

## ADDITIONAL FILE 2

Table S2 Mapping analysis of International Developmental Assessments for Infants Aged 12 Months.

Developmental Domains	ECD Conceptual constructs	ECD Conceptual elements contained in 10-14 month battery															
		BSID-III <sup>1</sup>	MDAT <sup>2</sup>	Griffiths <sup>3</sup>	CBCL <sup>4</sup>	RNDA <sup>5</sup>	ASQ-III <sup>6</sup>	PEDS <sup>7</sup>	CRE-DI <sup>8</sup>	DDST-II <sup>9</sup>	GMCD <sup>10</sup>	DAS-II <sup>11</sup>	TADI <sup>12</sup>	IYCD <sup>13</sup>	BDI-2 <sup>14,a</sup>	MSEL <sup>15,a</sup>	CDIIT <sup>16</sup>
<b>Conceptual constructs according to OX-NDA working group's neurodevelopmental matrix (Age Band: 10-14 months)</b>																	
Cognitive	Comprehension of simple instructions																
	Constructional skills																
	Comprehends concept of 'one'																
	Object permanence																
	Basic problem solving skills																
	Object matching/sorting																
	Pretend play																
Motor	Pincer grasp and grasp release																
	Transfer of objects between hands																
	Walks with support/alone																
	Stands alone																
	Motor coordination																
Language	2-4 syllable babble																
	1 meaningful word																

	2 words together																
	Preverbal gesture																
	Comprehends own name																
	Comprehends concept of 'no'																
Executive Function	Multi-step problem solving																
	Demonstrates means to an end																
	Empathy																
Behaviour	Positive behavior attributes																
	Negative behavior attributes																
	Emotional lability																
	Emotional regulation																
	Curiosity																

**ECD Conceptual elements as per WHO IYCD indicators (Age Band: 12.1-18.0 months)**

		BSID-III <sup>1</sup>	MDAT <sup>2</sup>	Griffiths <sup>3</sup>	CBCL <sup>4</sup>	RNDA <sup>5</sup>	ASQ-III <sup>6</sup>	PEDS <sup>7</sup>	CRE-DI <sup>8</sup>	DDST-II <sup>9</sup>	GMCD <sup>10</sup>	DAS-II <sup>11</sup>	TADI <sup>12</sup>	IYCD <sup>13</sup>	BDI-2 <sup>14,a</sup>	MSEL <sup>15,a</sup>	CDIIT <sup>16</sup>
Cognitive	Object sorting																
Motor	Matured motor coordination																
Language	Use of at least two to four words																
Social-emotional	Stranger anxiety																
	Self control/delay in gratification																
	Emergence of compliance																

## Legend:

■	Specific construct clearly present
■	Related construct present
■	General overview of parental concern only
■	Construct not present
■	Unable to assess as information not freely available

<sup>1</sup>BSID-III: Bayley Scales of Infant and Toddler Development, Third Edition (Bayley-III); ©Pearson. Available from: <http://www.pearsonclinical.co.uk>

<sup>2</sup>MDAT: The Malawi Developmental Assessment Tool; Gladstone M, Lancaster GA, Umar E, Nyirenda M, Kayira E, van den Broek NR, Smyth RL. The Malawi Developmental Assessment Tool (MDAT): the creation, validation, and reliability of a tool to assess child development in rural African settings. *PLoS medicine* 2010; **7**: e1000273.

<sup>3</sup>Griffiths: Griffiths Mental Development Scales; Luiz D, Barnard A, Knoesen N, Kotras N, Horrocks S, McAlinden P, Challis D, O'Connell R. Griffiths Mental Development Scales—Extended Revised: Two to Eight Years: Administration Manual. Hogrefe, Oxford, UK 2006.

<sup>4</sup>CBCL: Preschool Child Behavior Checklist; Achenbach TM. Manual for the Child Behavior Checklist/4-18 and 1991 profile. University of Vermont, Department of Psychiatry 1991.

<sup>5</sup>RNDA: Rapid Neurodevelopmental Assessment; Khan NZ, Muslima H, Begum D, Shilpi AB, Akhter S, Bilkis K, Begum N, Parveen M, Ferdous S, Morshed R, Batra M. Validation of rapid neurodevelopmental assessment instrument for under-two-year-old children in Bangladesh. *Pediatrics*. 2010 Apr 1;125(4):e755-62.

<sup>6</sup>ASQ-III: Ages & Stages Questionnaires®, Third Edition; <https://agesandstages.com/products-pricing/asq3/>

<sup>7</sup>PEDS: Parents' Evaluation of Developmental Status. Glascoe FP. Collaborating with parents: Using Parents' Evaluation of Developmental Status to detect and address developmental and behavioral problems. Ellsworth & Vandermeer Press; 1998. Available at: <http://forepath.org/>.

<sup>8</sup>CREDI: Caregiver Reported Early Developmental Instruments; McCoy DC, Waldman M, Team CF, Fink G. Measuring early childhood development at a global scale: evidence from the Caregiver-Reported early development instruments. *Early childhood research quarterly*. 2018 Oct 1;45:58-68. <https://sites.sph.harvard.edu/credi/>

<sup>9</sup>DDST-II: The Denver Developmental Screening Test IIInd edition; Frankenburg WK, Dodds J, Archer P, Shapiro H, Bresnick B. The Denver II: a major revision and restandardization of the Denver Developmental Screening Test. *Pediatrics* 1992; **89**: 91-7.

<sup>10</sup>GMCD: A Guide for Monitoring Child Development; Ertem IO, Dogan DG, Gok CG, Kizilates SU, Caliskan A, Atay G, Vatandas N, Karaaslan T, Baskan SG, Cicchetti DV. A guide for monitoring child development in low-and middle-income countries. *Pediatrics* 2008; **121**: e581-9.

<sup>11</sup>DASII: Developmental Assessment Scales for Indian Infants; Phatak P. Mental and Motor Growth of Indian Babies (1 Month-30 Months).(Longitudinal Growth of Indian Children). Final Report. <https://www.manashakti.org/tests/developmental-assessment-scales-indian-infants>

<sup>12</sup>TADI: Test de Aprendizaje y Desarrollo Infantil; López Vanegas, N. y Peñafiel Aguirre, T. (2020). Adaptación y validación del test de Aprendizaje y desarrollo infantil "TADI" en el GAD de Calderón. Trabajo de titulación previo a la obtención del Título de Psicólogo Infantil y Psicorehabilitación. Carrera de Psicología Infantil y Psicorehabilitación. Quito: UCE. 190 p.

<http://www.dspace.uce.edu.ec/bitstream/25000/20829/1/T-UCE-0007-CPS-245.pdf>

<sup>13</sup>IYCD: WHO Indicators of Infant and Young Child Development; Lancaster GA, McCray G, Kariger P, *et al.* Creation of the WHO Indicators of Infant and Young Child Development (IYCD): metadata synthesis across 10 countries. *BMJ Glob Health* 2018; **3**:e000747.

<sup>14</sup>BDI-2: Battelle's Development Inventory 2; Newborg, J., Stock, J.R., Wnek, L., Guidabaldi, J., & Svinicki, J. (1984). Battelle Developmental Inventory Screening Test. Allen Texas: DLM-Teaching Resources.

<sup>15</sup>MSEL: Mullen's Scales of Early Learning; Mullen, E. *Mullen Scales of Early Learning*. Circle Pines, NM: American Guidance Service 1995.

<sup>16</sup>CDIIT: Comprehensive Developmental Inventory for Infants and Toddlers; Hwang AW, Weng LJ, Liao HF. Construct validity of the comprehensive developmental inventory for infants and toddlers. *Pediatrics international*. 2010 Aug; **52**(4): 598-606.

<sup>a</sup> Instrument's commercialization partner contacted for information about the tool, response not obtained.