	0	0	1	2	6	0	23	0	13	0	1	0	0	0	10	0	5	0	1	1	56	**100**	**100**
Vavuniya	1	167	0	13	0	1	0	2	1	22	1	92	0	5	0	4	0	0	1	40	1	23	0	9	0	34	**100**	**100**
Mullaitivu	1	205	1	9	0	0	0	0	0	18	0	68	0	11	0	0	0	2	0	7	0	5	3	13	3	30	**100**	**100**
Batticaloa	10	1447	4	115	1	14	0	7	1	60	2	67	0	2	1	21	0	2	10	121	1	45	0	4	2	133	**100**	**100**
Ampara	4	235	1	30	0	3	0	0	4	23	3	171	0	2	0	5	0	1	4	109	1	35	1	22	2	102	**100**	**100**
Trincomalee	5	637	0	16	0	1	0	3	0	9	0	136	0	12	0	3	0	0	0	78	1	21	1	18	5	105	**100**	**100**
Kurunegala	16	1996	0	47	1	34	0	3	0	351	17	563	1	28	0	7	0	4	22	493	5	238	28	535	6	410	**97**	**100**
Puttalam	11	988	2	10	0	4	0	3	0	3	3	216	0	34	0	4	0	1	2	118	3	64	0	33	0	182	**92**	**100**
Anuradhapura	10	664	0	32	0	6	0	2	4	43	7	385	0	30	0	14	0	1	9	253	3	52	19	748	4	234	**91**	**100**
Polonnaruwa	10	350	0	21	0	3	0	1	0	25	3	237	0	2	1	52	0	0	2	131	0	29	5	439	0	91	**100**	**100**
Badulla	9	752	3	34	0	6	0	7	0	56	8	441	1	39	3	42	0	0	9	319	2	34	1	38	3	200	**100**	**100**
Monaragala	34	775	0	18	0	4	0	3	0	85	3	594	0	31	1	43	0	1	9	146	4	93	5	213	4	105	**100**	**100**
Ratnapura	45	2413	2	99	0	7	0	8	2	29	44	1621	2	27	1	27	0	2	13	320	2	116	0	148	9	297	**85**	**100**
Kegalle	13	1769	2	22	0	8	1	10	0	13	18	647	0	30	1	12	0	1	11	744	3	63	0	24	13	305	**82**	**100**
Kalmunai	3	679	0	17	0	0	0	2	0	28	0	66	0	5	0	4	0	0	6	203	0	16	0	0	4	118	**100**	**100**
SRILANKA	**707**	**43658**	**25**	**926**	**6**	**184**	**3**	**222**	**25**	**1405**	**255**	**9223**	**12**	**102**	**11**	**336**	**0**	**24**	**185**	**6651**	**47**	**1306**	**92**	**3149**	**186**	**7297**	**97**	**99**

Source: Weekly Returns of Communicable Diseases (esurvillance.epid.gov.lk). T=Timeliness refers to returns received on or before 11th Oct, 2024 Total number of reporting units 358 Number of reporting units data provided for the current week: 358 **C****-Completeness

A = Cases reported during the current week. B = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

05th – 11th Oct 2024 (41st Week)

Disease	No. of Cases by Province									Number of cases during current week in 2024	Number of cases during same week in 2023	Total number of cases to date in 2024	Total number of cases to date in 2023	Difference between the number of cases to date in 2024 & 2023
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	02	01	00	00	00	00	00	00	03	01	60	74	-18.9%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	00	00	00	03	00	01	00	00	04	05	230	196	17.3 %
Measles	00	00	00	00	00	00	00	00	00	00	15	285	614	-53.5%
Rubella	00	00	00	00	00	00	00	00	00	00	01	02	07	-71.4%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	02	0 %
Tetanus	00	00	00	00	00	00	00	00	00	00	00	05	06	-16.6 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Enceph-alitis	00	00	00	00	00	00	00	00	00	00	00	09	02	350 %
Whooping Cough	00	00	00	00	01	00	00	00	00	02	00	56	07	700 %

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

RDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna, **KN**: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam, **AP**: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS =**Congenital Rubella Syndrome

NA = Not Available

Take prophylaxis medications for leptospirosis during the paddy cultivation and harvesting seasons.

It is provided free by the MOH office / Public Health Inspectors.

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ON STATE SERVICE

Dr. H. A. Tissera
Actg. CHIEF EPIDEMIOLOGIST
EPIDEMIOLOGY UNIT
231, DE SARAM PLACE
COLOMBO 10