Supplementary 1: TREND checklist for reporting of non-randomized evaluations of behavioral and public health interventions

Darlow, B., Brown, M., McKinlay, E., Gray, L. Purdie, G., Pullon, S. (2022). Longitudinal impact of pre-registration interprofessional education on the attitudes and skills of health professionals during their early careers: a non-randomised trial with 4-year outcomes. BMJ Open

Paper Section/Topic	Item No.	Descriptor	Reported? ✓	Reported? Pg #
TITLE and ABSTRACT				
Title, Abstract	1	• Information on how units were allocated to interventions	✓	2
		• Structured abstract recommended	✓	2
		• Information on target population or study sample	✓	2
INTRODUCTION				
Background	2	• Scientific background and explanation of rationale	✓	4
		• Theories used in designing behavioral interventions	N/A	
METHODS				
Participants	3	• Eligibility criteria for participants, including criteria at different levels in recruitment/sampling plan (e.g., cities, clinics, subjects)	✓	4
		• Method of recruitment (e.g., referral, self-selection), including the sampling method if a systematic sampling plan was implemented	✓	4
		• Recruitment setting	✓	4
		• Settings and locations where the data were collected	✓	6
Interventions	4	• Details of the interventions intended for each study condition and how and when they were actually administered, specifically including:	✓	5
		○ Content: what was given?	✓	5
		○ Delivery method: how was the content given?	✓	5
		○ Unit of delivery: how were subjects grouped during delivery?	✓	5
		○ Deliverer: who delivered the intervention?	✓	5
		○ Setting: where was the intervention delivered?	✓	5
		○ Exposure quantity and duration: how many sessions or episodes or events were intended to be delivered? How long were they intended to last?	✓	5
		○ Time span: how long was it intended to take to deliver the intervention to each unit?	✓	5
		○ Activities to increase compliance or adherence (e.g., incentives)	N/A	
Objectives	5	• Specific objectives and hypotheses	✓	4
Outcomes	6	• Clearly defined primary and secondary outcome measures	✓	5
		• Methods used to collect data and any methods used to enhance the quality of measurements	✓	6
		• Information on validated instruments such as psychometric and biometric properties	✓	6
Sample size	7	• How sample size was determined and, when applicable, explanation of any interim analyses and stopping rules	✓	6
Assignment method	8	• Unit of assignment (the unit being assigned to study condition, e.g., individual, group, community)	✓	5
		• Method used to assign units to study conditions, including details of any restriction (e.g., blocking, stratification, minimization)	✓	4,5
		• Inclusion of aspects employed to help minimize potential bias induced due to non-randomization (e.g., matching)	NA	
Blinding (masking)	9	• Whether or not participants, those administering the interventions, and those assessing the outcomes were blinded to study condition assignment; if so, statement regarding how the blinding was accomplished and how it was assessed	✓	4
Unit of Analysis	10	• Description of the smallest unit that is being analysed to assess intervention effects (e.g., individual, group, or community)	✓	6
		• If the unit of analysis differs from the unit of assignment, the analytical method used to account for this (e.g., adjusting the standard error estimates by the design effect or using multilevel analysis)	N/A	

Statistical methods	11	• Statistical methods used to compare study groups for primary methods outcome(s), including complex methods for correlated data	✓	6
		• Statistical methods used for additional analyses, such as subgroup analyses and adjusted analysis	✓	6
		• Methods for imputing missing data, if used	✓	6
		• Statistical software or programs used	✓	6
RESULTS				
Participant flow	12	• Flow of participants through each stage of the study: enrollment, assignment, allocation and intervention exposure, follow-up, analysis (a diagram is strongly recommended)	✓	7, S3
		○ Enrollment: the numbers of participants screened for eligibility, found to be eligible or not eligible, declined to be enrolled, and enrolled in the study	✓	7, S3
		○ Assignment: the numbers of participants assigned to a study condition	✓	7,8, S3
		○ Allocation and intervention exposure: the number of participants assigned to each study condition and the number of participants who received each intervention	✓	7,8, S3
		○ Follow-up: the number of participants who completed the follow-up or did not complete the follow-up (i.e., lost to follow-up), by study condition	✓	9, S3
		○ Analysis: the number of participants included in or excluded from the main analysis, by study condition	✓	9, S3
		• Description of protocol deviations from study as planned, along with reasons	N/A	
Recruitment	13	• Dates defining the periods of recruitment and follow-up	✓	4,6
Baseline data	14	• Baseline demographic and clinical characteristics of participants in each study condition	✓	7,8
		• Baseline characteristics for each study condition relevant to specific disease prevention research	✓	7,8
		• Baseline comparisons of those lost to follow-up and those retained, overall and by study condition	✓	7,8
		• Comparison between study population at baseline and target population of interest	✓	7,8
Baseline equivalence	15	• Data on study group equivalence at baseline and statistical methods used to control for baseline differences	✓	7-9
Numbers analyzed	16	• Number of participants (denominator) included in each analysis for each study condition, particularly when the denominators change for different outcomes; statement of the results in absolute numbers when feasible	✓	S3
		✓ Indication of whether the analysis strategy was “intention to treat” or, if not, description of how non-compliers were treated in the analyses	✓	7,9
Outcomes and estimation	17	• For each primary and secondary outcome, a summary of results for each estimation study condition, and the estimated effect size and a confidence interval to indicate the precision	✓	9
		• Inclusion of null and negative findings	✓	9
		• Inclusion of results from testing pre-specified causal pathways through which the intervention was intended to operate, if any	N/A	
Ancillary analyses	18	• Summary of other analyses performed, including subgroup or restricted analyses, indicating which are pre-specified or exploratory	N/A	
Adverse events	19	• Summary of all important adverse events or unintended effects in each study condition (including summary measures, effect size estimates, and confidence intervals)	N/A	
DISCUSSION				
Interpretation	20	• Interpretation of the results, taking into account study hypotheses, sources of potential bias, imprecision of measures, multiplicative analyses, and other limitations or weaknesses of the study	✓	12, 13
		• Discussion of results taking into account the mechanism by which the intervention was intended to work (causal pathways) or alternative mechanisms or explanations	✓	12, 13
		• Discussion of the success of and barriers to implementing the intervention, fidelity of implementation	N/A	
		• Discussion of research, programmatic, or policy implications	✓	12, 13
Generalizability	21	• Generalizability (external validity) of the trial findings, taking into account the study population, the characteristics of the intervention, length of follow-up, incentives, compliance rates, specific sites/settings involved in the study, and other contextual issues	✓	12, 13
Overall evidence	22	• General interpretation of the results in the context of current evidence and current theory	✓	12, 13

From: http://www.cdc.gov/trendstatement/ *Also see:* https://www.equator-network.org/reporting-guidelines/improving-the-reporting-quality-of-nonrandomized-evaluations-of-behavioral-and-public-health-interventions-the-trend-statement/

Supplementary 2: Longitudinal Interprofessional Study survey items

Darlow, B., Brown, M., McKinlay, E., Gray, L. Purdie, G., Pullon, S. (2022). Longitudinal impact of pre-registration interprofessional education on the attitudes and skills of health professionals during their early careers: a non-randomised trial with 4-year outcomes. BMJ Open

Survey	Components	Stage
Survey 1	ATHCTS TSS Demographic items	Pre- the final year of training (and prior to TIPE or control exposure)
Survey 2	ATHCTS TSS Clinical practice intention (quantitative and free text items)	Post- the final year of training (and after TIPE or control exposure)
Survey 3	ATHCTS TSS Clinical practice characteristics (quantitative and free text items) Satisfaction (quantitative and free text items) Interprofessional practice (quantitative and free text items)*	One year post-graduation (and end of first year of professional practice)
Survey 4	ATHCTS TSS Clinical practice characteristics (quantitative and free text items) Satisfaction (quantitative and free text items) Interprofessional practice (quantitative and free text items)*	Two years post-graduation (and end of second year of professional practice)
Survey 5	ATHCTS TSS Clinical practice characteristics (quantitative and free text items) Satisfaction (quantitative and free text items) Interprofessional practice (quantitative and free text items)*	Three years post-graduation (and end of third year of professional practice)

ATHCTS, Attitudes Towards Health Care Teams Scale; TSS, Team Skills Scale; TIPE, Tairāwhiti interprofessional education programme

* Free-text questions #3 *interprofessional practice* completed only by participants who attended the Tairāwhiti interprofessional education programme.

Supplementary 3: Development of thematic template

Darlow, B., Brown, M., McKinlay, E., Gray, L. Purdie, G., Pullon, S. (2022). Longitudinal impact of pre-registration interprofessional education on the attitudes and skills of health professionals during their early careers: a non-randomised trial with 4-year outcomes. BMJ Open

Table S1. A Priori Template for Testing a Subset of Longitudinal Interprofessional Study Data

Free-text survey items	1. Explanation of response *'not working or training'* 2. Explanation of response *'Other health profession'* 3. Comments on responses to the '*Attitudes Towards Health Care Teams Scale'* 4. Comments on responses to the *'Team Skills Scale'* 5. Explanation of response *'Other practice setting/professional area'* 6. Explanation of response *'Other practice setting/professional area -- most of time spent'* 7. Explanation of response *'working or training in practice setting / professional area'* 8. Explanation of response *'Other location type'* 9. Explanation of response *'Other location type -- most of time spent'* 10. Explanation of response *'choosing to work in location type'* 11. Comments on response *'job and career satisfaction'* 12. [TIPE participants only] Comments on response *'function and purpose of this interprofessional team'* 13. [TIPE participants only] Explanation of response *'Other types of interprofessional team disciplines'* 14. [TIPE participants only] Description of response *'how this interprofessional team works and your role'* 15. [TIPE participants only] Comments on response *'experience of working or collaborating with different disciplines or health profession'* 16. [TIPE participants only] Comments on response *'aspects of interprofessional education that prepared you for working in interprofessional team'* 17. [TIPE participants only] Comments on response *'influence of TIPE on career choices'* 18. Other comments
A priori themes and sub-themes	**All participants** 1. Current work • General Details ◦ Reason for choosing clinical setting (Items 1, 2, 5 - 7) ◦ Reason for choosing location (Items 8 - 10) ◦ Job satisfaction (item 11) • Interprofessional team in current job ◦ Function and Purpose (Item 12, 13) ◦ How it works (Item 14)
	Participants who attended TIPE 2. Attitudes or experience regarding interprofessional teams or skills • Attitudes toward collaborating (Item 3) • Ability or experience collaborating (Items 4, 15) 3. Beliefs regarding the influence of interprofessional education • Pre-registration training preparation for interprofessional teams (Item 16) • Impact of TIPE on career (Item 17)

TIPE, Tairāwhiti Interprofessional Education program

Table S2. Initial Template (V1) for Coding the Longitudinal Interprofessional Study Full Dataset (all levels of codes)

Initial themes and sub-themes	**All participants** 1. To be coded (free node) 2. Doing for work • Reason for choosing Clinical Setting • Job Reasons • Personal Reasons • Reason for choosing Location • Job Reasons • Personal Reasons • Job Satisfaction • Satisfied • Dissatisfied
	Participants who attended TIPE 3. Attitudes or experience regarding interprofessional teams or skills • Ability or experience collaborating • Attitudes toward collaborating 4. Beliefs regarding the influence of interprofessional education • Pre-registration training preparation for interprofessional teams • TIPE influence on career
Free-text items not coded (descriptive-only answers)	1. Interprofessional team in current job (Items 12 - 14) • Function and Purpose • How it works

TIPE, Tairāwhiti Interprofessional Education program

Table S3. Final Themes and Sub-themes in the Longitudinal Interprofessional Study (higher-level codes only)

Themes (Level 1)	Sub-themes (including higher-level codes only)*

Theme 1: Current Work	**1. Reason for choosing clinical setting**
	• *Job Reasons*
	  ○ Requirement for career path
	  ○ Availability of job or opportunities
	  ○ Nature of the job
	• *Personal Reasons*
	  ○ Family
	  ○ Partner
	  ○ Friends
	2. Reason for choosing location
	• *Job Reasons*
	  ○ Requirement for career path
	  ○ Availability of job or opportunities
	  ○ Nature of the job
	• *'Nature of the Location' Reasons*
	• *Personal Reasons*
	  ○ Home, where I live
	  ○ Family
	  ○ Partner
	  ○ Friends
	3. Job satisfaction
	• [Coded, but results not reported due to low response rates]

Theme 2: Attitudes/experiences related to interprofessional teams or skills	• *Benefits of working in interprofessional teams or collaboration* • *Varies: challenges of working in interprofessional teams or collaboration* • *Health practitioner interaction but not part of team*
Theme 3: Influence of interprofessional education	**1. Pre-registration preparation for working in interprofessional teams** • *Participated in interprofessional education* • *Choice of clinical setting* • *Collaboration and teamwork* • *Hit the ground running* **2. Influence of TIPE on career** • *Choice of clinical setting* • *Choice of location* • *The way I do my job* • *No influence*

Note. Detailed lower-level codes (≥ level 5) are reported elsewhere (manuscript of results in review).
TIPE, Tairāwhiti Interprofessional Education program

Supplementary 4: Participant flowchart and additional analyses

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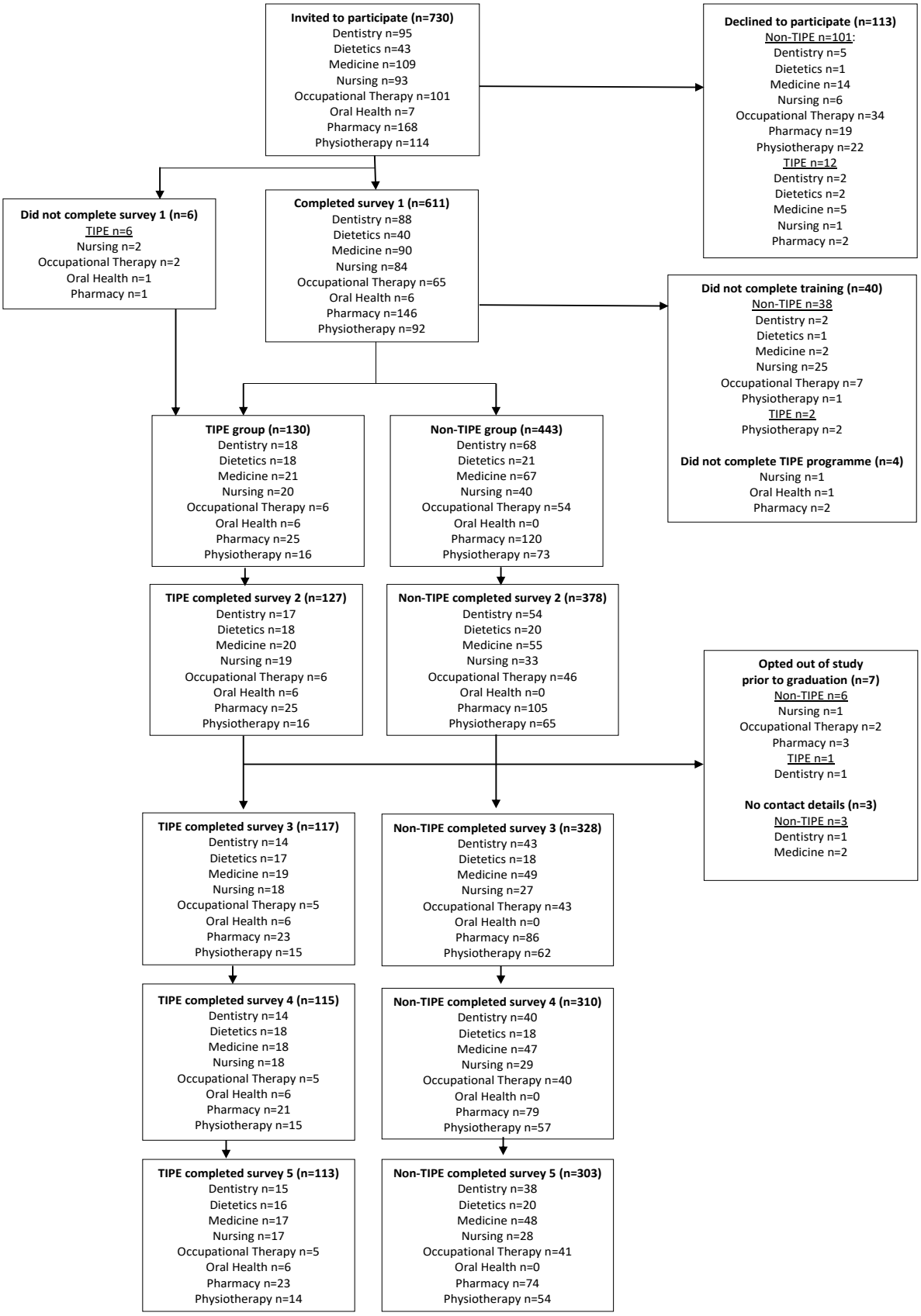

Figure S1. Participant flow. TIPE = Tairāwhiti Interprofessional Education programme

Response rates and loss to follow-up

Table S1. Survey 1 (baseline) response rates

Cohort and discipline	Invited	Completed survey	Response rate %
Non-TIPE			
Dentistry	75	70	93%
Dietetics	23	22	96%
Medicine	83	69	83%
Nursing	71	65	92%
Occupational Therapy	95	61	64%
Oral Health	0	0	-
Pharmacy	139	120	86%
Physiotherapy	96	74	77%
Total	582	481	83%
TIPE Cohort 1			
Dentistry	10	9	90%
Dietetics	10	8	80%
Medicine	15	12	80%
Nursing	10	10	100%
Occupational Therapy	2	2	100%
Oral Health	0	0	
Pharmacy	14	12	86%
Physiotherapy	6	6	100%
Total	67	59	88%
TIPE Cohort 2			
Dentistry	10	9	90%
Dietetics	10	10	100%
Medicine	11	9	82%
Nursing	9	8	89%
Occupational Therapy	2	2	100%
Oral Health	5	5	100%
Pharmacy	12	12	100%
Physiotherapy	10	10	100%
Total	69	65	94%

TIPE = Tairāwhiti Interprofessional Education programme

Table S2. Survey 2 (graduation) response rates

Cohort and discipline	Invited	Completed survey	Response rate %
Non-TIPE			
Dentistry	68	54	79%
Dietetics	21	20	95%
Medicine	67	55	82%
Nursing	40	33	83%
Occupational Therapy	54	46	85%
Oral Health	0	0	
Pharmacy	120	105	88%
Physiotherapy	73	65	89%
Total	443	378	85%
TIPE Cohort 1			
Dentistry	9	8	89%
Dietetics	8	8	100%
Medicine	12	11	92%
Nursing	10	10	100%
Occupational Therapy	2	2	100%
Oral Health	0	0	
Pharmacy	12	12	100%
Physiotherapy	6	6	100%
Total	59	57	97%
TIPE Cohort 2			
Dentistry	9	9	100%
Dietetics	10	10	100%
Medicine	9	9	100%
Nursing	10	9	90%
Occupational Therapy	4	4	100%
Oral Health	6	6	100%
Pharmacy	13	13	100%
Physiotherapy	10	10	100%
Total	71	70	99%

TIPE = Tairāwhiti Interprofessional Education programme

Table S3. Survey 3 (end of first year of clinical practice) response rates

Cohort and discipline	Invited	Completed survey	Response rate %
Non-TIPE			
Dentistry	66	42	64%
Dietetics	21	18	86%
Medicine	66	48	73%
Nursing	40	27	68%
Occupational Therapy	54	43	80%
Oral Health	0	0	
Pharmacy	117	84	72%
Physiotherapy	69	58	84%
Total	433	320	74%
TIPE Cohort 1			
Dentistry	9	6	67%
Dietetics	8	7	88%
Medicine	12	10	83%
Nursing	10	9	90%
Occupational Therapy	2	2	100%
Oral Health	0	0	
Pharmacy	12	11	92%
Physiotherapy	6	6	100%
Total	59	51	86%
TIPE Cohort 2			
Dentistry	9	8	89%
Dietetics	10	10	100%
Medicine	9	9	100%
Nursing	10	9	90%
Occupational Therapy	4	3	75%
Oral Health	6	6	100%
Pharmacy	13	12	92%
Physiotherapy	10	9	90%
Total	71	66	93%

TIPE = Tairāwhiti Interprofessional Education programme

Table S4. Survey 4 (end of second year of clinical practice) response rates

Cohort and discipline	Invited	Completed survey	Response rate %
Non-TIPE			
Dentistry	66	40	61%
Dietetics	21	18	86%
Medicine	66	46	70%
Nursing	40	29	73%
Occupational Therapy	54	40	74%
Oral Health	0	0	
Pharmacy	117	78	67%
Physiotherapy	69	54	78%
Total	433	305	70%
TIPE Cohort 1			
Dentistry	9	7	78%
Dietetics	8	8	100%
Medicine	12	10	83%
Nursing	10	9	90%
Occupational Therapy	2	2	100%
Oral Health	0	0	
Pharmacy	12	10	83%
Physiotherapy	6	6	100%
Total	59	52	88%
TIPE Cohort 2			
Dentistry	9	7	78%
Dietetics	10	10	100%
Medicine	9	8	89%
Nursing	10	9	90%
Occupational Therapy	4	3	75%
Oral Health	6	6	100%
Pharmacy	13	11	85%
Physiotherapy	10	9	90%
Total	71	63	89%

TIPE = Tairāwhiti Interprofessional Education programme

Table S5. Survey 5 (end of third year of clinical practice) response rates

Cohort and discipline	Invited	Completed survey	Response rate %
Non-TIPE			
Dentistry	66	38	58%
Dietetics	21	20	95%
Medicine	66	47	71%
Nursing	40	28	70%
Occupational Therapy	54	41	76%
Oral Health	0	0	
Pharmacy	117	73	62%
Physiotherapy	69	51	74%
Total	433	298	69%
TIPE Cohort 1			
Dentistry	9	7	78%
Dietetics	8	7	88%
Medicine	12	10	83%
Nursing	10	9	90%
Occupational Therapy	2	2	100%
Oral Health	0	0	
Pharmacy	12	11	92%
Physiotherapy	6	6	100%
Total	59	52	88%
TIPE Cohort 2			
Dentistry	9	8	89%
Dietetics	10	9	90%
Medicine	9	7	78%
Nursing	10	8	80%
Occupational Therapy	4	3	75%
Oral Health	6	6	100%
Pharmacy	13	12	92%
Physiotherapy	10	8	80%
Total	71	61	86%

TIPE = Tairāwhiti Interprofessional Education programme

Table S6. Baseline characteristics of participants who completed survey 5 and those did not complete survey 5 (lost to follow-up)

	Lost to follow-up (n=157)	Non lost to follow-up (n=416)	Total (n=573)	p
Discipline				0.009*
Dentistry	21.0% (33)	12.7% (53)	15.0% (86)	
Dietetics	1.9% (3)	8.7% (36)	6.8% (39)	
Nursing	9.6% (15)	10.8% (45)	10.5% (60)	
Medicine	14.6% (23)	15.6% (65)	15.4% (88)	
Pharmacy	30.6% (48)	23.3% (97)	25.3% (145)	
Physiotherapy	13.4% (21)	16.3% (68)	15.5% (89)	
Occupational Therapy	8.9% (14)	11.1% (46)	10.5% (60)	
Oral Health	0.0% (0)	1.4% (6)	1.0% (6)	
Female	61.1% (96/157)	73.6% (301/409)	70.1% (397/566)	0.004*
Age	22 (21–24) N=156	22 (21–24) N=410	22 (21–24) N=566	0.69†
NZ European	38.5% (60/156)	62.8% (257/409)	56.1% (317/565)	<0.0001*
Maori	3.8% (6/156)	8.6% (35/409)	7.3% (41/565)	0.054*
Pacific	1.3% (2/156)	1.2% (5/409)	1.2% (7/565)	1.00*
Chinese	19.9% (31/156)	15.4% (63/409)	16.6% (94/565)	0.20*
Indian	5.8% (9/156)	4.6% (19/409)	5.0% (28/565)	0.58*
Other	32.7% (51/156)	16.6% (68/409)	21.1% (119/565)	<0.0001*
Previous location				0.51*
Major urban city	43.9% (68/155)	45.5% (185/407)	45.0% (253/562)	
Regional city	26.5% (41/155)	29.2% (119/407)	28.5% (160/562)	
Small town	19.4% (30/155)	14.3% (58/407)	15.7% (88/562)	
Very small town/remote	10.3% (16/155)	11.1% (45/407)	10.9% (61/562)	
ATHCTS	52.4 (5.3) N=154	54.3 (5.3) N=404	53.8 (5.3) N=558	0.0002‡
TSS	55.8 (11.7) N=150	54.1 (11.6) N=396	54.6 (11.7) N=546	0.13‡
TIPE	10.8% (17)	27.2% (113)	22.7% (130)	<0.0001*

* Chi-squared test

† Wilcoxon rank sum test

‡ T-test

Table S7. ATHCTS and TSS scores compared between Surveys 1 and 2 for TIPE and non-TIPE students

Score	Difference		n	Baseline mean (SE)	Survey 2 mean (SE)	Difference (95%CI)	p
ATHCTS	ATHCTS - ATHCTS baseline	Non-TIPE	364	53.7 (0.3)	55.3 (0.3)	1.6 (1.0 to 2.2)	<0.0001
ATHCTS	ATHCTS - ATHCTS baseline	TIPE	118	55.4 (0.5)	58.2 (0.5)	2.8 (1.8 to 3.8)	<0.0001
TSS	TSS - TSS baseline	Non-TIPE	361	54.7 (0.6)	56.2 (0.6)	1.4 (0.3 to 2.5)	0.010
TSS	TSS - TSS baseline	TIPE	117	53.6 (1.2)	59.5 (1.0)	6.0 (3.7 to 8.3)	<0.0001

ATHCTS, Attitudes Towards Health Care Teams Scale. TSS, Team Skills Scale. TIPE, Tairāwhiti Interprofessional Education Programme.

Table S8. Attitudes to Health Care Teams Scale scores at each time point for cohort 1, cohort 2 and combined TIPE, non-TIPE students and each disciplinary group

Cohort	ATHCTS Survey 1 n	ATHCTS Survey 1 mean (95% CI)	ATHCTS Survey 2 n	ATHCTS Survey 2 mean (95% CI)	ATHCTS Survey 3 n	ATHCTS Survey 3 mean (95% CI)	ATHCTS Survey 4 n	ATHCTS Survey 4 mean (95% CI)	ATHCTS Survey 5 n	ATHCTS Survey 5 mean (95% CI)
TIPE Cohort 1	57	55.1 (53.7, 56.5)	56	57.3 (55.7, 59.0)	47	56.4 (54.6, 58.2)	51	56.5 (55.0, 58.1)	48	57.6 (56.0, 59.1)
TIPE Cohort 2	65	55.5 (54.3, 56.7)	70	59.0 (57.6, 60.3)	65	57.3 (55.8, 58.7)	59	57.4 (55.9, 58.9)	57	56.9 (55.4, 58.3)
TIPE	122	55.3 (54.4, 56.2)	126	58.2 (57.2, 59.3)	112	56.9 (55.8, 58.0)	110	57.0 (55.9, 58.0)	105	57.2 (56.1, 58.2)
Non-TIPE	436	53.3 (52.8, 53.8)	370	55.4 (54.8, 55.9)	308	54.6 (53.9, 55.3)	301	54.7 (54.1, 55.4)	283	55.4 (54.7, 56.2)
Dentistry	85	50.9 (49.8, 52.0)	69	52.8 (51.4, 54.1)	57	51.6 (50.1, 53.1)	54	51.8 (50.4, 53.2)	53	52.2 (50.3, 54.1)
Dietetics	39	54.9 (53.4, 56.4)	37	58.5 (56.7, 60.2)	31	57.8 (55.9, 59.8)	32	57.3 (55.1, 59.5)	33	57.3 (55.3, 59.3)
Medicine	86	54.0 (52.7, 55.3)	74	56.3 (55.1, 57.5)	68	56.3 (55.0, 57.6)	64	56.8 (55.2, 58.3)	58	57.8 (56.1, 59.5)
Nursing	57	56.4 (54.9, 57.8)	51	57.6 (56.1, 59.1)	43	56.6 (55.2, 58.0)	46	56.3 (54.8, 57.9)	44	56.9 (55.4, 58.4)
Occupational Therapy	58	54.1 (52.9, 55.3)	50	55.0 (52.8, 57.1)	41	57.0 (55.2, 58.8)	40	56.8 (55.1, 58.4)	40	56.3 (54.5, 58.1)
Oral Health	5	52.6 (46.5, 58.7)	6	56.8 (54.1, 59.5)	6	54.3 (48.1, 60.5)	6	54.0 (50.6, 57.4)	6	54.7 (51.9, 57.5)
Pharmacy	142	53.7 (52.9, 54.6)	128	56.0 (55.1, 56.9)	98	54.6 (53.3, 55.9)	98	54.2 (53.2, 55.2)	90	55.5 (54.2, 56.7)
Physiotherapy	86	54.1 (53.0, 55.2)	81	57.6 (56.3, 58.8)	76	55.1 (53.6, 56.5)	71	56.1 (54.6, 57.6)	64	56.4 (54.7, 58.1)

ATHCTS, Attitudes Towards Health Care Teams Scale; TIPE, Tairāwhiti Interprofessional Education programme

Table S9. Team Skills Scale scores at each time point for cohort 1, cohort 2 and combined TIPE, non-TIPE students and each disciplinary group

Cohort	TSS Survey 1 n	TSS Survey 1 mean (95% CI)	TSS Survey 2 n	TSS Survey 2 mean (95% CI)	TSS Survey 3 n	TSS Survey 3 mean (95% CI)	TSS Survey 4 n	TSS Survey 4 mean (95% CI)	TSS Survey 5 n	TSS Survey 5 mean (95% CI)
TIPE Cohort 1	57	55.1 (51.4, 58.8)	57	59.2 (56.2, 62.1)	47	55.2 (52.6, 57.9)	51	57.5 (55.0, 59.9)	48	60.1 (57.1, 63.0)
TIPE Cohort 2	63	52.6 (49.6, 55.5)	70	60.3 (57.7, 62.8)	64	57.8 (55.3, 60.4)	56	59.9 (57.1, 62.7)	56	59.2 (56.5, 61.9)
TIPE	120	53.8 (51.5, 56.1)	127	59.8 (57.9, 61.7)	111	56.7 (54.9, 58.6)	107	58.7 (56.9, 60.6)	104	59.6 (57.6, 61.5)
Non-TIPE	426	54.8 (53.8, 55.9)	372	56.4 (55.3, 57.5)	305	55.6 (54.4, 56.7)	299	57.2 (56.0, 58.4)	283	58.3 (57.1, 59.4)
Dentistry	86	57.0 (54.7, 59.2)	70	55.9 (53.7, 58.0)	57	53.1 (50.8, 55.4)	52	53.9 (51.6, 56.2)	53	56.2 (53.1, 59.2)
Dietetics	37	47.5 (44.0, 51.0)	38	57.5 (54.6, 60.3)	31	54.3 (50.9, 57.7)	32	59.3 (56.0, 62.5)	32	59.5 (56.0, 63.0)
Medicine	84	49.9 (47.5, 52.3)	75	53.9 (51.5, 56.3)	68	55.6 (53.5, 57.8)	64	57.1 (54.7, 59.4)	58	57.8 (55.6, 60.0)
Nursing	54	63.9 (61.1, 66.7)	52	63.6 (61.0, 66.1)	43	61.7 (59.0, 64.5)	46	62.4 (59.6, 65.1)	43	63.3 (60.4, 66.2)
Occupational Therapy	53	54.6 (51.4, 57.8)	50	59.9 (56.7, 63.1)	41	58.2 (54.9, 61.5)	40	61.9 (58.2, 65.7)	40	60.8 (57.7, 63.9)
Oral Health	4	51.3 (31.1, 71.4)	6	58.2 (40.7, 75.7)	6	52.0 (37.0, 67.0)	6	52.5 (37.2, 67.8)	6	52.3 (39.7, 65.0)
Pharmacy	140	53.7 (51.8, 55.6)	128	56.6 (54.4, 58.8)	95	55.1 (52.8, 57.3)	95	54.8 (52.6, 57.0)	90	56.7 (54.5, 58.8)
Physiotherapy	88	55.6 (53.3, 58.0)	80	56.7 (54.5, 58.9)	75	55.5 (53.1, 57.9)	71	58.7 (56.4, 61.0)	65	59.9 (57.6, 62.2)

TSS, Team Skills Scale; TIPE, Tairāwhiti Interprofessional Education programme

Table S10. Attitudes to Health Care Teams Scale scores: collected data and multiple imputation including variables in the analysis model and demographic variables

	Collected data	Multiple imputation
Number of Observations Used	1598	2292
Survey	F=5.32 d.f.=3,1156 p=0.001	F=3.43 d.f.=3,26749 p=0.016
TIPE x survey interaction	F=0.48 d.f.=3,1156 p=0.70	F=0.55 d.f.=3,77565 p=0.65
TIPE	F=10.17 d.f.=1,435 p=0.002	F=9.76 d.f.=1,1399 p=0.002
Mean TIPE minus non-TIPE	1.4 (95%CI 0.6 to 2.3) p=0.002	1.4 (95%CI 0.5 to 2.2) p=0.002
TIPE minus non-TIPE at graduation	1.9 (95%CI 0.8 to 3.0) p=0.001	1.9 (95%CI 0.8 to 3.0) p=0.0009
TIPE minus non-TIPE at one year postgraduation	1.4 (95%CI 0.2 to 2.6) p=0.024	1.2 (95%CI 0.1 to 2.4) p=0.039
TIPE minus non-TIPE at two years postgraduation	1.3 (95%CI 0.1 to 2.5) p=0.032	1.3 (95%CI 0.1 to 2.5) p=0.029
TIPE minus non-TIPE at three years postgraduation	1.1 (95%CI -0.1 to 2.4) p=0.070	1.1 (95%CI -0.1 to 2.3) p=0.078

TIPE, Tairāwhiti Interprofessional Education programme

Table S11. Teams Skill Scale scores: collected data and multiple imputation including variables in the analysis model and demographic variables

	Collected data	Multiple imputation
Number of Observations Used	1593	2292
Survey	F=8.91 d.f.=3,1134 p<0.0001	F=7.25 d.f.=3,24563 p<0.0001
TIPE x survey interaction	F=2.78 d.f.=3,1134 p=0.040	F=2.05 d.f.=3,66695 p=0.10
TIPE	F=4.05 d.f.=1,431 p=0.045	F=4.67 d.f.=1,1448 p=0.031
Mean TIPE minus non-TIPE	1.7 (95%CI 0.0 to 3.3) p=0.045	1.7 (95%CI 0.2 to 3.3) p=0.031
TIPE minus non-TIPE at graduation	3.5 (95%CI 1.5 to 5.5) p=0.0008	3.3 (95%CI 1.3 to 5.2) p=0.0010
TIPE minus non-TIPE at one year postgraduation	0.5 (95%CI -1.6 to 2.6) p=0.64	0.7 (95%CI -1.3 to 2.8) p=0.49
TIPE minus non-TIPE at two years postgraduation	1.4 (95%CI -0.7 to 3.5) p=0.20	1.4 (95%CI -0.7 to 3.5) p=0.18
TIPE minus non-TIPE at three years postgraduation	1.3 (95%CI -0.8 to 3.5) p=0.22	1.6 (95%CI -0.5 to 3.7) p=0.14

Adjusted for baseline TSS, baseline ATHCTS, discipline, gender, age, ethnicity, and previous location
TIPE, Tairāwhiti Interprofessional Education programme

Supplementary 5: Additional verbatim examples of themes derived from free-text comments made after completing Attitude to Health Care Teams and Teams Skills Scales

Darlow, B., Brown, M., McKinlay, E., Gray, L. Purdie, G., Pullon, S. (2022). Longitudinal impact of pre-registration interprofessional education on the attitudes and skills of health professionals during their early careers: a non-randomised trial with 4-year outcomes. BMJ Open

Interprofessional teamwork – attitudes and experiences	**Examples (TIPE and non-TIPE)**
Benefits of interprofessional teams or collaboration	[Teamwork] is really good and important. Not taught enough about it in Med school. -Survey 4, non-TIPE, Medicine, #8376 On [the] whole very beneficial. -Survey 3, TIPE, Pharmacy, #6844 I really enjoying working with a variety of disciplines, it has helped me see patient care in a broader perspective. I have also gained valuable skills and extended my assessment skills to recognise when other MDT members input is required. -Survey 3, TIPE, Nursing #0014
• *Enjoyable or positive*	Love it!! [Teamwork is] such an incredible way to collaborate and integrate ideas. It strengthens relationships and improves overall treatment quality and success. -Survey 5, TIPE, Physiotherapy, #2205 [Teamwork is] excellent and essential in palliative care. -Survey 5, TIPE, Medicine, #0135
• *Others' expert perspectives, support, learning*	I love team work and working with other clinicians, you have so much to learn from them, it is a morale booster. -Survey 3, non-TIPE, Occupational Therapy, #2274
• *Patient care, experiences and outcomes*	I find working as a collaborative team is very successful and important for the patient. They receive better care if it comes from a team who have good communication to ensure everyone works together. -Survey 4, TIPE, Pharmacy, #3922 [TIPE] has influenced me to look for workplaces where interprofessionalism is present as it demonstrated why it is so important for a patient's health outcomes. -Survey 3, TIPE, Oral Health, #2830
Challenges of interprofessional teams or collaboration	It can be a challenging but very rewarding part of your role in hospital. - Survey 5, non-TIPE, Dietetics, #3590 In rehab it is excellent as we are all on the same page. In medical, although we are supposed to be an IDT, other health professionals often go behind the wider MDT's back and organise what they think is best, not what the patient and the rest of the team think is best. -Survey 5, TIPE, Occupational Therapy, #4455
• *Not on the same page, role/input not understood or valued*	At times it can be very difficult when other members of the team don't value your opinion. -Survey 3, TIPE, Nursing, #0258 I feel on the acute wards, there is still often a divide between medical and allied health staff. Where there should be a more team feel and trust in each other's clinical judgment. Often there is still a battle to be heard and listened to. -Survey 4, TIPE, Physiotherapy, #7271
• *Inefficient, inconvenient e.g. time pressures, paperwork*	Satisfying and effective cooperation from those at the "coalface", frustration from admin side. - Survey 5, TIPE, Dentistry, #4926
• *Hard to communicate e.g. availability, staffing issues, incompatible software*	I've found it hard to communicate with other disciplines (aside from GP) as they're usually based at the hospital - the communication software they use is different from the ones used in my current private practice. Getting a hold of them via email or phone calls often result in a long series of voice messages. -Survey 5, TIPE, Physiotherapy, #8880 Our job as pharmacists would be much easier if there was a clear line of communication with GPs… There is such little time in community for multidisciplinary meetings and discussions, and until there is funding for this input, businesses simply could not afford to hire more pharmacists to fill these roles. -Survey 3, non-TIPE, Pharmacy, #2872
Interprofessional interaction outside of formal team	Limited opportunities with regards to true interdisciplinary discussion… [but] I am more confident now in talking to patients and explaining long term care and concerns as well as speaking to GPs and pharmacist with regards to medical and drug histories. -Survey 5, TIPE, Dentistry, #3243 It is difficult when you are working in isolation in a location as a dietitian. MDT meetings don't happen at our PHO - something I would like more of. -Survey 5, non-TIPE, Dietitian, #6653

TIPE = Tairāwhiti Interprofessional Education program; MDT = multi-disciplinary team; IDT = inter-disciplinary team; GP = general practitioner; PHO = primary health organisation

Supplementary 6: Verbatim examples of themes derived from free-text comments made by Tairāwhiti Interprofessional Education programme graduates about influence of pre-registration training on their professional practice

Darlow, B., Brown, M., McKinlay, E., Gray, L. Purdie, G., Pullon, S. (2022). Longitudinal impact of pre-registration interprofessional education on the attitudes and skills of health professionals during their early careers: a non-randomised trial with 4-year outcomes. BMJ Open

Influence of pre-registration training on preparation for workforce and TIPE on career*	**Number of comments**** One year post-graduation (n=113)	Two years post-graduation (n=111)	Three years post-graduation (n=114)	**Example (TIPE)**
Participated in an IPE course	**102**	**90**	**93**	TIPE program in Gisborne . -Survey 3, Oral Health, #5620
• *TIPE helpful*	*34*	*21*	*32*	The TIPE programme in Gisborne was THE BEST experience that set me up to work interprofessionally as a student. Before that we hardly touched on it. I think everyone needs to be doing this!! -Survey 3, Physiotherapy, #7271
The way I do my job	**102**	87	83	I don't think TIPE has had much, if any, influence on my career choice (to be a radiologist) but it certainly has influenced how I practise in my role as a junior doctor. -Survey 3, Medicine, #479
• *Understand others' roles/perspectives*	*17*	*16*	*6*	[TIPE] made me appreciate the roles of others and value their input. -Survey 5, Nursing, #0077
• *Connecting with other health professionals*	*48*	*30*	*43*	[TIPE] encouraged me to be more assertive and reach out to other health professionals first to initiate an interprofessional team approach for a patient when I feel it is appropriate. - Survey 3, Physiotherapy, #8880
• *Collaborating to prioritise patient wellbeing*	*15*	*10*	*7*	[TIPE] has been an awesome program, as I now think of patients' wellbeing as a whole, rather than focusing on what my profession does. I know that I can liaise with GPs or other health professionals if I need to for the best treatment outcome and benefit of the patient. -Survey 3, Dentistry, #8826
• *Thriving in interprofessional teams*	*15*	*15*	*16*	[TIPE] has made me more open to dealing with people and professions who may not share the same view, and working out how we can make things work with the goal of the client in mind. -Survey 3, Occupational Therapy, #3643
• *Hit the ground running*	*4*	*5*	*5*	[TIPE] allowed me to hit the ground running when I began my role in the hospital. -Survey 3, Pharmacy, #7374
• *Interprofessional champions*	*0*	*2*	*1*	I am an advocate for more multi-disciplinary discourse in our pharmacy chain. -Survey 4, Pharmacy, #3878
No perceived influence	**22**	**14**	**24**	It hasn't, since there are hardly any jobs for dietitians. You just take what you can get. -Survey 3, Dietetics, #4766

TIPE = Tairāwhiti Interprofessional Education programme; IPE = interprofessional education; GP = General Practitioner

* Two additional themes, related to influence on geographical location and clinical setting, are reported in a separate paper

** Participants could make more than one free-text comment within an item response.