

## SUPPLEMENT

### Contents

|   |    |
|---|----|
| Supplementary Material 1: Literature review.....                        | 2  |
| Supplementary Material 2: PIMS-TS definition .....                      | 10 |
| Supplementary Material 3: Latent Class Analysis (LCA).....              | 11 |
| Supplementary Material 4: All cases reported via BPSU Surveillance..... | 12 |
| Children not classified as PIMS-TS, Kawasaki or TSS .....               | 25 |
| Supplementary Material 5: Clinical suspicion .....                      | 26 |

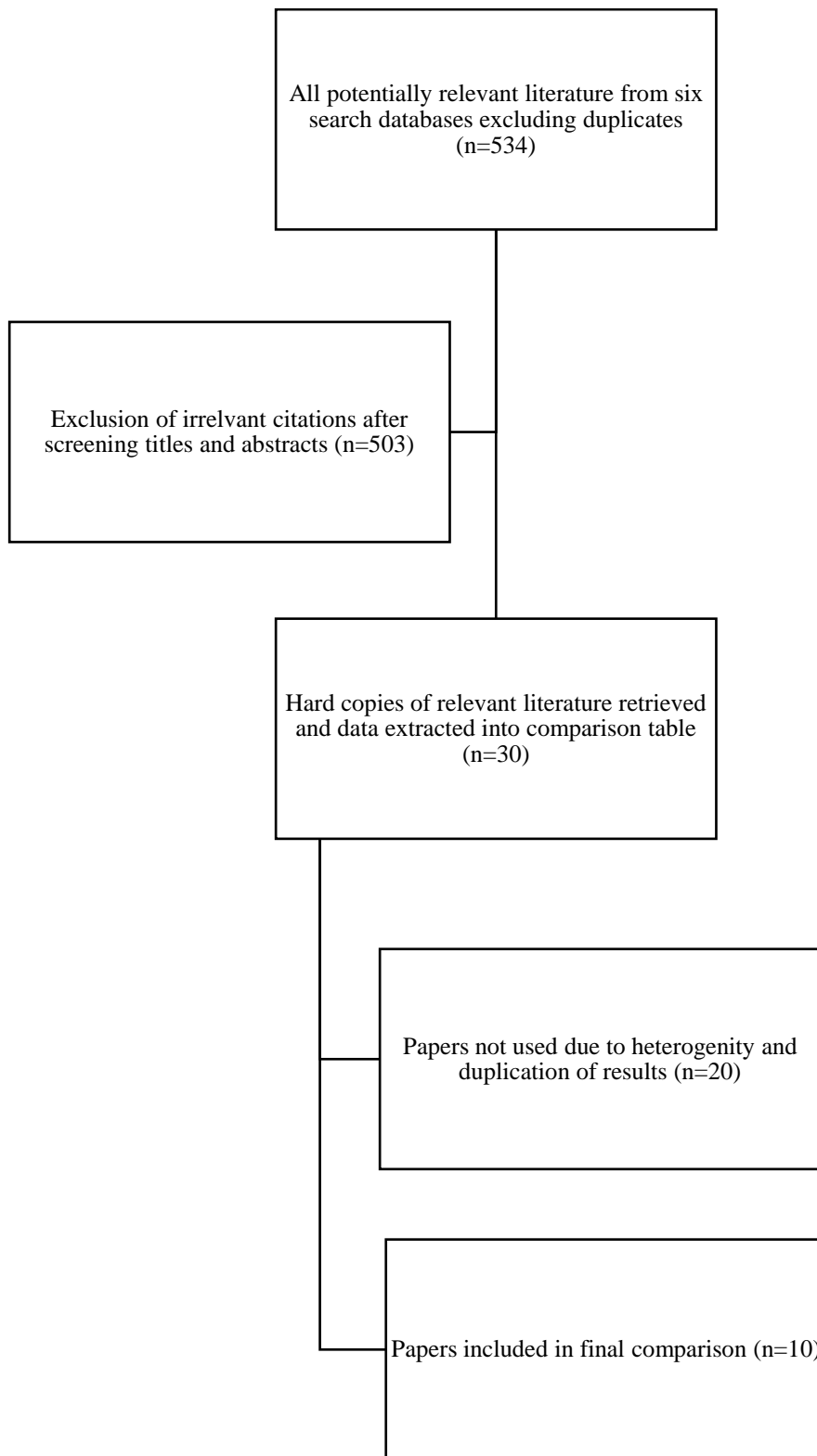
## Supplementary Material 1: Literature review

### Methods: Literature review

The titles and abstracts were screened for relevance by two independent researchers and 30 studies were selected for data extraction. Following data extraction, the studies were appraised based upon their homogeneity to the BPSU dataset as well as their data sources. There were several reasons why the studies were not included in the final comparison – firstly, many of the studies were evidence systematises or systematic reviews, and as they used studies also included in the data extraction table, they were not included to prevent the duplication of patient data and results which would have caused a bias in the dataset. Furthermore, there were several studies with small samples sizes ( $n < 20$ ) which would not have been a fair comparison to the BPSU dataset ( $n = 343$ ). Finally studies that were superseded by later analysis in the same country were again not included to prevent the duplication of data, this included one study from the United Kingdom as we did not have access to their NHS numbers in order to ensure individual cases. After individual assessment of all 30 studies – ten were evaluated to be a fair comparison to the BPSU dataset, see Figure S1. Full details of extracted data from the ten studies compared to the data collected by the BPSU are available in Tables S1.2 and S1.3.

**Table S1.1: Summary of databases searches and number of results.**

| Source                          | No. of results* |
|---------------------------------|-----------------|
| Embase                          | 383             |
| Medline                         | 381             |
| Scopus                          | 352             |
| Preprints (medRxiv and bioRxiv) | 30              |
| Google                          | 2               |
| Total after de-duplication      | 534             |



**Figure S1: Flow diagram explaining the process of identifying the selected comparison studies.**

## Literature search strategy

Database(s): Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Daily and Versions(R) 1946 to September 04, 2020

Search Strategy:

| #  | Searches   | Results |
|----|--|---------|
| 1  | exp coronavirus/   | 29785   |
| 2  | exp Coronavirus Infections/  | 31371   |
| 3  | ((corona* or corono*) adj1 (virus* or viral* or virinae*)).tw,kw.  | 1649    |
| 4  | (coronavirus* or coronovirus* or coronavirinae* or CoV or HCoV*).tw,kw.  | 38721   |
| 5  | ("2019-nCoV" or 2019nCoV or nCoV2019 or "nCoV-2019" or "COVID-19" or COVID19 or "CORVID-19" or CORVID19 or "WN-CoV" or WNCov or "HCoV-19" or HCoV19 or "2019 novel*" or Ncov or "n-cov" or "SARS-CoV-2" or "SARSCoV-2" or "SARSCoV2" or "SARS-CoV2" or SARSCov19 or "SARS-Cov19" or "SARSCov-19" or "SARS-Cov-19" or Ncovor or Ncorona* or Ncorono* or NcovWuhan* or NcovHubei* or NcovChina* or NcovChinese* or SARS2 or "SARS-2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus2").tw,kw. | 48902   |
| 6  | or/1-5   | 71568   |
| 7  | exp Mucocutaneous Lymph Node Syndrome/   | 6069    |
| 8  | kawasaki.tw,kw.  | 7467    |
| 9  | KD.tw,kw.  | 62114   |
| 10 | "lymph node syndrome".tw,kw.   | 479     |
| 11 | (inflammatory or hyperinflammatory or "hyper inflammatory").tw,kw.   | 688129  |
| 12 | "cytokine storm".tw,kw.  | 1736    |
| 13 | exp Cytokine Release Syndrome/   | 253     |
| 14 | CSS.tw,kw.   | 8110    |
| 15 | ("Cytokine release syndrome" or CRS).tw,kw.  | 11657   |
| 16 | "PIMS TS".tw,kw.   | 15      |
| 17 | exp Shock, Septic/   | 22620   |
| 18 | "toxic shock".tw,kw.   | 4611    |
| 19 | "septic shock".tw,kw.  | 22688   |
| 20 | TSS.tw,kw.   | 5849    |
| 21 | MIS-C.tw,kw.   | 69      |
| 22 | or/7-21  | 810285  |
| 23 | exp infant/ or exp child/ or Adolescent/ or minors/ or puberty/ or pediatrics/   | 3588732 |
| 24 | (Infant* or infancy or Newborn* or Baby* or Babies or Neonat* or Preterm* or premature* or low birth weight or VLBW or LBW or Postmatur* or Child* or Schoolchild* or (School adj age*) or Preschool* or Kid or kids or Toddler* or Teen* or Boy* or Girl* or Minor* or Pubert* or Pubescen* or Prepubescen* or adolescent or Paediatric* or Pediatric* or Peadiatric* or youth* or "young people").tw,kw.   | 2761251 |
| 25 | 23 or 24   | 4615989 |
| 26 | 6 and 22 and 25  | 435     |
| 27 | limit 42 to yr="2019 -Current"   | 381     |

Database(s): Embase 1974 to 2020 September 04

Search Strategy:

| # | Searches   | Results |
|---|--|---------|
| 1 | exp Coronavirinae/   | 18643   |
| 2 | ((corona* or corono*) adj1 (virus* or viral* or virinae*)).tw,kw.  | 1399    |
| 3 | (coronavirus* or coronovirus* or coronavirinae* or CoV or HCoV*).tw,kw.  | 40240   |
| 4 | ("2019-nCoV" or 2019nCoV or nCoV2019 or "nCoV-2019" or "COVID-19" or COVID19 or "CORVID-19" or CORVID19 or "WN-CoV" or WNCov or "HCoV-19" or HCoV19 or "2019 novel*" or Ncov or "n-cov" or "SARS-CoV-2" or "SARSCoV-2" or "SARSCoV2" or "SARS-CoV2" or SARSCov19 or "SARS-Cov19" or "SARSCov-19" or "SARS-Cov-19" or Ncovor or Ncorona* or Ncorono* or NcovWuhan* or NcovHubei* or NcovChina* or NcovChinese* or SARS2 or "SARS-2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus2" or SARScoronavirus2 or "SARS-coronavirus-2" or "SARScoronavirus 2" or "SARS coronavirus2").tw,kw. | 46327   |
| 5 | or/1-4   | 68127   |
| 6 | exp mucocutaneous lymph node syndrome/   | 11685   |

|    |   |         |
|----|---|---------|
| 7  | kawasaki.tw,kw.   | 10423   |
| 8  | KD.tw,kw.   | 59037   |
| 9  | "lymph node syndrome*".tw,kw.   | 811     |
| 10 | (inflammatory or hyperinflammatory or "hyper inflammatory").tw,kw.  | 1003627 |
| 11 | "cytokine storm".tw,kw.   | 2420    |
| 12 | exp cytokine release syndrome/  | 3087    |
| 13 | CSS.tw,kw.  | 12962   |
| 14 | ("Cytokine release syndrome" or CRS).tw,kw.   | 18416   |
| 15 | "PIMS TS".tw,kw.  | 14      |
| 16 | exp septic shock/   | 51973   |
| 17 | "toxic shock".tw,kw.  | 5518    |
| 18 | "septic shock".tw,kw.   | 37059   |
| 19 | TSS.tw,kw.  | 8162    |
| 20 | MIS-C.tw,kw.  | 62      |
| 21 | or/6-20   | 1161322 |
| 22 | exp infant/   | 987878  |
| 23 | exp juvenile/   | 3445017 |
| 24 | exp "minor (person)"/   | 635     |
| 25 | exp puberty/  | 41314   |
| 26 | exp pediatrics/   | 107069  |
| 27 | (Infant* or infancy or newborn* or baby* or babies or neonat* or preterm* or premature* or "low birth weight" or VLBW or LBW or Postmatur* or Child* or schoolchild* or "school age*" or preschool* or kid or kids or toddler* or teen or boy or girl* or minor* or pubert* or pubesce* or prepubescen* or adolescent or paediatric* or pediatric* or peadiatric* or youth* or "young people").tw,kw. | 3368288 |
| 28 | or/22-27  | 4737205 |
| 29 | 5 and 21 and 28   | 441     |
| 30 | limit 29 to yr="2019 -Current"  | 383     |

### SCOPUS (searched 08/09/20)

TITLE-ABS-KEY( "2019-nCoV" OR 2019ncov OR ncov2019 OR "nCoV-2019" OR "COVID-19" OR covid19 OR "CORVID-19" OR corvid19 OR "WN-CoV" OR wncov OR "HCoV-19" OR hcov19 OR "2019 novel\*" OR ncov OR "n-cov" OR "SARS-CoV-2" OR "SARSCoV-2" OR "SARSCoV2" OR "SARS-CoV2" OR sarscov19 OR "SARS-Cov19" OR "SARSCov-19" OR "SARS-Cov19" OR ncover OR ncorona\* OR ncorono\* OR ncovwuhan\* OR ncovhubei\* OR ncovchina\* OR ncovchinese\* OR sars2 OR "SARS-2" OR sarscoronavirus2 OR "SARS-coronavirus-2" OR "SARScoronavirus 2" OR "SARS coronavirus2" OR sarscoronavirus2 OR "SARS-coronavirus-2" OR "SARScoronavirus 2" OR "SARS coronavirus2" ) AND TITLE-ABS-KEY ( kawasaki OR kda OR "lymph node syndrome" OR inflammatory or proinflammatory or "hyper inflammatory" OR "cytokine storm" OR CSS OR "Cytokine release syndrome" or CRS OR "pims ts" OR "toxic shock" OR "septic shock" OR TSS OR MIS-C ) AND TITLE-ABS-KEY(Infant\* OR infancy OR Newborn\* OR Baby\* OR Babies OR Neonat\* OR Preterm\* OR premature\* OR "low birth weight" OR VLBW OR LBW OR Postmatur\* OR Child\* OR Schoolchild\* OR "school age\*" OR Preschool\* OR Kid OR kids OR Toddler\* OR Teen\* OR Boy\* OR Girl\* OR Minor\* OR Pubert\* OR Pubescen\* OR Prepubescen\* OR adolescent OR Paediatric\* OR Pediatric\* OR Peadiatric\* OR youth\* OR "young people") (total 352)

### PREPRINTS (medRxiv and bioRxiv) (searched 19.05.02)

(COVID or nCoV or SARS or coronavirus) AND (Kawasaki or Cytokine or Lymph Node Syndrome) AND child (combination of terms used due to limitations of preprints search facility)

### Google search

Terms searched:

COVID or nCoV or SARS or coronavirus

Kawasaki

Cytokine

Lymph Node Syndrome

**Table S1.2: Summary of demographics and SARS-CoV-2 positivity among cases in included comparison studies, compared to the BPSU dataset.**

| Study  | Data Collection/<br>Study Type  | Country   | n   | Age  | Ethnicity  | Sex  | Underlying<br>Conditions /<br>Comorbidities  | Any positive SARS-<br>CoV-2 test   | SARS-<br>CoV-2<br>PCR<br>positive | SARS-CoV-2<br>Serology positive  | Died             |
|--|---|---|-----|--|--|--|--|--|-----------------------------------|--|------------------|
| <i>BPSU surveillance</i>                       | <i>Prospective, among &lt;16 years</i>                                  | <i>UK &amp; Ireland</i>   | 268 | <i>Median 8.2 years (IQR 4.0-12.1 years)</i>                   | <i>114 (43%) White, 63 (24%) Asian/Asian British, 60 (22%) Black African/ Caribbean / Black British, 11 (4%) Mixed, 10 (4%) other, 10 missing</i>  | <i>161 (60%) male, 90 (34%) female</i>       | <i>84 (31%) underlying condition and/or overweight [49 (18%) underlying medical conditions; 36 (13%) overweight]</i> | <i>94/265 (35%) [31 of 170 (18%) with no positive test had a household member with either confirmed or suspected COVID-19]</i> | <i>39/264 (15%)</i>               | <i>75/118 (64%)</i>  | <i>3 (1.0%)</i>  |
| <i>Antunez-Montes et al (2020)<sup>9</sup></i> | <i>Pre-print. Ambispective multicentre cohort study among ≤18 years</i> | <i>Latin America (Mexico, Colombia, Peru, Costa Rica, Brasil)</i> | 95  | <i>Median 7 years (range 1 month-17 years)</i>                 | <i>All mestizos (Latin living in South America)</i>  | <i>52 (54.7%) male, 43 (45.3%) female</i>    | <i>11 (11.6%)</i>  | <i>95 (100%)</i>   | <i>23 (24.2%)</i>                 | <i>72/88 (81.8%)</i>   | <i>2 (2.1%)</i>  |
| <i>Belhadjer et al (2020)<sup>7</sup></i>      | <i>Retrospective</i>  | <i>France/Switzerland</i>   | 35  | <i>Median 10 years (range 2-16 years)</i>                      | <i>Not reported</i>  | <i>18 (51.4%) male, 17 (48.6%) female</i>    | <i>10 (28%)</i>  | <i>31 (88.5%)</i>  | <i>14 (40.0%)</i>                 | <i>30 (85.7%)</i>  | <i>0</i>         |
| <i>Dhanalakshmi et al (2020)<sup>15</sup></i>  | <i>Prospective &amp; retrospective</i>                                  | <i>India (Chennai)</i>  | 19  | <i>Median 6 years (range 1-16 years)</i>                       | <i>19 (100%) Indian</i>  | <i>8 (42.1%) male, 11 (57.9%) female</i>     | <i>1 (5%)</i>  | <i>11/15 (73.3%)</i>   | <i>4/15 (26.7%)</i>               | <i>8/15 (53.3%)</i>  | <i>0</i>         |
| <i>Godfred-Cato et al (2020)<sup>10</sup></i>  | <i>Retrospective</i>  | <i>USA</i>  | 570 | <i>Median 8 years (range 2 weeks–20 years, IQR 4-12 years)</i> | <i>187 Hispanic (40.5%), 153 Black non-hispanic (33.1%), 61 white non-hispanic (13.2%), 26 Other (5.6%), 18 Multiple (3.9%), 13 Asian (2.8%), 3 American Indian (0.6%), 1 Native Hawaiian (0.2%)</i> | <i>316 (55.4%) male, 254 (44.5%) female</i>  | <i>146 (25.6%) Obese, 48 (8.4%) Chronic lung disease</i>   | <i>565 of 565 tested (100%); (positive test OR known COVID-19 exposure an inclusion criteria)</i>                              | <i>418 (74.0%)</i>                | <i>302 (53.5%)</i>   | <i>10 (1.8%)</i> |
| <i>Jain et al (2020)<sup>14</sup></i>          | <i>Prospective &amp; retrospective</i>                                  | <i>India (Mumbai)</i>   | 23  | <i>Median 7.2 years (range 0.8-14 years)</i>                   | <i>Not reported</i>  | <i>11 (47.8%) male, 12 (52.2%) female</i>    | <i>-</i>   | <i>-</i>   | <i>9 (39.1%)</i>                  | <i>5 (33.3%)</i>   | <i>1 (4.3%)</i>  |
| <i>Moraleda et al (2020)<sup>3</sup></i>       | <i>Multicentre national study</i>                                       | <i>Spain</i>  | 31  | <i>Median 7.6 years (IQR 4.5-11.5 years)</i>                   | <i>Not reported</i>  | <i>18/31 (58.1%) male, 13 (41.9%) female</i> | <i>4 (12.9%) Asthma, 3 (9.7%) Obese. 1 Chronic cardiac disease, 1 chronic haematologic disease, 1 neoplasm</i>       | <i>30 (81.1%)</i>  | <i>17 (54.8%)</i>                 | <i>19 (61.3% of 31, not clear how many tested for IgM / IgG): IgM 10/17 (58.8%), IgG 19/21 (90.4%)</i> | <i>1 (3.2%)</i>  |
| <i>Pouletty et al (2020)<sup>8</sup></i>       | <i>Retrospective</i>  | <i>France (Paris - 7 hospitals)</i>                               | 16  | <i>Median 10 years (IQR 4.7 to 12.5)</i>                       | <i>'Origin': 10 (62.5%) Afro-Caribbean, 2 (12.5%) Middle Eastern, 4 (25.0%) European (presumably white)</i>  | <i>8 (50.0%) male, 8 (50.0%) female</i>      | <i>6 (37.5%): 2 (12.5%) Asthma 4 (25.0%) Overweight</i>  | <i>15 (93.8%)</i>  | <i>12 (75.0%)</i>                 | <i>8 (50.0%)</i>   | <i>0</i>         |
| <i>Torres et al (2020)<sup>11</sup></i>        | <i>Retrospective/prospective study in children &lt;21 years</i>         | <i>Chile (Santiago)</i>   | 27  | <i>Median 6 years (range 0-14 years)</i>                       | <i>Not reported</i>  | <i>14(51.9%) male, 13(48.1%) female</i>      | <i>7 (25.9%)</i>   | <i>22 (81.5%)</i>  | <i>14 (51.9%)</i>                 | <i>10/13 (77%)</i>   | <i>0</i>         |

|   |               |  |    |   |   |                                   |   |            |              |                                     |                |
|---|---------------|--|----|---|---|-----------------------------------|---|------------|--------------|-------------------------------------|----------------|
| Toubiana <i>et al</i> (2020) <sup>5</sup> | Prospective   | France (Paris – one hospital, not inc. in Pouletty et al.) | 21 | Median 7.9 years (range 3.7-16.6 years) | 12 (57%) either Black African/Caribbean or Mixed with one parent Black African/Caribbean, 3 (14.3%) either Asian or Mixed with one parent Asian | 9 (42.9%) male, 12 (57.1%) female | 5 (23.8%) Overweight (BMI above 75 <sup>th</sup> centile) | 19 (90.5%) | 8/21 (38.1%) | 19/21 (90.5%)                       | 0              |
| Verdoni <i>et al</i> (2020) <sup>4</sup>  | Retrospective | Italy (Bergamo)  | 10 | Mean 7.5 years (SD 3.5)                 | Not reported  | 7 (70.0%) male, 3 (30.0%) female  | Mean BMI 19.11 kg/m <sup>2</sup> (SD 3.21)                | 8 (80.0%)  | 2 (20.0%)    | 8 (80.0%) IgG (3 also IgM positive) | None mentioned |

**Table S1.3: Summary of symptoms, system involvement and treatment among cases in included comparison studies, compared to the BPSU dataset.**

| Study   | n   | Shock   | Cardiovascular Involvement  | Dermatological Involvement   | Gastrointestinal Involvement  | Neurological Involvement                                    | Respiratory Involvement   | Mechanical ventilation  | ICU       | Kawasaki symptoms                                |
|---|-----|---|---|--|---|---|---|---|-----------|--|
| <i>BPSU surveillance</i>                        | 268 | 114 (43%) hypotension; 80 (30%) required inotropes        | 140 (52%)   | 141 (53%) any rash; 135 (50%) conjunctivitis   | 266 (99%) vomiting, diarrhoea or abdominal pain [144 (54%) diarrhoea; 147 (55%) vomiting] | 87 (32%) (seizure, confusion, drowsiness, coma or headache) | 48 (18%) had conventional ventilation, High Frequency Oscillation or CPAP; 69 (26%) cough   | 44 (16%) conventional ventilation or High Frequency Oscillation | 18 (44%)  | 24 (9%) complete KD                              |
| Antunez-Montes <i>et al</i> (2020) <sup>9</sup> | 95  | 14 (15%) required inotropes for shock                     | 11 (12%)  | -  | 43 (45%)  | -   | 34 (36%) suggestive pneumonia; 3 (3%) suggestive ARDS; 47 (49%) upper respiratory tract infection; 23 (24%) lower respiratory tract infection | 9 (9%)  | 20 (21%)  | -  |
| Belhadjer <i>et al</i> (2020) <sup>7</sup>      | 35  | 28 (80%) cardiogenic shock requiring inotropes            | 35 (100%)   | 20 (57%) skin rash; 31 (89%) bulbar conjunctivitis   | 29 (83%)  | 11 (31%) neurological signs                                 | 12 (34%) respiratory signs  | 22 (62%)  | 35 (100%) | 0 complete KD; 12 (34%) similar to incomplete KD |
| Dhanalakhmi <i>et al</i> (2020) <sup>15</sup>   | 19  | 10 (53%) hypotension; 6 (32%) required vasoactive support | 12 (63%)  | 14 (74%) mucocutaneous involvement; 9 (47%) conjunctivitis   | 8 (42%)   | 6 (31%)   | 8 (42%)   | 0   | 12 (63%)  | 7 (37%)  |
| Godfred-Cato <i>et al</i> (2020) <sup>10</sup>  | 570 | 202 (35%)   | 493 (86%)   | 404 (71%) rash, mucocutaneous lesions or conjunctivitis [315 (55%) rash; 276 (48%) conjunctivitis] | 518 (91%)   | 218 (38%)   | 359 (63%) [163 (29%) cough; 110 (19%) pneumonia; 34 (6%) ARDS]  | 69 (13%) intubation and mechanical ventilation                  | 364 (64%) | 28 (5%) complete KD                              |
| Jain <i>et al</i> (2020) <sup>14</sup>          | 23  | 15 (65%) shock  | 15 (65%) clinical myocarditis (LV dysfunction and/or elevated cardiac biomarkers) | 14 (61%) rash; 11 (48%) conjunctivitis   | 15 (65%) diarrhoea/vomiting; 12 (52%) abdominal pain                                      | -   | -   | 9 (39%)   | -         | 1 (4%) complete KD                               |
| Moraleda <i>et al</i> (2020) <sup>3</sup>       | 31  | 15 (48%) hypotension or shock                             | 25 (81%) myocardial dysfunction   | 23 (74%) rash or conjunctivitis  | 27 (87%) vomiting, diarrhoea or abdominal pain  | 4 (13%) altered consciousness or confusion                  | 11 (35%) cough; 8 (26%) shortness of breath   | 6 (19%) invasive mechanical ventilation                         | 20 (65%)  | 13 (42%) complete or incomplete KD               |
| Pouletty <i>et al</i> (2020) <sup>8</sup>       | 16  | 7 (44%) KDSS  | 11 (69%) echocardiography abnormalities   | 13 (81%) rash; 15 (94%) conjunctivitis   | 13 (81%)  | 9 (56%)   | 2 (12%) respiratory signs; 0 ARDS; 5 (31%) abnormal chest X-ray   | 2 (12%) invasive ventilation                                    | 7 (44%)   | 16 (100%)  |



|   |    |  |  |  |  |   |                          |          |          |   |
|---|----|--|--|--|--|---|--------------------------|----------|----------|---|
| Torres <i>et al</i> (2020) <sup>11</sup>  | 27 | 12 (44%) required inotropes                              | 12 (44%) pericardial effusion and/or myocardial dysfunction and/or coronary artery abnormalities | 14 (52%) rash; 13 (48%) conjunctival injection | 17(63%) abdominal pain; 17 (63%) diarrhoea; 13(48%) vomiting | -   | 7 (26%) cough            | 12 (44%) | 16 (59%) | 4 (15%) complete KD; 14 (52%) had at least one KD symptom |
| Toubiana <i>et al</i> (2020) <sup>5</sup> | 21 | 14 (67%) required inotropes; 12 (57%) KDSS               | 16 (76%) myocarditis; 10 (48%) pericardial effusions   | 16 (76%) rash; 17 (81%) conjunctival injection | 21 (100%)  | 6 (29%) headache, confusion or meningeal irritation | 3 (14%) pleural effusion | 11 (52%) | 17 (81%) | 11 (52%) complete KD; 10 (48%) incomplete KD              |
| Verdoni <i>et al</i> (2020) <sup>4</sup>  | 10 | 5 (50%) KDSS and hypotension; 2 (20%) required inotropes | 6 (60%)  | 9 (90%) rash; 9 (90%) conjunctivitis           | 6 (60%) diarrhoea  | -   | 5 (50%) pneumonia        | -        | -        | 5 (50%) complete KD; 5 (50%) incomplete KD                |

## Supplementary Material 2: PIMS-TS definition

Cardiac, gastrointestinal, respiratory failure indicators, and ferritin or D-dimer markers used to define PIMS:

- 1) Cardiac involvement: cardiac arrest OR any one or more of the following findings on ECG/Echo:
  - Prolonged PR interval
  - Prolonged QT interval
  - Arrhythmia
  - Low voltages
  - Abnormal Q waves
  - ST or T wave changes
  - Decreased myocardial contractility
  - Pericardial effusion
  - Coronary arteries affected (dilation/aneurysm)
  - Mitral or aortic valve insufficiency
  - Myocardial infarction
  - Other abnormality reported
- 2) Gastrointestinal involvement (any one of the following):
  - Vomiting or diarrhoea or abdominal pain.
  - Low albumin: <30 g/L if <1yr, <35 g/L if 1-15yrs.
  - High ALT: >82 IU/L if <1yr, >56 IU/L if <3yrs, >58 IU/L if <7yrs, >72 IU/L if <13yrs, >74 IU/L if 13-15yrs.
  - Abnormal APTT: <28 or >55 secs if <3 months, <28 or >45 if  $\geq$ 3 months.
  - High INR or PT (whichever given): INR >1.2, or PT >14.
- 3) Respiratory failure (required any one of the following):
  - CPAP
  - Conventional ventilation
  - High Frequency Oscillation
- 4) Raised ferritin (>500 ug/L) and/or raised D-dimers >1000 ng/ml (2x upper limit normal).

### Supplementary Material 3: Latent Class Analysis (LCA)

Variables included in Latent Class Analysis – PIMS-TS, Kawasaki and TSS features all included:

1. Any cardiac involvement: cardiac arrest OR any one or more of the following findings on ECG/Echo:
  - Prolonged PR interval
  - Prolonged QT interval
  - Arrhythmia
  - Low voltages
  - Abnormal Q waves
  - ST or T wave changes
  - Decreased myocardial contractility
  - Pericardial effusion
  - Coronary arteries affected (dilation/aneurysm)
  - Mitral or aortic valve insufficiency
  - Myocardial infarction
  - Other abnormality reported
2. Gastrointestinal involvement: Vomiting or diarrhoea
3. Gastrointestinal involvement: Abdominal pain
4. Respiratory failure (any one of the following):
  - CPAP
  - Conventional ventilation
  - High Frequency Oscillation
5. Kawasaki features: Conjunctivitis (bilateral, bulbar, non-suppurative)
6. Kawasaki features: Lymphadenopathy (cervical >1.5 cm diameter)
7. Kawasaki features: Rash (widespread, polymorphous, not vesicular)
8. Any other rash
9. Desquamation 1-2 weeks after rash
10. Kawasaki features: Lips and mucosa (red cracked lips, strawberry tongue, erythematous oral cavity)
11. Kawasaki features: Changes of extremities (erythema, oedema of palms and soles initially)
12. Hypotension
13. Albumin – low (<30 g/L if <1yr, <35 g/L if 1-15yrs)
14. Raised ALT (>82 IU/L if <1yr, >56 IU/L if <3yrs, >58 IU/L if <7yrs, >72 IU/L if <13yrs, >74 IU/L if 13-15yrs)
15. Raised ferritin (>500 ug/L)
16. Raised D-dimers (>1000 ng/ml)
17. Confusion
18. Muscle aches
19. Creatine kinase ( $\geq 600$ U/L)
20. Creatinine (for <4yrs  $\geq 78$  umol/L, 5-11 years  $\geq 106$  umol/L, 12-15 years  $\geq 180$  umol/L)
21. Platelets (<100x10<sup>9</sup>/L)
22. Positive SARS-CoV-2 PCR test
23. Positive SARS-CoV-2 serology test

## Supplementary Material 4: All cases reported via BPSU Surveillance

Note: three children had a prior history of KD; one was classified as a PIMS-TS case and was included in the analysis (they had had KD a year before), while the other two did not meet the criteria for PIMS-TS, KD, or TSS (histories of KD in 2016 and 2011, respectively).

**Table S4.1 Demographics, for all reported cases**

|  | Total (n=343)                  |             | Total with any PIMS (n=268)    |             | PIMS-TS only (n=216)           |             | KD only (n=13)                |             | PIMS-TS/KD (n=13)             |             | PIMS-TS/TSS (n=28)             |             | PIMS-TS/ KD/TSS (n=11)         |             | Unclassified (n=56)            |             |
|--|--------------------------------|-------------|--------------------------------|-------------|--------------------------------|-------------|-------------------------------|-------------|-------------------------------|-------------|--------------------------------|-------------|--------------------------------|-------------|--------------------------------|-------------|
|  | n                              | %           | n                              | %           | n                              | %           | n                             | %           | n                             | %           | n                              | %           | n                              | %           | n                              | %           |
| <b>Total</b>                               | 343                            |             | 268                            |             | 216                            |             | 13                            |             | 13                            |             | 28                             |             | 11                             |             | 56                             |             |
| <b>Sex</b>                                 |                                |             |                                |             |                                |             |                               |             |                               |             |                                |             |                                |             |                                |             |
| Male                                       | 208                            | <b>60.6</b> | 161                            | <b>60.1</b> | 124                            | <b>57.4</b> | 9                             | <b>69.2</b> | 11                            | <b>84.6</b> | 21                             | <b>75.0</b> | 5                              | <b>45.5</b> | 34                             | <b>60.7</b> |
| Female                                     | 111                            | <b>32.4</b> | 90                             | <b>33.6</b> | 79                             | <b>36.6</b> | 4                             | <b>30.8</b> | 2                             | <b>15.4</b> | 5                              | <b>17.9</b> | 4                              | <b>36.4</b> | 15                             | <b>26.8</b> |
| <b>Age group</b>                           |                                |             |                                |             |                                |             |                               |             |                               |             |                                |             |                                |             |                                |             |
| <1 year                                    | 33                             | <b>9.6</b>  | 23                             | <b>8.6</b>  | 19                             | <b>8.8</b>  | 2                             | <b>15.4</b> | 2                             | <b>15.4</b> | 2                              | <b>7.1</b>  | 0                              | <b>0.0</b>  | 8                              | <b>14.3</b> |
| 1-4 years                                  | 88                             | <b>25.7</b> | 65                             | <b>24.3</b> | 54                             | <b>25.0</b> | 6                             | <b>46.2</b> | 4                             | <b>30.8</b> | 4                              | <b>14.3</b> | 3                              | <b>27.3</b> | 16                             | <b>28.6</b> |
| 5-9 years                                  | 99                             | <b>28.9</b> | 80                             | <b>29.9</b> | 61                             | <b>28.2</b> | 4                             | <b>30.8</b> | 4                             | <b>30.8</b> | 10                             | <b>35.7</b> | 5                              | <b>45.5</b> | 12                             | <b>21.4</b> |
| 10-15 years                                | 123                            | <b>35.9</b> | 100                            | <b>37.3</b> | 82                             | <b>38.0</b> | 1                             | <b>7.7</b>  | 3                             | <b>23.1</b> | 12                             | <b>42.9</b> | 3                              | <b>27.3</b> | 20                             | <b>35.7</b> |
| <i>Median age (IQR)</i>                    | <i>7.68 years (3.32-11.85)</i> |             | <i>8.21 years (4.03-12.09)</i> |             | <i>7.84 years (4.03-12.60)</i> |             | <i>3.73 years (1.55-5.32)</i> |             | <i>5.19 years (1.85-9.75)</i> |             | <i>8.83 years (6.15-12.32)</i> |             | <i>7.09 years (4.32-10.07)</i> |             | <i>6.45 years (2.36-11.66)</i> |             |
| <b>Weight 2 SDs above mean for age/sex</b> | 41                             | <b>12.0</b> | 36                             | <b>13.4</b> | 32                             | <b>14.8</b> | 0                             | <b>0.0</b>  | 0                             | <b>0.0</b>  | 1                              | <b>3.6</b>  | 3                              | <b>27.3</b> | 4                              | <b>7.1</b>  |
| <b>Underlying medical conditions</b>       |                                |             |                                |             |                                |             |                               |             |                               |             |                                |             |                                |             |                                |             |
| Any  | 70                             | <b>20.4</b> | 51                             | <b>19.0</b> | 43                             | <b>19.9</b> | 1                             | <b>7.7</b>  | 2                             | <b>15.4</b> | 2                              | <b>7.1</b>  | 4                              | <b>36.4</b> | 16                             | <b>28.6</b> |
| Neurodevelopmental                         | 16                             | <b>4.7</b>  | 12                             | <b>4.5</b>  | 10                             | <b>4.6</b>  | 1                             | <b>7.7</b>  | 2                             | <b>15.4</b> | 0                              | <b>0.0</b>  | 0                              | <b>0.0</b>  | 2                              | <b>3.6</b>  |
| Gastrointestinal                           | 7                              | <b>2.0</b>  | 7                              | <b>2.6</b>  | 6                              | <b>2.8</b>  | 0                             | <b>0.0</b>  | 0                             | <b>0.0</b>  | 0                              | <b>0.0</b>  | 1                              | <b>9.1</b>  | 0                              | <b>0.0</b>  |
| Haematological                             | 10                             | <b>2.9</b>  | 7                              | <b>2.6</b>  | 4                              | <b>1.9</b>  | 0                             | <b>0.0</b>  | 0                             | <b>0.0</b>  | 0                              | <b>0.0</b>  | 3                              | <b>27.3</b> | 3                              | <b>5.4</b>  |
| Asthma requiring regular medication        | 10                             | <b>2.9</b>  | 6                              | <b>2.2</b>  | 6                              | <b>2.8</b>  | 0                             | <b>0.0</b>  | 0                             | <b>0.0</b>  | 0                              | <b>0.0</b>  | 0                              | <b>0.0</b>  | 4                              | <b>7.1</b>  |
| <b>Ethnicity</b>                           |                                |             |                                |             |                                |             |                               |             |                               |             |                                |             |                                |             |                                |             |
| White                                      | 150                            | <b>43.7</b> | 114                            | <b>42.5</b> | 105                            | <b>48.6</b> | 3                             | <b>23.1</b> | 2                             | <b>15.4</b> | 4                              | <b>14.3</b> | 3                              | <b>27.3</b> | 30                             | <b>53.6</b> |
| Black/African/Caribbean/Black British      | 72                             | <b>21.0</b> | 60                             | <b>22.4</b> | 42                             | <b>19.4</b> | 5                             | <b>38.5</b> | 3                             | <b>23.1</b> | 10                             | <b>35.7</b> | 5                              | <b>45.5</b> | 6                              | <b>10.7</b> |
| Asian/Asian British                        | 77                             | <b>22.4</b> | 63                             | <b>23.5</b> | 44                             | <b>20.4</b> | 4                             | <b>30.8</b> | 6                             | <b>46.2</b> | 12                             | <b>42.9</b> | 1                              | <b>9.1</b>  | 9                              | <b>16.1</b> |
| Mixed/multiple ethnic groups               | 19                             | <b>5.5</b>  | 11                             | <b>4.1</b>  | 9                              | <b>4.2</b>  | 0                             | <b>0.0</b>  | 1                             | <b>7.7</b>  | 0                              | <b>0.0</b>  | 1                              | <b>9.1</b>  | 7                              | <b>12.5</b> |
| Other ethnic groups                        | 13                             | <b>3.8</b>  | 10                             | <b>3.7</b>  | 8                              | <b>3.7</b>  | 1                             | <b>7.7</b>  | 0                             | <b>0.0</b>  | 1                              | <b>3.6</b>  | 1                              | <b>9.1</b>  | 2                              | <b>3.6</b>  |

**Table S4.2 Signs and symptoms, for all reported cases**

|   | Total (n=343) |      | Total with any PIMS-TS (n=268) |      | PIMS-TS only (n=216) |      | PIMS-TS/KD (n=13) |      | PIMS-TS/TSS (n=28) |      | PIMS-TS/KD/TSS (n=11) |      | Unclassified (n=56) |      | KD only (n=13) |      |
|---|---------------|------|--------------------------------|------|----------------------|------|-------------------|------|--------------------|------|-----------------------|------|---------------------|------|----------------|------|
|   | n             | %    | n                              | %    | n                    | %    | n                 | %    | n                  | %    | n                     | %    | n                   | %    | n              | %    |
| <b>Symptoms and signs at presentation</b> |               |      |                                |      |                      |      |                   |      |                    |      |                       |      |                     |      |                |      |
| Abdominal pain                            | 177           | 51.6 | 152                            | 56.7 | 117                  | 54.2 | 6                 | 46.2 | 20                 | 71.4 | 9                     | 81.8 | 19                  | 33.9 | 2              | 15.4 |
| Vomiting                                  | 172           | 50.1 | 147                            | 54.9 | 111                  | 51.4 | 5                 | 38.5 | 23                 | 82.1 | 8                     | 72.7 | 16                  | 28.6 | 5              | 38.5 |
| Diarrhoea                                 | 163           | 47.5 | 144                            | 53.7 | 104                  | 48.1 | 9                 | 69.2 | 22                 | 78.6 | 9                     | 81.8 | 11                  | 19.6 | 5              | 38.5 |
| Loss of appetite                          | 132           | 38.5 | 106                            | 39.6 | 81                   | 37.5 | 6                 | 46.2 | 11                 | 39.3 | 8                     | 72.7 | 19                  | 33.9 | 5              | 38.5 |
| Cough                                     | 82            | 23.9 | 69                             | 25.7 | 53                   | 24.5 | 4                 | 30.8 | 7                  | 25.0 | 5                     | 45.5 | 9                   | 16.1 | 3              | 23.1 |
| Muscle aches                              | 75            | 21.9 | 62                             | 23.1 | 43                   | 19.9 | 2                 | 15.4 | 10                 | 35.7 | 7                     | 63.6 | 9                   | 16.1 | 2              | 15.4 |
| Headache                                  | 73            | 21.3 | 61                             | 22.8 | 48                   | 22.2 | 2                 | 15.4 | 7                  | 25.0 | 4                     | 36.4 | 10                  | 17.9 | 1              | 7.7  |
| Sore throat                               | 64            | 18.7 | 52                             | 19.4 | 42                   | 19.4 | 1                 | 7.7  | 3                  | 10.7 | 6                     | 54.5 | 11                  | 19.6 | 1              | 7.7  |
| Irritability                              | 62            | 18.1 | 43                             | 16.0 | 30                   | 13.9 | 5                 | 38.5 | 3                  | 10.7 | 5                     | 45.5 | 13                  | 23.2 | 6              | 46.2 |
| Neck pain                                 | 43            | 12.5 | 36                             | 13.4 | 27                   | 12.5 | 2                 | 15.4 | 5                  | 17.9 | 2                     | 18.2 | 4                   | 7.1  | 2              | 15.4 |
| Drowsy                                    | 42            | 12.2 | 36                             | 13.4 | 25                   | 11.6 | 1                 | 7.7  | 5                  | 17.9 | 5                     | 45.5 | 5                   | 8.9  | 0              | 0.0  |
| Runny nose                                | 35            | 10.2 | 26                             | 9.7  | 23                   | 10.6 | 1                 | 7.7  | 1                  | 3.6  | 1                     | 9.1  | 5                   | 8.9  | 4              | 30.8 |
| Breathing difficulty                      | 27            | 7.9  | 24                             | 9.0  | 22                   | 10.2 | 0                 | 0.0  | 2                  | 7.1  | 0                     | 0.0  | 2                   | 3.6  | 1              | 7.7  |
| Confusion                                 | 16            | 4.7  | 13                             | 4.9  | 11                   | 5.1  | 0                 | 0.0  | 2                  | 7.1  | 0                     | 0.0  | 1                   | 1.8  | 1              | 7.7  |
| Syncope                                   | 18            | 5.2  | 15                             | 5.6  | 8                    | 3.7  | 1                 | 7.7  | 3                  | 10.7 | 3                     | 27.3 | 3                   | 5.4  | 0              | 0.0  |
| Photophobia                               | 12            | 3.5  | 11                             | 4.1  | 5                    | 2.3  | 1                 | 7.7  | 3                  | 10.7 | 2                     | 18.2 | 0                   | 0.0  | 0              | 0.0  |
| Sneezing                                  | 13            | 3.8  | 10                             | 3.7  | 10                   | 4.6  | 0                 | 0.0  | 0                  | 0.0  | 0                     | 0.0  | 3                   | 5.4  | 0              | 0.0  |
| Wheezing                                  | 12            | 3.5  | 9                              | 3.4  | 9                    | 4.2  | 0                 | 0.0  | 0                  | 0.0  | 0                     | 0.0  | 2                   | 3.6  | 1              | 7.7  |
| Arthritis                                 | 10            | 2.9  | 8                              | 3.0  | 7                    | 3.2  | 0                 | 0.0  | 1                  | 3.6  | 0                     | 0.0  | 1                   | 1.8  | 0              | 0.0  |
| Grunting                                  | 8             | 2.3  | 8                              | 3.0  | 5                    | 2.3  | 0                 | 0.0  | 3                  | 10.7 | 0                     | 0.0  | 0                   | 0.0  | 0              | 0.0  |
| Loss of taste                             | 8             | 2.3  | 6                              | 2.2  | 4                    | 1.9  | 0                 | 0.0  | 2                  | 7.1  | 0                     | 0.0  | 2                   | 3.6  | 0              | 0.0  |
| Loss of smell                             | 5             | 1.5  | 3                              | 1.1  | 2                    | 0.9  | 0                 | 0.0  | 1                  | 3.6  | 0                     | 0.0  | 2                   | 3.6  | 0              | 0.0  |
| Coma                                      | 2             | 0.6  | 2                              | 0.7  | 0                    | 0.0  | 2                 | 15.4 | 0                  | 0.0  | 0                     | 0.0  | 0                   | 0.0  | 0              | 0.0  |
| Bruising                                  | 3             | 0.9  | 2                              | 0.7  | 2                    | 0.9  | 0                 | 0.0  | 0                  | 0.0  | 0                     | 0.0  | 1                   | 1.8  | 0              | 0.0  |
|   |               |      |                                |      |                      |      |                   |      |                    |      |                       |      |                     |      |                |      |
| <b>Signs of shock</b>                     |               |      |                                |      |                      |      |                   |      |                    |      |                       |      |                     |      |                |      |
| Age-specific tachycardia                  | 197           | 57.4 | 163                            | 60.8 | 122                  | 56.5 | 6                 | 46.2 | 25                 | 89.3 | 10                    | 90.9 | 25                  | 44.6 | 6              | 46.2 |

|   |     |      |     |      |    |      |    |       |    |      |    |       |    |      |    |       |
|---|-----|------|-----|------|----|------|----|-------|----|------|----|-------|----|------|----|-------|
| Capillary refill time >2secs  | 114 | 33.2 | 97  | 36.2 | 75 | 34.7 | 3  | 23.1  | 12 | 42.9 | 7  | 63.6  | 13 | 23.2 | 1  | 7.7   |
| Pale/mottled skin   | 68  | 19.8 | 56  | 20.9 | 39 | 18.1 | 3  | 23.1  | 9  | 32.1 | 5  | 45.5  | 8  | 14.3 | 1  | 7.7   |
| Hypotension   | 136 | 39.7 | 114 | 42.5 | 82 | 38.0 | 1  | 7.7   | 23 | 82.1 | 8  | 72.7  | 15 | 26.8 | 2  | 15.4  |
| Cold hands/feet   | 63  | 18.4 | 56  | 20.9 | 38 | 17.6 | 1  | 7.7   | 12 | 42.9 | 5  | 45.5  | 4  | 7.1  | 1  | 7.7   |
| Urinary output <2ml/kg/hr   | 55  | 16.0 | 48  | 17.9 | 30 | 13.9 | 1  | 7.7   | 11 | 39.3 | 6  | 54.5  | 3  | 5.4  | 2  | 15.4  |
| Required fluid boluses  | 151 | 44.0 | 129 | 48.1 | 92 | 42.6 | 5  | 38.5  | 24 | 85.7 | 8  | 72.7  | 16 | 28.6 | 2  | 15.4  |
|   |     |      |     |      |    |      |    |       |    |      |    |       |    |      |    |       |
| <b>Features of Kawasaki</b>   |     |      |     |      |    |      |    |       |    |      |    |       |    |      |    |       |
| Conjunctivitis (bilateral, bulbar, non-suppurative)                             | 180 | 52.5 | 135 | 50.4 | 88 | 40.7 | 13 | 100.0 | 23 | 82.1 | 11 | 100.0 | 27 | 48.2 | 13 | 100.0 |
| Lymphadenopathy (cervical>1.5cm)  | 94  | 27.4 | 66  | 24.6 | 37 | 17.1 | 12 | 92.3  | 8  | 28.6 | 9  | 81.8  | 13 | 23.2 | 10 | 76.9  |
| Rash (widespread, polymorphous, not vesicular)                                  | 166 | 48.4 | 117 | 43.7 | 71 | 32.9 | 12 | 92.3  | 23 | 82.1 | 11 | 100.0 | 30 | 53.6 | 13 | 100.0 |
| Lips and mucosa (red cracked lips, strawberry tongue, erythematous oral cavity) | 126 | 36.7 | 89  | 33.2 | 58 | 26.9 | 12 | 92.3  | 10 | 35.7 | 9  | 81.8  | 20 | 35.7 | 13 | 100.0 |
| Changes of extremities (erythema, oedema of palms and soles initially)          | 99  | 28.9 | 74  | 27.6 | 38 | 17.6 | 11 | 84.6  | 15 | 53.6 | 10 | 90.9  | 10 | 17.9 | 11 | 84.6  |
| Any other rash  | 58  | 16.9 | 49  | 18.3 | 36 | 16.7 | 0  | 0.0   | 11 | 39.3 | 2  | 18.2  | 7  | 12.5 | 2  | 15.4  |

**Table S4.3 Other signs / examination on admission, for all reported cases**

|  | Total (n=343) |      | Total with any PIMS-TS (n=268) |       | PIMS-TS only (n=216) |       | PIMS-TS/ KD (n=13) |       | PIMS-TS/TSS (n=28) |       | PIMS-TS/KD/TSS (n=11) |       | Unclassified (n=56) |      | KD only (n=13) |       |
|--|---------------|------|--------------------------------|-------|----------------------|-------|--------------------|-------|--------------------|-------|-----------------------|-------|---------------------|------|----------------|-------|
|  | n             | %    | n                              | %     | n                    | %     | n                  | %     | n                  | %     | n                     | %     | n                   | %    | n              | %     |
| <b>Examination on admission</b>  |               |      |                                |       |                      |       |                    |       |                    |       |                       |       |                     |      |                |       |
| Tachypnoea   | 104           | 30.3 | 88                             | 32.8  | 69                   | 31.9  | 4                  | 30.8  | 14                 | 50.0  | 1                     | 9.1   | 11                  | 19.6 | 4              | 30.8  |
| Low saturations  | 38            | 11.1 | 35                             | 13.1  | 28                   | 13.0  | 0                  | 0.0   | 7                  | 25.0  | 0                     | 0.0   | 2                   | 3.6  | 1              | 7.7   |
| Tachycardia  | 230           | 67.1 | 190                            | 70.9  | 144                  | 66.7  | 9                  | 69.2  | 26                 | 92.9  | 11                    | 100.0 | 30                  | 53.6 | 7              | 53.8  |
| Chest signs  | 47            | 13.7 | 43                             | 16.0  | 32                   | 14.8  | 1                  | 7.7   | 9                  | 32.1  | 1                     | 9.1   | 2                   | 3.6  | 1              | 7.7   |
| Reduced GCS  | 15            | 4.4  | 13                             | 4.9   | 9                    | 4.2   | 1                  | 7.7   | 2                  | 7.1   | 1                     | 9.1   | 2                   | 3.6  | 0              | 0.0   |
| Seizure  | 6             | 1.7  | 3                              | 1.1   | 1                    | 0.5   | 1                  | 7.7   | 1                  | 3.6   | 0                     | 0.0   | 2                   | 3.6  | 0              | 0.0   |
|  |               |      |                                |       |                      |       |                    |       |                    |       |                       |       |                     |      |                |       |
| <b>Other signs/symptoms</b>  |               |      |                                |       |                      |       |                    |       |                    |       |                       |       |                     |      |                |       |
| Any rash reported  | 193           | 56.3 | 141                            | 52.6  | 90                   | 41.7  | 12                 | 92.3  | 28                 | 100.0 | 11                    | 100.0 | 33                  | 58.9 | 13             | 100.0 |
| Any fever reported   | 336           | 98.0 | 268                            | 100.0 | 216                  | 100.0 | 13                 | 100.0 | 28                 | 100.0 | 11                    | 100.0 | 49                  | 87.5 | 13             | 100.0 |
| CRP>100 either at admission or during admission  | 274           | 79.9 | 268                            | 100.0 | 216                  | 100.0 | 13                 | 100.0 | 28                 | 100.0 | 11                    | 100.0 | 6                   | 10.7 | 0              | 0.0   |
| Gastro involvement (any vomiting, diarrhoea or abdominal pain)   | 328           | 95.6 | 266                            | 99.3  | 214                  | 99.1  | 13                 | 100.0 | 28                 | 100.0 | 11                    | 100.0 | 46                  | 82.1 | 10             | 76.9  |
| Respiratory involvement (had conventional ventilation, High Frequency Oscillation or CPAP)                                 | 55            | 16.0 | 48                             | 17.9  | 30                   | 13.9  | 2                  | 15.4  | 11                 | 39.3  | 5                     | 45.5  | 6                   | 10.7 | 0              | 0.0   |
| Any neurological involvement (had a seizure on admission or reported confusion or reported drowsiness or coma or headache) | 106           | 30.9 | 87                             | 32.5  | 63                   | 29.2  | 4                  | 30.8  | 12                 | 42.9  | 8                     | 72.7  | 14                  | 25.0 | 1              | 7.7   |
| Any tachycardia reported   | 236           | 68.8 | 195                            | 72.8  | 148                  | 68.5  | 9                  | 69.2  | 26                 | 92.9  | 11                    | 100.0 | 30                  | 53.6 | 8              | 61.5  |





**Table S4.5 SARS-CoV-2 testing and exposure among all PIMS-TS cases**

|   | Total with any PIMS-TS (n=268) |       | PIMS-TS only (n=216) |       | PIMS-TS/KD (n=13) |        | PIMS-TS/TSS (n=28) |        | PIMS-TS/KD/ TSS (n=11) |        |
|---|--------------------------------|-------|----------------------|-------|-------------------|--------|--------------------|--------|------------------------|--------|
|   | n                              | %     | n                    | %     | n                 | %      | n                  | %      | n                      | %      |
| Any positive SARS-CoV-2 test  | 94                             | 35.1% | 63                   | 29.2% | 8                 | 61.5%  | 16                 | 57.1%  | 7                      | 63.6%  |
| Had SARS-CoV-2 PCR test   | 264                            | 98.5% | 212                  | 98.1% | 13                | 100.0% | 28                 | 100.0% | 11                     | 100.0% |
| If had PCR, PCR positive  | 39                             | 14.8% | 29                   | 13.7% | 1                 | 7.7%   | 7                  | 25.0%  | 2                      | 18.2%  |
| Had SARS-CoV-2 serology test  | 118                            | 44.0% | 85                   | 39.4% | 9                 | 69.2%  | 17                 | 60.7%  | 7                      | 63.6%  |
| If had serology done, serology positive   | 75                             | 63.6% | 46                   | 54.1% | 8                 | 88.9%  | 14                 | 82.4%  | 7                      | 100.0% |
| PCR negatives with serology test  | 94                             | 41.8% | 69                   | 37.7% | 8                 | 66.7%  | 12                 | 57.1%  | 5                      | 55.6%  |
| PCR negatives, serology positive  | 54                             | 57.4% | 33                   | 47.8% | 7                 | 87.5%  | 9                  | 75.0%  | 5                      | 100.0% |
| Any positive SARS-CoV-2 test OR household contact with confirmed SARS-CoV-2             | 96                             | 35.8% | 65                   | 30.1% | 8                 | 61.5%  | 16                 | 57.1%  | 7                      | 63.6%  |
| Any positive SARS-CoV-2 test OR household contact with confirmed SARS-CoV-2 OR symptoms | 125                            | 46.6% | 90                   | 41.7% | 8                 | 61.5%  | 18                 | 64.3%  | 9                      | 81.8%  |

**Table S4.6 SARS-CoV-2 testing among all reported cases**

|                                     | Total (n=343) |      | Total with any PIMS-TS (n=268) |      | PIMS-TS only (n=216) |      | PIMS-TS/KD (n=13) |       | PIMS-TS/TSS (n=28) |       | PIMS-TS/KD/TSS (n=11) |       | Unclassified (n=56) |      | KD only (n=13) |       |
|-------------------------------------|---------------|------|--------------------------------|------|----------------------|------|-------------------|-------|--------------------|-------|-----------------------|-------|---------------------|------|----------------|-------|
|                                     | n             | %    | n                              | %    | n                    | %    | n                 | %     | n                  | %     | n                     | %     | n                   | %    | n              | %     |
| Had PCR test                        | 336           | 98.0 | 264                            | 98.5 | 212                  | 98.1 | 13                | 100.0 | 28                 | 100.0 | 11                    | 100.0 | 53                  | 94.6 | 13             | 100.0 |
| PCR positive                        | 44            | 13.1 | 39                             | 14.8 | 29                   | 13.7 | 1                 | 7.7   | 7                  | 25.0  | 2                     | 18.2  | 4                   | 7.5  | 1              | 7.7   |
| Had serology test                   | 154           | 44.9 | 118                            | 44.0 | 85                   | 39.4 | 9                 | 69.2  | 17                 | 60.7  | 7                     | 63.6  | 29                  | 51.8 | 3              | 23.1  |
| If serology done, serology positive | 86            | 55.8 | 75                             | 63.6 | 46                   | 54.1 | 8                 | 88.9  | 14                 | 82.4  | 7                     | 100.0 | 9                   | 31.0 | 0              | 0.0   |
| PCR negatives with serology test    | 127           | 37.0 | 94                             | 41.8 | 69                   | 37.7 | 8                 | 66.7  | 12                 | 57.1  | 5                     | 55.6  | 26                  | 53.1 | 3              | 25.0  |
| PCR negatives, serology positive    | 63            | 49.6 | 54                             | 57.4 | 33                   | 47.8 | 7                 | 87.5  | 9                  | 75.0  | 5                     | 100.0 | 7                   | 26.9 | 0              | 0.0   |

**Table S4.7 Laboratory results (median, IQR) for all PIMS-TS cases**

| Variable   |                       | TOTAL with any PIMS (n=268) |                   | PIMS-TS only (n=216) |                   | PIMS-TS/Kawasaki only (n=13) |                   | PIMS-TS/TSS only (n=28) |                     | PIMS-TS/Kawasaki/TSS (n=11) |                   |
|--|-----------------------|-----------------------------|-------------------|----------------------|-------------------|------------------------------|-------------------|-------------------------|---------------------|-----------------------------|-------------------|
|  |                       | No. with values             | Median (IQR)      | No. with values      | Median (IQR)      | No. with values              | Median (IQR)      | No. with values         | Median (IQR)        | No. with values             | Median (IQR)      |
| <b>C-Reactive Protein (mg/L)</b>                     |                       | 262                         | 222.5 (162-289)   | 211                  | 210 (154.6-282)   | 12                           | 219.5 (158-256.5) | 28                      | 292 (212.5-321.9)   | 11                          | 223 (162-321.0)   |
| <b>D-dimers (ug/L)</b>                               |                       | 213                         | 3400 (1757-6921)  | 169                  | 3400 (1552-6742)  | 9                            | 2670 (2109-3967)  | 26                      | 4734.5 (2550-10329) | 9                           | 2241 (1559-3922)  |
| <b>Ferritin* (ug/L)</b>                              |                       | 241                         | 542.6 (284-1049)  | 192                  | 513.5 (273.5-910) | 12                           | 251 (194-1455.5)  | 27                      | 818 (422-1474)      | 10                          | 1390 (448-2452)   |
| <b>Creatine Kinase (U/L)</b>                         |                       | 174                         | 67 (36-223)       | 136                  | 65.5 (36-195.5)   | 9                            | 64 (37-96)        | 23                      | 92 (32-1135)        | 6                           | 225.5 (49-420)    |
| <b>NT-proB-type Natriuretic Peptide (BNP) (ng/L)</b> |                       | 117                         | 2024 (461-5984)   | 87                   | 1542 (319-4658)   | 7                            | 1264 (623-12035)  | 19                      | 10000 (741-20549)   | 4                           | -                 |
| <b>APTT (sec)</b>                                    |                       | 158                         | 31.85 (26.5-36.8) | 115                  | 32.6 (27.4-37)    | 10                           | 28 (21-30.1)      | 23                      | 29 (23-39.6)        | 10                          | 31.65 (29.7-35)   |
| <b>INR**</b>   |                       | 171                         | 1.2 (1.1-1.3)     | 136                  | 1.2 (1.1-1.3)     | 5                            | 1.1 (1.1-1.3)     | 23                      | 1.3 (1.1-1.4)       | 7                           | 1.3 (1.1-1.4)     |
| <b>Fibrinogen (g/L)</b>                              |                       | 197                         | 5.9 (4.9-7.0)     | 152                  | 5.8 (4.8-7.0)     | 9                            | 5.2 (5.0-5.8)     | 26                      | 6.1 (5.5-7.3)       | 10                          | 5.5 (4.4-6.4)     |
| <b>Lactate Dehydrogenase (LDH) (IU/L)</b>            |                       | 183                         | 377 (283-560)     | 140                  | 357.5 (278-525)   | 10                           | 417 (283-553)     | 25                      | 533 (372-764)       | 8                           | 489 (354.5-865.5) |
| <b>Procalcitonin (ug/L)</b>                          |                       | 78                          | 4.7 (1.9-15.9)    | 67                   | 3.8 (1.8-10.4)    | 1                            | -                 | 8                       | 12.0 (6.4-75.9)     | 2                           | 58.3 (45.2-71.4)  |
| <b>Amylase (U/L)</b>                                 |                       | 104                         | 41.5 (26-85)      | 77                   | 37 (24-55)        | 6                            | 53.5 (31-138)     | 16                      | 85.5 (46.5-122.5)   | 5                           | 163 (90-188)      |
| <b>Vitamin D (nmol/L)</b>                            |                       | 129                         | 32.2 (21-51)      | 100                  | 33 (23-53.5)      | 7                            | 22.5 (10.1-43.5)  | 18                      | 24 (18.2-43.1)      | 4                           | 24.4 (12.3-32)    |
| <b>Platelets* (x10<sup>9</sup>/L)</b>                | Taking lowest values  | 268                         | 171.5 (112-266.5) | 216                  | 178 (113-266.5)   | 13                           | 320 (154-425)     | 28                      | 124 (92-172)        | 11                          | 166 (148-233)     |
|  | Taking highest values | 268                         | 208 (144.5-304.5) | 216                  | 211 (146-301.5)   | 13                           | 320 (179-428)     | 28                      | 142.5 (124-228.5)   | 11                          | 194 (148-278)     |
| <b>Albumin* (g/L)</b>                                | All                   | 267                         | 25 (21-31)        | 215                  | 26 (22-31)        | 13                           | 24 (21-34)        | 28                      | 20 (18.5-24.5)      | 11                          | 22 (19-23)        |
|  | <1 year               | 23                          | 27 (25-31)        | 19                   | 26 (25-31)        | 2                            | -                 | 2                       | -                   | 0                           | -                 |
|  | 1-15 years            | 244                         | 25 (21-30)        | 196                  | 26 (22-31)        | 11                           | 23 (20-34)        | 26                      | 20 (18-24)          | 11                          | 22 (19-23)        |
| <b>Lymphocyte count* (x10<sup>9</sup>/L)</b>         | All                   | 268                         | 0.8 (0.5-1.7)     | 216                  | 0.8 (0.5-1.8)     | 13                           | 1.6 (0.7-2.3)     | 28                      | 0.7 (0.4-1.1)       | 11                          | 0.9 (0.7-1.6)     |
|  | <1 year               | 23                          | 2.5 (1.6-3.9)     | 19                   | 2.4 (1.6-3.9)     | 2                            | -                 | 2                       | -                   | 0                           | -                 |
|  | 1-15 years            | 245                         | 0.8 (0.4-1.4)     | 216                  | 0.8 (0.5-1.8)     | 11                           | 1.0 (0.4-2.3)     | 26                      | 0.7 (0.4-1.0)       | 11                          | 0.9 (0.7-1.6)     |
| <b>Triglycerides (mmol/L)</b>                        | All                   | 143                         | 2.3 (1.5-3.5)     | 106                  | 2.1 (1.3-3.3)     | 7                            | 1.9 (1.3-2.8)     | 21                      | 2.5 (1.9-3.8)       | 9                           | 2.8 (2.3-4.7)     |
|  | <1 year               | 9                           | 2.1 (1.7-5.1)     | 9                    | 2.1 (1.7-5.1)     | 0                            | -                 | 0                       | -                   | 0                           | -                 |
|  | 1-15 years            | 134                         | 2.3 (1.5-3.4)     | 97                   | 2.1 (1.3-3.1)     | 7                            | 1.9 (1.3-2.8)     | 21                      | 2.5 (1.9-3.8)       | 9                           | 2.8 (2.3-4.7)     |
| <b>Urea (mmol/L)</b>                                 | All                   | 255                         | 4.2 (3.0-6.1)     | 206                  | 4 (3-5.5)         | 12                           | 3.6 (2.6-4.5)     | 28                      | 5.7 (4.1-10.5)      | 9                           | 5 (4.7-23.5)      |
|  | <1 year               | 22                          | 3.1 (2.3-4.2)     | 19                   | 3.1 (2.3-4.2)     | 1                            | -                 | 2                       | -                   | 0                           | -                 |
|  | 1-15 years            | 233                         | 4.2 (3.2-6.1)     | 187                  | 4.1 (3.1-5.5)     | 11                           | 3.7 (2.5-4.5)     | 26                      | 5.7 (4.1-10.5)      | 9                           | 5 (4.7-23.5)      |
| <b>Hb* (g/L)</b>                                     | All                   | 268                         | 95 (85-106)       | 216                  | 97 (86-108.5)     | 13                           | 97 (86-104)       | 28                      | 89.5 (77.5-97)      | 11                          | 84 (81-97)        |
|  | 0-4 years             | 88                          | 91 (85-105.5)     | 73                   | 92 (85-106)       | 6                            | 93 (86-97)        | 6                       | 85.5 (64-90)        | 3                           | 97 (81-97)        |
|  | 5-15 years            | 180                         | 96.5 (85-108)     | 143                  | 99 (87-109)       | 7                            | 100 (78-105)      | 22                      | 91.5 (79-97)        | 8                           | 84 (75.5-89)      |
| <b>WBC count (x10<sup>9</sup>/L)</b>                 | All                   | 263                         | 11.1 (8.0-15.7)   | 216                  | 11.4 (7.9-15.6)   | 12                           | 11.0 (8-19.1)     | 28                      | 9.895 (7.9-13.2)    | 11                          | 14.3 (8.2-22.8)   |

|   |             |     |                 |     |                 |    |                 |    |                   |    |                  |
|---|-------------|-----|-----------------|-----|-----------------|----|-----------------|----|-------------------|----|------------------|
|   | 0-5 years   | 99  | 13.4 (9.1-18.1) | 82  | 13.6 (9.3-18.1) | 6  | 18.7 (8.2-21.9) | 7  | 8.9 (4.3-11.5)    | 4  | 14.9 (10.9-18.7) |
|   | 6-15 years  | 164 | 10.4 (7.8-13.9) | 130 | 10.4 (7.5-13.7) | 6  | 8.2 (5.5-13.6)  | 21 | 10.1 (8.4-13.3)   | 7  | 14.3 (7.8-28)    |
| <b>Creatinine*</b> (umol/L)                       | All         | 268 | 49 (32-71)      | 216 | 48 (33-67)      | 13 | 28 (22-55)      | 28 | 59.5 (43-101)     | 11 | 67 (28-160)      |
|   | 0-4 years   | 88  | 27.5 (22-40)    | 73  | 28 (22-40)      | 6  | 23.5 (21-27)    | 6  | 42 (27-48)        | 3  | 25 (22-28)       |
|   | 5-11 years  | 113 | 51 (39-66)      | 85  | 47 (38-58)      | 6  | 63 (46-77)      | 14 | 58 (44-71)        | 8  | 92 (60.5-205)    |
|   | 12-15 years | 67  | 82 (59-107)     | 58  | 77.5 (59-104)   | 1  | -               | 8  | 95.5 (84.5-161.5) | 0  | -                |
| <b>Neutrophil count*</b><br>(x10 <sup>9</sup> /L) | All         | 268 | 12.3 (8.8-17.5) | 216 | 11.5 (8.4-16.2) | 13 | 12.3 (7.8-15.6) | 28 | 16.8 (12.4-28.4)  | 11 | 19.1 (12.8-27.3) |
|   | 0-6 years   | 116 | 12.3 (8.3-16.2) | 96  | 11.5 (8.1-16.1) | 7  | 12.3 (7.8-15.3) | 8  | 12.6 (9.6-16.2)   | 5  | 16.1 (13.1-19.2) |
|   | 7-11 years  | 85  | 11.9 (10-17.4)  | 62  | 11.4 (9.9-15.4) | 5  | 15.6 (10-19.4)  | 12 | 16.8 (13.2-36.3)  | 6  | 19.9 (9.2-27.3)  |
|   | 12-15 years | 67  | 12.5 (8.2-19.2) | 58  | 11.9 (8.2-18.4) | 1  | -               | 8  | 21.3 (16.0-28.4)  | 0  | -                |
| <b>ALT*</b> (IU/L)                                | All         | 265 | 47 (25-90)      | 213 | 43 (22-79)      | 13 | 39 (19-149)     | 28 | 88.5 (50-115.5)   | 11 | 67 (48-140)      |
|   | <1 year     | 23  | 30 (16-107)     | 19  | 28 (16-47)      | 2  | -               | 2  | -                 | 0  | -                |
|   | 1-2 years   | 33  | 31 (21-52)      | 26  | 28.5 (21-44)    | 2  | -               | 3  | -                 | 2  | -                |
|   | 3-6 years   | 60  | 37 (20-59)      | 51  | 33 (20-59)      | 3  | -               | 3  | -                 | 3  | -                |
|   | 7-12 years  | 97  | 63 (36-98)      | 72  | 51.5 (25-97)    | 5  | -               | 14 | 80 (48-98)        | 6  | 78.5 (49-140)    |
|   | 13-15 years | 52  | 71.5 (42-128)   | 45  | 71 (42-128)     | 1  | -               | 6  | 82.5 (52-89)      | 0  | -                |

\* Two values given - on admission and lowest/highest depending on variable. If looking at low values, took lowest of the two, and if looking at higher then used highest value. If low and high values both of interest, calculated separately - stated in table. \*\* 7 children had PT instead of INR - included in PIMS-TS definition, not presented here.

**Table S4.8 Laboratory results – number outside of normal range (as specified) out of number tested, for all reported cases**

| Variable        | Age group/ values   | TOTAL with any PIMS (n=268) |             | PIMS-TS only (n=216) |             | PIMS-TS/KD (n=13) |             | PIMS-TS/TSS (n=28) |              | PIMS-TS/KD/TSS (n=11) |              | KD only (n=13)    |             | Unclassified (n=56) |             |
|-----------------|---|-----------------------------|-------------|----------------------|-------------|-------------------|-------------|--------------------|--------------|-----------------------|--------------|-------------------|-------------|---------------------|-------------|
|                 |   | n / n with values           | %           | n / n with values    | %           | n / n with values | %           | n / n with values  | %            | n / n with values     | %            | n / n with values | %           | n / n with values   | %           |
| Albumin*        | 0yrs: <30 g/L<br>1-15 yrs: <35 g/L  | 232/267                     | <b>86.9</b> | 182/215              | <b>84.7</b> | 11/13             | <b>84.6</b> | 28/28              | <b>100.0</b> | 11/11                 | <b>100.0</b> | 7/13              | <b>53.8</b> | 31/54               | <b>57.4</b> |
|                 | 0yrs: <30 g/L   | 14/23                       | <b>60.9</b> | 11/19                | <b>57.9</b> | 1/2               | <b>50.0</b> | 2/2                | <b>100.0</b> | 0/0                   | -            | 1/2               | <b>50.0</b> | 4/8                 | <b>50.0</b> |
|                 | 1-15 yrs: <35 g/L   | 218/244                     | <b>89.3</b> | 171/196              | <b>87.2</b> | 10/11             | <b>90.9</b> | 26/26              | <b>100.0</b> | 11/11                 | <b>100.0</b> | 6/11              | <b>54.5</b> | 27/46               | <b>58.7</b> |
| ALT*            | 0yrs: >82 IU/L<br>1-2yrs: >56 IU/L<br>3-6yrs: >58 IU/L<br>7-12yrs: >72 IU/L<br>13-15yrs: >74 IU/L | 89/265                      | <b>33.6</b> | 63/213               | <b>29.6</b> | 4/13              | <b>30.8</b> | 17/28              | <b>60.7</b>  | 5/11                  | <b>45.5</b>  | 3/13              | <b>23.1</b> | 19/54               | <b>35.2</b> |
|                 | 0yrs: >82 IU/L  | 6/23                        | <b>26.1</b> | 3/19                 | <b>15.8</b> | 1/2               | <b>50.0</b> | 2/2                | <b>100.0</b> | 0/0                   | -            | 0/2               | <b>0.0</b>  | 1/8                 | <b>12.5</b> |
|                 | 1-2yrs: >56 IU/L  | 6/33                        | <b>18.2</b> | 2/26                 | <b>7.7</b>  | 1/2               | <b>50.0</b> | 2/3                | <b>66.7</b>  | 1/2                   | <b>50.0</b>  | 1/4               | <b>25.0</b> | 2/7                 | <b>28.6</b> |
|                 | 3-6yrs: >58 IU/L  | 16/60                       | <b>26.7</b> | 13/51                | <b>25.5</b> | 0/3               | <b>0.0</b>  | 2/3                | <b>66.7</b>  | 1/3                   | <b>33.3</b>  | 1/4               | <b>25.0</b> | 6/14                | <b>42.9</b> |
|                 | 7-12yrs: >72 IU/L   | 36/97                       | <b>37.1</b> | 24/72                | <b>33.3</b> | 2/5               | <b>40.0</b> | 7/14               | <b>50.0</b>  | 3/6                   | <b>50.0</b>  | 1/3               | <b>33.3</b> | 7/18                | <b>38.9</b> |
|                 | 13-15yrs: >74 IU/L  | 25/52                       | <b>48.1</b> | 21/45                | <b>46.7</b> | 0/1               | <b>0.0</b>  | 4/6                | <b>66.7</b>  | 0/0                   | -            | 0/0               | -           | 3/7                 | <b>42.9</b> |
| Amylase         | >220 U/L  | 2/104                       | <b>1.9</b>  | 0/75                 | <b>0.0</b>  | 1/6               | <b>16.7</b> | 0/16               | <b>0.0</b>   | 1/5                   | <b>20.0</b>  | 0/4               | <b>0.0</b>  | 0/22                | <b>0.0</b>  |
| APTT            | APTT:<br><3mths: >55 sec<br>3mth-15yrs: >45 sec   | 9/158                       | <b>5.7</b>  | 5/115                | <b>4.3</b>  | 0/10              | <b>0.0</b>  | 3/23               | <b>13.0</b>  | 1/10                  | <b>10.0</b>  | 1/9               | <b>11.1</b> | 0/31                | <b>0.0</b>  |
|                 | APTT <28  | 46/158                      | <b>29.1</b> | 31/115               | <b>27.0</b> | 5/10              | <b>50.0</b> | 8/23               | <b>34.8</b>  | 2/10                  | <b>20.0</b>  | 0/9               | <b>0.0</b>  | 11/31               | <b>35.5</b> |
|                 | <3mths: >55 sec   | 0/2                         | <b>0.0</b>  | 0/2                  | <b>0.0</b>  | 0/0               | -           | 0/0                | -            | 0/0                   | -            | 0/0               | -           | 0/0                 | -           |
|                 | 3mth-15yrs: >45 sec   | 9/156                       | <b>5.8</b>  | 5/113                | <b>4.4</b>  | 0/10              | <b>0.0</b>  | 3/23               | <b>13.0</b>  | 1/10                  | <b>10.0</b>  | 1/9               | <b>11.1</b> | 0/31                | <b>0.0</b>  |
| Creatine Kinase | >300 U/L  | 31/174                      | <b>17.8</b> | 20/136               | <b>14.7</b> | 1/9               | <b>11.1</b> | 8/23               | <b>34.8</b>  | 2/6                   | <b>33.3</b>  | 0/6               | <b>0.0</b>  | 2/38                | <b>5.3</b>  |
|                 | > 600 U/L   | 21/174                      | <b>12.1</b> | 13/136               | <b>9.6</b>  | 1/9               | <b>11.1</b> | 6/23               | <b>26.1</b>  | 1/6                   | <b>16.7</b>  | 0/6               | <b>0.0</b>  | 1/38                | <b>2.6</b>  |
| Creatinine*     | 0-4yrs: >=78 umol/L<br>5-11yrs: >=106 umol/L<br>12-15yrs: >=180 umol/L                            | 20/268                      | <b>7.5</b>  | 11/216               | <b>5.1</b>  | 1/13              | <b>7.7</b>  | 5/28               | <b>17.9</b>  | 3/11                  | <b>27.3</b>  | 0/13              | <b>0.0</b>  | 2/55                | <b>3.6</b>  |
|                 | 0-4yrs: >=78 umol/L   | 4/216                       | <b>1.9</b>  | 3/73                 | <b>4.1</b>  | 0/6               | <b>0.0</b>  | 1/6                | <b>16.7</b>  | 0/3                   | <b>0.0</b>   | 0/8               | <b>0.0</b>  | 2/23                | <b>8.7</b>  |
|                 | 5-11yrs: >=106 umol/L   | 11/113                      | <b>9.7</b>  | 4/85                 | <b>4.7</b>  | 1/6               | <b>16.7</b> | 3/14               | <b>21.4</b>  | 3/8                   | <b>3.8</b>   | 0/5               | <b>0.0</b>  | 0/19                | <b>0.0</b>  |
|                 | 12-15yrs: >=180 umol/L  | 7/67                        | <b>7.5</b>  | 4/58                 | <b>6.9</b>  | 0/1               | <b>0.0</b>  | 1/8                | <b>12.5</b>  | 0/0                   | -            | 0/0               | -           | 2/13                | <b>15.4</b> |

|   |   |         |             |         |             |       |              |       |              |       |              |      |              |       |             |
|---|---|---------|-------------|---------|-------------|-------|--------------|-------|--------------|-------|--------------|------|--------------|-------|-------------|
| <b>D-dimers</b>                               | >1000 ug/L  | 183/213 | <b>85.9</b> | 143/169 | <b>84.6</b> | 9/9   | <b>100.0</b> | 24/26 | <b>92.3</b>  | 7/9   | <b>77.8</b>  | 4/6  | <b>66.7</b>  | 29/44 | <b>65.9</b> |
| <b>Ferritin* ^^</b>                           | >500 ug/L   | 126/241 | <b>52.3</b> | 97/192  | <b>50.5</b> | 4/12  | <b>33.3</b>  | 19/27 | <b>70.4</b>  | 6/10  | <b>60.0</b>  | 2/10 | <b>20.0</b>  | 16/46 | <b>34.8</b> |
|   | ≥200 mg/L   | 211/241 | <b>87.6</b> | 166/192 | <b>86.5</b> | 9/12  | <b>75.0</b>  | 26/27 | <b>96.3</b>  | 10/10 | <b>100.0</b> | 5/10 | <b>50.0</b>  | 28/46 | <b>60.9</b> |
| <b>Fibrinogen</b>                             | If outside: 1.5-4.0 g/L   | 182/197 | <b>92.4</b> | 140/152 | <b>92.1</b> | 8/9   | <b>88.9</b>  | 24/26 | <b>92.3</b>  | 10/10 | <b>100.0</b> | 5/7  | <b>71.4</b>  | 25/36 | <b>69.4</b> |
| <b>Haemoglobin*</b>                           | 0-4yrs: <110 g/L<br>5-15yrs: <115 g/L   | 230/268 | <b>85.8</b> | 180/216 | <b>83.3</b> | 12/13 | <b>92.3</b>  | 27/28 | <b>96.4</b>  | 11/11 | <b>100.0</b> | 9/13 | <b>69.2</b>  | 40/55 | <b>72.7</b> |
|   | 0-4yrs: <110 g/L  | 77/88   | <b>87.5</b> | 62/73   | <b>84.9</b> | 6/6   | <b>100.0</b> | 6/6   | <b>100.0</b> | 3/3   | <b>100.0</b> | 7/8  | <b>87.5</b>  | 20/23 | <b>87.0</b> |
|   | 5-15yrs: <115 g/L   | 153/180 | <b>85.0</b> | 118/143 | <b>82.5</b> | 6/7   | <b>85.7</b>  | 21/22 | <b>95.5</b>  | 8/8   | <b>100.0</b> | 2/5  | <b>40.0</b>  | 20/32 | <b>62.5</b> |
| <b>INR** ^^</b>                               | INR >1.2  | 72/171  | <b>42.1</b> | 52/136  | <b>38.2</b> | 2/5   | <b>40.0</b>  | 14/23 | <b>60.9</b>  | 4/7   | <b>57.1</b>  | 0/6  | <b>0.0</b>   | 7/30  | <b>23.3</b> |
| <b>Lactate Dehydrogenase (LDH)</b>            | >900 IU/L   | 16/183  | <b>8.7</b>  | 10/140  | <b>7.1</b>  | 1/10  | <b>10.0</b>  | 4/25  | <b>16.0</b>  | 1/8   | <b>12.5</b>  | 0/7  | <b>0.0</b>   | 5/40  | <b>12.5</b> |
| <b>Lymphocyte count*</b>                      | 0yrs: <4.0 (x10 <sup>9</sup> /L)<br>1-15yrs: <1.5 (x10 <sup>9</sup> /L)   | 202/268 | <b>75.4</b> | 163/216 | <b>75.5</b> | 7/13  | <b>53.8</b>  | 24/28 | <b>85.7</b>  | 8/11  | <b>72.7</b>  | 8/13 | <b>61.5</b>  | 35/55 | <b>63.6</b> |
|   | 0yrs: <4.0 (x10 <sup>9</sup> /L)  | 18/23   | <b>78.3</b> | 15/19   | <b>78.9</b> | 1/2   | <b>50.0</b>  | 2/2   | <b>100.0</b> | 0/0   | -            | 2/2  | <b>100.0</b> | 6/8   | <b>75.0</b> |
|   | 1-15yrs: <1.5 (x10 <sup>9</sup> /L)   | 184/245 | <b>75.1</b> | 148/216 | <b>68.5</b> | 6/11  | <b>54.5</b>  | 22/26 | <b>84.6</b>  | 8/11  | <b>72.7</b>  | 6/11 | <b>54.5</b>  | 29/47 | <b>61.7</b> |
| <b>Neutrophil count*</b>                      | 0-6yrs: >8.0 (x10 <sup>9</sup> /L)<br>7-11yrs: >6.0 (x10 <sup>9</sup> /L)<br>12-15yrs: >7.5 (x10 <sup>9</sup> /L) | 228/268 | <b>85.1</b> | 180/216 | <b>83.3</b> | 10/13 | <b>76.9</b>  | 27/28 | <b>96.4</b>  | 11/11 | <b>100.0</b> | 8/13 | <b>61.5</b>  | 35/55 | <b>63.6</b> |
|   | 0-6yrs: >8.0 (x10 <sup>9</sup> /L)  | 91/116  | <b>78.4</b> | 73/96   | <b>76.0</b> | 5/7   | <b>71.4</b>  | 8/8   | <b>100.0</b> | 5/5   | <b>100.0</b> | 5/10 | <b>50.0</b>  | 21/29 | <b>72.4</b> |
|   | 7-11yrs: >6.0 (x10 <sup>9</sup> /L)   | 82/85   | <b>96.5</b> | 59/62   | <b>95.2</b> | 5/5   | <b>100.0</b> | 12/12 | <b>100.0</b> | 6/6   | <b>100.0</b> | 3/3  | <b>100.0</b> | 7/13  | <b>53.8</b> |
|   | 12-15yrs: >7.5 (x10 <sup>9</sup> /L)  | 55/67   | <b>82.1</b> | 48/58   | <b>82.8</b> | 0/1   | <b>0.0</b>   | 7/8   | <b>87.5</b>  | 0/0   | -            | 0/0  | -            | 7/13  | <b>53.8</b> |
| <b>NT-proB-type Natriuretic Peptide (BNP)</b> | >100 ng/L   | 109/117 | <b>93.2</b> | 79/87   | <b>90.8</b> | 7/7   | <b>100.0</b> | 19/19 | <b>100.0</b> | 4/4   | <b>100.0</b> | 5/5  | <b>100.0</b> | 21/28 | <b>75.0</b> |
|   | > 300 ng/L  | 93/117  | <b>79.5</b> | 66/87   | <b>75.9</b> | 6/7   | <b>85.7</b>  | 17/19 | <b>89.5</b>  | 4/4   | <b>100.0</b> | 4/5  | <b>80.0</b>  | 16/28 | <b>57.1</b> |
| <b>Platelets*</b>                             | <100 (TSS)  | 54/268  | <b>20.1</b> | 40/216  | <b>18.5</b> | 2/13  | <b>15.4</b>  | 10/28 | <b>35.7</b>  | 2/11  | <b>18.2</b>  | 0/13 | <b>0</b>     | 4/55  | <b>7.3</b>  |
|   | Low: <150 (x10 <sup>9</sup> /L)   | 111/268 | <b>41.4</b> | 86/216  | <b>39.8</b> | 3/13  | <b>23.1</b>  | 18/28 | <b>64.3</b>  | 4/11  | <b>36.4</b>  | 2/13 | <b>15.4</b>  | 14/55 | <b>25.5</b> |
|   | High: >450 (x10 <sup>9</sup> /L)  | 18/268  | <b>6.7</b>  | 15/216  | <b>6.9</b>  | 2/13  | <b>15.4</b>  | 1/28  | <b>3.6</b>   | 0/11  | <b>0.0</b>   | 5/13 | <b>38.5</b>  | 12/55 | <b>21.8</b> |
| <b>Procalcitonin</b>                          | >0.5ug/L  | 70/78   | <b>89.7</b> | 59/67   | <b>88.1</b> | 1/1   | <b>100.0</b> | 8/8   | <b>100.0</b> | 2/2   | <b>100.0</b> | 1/1  | <b>100.0</b> | 6/13  | <b>46.2</b> |
| <b>Triglycerides</b>                          | 0yrs: >1.7 mmol/L<br>1-15yrs: >2.1 mmol/L   | 77/143  | <b>53.8</b> | 53/106  | <b>50.0</b> | 3/7   | <b>42.9</b>  | 15/21 | <b>71.4</b>  | 7/9   | <b>77.8</b>  | 2/5  | <b>40.0</b>  | 8/32  | <b>25.0</b> |
|   | 0yrs: >1.7 mmol/L   | 6/9     | <b>66.7</b> | 6/9     | <b>66.7</b> | 0/0   | -            | 0/0   | -            | 0/0   | -            | 0/0  | -            | 1/3   | <b>33.3</b> |
|   | 1-15yrs: >2.1 mmol/L  | 71/134  | <b>53.0</b> | 47/97   | <b>48.5</b> | 3/7   | <b>42.9</b>  | 15/21 | <b>71.4</b>  | 7/9   | <b>77.8</b>  | 2/5  | <b>40.0</b>  | 7/29  | <b>24.1</b> |

|                  |  |         |             |        |             |      |             |       |             |      |             |      |             |       |             |
|------------------|--|---------|-------------|--------|-------------|------|-------------|-------|-------------|------|-------------|------|-------------|-------|-------------|
| <b>Urea</b>      | 0yrs: >5.5 mmol/L<br>1-15yrs: >6.5 mmol/L  | 58/255  | <b>22.7</b> | 40/206 | <b>19.4</b> | 2/12 | <b>16.7</b> | 12/28 | <b>42.9</b> | 4/9  | <b>44.4</b> | 0/12 | <b>0.0</b>  | 4/53  | <b>7.5</b>  |
|                  | 0yrs: >5.5 mmol/L  | 5/22    | <b>22.7</b> | 4/19   | <b>21.1</b> | 0/1  | <b>0.0</b>  | 1/2   | <b>50.0</b> | 0/0  | -           | 0/2  | <b>0.0</b>  | 0/7   | <b>0.0</b>  |
|                  | 1-15yrs: >6.5 mmol/L   | 53/233  | <b>22.7</b> | 36/187 | <b>19.3</b> | 2/11 | <b>18.2</b> | 11/26 | <b>42.3</b> | 4/9  | <b>44.4</b> | 0/10 | <b>0.0</b>  | 4/46  | <b>8.7</b>  |
| <b>Vitamin D</b> | Insufficient: 25-50 nmol/L   | 44/129  | <b>34.1</b> | 34/100 | <b>34.0</b> | 2/7  | <b>28.6</b> | 6/18  | <b>33.3</b> | 2/4  | <b>50.0</b> | 1/4  | <b>25.0</b> | 10/27 | <b>37.0</b> |
|                  | Severe deficiency: <25 nmol/L  | 50/129  | <b>38.8</b> | 35/100 | <b>35.0</b> | 4/7  | <b>57.1</b> | 9/18  | <b>50.0</b> | 2/4  | <b>50.0</b> | 1/4  | <b>25.0</b> | 5/27  | <b>18.5</b> |
| <b>WBC count</b> | Low:<br>0-5yrs: <5.0 (x10 <sup>9</sup> /L)<br>6-15yrs: <3.0 (x10 <sup>9</sup> /L)    | 13/263  | <b>4.9</b>  | 11/216 | <b>5.1</b>  | 0/12 | <b>0.0</b>  | 2/28  | <b>7.1</b>  | 0/11 | <b>0.0</b>  | 1/13 | <b>7.7</b>  | 2/55  | <b>3.6</b>  |
|                  | High:<br>0-5yrs: >15.0 (x10 <sup>9</sup> /L)<br>6-15yrs: >10.0 (x10 <sup>9</sup> /L) | 124/263 | <b>47.1</b> | 99/216 | <b>45.8</b> | 6/12 | <b>50.0</b> | 12/28 | <b>42.9</b> | 7/11 | <b>63.6</b> | 5/13 | <b>38.5</b> | 19/55 | <b>34.5</b> |
|                  | 0-5yrs: <5.0 (x10 <sup>9</sup> /L)   | 11/99   | <b>11.1</b> | 9/82   | <b>11.0</b> | 0/6  | <b>0.0</b>  | 2/7   | <b>28.6</b> | 0/4  | <b>0.0</b>  | 1/10 | <b>10.0</b> | 0/25  | <b>0.0</b>  |
|                  | 0-5yrs: >15.0 (x10 <sup>9</sup> /L)  | 40/99   | <b>40.4</b> | 33/82  | <b>40.2</b> | 4/6  | <b>66.7</b> | 1/7   | <b>14.3</b> | 2/4  | <b>50.0</b> | 3/10 | <b>30.0</b> | 12/25 | <b>48.0</b> |
|                  | 6-15yrs: <3.0 (x10 <sup>9</sup> /L)  | 2/164   | <b>1.2</b>  | 2/130  | <b>1.5</b>  | 0/6  | <b>0.0</b>  | 0/21  | <b>0.0</b>  | 0/7  | <b>0.0</b>  | 0/3  | <b>0.0</b>  | 2/30  | <b>6.7</b>  |
|                  | 6-15yrs: >10.0 (x10 <sup>9</sup> /L)   | 84/164  | <b>51.2</b> | 66/130 | <b>50.8</b> | 2/6  | <b>33.3</b> | 11/21 | <b>52.4</b> | 5/7  | <b>71.4</b> | 2/3  | <b>66.7</b> | 7/30  | <b>23.3</b> |

\* Two values given - on admission and lowest/highest depending on variable. If looking at low values, took lowest of the two, and if looking at higher then used highest value. If low and high values both of interest, calculated separately - stated in table. \*\* 7 children had PT instead of INR - included in PIMS-TS definition, not presented here. ^^ Preliminary WHO definition includes: C reactive protein  $\geq 60$  mg/L or ferritin  $\geq 200$  mg/L at any point during admission. Evidence of coagulopathy (international normalised ratio  $>1.2$  (any age), premature neonate with prothrombin time  $>16$  s, 15 or term infant/older child with prothrombin time  $>14$  s.

**Table S4.9 Outcomes**

|  | Total (n=343)             |       | Total with any PIMS-TS (n=268) |       | PIMS-TS only (n=216)      |       | PIMS-TS/KD (n=13)              |       | PIMS-TS/TSS (n=28)            |       | PIMS-TS/KD/TSS (n=11)      |       | Unclassified (n=56)      |       | KD only (n=13)            |      |
|--|---------------------------|-------|--------------------------------|-------|---------------------------|-------|--------------------------------|-------|-------------------------------|-------|----------------------------|-------|--------------------------|-------|---------------------------|------|
|  | n                         | %     | n                              | %     | n                         | %     | n                              | %     | n                             | %     | n                          | %     | n                        | %     | n                         | %    |
| <b>Admitted to PICU</b>  | 141                       | 41.1% | 118                            | 44.0% | 89                        | 41.2% | 4                              | 30.8% | 19                            | 67.9% | 6                          | 54.5% | 19                       | 33.9% | 1                         | 7.7% |
| <b>Required conventional ventilation/<br/>High Frequency Oscillation</b> | 55                        | 16.0% | 44                             | 16.4% | 28                        | 13.0% | 1                              | 7.7%  | 10                            | 35.7% | 5                          | 45.5% | 6                        | 10.7% | 0                         | 0.0% |
| <b>Required peritoneal dialysis</b>                                      | 2                         | 0.6%  | 1                              | 0.4%  | 1                         | 0.5%  | 0                              | 0.0%  | 0                             | 0.0%  | 0                          | 0.0%  | 1                        | 1.8%  | 0                         | 0.0% |
| <b>Required inotropes</b>  | 89                        | 25.9% | 80                             | 29.9% | 56                        | 25.9% | 3                              | 23.1% | 15                            | 53.6% | 6                          | 54.5% | 6                        | 10.7% | 1                         | 7.7% |
| <b>Died</b>  | 4                         | 1.2%  | 3                              | 1.1%  | 2                         | 0.9%  | 0                              | 0.0%  | 1                             | 3.6%  | 0                          | 0.0%  | 1                        | 1.8%  | 0                         | 0.0% |
| <i>Median duration of hospital stay (IQR)</i>                            | <i>7 days (IQR: 5-11)</i> |       | <i>8 days (IQR: 5-11)</i>      |       | <i>7 days (IQR: 5-10)</i> |       | <i>5 days (IQR: 4-6)</i>       |       | <i>13 days (IQR: 10.5-17)</i> |       | <i>9 days (IQR: 5-12)</i>  |       | <i>6 days (IQR: 4-8)</i> |       | <i>4 days (IQR: 2-16)</i> |      |
| <i>Median duration of PICU stay (IQR)</i>                                | <i>3 days (IQR: 2-7)</i>  |       | <i>3 days (IQR: 2-7)</i>       |       | <i>3 days (IQR: 2-6)</i>  |       | <i>2.5 days (IQR: 1.5-3.5)</i> |       | <i>6 days (IQR: 2-8)</i>      |       | <i>3.5 days (IQR: 2-5)</i> |       | <i>1 day (IQR: 1-12)</i> |       | <i>3 days (IQR: 2-6)</i>  |      |

**Table S4.10 Greater London versus outside Greater London**

|                            |  | Total                            |               | Greater London                   |              | Outside Greater London           |              |
|----------------------------|--|----------------------------------|---------------|----------------------------------|--------------|----------------------------------|--------------|
|                            |  | Number                           | %             | Number                           | %            | Number                           | %            |
| <b>TOTAL</b>               |  | <b>268</b>                       | <b>100.0%</b> | <b>124</b>                       | <b>46.3%</b> | <b>144</b>                       | <b>53.7%</b> |
| <b>Ethnicity</b>           | <b>Number with ethnicity information</b> | <b>258</b>                       |               | 116                              |              | 142                              |              |
|                            | <b>White</b>                             | <b>114</b>                       | <b>44.2%</b>  | 32                               | 27.6%        | 82                               | 57.7%        |
|                            | <b>Black/Black British</b>               | <b>60</b>                        | <b>23.3%</b>  | 41                               | 35.3%        | 19                               | 13.4%        |
|                            | <b>Asian/Asian British</b>               | <b>63</b>                        | <b>24.4%</b>  | 30                               | 25.9%        | 33                               | 23.2%        |
|                            | <b>Mixed</b>                             | <b>11</b>                        | <b>4.3%</b>   | 4                                | 3.4%         | 7                                | 4.9%         |
|                            | <b>Other</b>                             | <b>10</b>                        | <b>3.9%</b>   | 9                                | 7.8%         | 1                                | 0.7%         |
| <b>Age (years)</b>         | <i>Median</i>                            | <i>8.2 years (IQR: 4.0-12.1)</i> |               | <i>9.2 years (IQR: 5.4-12.7)</i> |              | <i>6.4 years (IQR: 2.6-10.9)</i> |              |
|                            | <i>Mean</i>                              | <i>7.9 years</i>                 |               | <i>9.0 years</i>                 |              | <i>7.0 years</i>                 |              |
|                            | <b>&lt;1 yr</b>                          | <b>23</b>                        | <b>8.6%</b>   | 7                                | 5.6%         | 16                               | 11.1%        |
|                            | <b>1-4 yrs</b>                           | <b>65</b>                        | <b>24.3%</b>  | 23                               | 18.5%        | 42                               | 29.2%        |
|                            | <b>5-9 yrs</b>                           | <b>80</b>                        | <b>29.9%</b>  | 37                               | 29.8%        | 43                               | 29.9%        |
|                            | <b>10-15 yrs</b>                         | <b>100</b>                       | <b>37.3%</b>  | 57                               | 46.0%        | 43                               | 29.9%        |
| <b>Sex</b>                 | <b>Number with information</b>           | <b>251</b>                       |               | 118                              |              | 133                              |              |
|                            | <b>Male</b>                              | <b>161</b>                       | <b>64.1%</b>  | 76                               | 64.4%        | 85                               | 63.9%        |
|                            | <b>Female</b>                            | <b>90</b>                        | <b>35.9%</b>  | 42                               | 35.6%        | 48                               | 36.1%        |
| <b>Case classification</b> | <b>PIMS-TS only</b>                      | <b>216</b>                       | <b>80.6%</b>  | 106                              | 85.5%        | 110                              | 76.4%        |
|                            | <b>PIMS-TS/Kawasaki only</b>             | <b>13</b>                        | <b>4.9%</b>   | 1                                | 0.8%         | 12                               | 8.3%         |
|                            | <b>PIMS-TS/TSS only</b>                  | <b>28</b>                        | <b>10.4%</b>  | 15                               | 12.1%        | 13                               | 9.0%         |
|                            | <b>PIMS-TS/Kawasaki/TSS</b>              | <b>11</b>                        | <b>4.1%</b>   | 2                                | 1.6%         | 9                                | 6.3%         |



### **Children not classified as PIMS-TS, Kawasaki or TSS**

There were 56 suspected cases that did not meet the definition of any of the three syndromes. Of these, 48 (85.7%) children had 2 of the 3 criteria for classification as PIMS; 43 of these had fever and at least one other PIMS-TS criteria, but had CRP <100 mg/L or were missing CRP values. The median CRP level in the 35 children in this group with reported CRP was 75 mg/L (IQR: 55.9-91, range 12.5-99). One child in this group died of an unrelated cause; their highest CRP was 92.6 mg/L. Four other children had no reported fever but had CRP>100 mg/L and at least one other PIMS-TS criteria.

One child had all 5 features of Kawasaki and had fever written in the case notes, but no information regarding duration of fever (a duration of 5 days was required to fill the Kawasaki criteria). Four cases had 4 features of Kawasaki but a fever duration prior to admission of 2-3 days.

One of 5 criteria for TSS was multisystem involvement – 8 children had multisystem involvement, and 7 of these fulfilled 2 other criteria for TSS (4 criteria are needed to classify as TSS). Seven children fulfilled 3 criteria of TSS with no multisystem involvement.

Nearly two-thirds of these children had been suspected as having PIMS-TS according to the clinician reporting (n=36, 64.3%), 39.3% (n=22) were suspected KD and 3.6% (n=2) were suspected TSS (note several cases had multiple suspicions reported).

In terms of missing data: 10 children were missing a value for CRP, 23 had missing information on whether they had had an ECG, 7 had no information regarding if they had had an Echo, 2 were missing albumin, 2 were missing ALT, 16 were missing APTT, 31 were missing information regarding respiratory failure, 10 were missing ferritin and 16 were missing D-dimers (9 were missing both ferritin and D-dimers).

Forty-nine had information regarding sex; 15 (30.6%) were female and 34 (69.4%) were male. The mean age was 7.0 years (median 6.4, IQR 2.4-11.7 years). Fifty-four cases had information regarding ethnicity: 30 (55.6%) were white, 9 (16.7%) were Asian/Asian British, 6 (11.1%) were Black/African/Caribbean/Black British, and 7 (13.0%) were Mixed/Multiple Ethnic Groups. Sixteen (28.6%) had underlying medical conditions and 4 (7.1%) were over 2 SDs above the mean weight for their age and sex. Eleven (19.6%) children tested positive on either PCR or serology tests: only 4 of 52 tested by PCR for SARS-CoV-2 infection were positive (7.7%), while 9 of 29 tested for antibodies were positive (31.0%).

## Supplementary Material 5: Clinical suspicion

Agreement between case definitions and initial clinician suspicions. Blue indicates complete agreement, orange indicates partial agreement.

**Table S5.1 Percentage of defined case type classified as suspected case type**

| Definition category   | Total      | Suspicion category |        |         |       |          |       |            |       |             |      |                |      |
|-----------------------|------------|--------------------|--------|---------|-------|----------|-------|------------|-------|-------------|------|----------------|------|
|                       |            | PIMS-TS only       |        | KD only |       | TSS only |       | PIMS-TS/KD |       | PIMS-TS/TSS |      | PIMS-TS/TSS/KD |      |
| <b>PIMS-TS only</b>   | <b>216</b> | 147                | 68.1%  | 31      | 14.4% | 6        | 2.8%  | 21         | 9.7%  | 7           | 3.2% | 1              | 0.5% |
| <b>KD only</b>        | <b>13</b>  | 2                  | 15.4%  | 9       | 69.2% | 0        | 0.0%  | 2          | 15.4% | 0           | 0.0% | 0              | 0.0% |
| <b>TSS only</b>       | <b>2</b>   | 2                  | 100.0% | 0       | 0.0%  | 0        | 0.0%  | 0          | 0.0%  | 0           | 0.0% | 0              | 0.0% |
| <b>PIMS-TS/KD</b>     | <b>13</b>  | 7                  | 53.8%  | 5       | 38.5% | 0        | 0.0%  | 1          | 7.7%  | 0           | 0.0% | 0              | 0.0% |
| <b>PIMS-TS/TSS</b>    | <b>28</b>  | 19                 | 67.9%  | 5       | 17.9% | 0        | 0.0%  | 3          | 10.7% | 0           | 0.0% | 1              | 3.6% |
| <b>KD/TSS</b>         | <b>4</b>   | 1                  | 25.0%  | 2       | 50.0% | 1        | 25.0% | 0          | 0.0%  | 0           | 0.0% | 0              | 0.0% |
| <b>PIMS-TS/TSS/KD</b> | <b>11</b>  | 8                  | 72.7%  | 2       | 18.2% | 0        | 0.0%  | 0          | 0.0%  | 0           | 0.0% | 1              | 9.1% |
| <b>Unclassified</b>   | <b>56</b>  | 32                 | 57.1%  | 19      | 33.9% | 1        | 1.8%  | 3          | 5.4%  | 1           | 1.8% | 0              | 0.0% |

**Table S5.2 Percentage of suspected case type classified as defined case type**

| Definition category   | Suspicion category |       |           |       |          |       |            |       |             |       |                |       |
|-----------------------|--------------------|-------|-----------|-------|----------|-------|------------|-------|-------------|-------|----------------|-------|
|                       | PIMS-TS only       |       | KD only   |       | TSS only |       | PIMS-TS/KD |       | PIMS-TS/TSS |       | PIMS-TS/TSS/KD |       |
| <b>PIMS-TS only</b>   | 147                | 67.4% | 31        | 42.5% | 6        | 75.0% | 21         | 70.0% | 7           | 87.5% | 1              | 33.3% |
| <b>KD only</b>        | 2                  | 0.9%  | 9         | 12.3% | 0        | 0.0%  | 2          | 6.7%  | 0           | 0.0%  | 0              | 0.0%  |
| <b>TSS only</b>       | 2                  | 0.9%  | 0         | 0.0%  | 0        | 0.0%  | 0          | 0.0%  | 0           | 0.0%  | 0              | 0.0%  |
| <b>PIMS-TS/KD</b>     | 7                  | 3.2%  | 5         | 6.8%  | 0        | 0.0%  | 1          | 3.3%  | 0           | 0.0%  | 0              | 0.0%  |
| <b>PIMS-TS/TSS</b>    | 19                 | 8.7%  | 5         | 6.8%  | 0        | 0.0%  | 3          | 10.0% | 0           | 0.0%  | 1              | 33.3% |
| <b>KD/TSS</b>         | 1                  | 0.5%  | 2         | 2.7%  | 1        | 12.5% | 0          | 0.0%  | 0           | 0.0%  | 0              | 0.0%  |
| <b>PIMS-TS/TSS/KD</b> | 8                  | 3.7%  | 2         | 2.7%  | 0        | 0.0%  | 0          | 0.0%  | 0           | 0.0%  | 1              | 33.3% |
| <b>Unclassified</b>   | 32                 | 14.7% | 19        | 26.0% | 1        | 12.5% | 3          | 10.0% | 1           | 12.5% | 0              | 0.0%  |
| <b>Total</b>          | <b>218</b>         |       | <b>73</b> |       | <b>8</b> |       | <b>30</b>  |       | <b>8</b>    |       | <b>3</b>       |       |