Appendix B: Studies identified in search that described PDSA method in sufficient detail to be included for full analysis

First Author	Cycle(s) referred to as PDSAs or PDCAs?	Iterative Cycles			Prediction-based test of change	Small-scale testing							Data over time			Type of Data used to inform cycles
						Sample		Complexity	Duration							
		Iterative nature of cycles	Number of cycles / chains of cycles	Content of final "act" stage	Prediction-based test of change categorisation	Total sample size post PDSA cycle initiation per chain	Incremental scale over cycles of an iterative chain	Several tests of change in a cycle	Total Length of PDSA cycle conduct (start of first cycle to end of last cycle)	Length of individual cycles	Deduced average duration per cycle (Total PDSA use duration/ number of PDSA)	Length of cycle	Regular (R) / isolated (I)	Use of statistics	Data Time Interval (months)	Type of Data used to inform cycles
Beger (1)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change - with explicit prediction articulated in plan	33	N/A	No	30	Not Stated	30	30	I	None	Before and after	Quantitative and Qualitative
Bittle(2)	PDSA	Iterative chain	3	1 Not referred to	Testing change	Not Stated	No sample size data	Yes	45	Cycles 1: 4, Cycle 2: 3, Cycle 3: 12	N/A	4; 3; 12	R	p value	12	Quantitative
Boyd(3)	PDSA	Iterative chain	7	5 New PDSA scheduled	Testing change	100	Not incremental	No	7	1	N/A	1	R	p value	Weekly	Quantitative
Brown(4)	PDSA	Single isolated cycle	1	5 New PDSA scheduled	Testing change	Not Stated	N/A	Yes	1	1	N/A	1	N	None	N/A	Qualitative
Buckley(5)	PDSA	Multiple Iterative chains	Chain 1: 6, Chain 2: unclear	2 Further changes implemented	Testing change - with explicit prediction articulated in plan	Not Stated	No sample size data	No	Chain 1: 45, Chain 2: 36	Not Stated	7.5	7.5	R	p value	3	Quantitative
Buhr(6)	PDSA	Multiple isolated cycles	4	3 Changes made permanent	Testing change	Cycle 1: 66, Cycle2, 3, 4: Not stated	N/A	No	16	Cycle 1: 3, Cycle 2: Not stated, Cycle 3: 11, Cycle 4:Not stated	N/A	3; 11	I	none	Before and after	Quantitative

Caswell(7)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change	46	N/A	Yes	9	9	N/A	9	I	None	Before and after	Quantitative
Chen(8)	PDCA	Single isolated cycle	1	3 Changes made permanent	Testing change	90	N/A	Yes	20	Not Stated	20	20	I	p value	Before and after	Quantitative
Christie(9)	PDSA	Single isolated cycle	1	2 Further changes implemented	Testing change	Not Stated	N/A	No	Not Stated	Not Stated	Not Stated	Not Stated	I	None	Before and after	Quantitative
Curran(10)	PDSA	Single isolated cycle	1	5 New PDSA scheduled	Testing change	307	N/A	Yes	12	12	N/A	12	R	None	Weekly	Quantitative and Qualitative
Dover(11)	PDSA	Iterative chain	4	3 Changes made permanent	Collecting data in first followed by testing change	Not Stated	No sample size data	No	12	Not Stated	3	3	I	None	Before and after	Quantitative and Qualitative
Dunn(12)	PDSA	Single isolated cycle	1	2 Further changes implemented	Collecting data	332	N/A	No	2	2	N/A	2	N	None	N/A	Qualitative
Eckhart(13)	PDCA	Single isolated cycle	1	4 Further changes suggested	Testing change	43	N/A	No	18	18	N/A	18	I	None	Irregular 4 data points	Quantitative
Eisenberg(14)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change	1100	N/A	Yes	18	Not Stated	18	18	N	None	N/A	Quantitative but not presented
Fernandes(15)	PDCA	Single isolated cycle	1	3 Changes made permanent	Testing change	70	N/A	No	13	Not Stated	13	13	R	None	1	Quantitative
Flynt(16)	PDCA	Single isolated cycle	1	4 Further changes suggested	Testing change	Not Stated	N/A	Yes	Not Stated	Not Stated	Not Stated	Not Stated	N	None	N/A	Quantitative but not presented

Gillaspie(17)	PDSA	Iterative chain	3	0 - Unclear	Testing change	Not Stated	No sample size data	No	0.033333333	Not Stated	0.011111111	0.011111111	N	None	N/A	Qualitative
Gordon(18)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change	Not Stated	N/A	Yes	60	60	N/A	60	I	None	Irregualr - 5 points	Quantitative
Gordon(19)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change	Not Stated	N/A	Yes	24	Not Stated	24	24	R	None	Daily	Quantitative
Hallett(20)	PDSA	Single isolated cycle	1	2 Further changes implemented	Testing change	7	N/A	No	3	3	N/A	3	A	None	N/A	Quantitative
Hoskins(21)	PDCA	Multiple isolated cycles	2	3 Changes made permanent	Testing change	Not Stated	N/A	Yes	Cycle 1:6, Cycle 2: Not Stated	Not Stated	6	6	R	p value	1	Quantitative
Isouard(22)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change	Not Stated	N/A	Yes	12	Not Stated	12	12	R	p value	2	Quantitative
Johnson(23)	PDSA	Multiple isolated cycles	5	4 Further changes suggested	Testing change	Not Stated	N/A	Yes	Not Stated	Not Stated	N/A	Not Stated	A	None	N/A	Quantitative
Leone(24)	PDSA	Single isolated cycle	1	5 New PDSA scheduled	Testing change	40	N/A	Yes	2	2	N/A	2	A	None	N/A	Quantitative
Lynch-Jordan(25)	PDSA	Multiple Iterative chains	4 chains of mulitple cycles(not stated)	5 New PDSA scheduled	Testing change	Chain 1:5, Chain 2:34, Chain 3:5, Chain 4:unclear	Incremental of same sample	Yes	6	Not Stated	Not Stated	Not Stated	R	None	Weekly	Quantitative
Manfredi(26)	PDCA	Iterative chain	3	5 New PDSA scheduled	Collecting data in first followed by testing change	29	Not incremental	Yes	6	Not Stated	2	2	I	None	Per PDSA cycle	Quantitative

Study	Type	Structure	N	Changes	Data collection	N	Incremental	Y/N	N	Cycle breakdown		N	Code	Stats	Timing	Method
Marcellus(27)	PDSA	Iterative chain	3	0 - Unclear	Collecting data in first followed by testing change	178	Not incremental	Yes	32	Cycle 1: 8, Cycle 2: 7, Cycle 3: 16	N/A	8; 7; 16	I	None	Per PDSA cycle	Quantitative
McPharlin(28)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change	68	N/A	No	14	5	N/A	5	I	None	Before and after	Quantitative
Meehan(29)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change - with explicit prediction articulated in plan	62	N/A	No	0.5	0.5	N/A	0.5	N	None	N/A	Qualitative
Miano(30)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change	31	N/A	No	6	6	N/A	6	A	None	N/A	Quantitative
Miller(31)	PDCA	Iterative chain	3	1 Not referred to	Collecting data in first followed by testing change	75	Not incremental	No	Not Stated	Cycle 1: 6, Cycle 2: 6, Cycle 3: Not Stated	N/A	6; 6	R	None	Per data item	Quantitative
Moran(32)	PDSA	Single isolated cycle	1	4 Further changes suggested	Testing change	Not Stated	N/A	Yes	Not Stated	Not Stated	Not Stated	Not Stated	N	None	N/A	Qualitative
Nayeri(33)	PDCA	Single isolated cycle	1	3 Changes made permanent	Testing change	44	N/A	No	Not Stated	Not Stated	Not Stated	Not Stated	I	p value	Before and after	Quantitative
New(34)	PDCA	Single isolated cycle	1	3 Changes made permanent	Testing change	Not Stated	N/A	No	1	1	N/A	1	N	None	N/A	Qualitative
Pace(35)	PDCA	Iterative chain	3	3 Changes made permanent	Collecting data in first followed by testing change	Sample changed during iterative chain	Change sample	Yes	48	Not Stated	16	16	R	None	3	Quantitative
Pronovost(36)	PDSA	Multiple isolated cycles	3	3 Changes made permanent	Testing change	Not Stated	N/A	No	Not Stated	Cycle 1: 3, Cycle 2, 3: Not Stated	N/A	3;3	R	None	1	Quantitative and Qualitative

Study	Method	Cycle Type	Number	Changes	Activity	Sample Size	Sample Size Notes									Data Type
Reid(37)	PDSA	Single isolated cycle	1	4 Further changes suggested	Collecting data	50	N/A	No	1	Not Stated	1	1	A	None	N/A	Quantitative
Robarts(38)	PDSA	Multiple Iterative chains	2 chains of multiple cycles(not stated)	3 Changes made permanent	Testing change	Not Stated	No sample size data	No	Not Stated	Not Stated	N/A	Not Stated	A	p value	N/A	Quantitative and Qualitative
Sanchez(39)	PDCA	Single isolated cycle	1	4 Further changes suggested	Testing change	52	N/A	No	0.5	0.5	N/A	0.5	A	None	N/A	Quantitative
Simon(40)	PDCA	Single isolated cycle	1	3 Changes made permanent	Testing change	1094	N/A	No	24	Not Stated	24	24	I	p value	Before and after	Quantitative
Sorokin(41)	PDSA	Single isolated cycle	1	2 Further changes implemented	Testing change	2079	N/A	Yes	20	Not Stated	20	20	R	None	3	Quantitative
Stadt(42)	PDSA	Iterative chain	Multiple (not stated)	0 - Unclear	Testing change	Not Stated	Individual cycle sample size not reported	Yes	48	Not Stated	Not Stated	Not Stated	R	None	3	Quantitative and Qualitative
Sumrall(43)	PDSA	Single isolated cycle	1	4 Further changes suggested	Testing change	Not Stated	N/A	Yes	18	Not Stated	18	18	R	None	3	Quantitative
Torkki(44)	PDCA	Single isolated cycle	1	2 Further changes implemented	Testing change	923	N/A	Yes	12	Not Stated	12	12	R	p value	12	Quantitative
Varkey(45)	PDSA	Iterative chain	5	0 - Unclear	Testing change	68	Incremental of same sample	No	0.75	Not Stated	0.15	0.15	I	p value	Before and after	Quantitative
Wheatland(46)	PDSA	Single isolated cycle	1	2 Further changes implemented	Collecting data	253	N/A	No	Not Stated	Not Stated	N/A	Not Stated	A	None	N/A	Quantitative

| Wojciechowski(47) | PDSA | Multiple Iterative chains | 4 chains of mulitple cycles(not stated) | 5 New PDSA scheduled | Mixed | Not Stated | Not incremental | No | 48 | Not Stated | Not Stated | Not Stated | I | None | Before and after | Quantitative and Qualitative |

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