Summary of relevant literature review

Paper	Citation	Content	evidence
The British Dietetic Association Practice toolkit – the use of blended diet with enteral feeding tubes	https://www.bda.com>resource November 2021	Formation of working group consisting of paediatric group and parenteral and enteral group of BDA Review of 2013 BDA policy statement and 2015 practice toolkit in relation to use of blended diet with enteral feeding tubes After literature review of working group members policy statement suggests that BD may be offered as a choice to patients and carers	Combination of literature review and expert opinion Practice guideline
Efficacy and tolerance of blended diets in children receiving gastrostomy feeds	Batsis ID, Davis L, Prichett L, Wu L, Shores D, Au Yeung K, Olivia-Hemker M Nutr Clin Pract 2020; 35: 282-288	single-center, retrospective study 23 patients Most common underlying diagnosis was neurological disorder 35% received commercial whole cow milk formula, 30% hydrolyste, 35% AA based formula. After formula switches 65% received homemade blended diets, 17.5% commercial blended diets, 17.5% a combination of both. **Outcome:** Median duration on blended diet 17months 95% patients with upper GI symptoms improved within first 3 months of blended diet 21% of patients developed mild constipation on the diet managed with increased H2O intake and/or polyethylene glycol 2 patients discontinued blended diet because of inadequate weight gain and worsening upper GI symptoms	Retrospective data Small case series Single centre study, not RC
Viscosity of commercial food-based formulas and home-prepared blenderized feeds	Hron B, Rosen R. JPGEN 2020; 70(6): e124-e128	Measurement of viscosity of commercial and homemade blends using digital rotational viscometer and IDDSI syringe flow test **Results** Significant variation in viscosity between commercial and homemade blends	Lab analysis
A laboratory based evaluation	Madden AM et al. J Hum Nutr	One blended feed recipe was	Laboratory based

of tube blocking and microbial risks associated with one blended enteral feed recipe	Diet 2019; 32 (5); 667-675	made used three different methods Enteral feeding tube blockages and time taken were recorded **Results** No risk of tube blockages when blended feed was given into 14 Fr tube	study
Reemergence of blended tube feeding and parents' reported experiences in their tube fed children	Johnson T et al. J Altern Complement Md 2018; 24 (4): 369-373	Convenience sample 43 parents of tube fed children in on line tube feeding support group completed electronic survey Comparison between commercial formula (CF) and blended tube feed (BTF) **Results** 50.5 % used CF, 49,5 % BTF Parents reported fewer symptoms if tube feeding intolerance on BTF and the children more frequently met growth goals Primary reason parents did not use BTF was lack of knowledge (50.9%) or time constrains (20 %) **Conclusion:** Significant number of parents used BTF Wide variability in BTF preparation Parents need more support	Prospective descriptive study
Blenderized tube feeding: A survey of dietitians' perspectives: Education and perceived competence.		716 Dietitians with authority to practice enteral nutrition in the province of British Columbia/Canada were sent an original questionnaire to understand 221 (31%) responded. 28% reported knowledge of blenderized tube feeding (BTF), 24% confidence in managing patients on BFT. Few agreed they had expertise to design (29%), administer (15%) or teach administration (24%) of BTF 27% did not have BFT education of any kind, those with BFT education reported it to be primarily derived from informal sources (self-directed study, learning from colleagues or patients) **Conclusion:** Formal BTF education is uncommon and limited perceived competence on BTF	Cross sectional survey by use of an original questionnaire (not standardised) Large number of dietitians included, response rate only 31% Unable to understand if 2/3 did not respond

Nutritional and microbiological quality of commercial and homemade blenderized whole food enteral diets for home-based enteral nutritional therapy in adults	Viera MMC et al. Clin Nutr 2018; 37(1): 177-181	66 sampler of commercial (CD) and non commercial (NCD) enteral diets collected at homes of patients on home enteral therapy – 33 in each group Laboratory analysis of samples and MUAC and triceps skinfold thickness measured in patients **Results** Significantly lower values of protein, fat, fibre, CH and energy in NCD but significantly higher water content In CD protein 20% more than prescribed value **Conclusion** NCD showed low values of energy and macronutrients – less than 50% of prescribed values and had high level of bacterial contamination	Cross sectional study
Parenteral Perspectives on Blenderized Tube Feeds for Children Requiring Supplemental Nutrition	Trollip A, Lindeback R, Banerjee K Nutr Clin Pract 2019 Jul 7. doi: 10.1002/ncp.10368.	Dietitians at a pediatric hospital in Sydney identified 21 children receiving BTFs. Questionnaires that focused on child/parent demographics, parental knowledge, dietetic support, and symptoms before and after commencing BTFs were distributed and food diaries sent. **Results:** 12/21 completed surveys: Improvements in general health, emotional and social well-being, and gastrointestinal symptoms. Challenges with: food preparation, nutrition adequacy, food storage, and prevention of tube blockages. Respondents primarily sought information online from social media and support groups. Likert scale analysis demonstrated positive outcomes for children receiving BTFs. Improvements in: general health, growth, nausea/vomiting, reflux, constipation, diarrhea, and social inclusion. Tube blockage was reported, however, and only changed from "never" to "rarely a problem." Food diaries were not detailed enough for analysis.	Questionnaire based small paediatric case study
Basics of Blenderized Tube Feeds: A Primer for Pediatric Primary Care Clinicians	Oparaji JA, Sferra T, Sankararaman S Gastroenterology Res. 2019 Jun;12(3):111-114. doi:	Review article: Discussion of the benefits and drawbacks of BTF. Review of clinical application pearls for	Review article

	10.14740/gr1192. Epub 2019 Jun 7.	pediatric primary care clinicians. **Conclusion:** important for clinicians to have a basic understanding of BTF in order to support families	
Impact of design changes in gastrostomy tube (G-tube) devices for patients who rely on home-based blenderized diets for enteral nutrition	Guha S, Bouhrira N, Antonino MJ, Silverstein JS, Cooper J, Myers MR. J Am Coll Nutr 2019; 38(4): 311-317	Patients blenderized diet recipes and practices were obtained through patient advocacy groups Different blenders and blending times were studied. 5 legacy G-tube brands and 3 corresponding ENFIT brands, sized between 14 Fr and 24 Fr, were studied under gravity and push modes of feeding **Results:** Considering both thin and thick blenderized gravity mode feeds, average increase in feeding time from 20 minutes to 32 $\pm$ 18 minutes in transitioning from legacy to ENFIT with standard G-tubes was observed, compared to 22 $\pm$ 3.5 minutes for low profiles. For push mode diets, a 60 sec push with standard ENFIT G-tube was easier compared to standard legacy G-tubes (61% $\pm$ 21% as much force), but faster 5 sec pushes required considerably more effort for ENFIT standard G-tubes (167% $\pm$ 96%). Low profile ENFIT G-tubes required slightly less effort compared to low profile legacies for both 60 sec and 5 sec pushes (72% $\pm$ 22% and 90% $\pm$ 19%, respectively). Clogging was common in both legacy and ENFIT devices, particular under gravity mode. **Conclusion:** For push mode feeding, patients will largely be unimpacted after transition to ENFIT. For gravity feeds ENFIT users may need higher powered blenders and should expect longer feeding times	Quantification of in vitro performance of existing (legacy) and standardised G- tubes (ENFIT) for blenderized diets
Blenderized tube feedings for adult patients on home enteral nutrition: A pilot study	Hurt RT, Epp LM, Duellman WM, Pattinson AK, Lammert L, Baker MR, Miller LD, Kuchkuntia AR, Mundi MSJ Altern Complement Med 2019; 25(4): 413-416	20 patients on traditional enteral nutrition (EN) formula attending the Mayo clinic in Rochester/Minnesota USA gave consent to participate and were supposed to be hanged to BFT for 6 weeks. 9 patients completed BTF for 6 weeks. Weight was measured at baseline	Single-center open-label pilot study Small number of patients Only 9 completed 6 weeks of BFT

		and at 6 weeks of BTF Participants completed a survey regarding the frequency of BFT use and adverse effects, at baseline and then weekly for 6 weeks. **Results:** BFT use increased from 4.85 ± 2.44 to 6.45 ± 0.82 days per week from week 1 to 6. The percentage of participants consuming > 50% of their calorie intake from BFT increased from 23.1% (3 of 13 participants) at week 1 to 44.4% (4 of 9 participants) at week 6. 6/9 participants experienced weight gain, 1/9 participant maintained weight, 2/9 lost weight (intentionally in one and due to intolerance to commercial formula in the other) **Conclusion:** BFT found to be safe and effective in promoting weight gain in adult patients who required home enteral nutrition for at least 6 weeks	
Health Outcomes and Quality of Life Indices of Children Receiving Blenderized Feeds via Enteral Tube.	Hron B, Fishman E, Lurie M, Clarke T, Chin Z, Hester L, Burch E, Rosen R J Pediatr. 2019 Aug;211:139-145.e1. doi: 10.1016/j.jpeds.2019.04.023. Epub 2019 May 23	Prospective cohort study of 70 children aged 1-18 years receiving BTF vs conventional formula: Rates of hospitalization, visits to emergency department (ED) at Boston Children's Hospital in 2017 Likert scale addressing satisfaction with feeding regimen; Pediatric Gastroesophageal Reflux Disease Symptom and Quality of Life Questionnaire; Pediatric Quality of Life Inventory; and Pediatric Quality of Life Inventory Gastrointestinal Symptoms Scale. **Results:** 40/70 (60%) received BTF diets (n = 42, 60%) no difference in demographics or comorbid diagnoses from conventional formula group (n = 28, 40%). Rates of total visits to the ED (0.8 ± 1.5 vs 1.4 ± 2.7, P = .05), total admissions (0.8 ± 1.2 vs 1.7 ± 2.3, P = .01), and respiratory-related admissions (0.2 ± 0.5 vs 0.6 ± 0.8, P = .04) per year were significantly lower in BTF, and respiratory-related visits to the ED trended toward	Prospective cohort study of 70 children

		significance (0.1 ± 0.4 vs 0.4 ± 0.8, P = .08). Compared with conventional formula, participants on BTF reported greater satisfaction ratings (Likert scale 4.3 ± 1.0 vs 3.3 ± 1.2, P = .001), lower symptom (0.7 ± 0.8 vs 1.2 ± 1.1, P = .03), and total (0.8 ± 0.8 vs 1.2 ± 1.0, P = .02) scores on Pediatric Gastroesophageal Reflux Disease Symptom and Quality of Life Questionnaire and greater scores on the Pediatric Quality of Life Inventory Gastrointestinal Symptoms Scale, indicating less nausea and vomiting (64.0 ± 22.6 vs 49.0 ± 37.9, P = .02), abdominal pain (65.0 ± 26.8 vs 56.4 ± 33.9, P = .04), diarrhea (87.9 ± 15.5 vs 73.6 ± 26.3, P = .004), and fewer total symptoms (70.2 ± 16.3 vs 62.3 ± 19.6, P = .03). **Conclusion:** Blenderized diets are associated with decreased healthcare use, improved symptom scores, and increased patient satisfaction compared with conventional formulas.	
Increased force required with proposed standardized enteral feed connector in blenderized tube feeding	Mundi MS et al. Nutr Clin Pract 2016	4 sample enteral feeds with varying viscosity placed into syring and attached to current feeding connector or prototype ENFit connector Force required to compress syringe measured through dynamic mechanical analyzer **Results:** Force need to compress syringe was lowest with fiber-containing formula Decline in force with ENFit connector Commercial blenderized formula required slightly higher force with ENFit than current tube	Small study with 4 enteral feeds Force needed to compress syringe compared between current connector and ENFit
Your tube: The role of different diets in children who are gastrostomy fed: protocol for a mixed methods exploratory sequential study	Taylor J et al. BMJ Open 2019	Planned mixed method study Gastrostomy fed children aged 6m to 18 yrs Recruited via general, community and specialist paediatric and dietetic services Workstream IWS) 1: Qualitative study with semi structured interview with parents	Mixed method study 2 workstreams No data available yet

		(n=20) and young people (n = 5 to 10), focus groups (n=25) with health professionals WS 2: cohort study of 300 gastrostomy fed children Data collection at month 0, 9, 18 from parents, children and clinicians using standardised method and questionnaire developed for study	
Blended diets for gastrostomy fed children and young people: a scoping review	Breaks A et al. J Hum Nutr Diet 2018	PUBMED, PSychINFOm CINAHL, SCOPUS, AMED, EMBASE search for articles 'blended diets' **Results:** 43 studies **Conclusion:** Gaps in evidence regarding impact of blended diets on health and well-being of children Nutritional impact not fully understood Knowledge and views of professionals involved varies	Review article including 43 studies
Blended foods for tube-fed children: a safe and realistic option ? A rapid review of the evidence	Coad J et al. Arch Dis Child 2017	Rapid review of current literature **Results:** Three categories: 1. Those who feel that BTF is unsafe and substandard 2. see benefits in particular circumstances (eg to reduce constipation) 3. merit in BTF but cautious to proclaim benefits due to lack of research	Review article
Transition to a tube feeding formula with real food ingredients in pediatric patients with intestinak failure	Samela K et al Nutr Clin Pract 2017	Data collected retrospectively of children with intestinal failure (IF) > 1 yr of age receiving EN via continuous infusion, bolus feeds or both Change to tube feeding formula with real food ingredients (TFRF): given for diarrhoea or inconsistent stooling pattern 10 children (mean small bowel length 48.3 cm) 9/10 tolerated transition to 100% TFRF (7/9 with entire colon in continuity) Average age at successful transition 29.2 m Average length of time to 100% TFRF 67.3 days **Conclusion:** TFRF well tolerated Improvement of stooling pattern	Retrospective study 10 children

		Cost-effective	
Home enteral nutrition reduces complications, length of stay and health care costs: results from a multi-centre study	Klek S et al. Am J Clin Nutr 2014; 100 (2): 609-615	Observational multicenter study 456 home enteral nutrition patients (142 children) over 6 year period Comparison of 2 x 12 months periods Period 1: patients tube homemade diet and no monitoring Period 2: standard feed and monitoring (HEN) **Results** Weight gain and stabilisation of liver function in both groups Less infections and hospital admissions with HEN **Conclusion:** HEN improved clinical outcomes and decreases health care costs. Unable to determine if articicial diet or introduction of monitoring made the difference	Observational multicenter study
Deconstructing pediatric blenderised tube feeding	Zettle S. Nutr Clin Pract 2016; 31 (6): 773-779	Discussion of several different approaches to planning a BD.	Literature review and expert opinion
Patient and carer experience of blended diet via gastrostomy: a qualitative study	Philips G. J Hum Nutr Diet 2018; 32(3): 391-399	Semi structured interview of patients and carers using or who had previously used BD via gastrostomy Thematic analysis of collected data **Results** Overall positive experience of BD Few or no disadvantages reported Improvement in GI symptoms and general well being Social benefits to the family and patient **Conclusion** BD beneficial. More research needed	Small number of semi structured interview of patients and carers
Outcomes for gastrostomy fed children and their parents: qualitative findings from the 'your tube' study	Maddison Je et al. Dev Med Child Neurol 2021; 63 (9): 1099-1106	Twenty parents of children and 2 children plus 41 health professionals (dietitians, nurses, pediatricians, SALT) recruited Semi structured interviews of parents and children Focus groups of health professionals Children included those on formula (11), blended food (7) and mixed diet (2) All tube fed for at least 6 m. Neurological, genetic and metabolic underlying diagnosis	Qualitative research study Interviews of parents and children Focus groups of health professionals

		Results Tube feeding associated with psychosocial and medical problems Participants believed type of diet would most likely affect GI symptoms, time spent feeding, sleep and physical health	
Pureed gastrostomy tube diet improves gagging and retching in children with fundoplication	Pentiuk S et al. JPEN 2011; 35 (3): 375-379	33 children post fundoplication surgery with gagging and retching selected from one clinic Started on pureed by gastrostomy tube diet (PBGT) Weight monitored in clinic Symptoms survey and oral feeding tolerance by telephone **Results** 17/33 reported 76-100% reduction of symptoms 24/33 had $\geq$ 50% improvement No child had worse symptoms on PBGT 19/33 improved oral intake on PBGT **Conclusion** PBGT effective in providing nutrition and my decrease symptoms of gagging and retching post fundoplication	Small single-centre case based telephone survey Not randomised No control group
A survey of home enteral nutrition practices and reimbursement in the Asia pacific region	Wong A, Banks MD, Bauer JD Nutrients 2018	Electronic questionnaire based survey sent to 20 clinical nutrition societies and leaders in the Asia Pacific region 13 countries responded. Availability of home enteral nutrition (HEN), type of feeds and enteral access device used, national reimbursement policies, presence of nutrition support team (NST) and clinical education in the region was documented. **Results:** Financial support for HEN was available in 40% of countries. Association between financial support and health expenditure was found ($r+ 0.63$, $p = 0.021$). High and middle-upper income countries used mainly commercial supplements for HEN, lower-middle income countries use mainly blenderized diet. Presence of NSTs was limited and only present mainly in acute settings.	Electronic questionnaire based multi-center survey

		60% indicated urgent need for funding and reimbursement of HEN.	
Bacterial contamination of blenderized whole food and commercial enteral tube feeding in the Philippines	Sullivan MM et al. J Hosp Infect 2001; 49: 268-273	Analysis from 4 Philippine acute-care hospital prepared (whole) tube feeds for microbial contamination and comparison with reconstituted commercial powdered feeds (random collection, 24 samples) **Results** Microbial quality of majority hospital-prepared enteral tube feeds were not within published guidelines for safety	Random samples of in 4 hospitals hospital prepared tube feeds and comparison to reconstituted commercial powdered feed
Dietitians' perceptions and experience of blenderised feeds for paediatric tube-feeding	Armstrong J et al. Arch Dis Child 2017: 152-156	BDA web based questionnaire 77 respondents 19/77 aware of professional guidelines in blenderised food for tube feeding (BFTF) 63/77 never received training in BFTF 34/77 would not recommend BFTF 11/77 would advise against BFTF 43/77 recommended to use BFTF to supplement commercial feeds 44/77 felt confident to support patients on BFTF 43/77 had previous experience with BFTF Main concerns of dietitians were nutritional inadequacy, tube blockage and increased infection risk	Web based questionnaire distributed to British Dietetic Association
Blenderized enteral nutrition diet study: Feasibility, clinical and microbiome outcomes of providing blenderized feeds trhough a gastric tube in a medically complex pediatricpopulation	Gallagher K et al, J Parenter Enteral Nutr 2018	20 paediatric patients included Children were G-tube dependent and received $\geq$ 75% of daily energy requirement from commercial formula. Over 4 weeks, participants were transitioned from commercial formula to BTF. 6 months monitored for changes in nutrient intake, GI symptoms, oral feeding, medication use, caregiver perceptions. Changes to intestinal microbiota monitored by 16S rDNA=based sequencing **Results:** Transition to BFT feasible in 17/20 children. 1/20 transitioned to oral feeds Participants required 50% more	Single center open-label study Prospective Small number of patients

		calories to maintain BMI while on BFT compared with commercial formula. BFT micronutrient content was superior to commercial formula. Prevalence of vomiting and use of acid-suppressive agent significantly decreased on BTF. Bacterial diversity and richness in stool samples significantly increased, while the relative abundance of proteobacteria decreased on BTF. Caregivers were more satisfied with BFTs and unanimously indicated that they would recommend BTFs.	
Homemade diet versus diet industrialized for patients using alternative feeding tube at home – an integrated review	Franca SC et al Nutr Hosp 2017	Integrative literature review of study papers published in English, Spanish or Portuguese Brazil: Comparison of the use of commercialized or blenderized homemade preparations for EN. Databases used were PubMED, EMBASEm Scopus, Web of Science and Bireme (without period 2010 to 2015) Search terms were enteral nutrition, foods, formulated, diet **Results:** 12 articles selected Most studies showed level 4 evidence Published in journals with higher Qualis index Four aspects were evaluated: comparison between groups studying the clinical effects, comparison of the chemical composition of homemade products, physical-chemical and microbiological analysis of the enteral diets, articles on epidemiological data on HEN **Conclusion:** Industrialized diet more suitable for patients using alternative feeding supply at home, but is more expensive	Integrative literature review 12 articles Most level 4 evidence
Percutaneous endoscopic gastrostomy feeding of locally advanced oro-pharyngo-laryngeal cancer patients: Blenderized or commercial food ?	Papakostas P et al. Oral Oncol 2017	Nutritional and anthropometric data was collected prospectively at the time of PEG placement, at 8 weeks after treatment termination and at 8 months (6 m of recovery from treatment) and analysed retrospectively in 212 adult head and neck cancer	analysis of prospectively collected data 212 patients Single center Not randomised

		patients. All patients were prescribed a commercial feed. **Results:** 112/212 patients received the commercial formula feed 69/212 voluntarily switched to BTF. 31/69 received a homemade formula of standard ingredients. At 8 m BMI and fat free mass of patients receiving commercial formula had almost recovered to the values at the time of first diagnosis. Neither group on blenderized or homemade formulas showed nutritional improvement, but experienced a significant deterioration throughout the study period, with the homemade formula being the worst **Conclusion:** Homemade and blenderized foods do not actively support the nutritional requirements of adult head and neck cancer patients	
Nutritional and microbiological quality of commercial and homemade blenderized whole food enteral diets for home-based enteral nutrition therapy in adults	Viera MMC et al Nutr Clinc Pract 2018	66 samples of commercial (CD) and noncommercial (NCD) enteral diets collected from patients on HEN. 33 of each type CD were either power (PCD, n=13) or liquid (LCD, n=20). Samples were analysed in lab to assess nutritional and microbiological quality. Mid upper arm circumference (MUAC) and triceps skinfold thickness (TST) were obtained from patients' medical records. **Results:** Significantly lower protein, fat, fiber, carbohydrate and energy content but significantly higher H20 content of NCD PCD and LCD did not show statistically significant differences between them In NCD, values measured for macronutrients and energy corresponded to < 50% of the prescribed values (except for fat) In CD, protein value was 20% more than the prescribed value, fat and energy corresponded to 100% to the prescription, carbohydrates to 92%.	adult cross-sectional study, 66 patients

		Prevalence of undernutrition was high both in CD and NCD, but higher percentage of patients on NCD. Samples of NCD complied significantly less with the microbiological standard for coliform bacteria **Conclusion:** Homemade blenderized diet showed low values of energy and macronutrients, delivered < 50% of prescribed values and had high levels of bacterial contamination	
Reemergence of blenderized tube feedings.Exploring the evidence	Bobo E at al. Nutr Clin Practi 2016; 31 (6): 730-735	Summary of key historical points, discussion for rationale of use, description of points to consider when using BTF and review of evidence in practice,	Review article
Comparative study between the phramonkutklao's diabetic blenderized diets and commercial diets on glycaemic variability in continuous tube fed patients with type 2 diabetes	Tiyapanjanit T et al. J Med Assoc Thai 2014		Cross-over design study
ILSI Task Force on enteral nutrition; estimated composition and costs of blenderized diets	Borghi R, Dutra Araujo T, Airoldi Vieira RI, Theodoro de Souza T, Waitsberg DL Nutr Hosp2013 Nov 1;28(6):2033-8. doi: 10.3305/nutr hosp.v28in06.6759.	14 randomly collected BTF diets recipes 9/14 were poorly described or failed to standardize foodstuffs and portions and, consequently, nutrient and energy composition was difficult to define. 5/14 BTD allowed theoretical estimation of their nutritional properties. Macronutrient content was highly variable, often conflicting with accepted daily recommendations. Nominal cost of BTD was comparatively low in relation to industrialized formulas; however we did not compute labor and indirect expenses, probably rendering final value more expensive than with the industrialized alternative **Conclusion:** use of BTF diets requires careful assessment, prioritizing correction of potencial nutritional deficits by means of safe, balanced, chemically complete and effective nutritional prescriptions.	random analysis of small sample of 14 BTF diets
Home enteral nutrition in	Moreno Villares JM, Pedron Giner C, Martinez Costa C,	On-line patients' register (NEPAD) of Spanish Society of Pediatric	Abstract only as article in Spanish

Spain. Results of the register of the Spanish Society of Pediatric Gastroenterology, Hepatology and Nutrition in 2003	Oliveros Leal L, Galera Peinado AP, Rosell Camps A, Gomex Lopez L, Marugan de Miguelsanz JM An Pediatr (Barc)2006 Mar;64(3):239-43	Gastroenterology, Hepatology and Nutrition. Analysis of the results of the first year of the NEPAD register (2003). **Results:** 124 children (mean age at start of HEN 3.6y)from 6 hospitals registered. Gastrointestestinal disease in 20%, neurological or mental retardation in 20%, cystic fibrosis in 14.5%, tumor in 11%, innate error of metabolism in 10%, congenital cardiac disease in 6%, severe primary malnutrition in 6%, and other causes in 13%. Nasogastric tube used as the first route of access in 56%, gastrostomy in 42 Continuous nocturnal enteral nutrition in 60% and 90% used infusion pump. Blenderized natural food in 14%, polymeric pediatric formula in 50%, and infant formulae in 18%. On December 31st, 84 children continued to receive enteral nutrition (68%). **Conclusions:** on-line national register underused in first year of existence (2003). Patients with gastrointestinal or neurological diseases main group of slight preference for the use of nasogastric tube over gastrostomy.	On-line register of Spanish SPGHN 6 hospitals 124 paediatric patients Incomplete data set
Nutritional analysis of blenderized enteral diets in the Philippines	Sullivan MM, Sorreda-Esguerra P, Platon MB, Castro CG, Chou NR, Shott S, Comer GM, Alarcon P. Asia Pac J Clin Nutr.2004;13(4):385-91	Analysis of nutritional quality and viscosity of BTFs) from 4 hospitals in the Philippines. Samples of two different BTFs (one standard and one modified) were collected from each hospital on 3 separate occasions; analyzed for macronutrients, micronutrients, and viscosity. **Results:** Considerable variation among the BTFs for concentrations of most nutrients measured. Standard BTF samples: caloric density ranged from 66-123 kcal/100g ;percentages of total weight for protein, carbohydrate, and fat ranged from 1.5-4.0%, 8.6-21.4%, and 0.27-3.40%, respectively. Levels of specific vitamins undetectable in 10 standard and	4 hospitals randomly chosen Samples from 2 different BFT (one standard, one modified) collected randomly x 3

		15 modified BTF samples. In samples where vitamin levels were detectable, results were: vitamin A, 625-8850 IU/kg; riboflavin, 0.40-5.00 mg/kg; and pyridoxine, 0.14-3.00 mg/kg. Mineral concentrations also varied greatly (eg calcium, 64-524 mg/kg; sodium, 148-886 mg/kg; iron, 3.0-13.7 mg/kg; and zinc, 1.8- 11.5 mg/kg). Measured values tended to be lower than expected values for all nutrients, (difference statistically significant only for calories (P = 0.023). Viscosity of BTF samples ranged from 2.3-45,060 centipoise for analysis. **Conclusion:** hospital prepared BTF contain unpredictable levels of micronutrients and macronutrients and likely to deliver less than desired amounts of nutrients. Viscosity omay be unsuitable for infusion through feeding tubes.	
Enteral feeding in stable chronic obstructive pulmonary disease patients	Tanchoco CC, Castro CA, Villadolid MF, Casino G, Rodrigues MP, Roa C, de la Crus Cm, Tangcongco F Jr Respirology 2001 Mar;6(1):43-50.	Comparison of a defined formula diet with a BTF on nutritional and respiratory function parameters and bacterial load **Results:** 17 inpatients (aged50-75 yrs), admitted to University of the Philippines-Philippine General Hospital for chronic bronchitis and/or emphysema. divided into two groups according to dietary regimens. Each group received either standardized commercial formula or blenderized formula for 2 weeks. Dietary intake, anthropometric measurements, laboratory examinations and lung function were assessed. Subjective Patient's and physician's assessment also sought. Microbiological examinations were performed on the prepared enteral formulas. **Results:** Slight increase in weight and pulmonary function in both groups (no significant difference). Possible formula contamination was confirmed.Physician and	Small case study on 17 adults Random division into two groups: 2 weeks treatment either with standard formula or BTF

		patients rated both formulas as comparable.	
Nutritional evaluation of a blenderized diet in five major burn patients.	Bailey RT Jr, Carnazzo AJ, Organ CH Jr Am J Surg.1982 Dec;144(6):655-9.	Five consecutively admitted major burn patients received high calorie, high protein diet supplemented with a blenderized diet (egg, rice, and milk base formula) prepared in hospital. BT formula provided > 60 percent of the average daily caloric requirements essential to their recovery. It was effective in preventing significant weight loss and promoting wound healing and successful skin grafting. The formula is inexpensive, palatable, of high quality protein, and provides a complete feeding when administered daily in conjunction with vitamin and mineral supplements.	Small case study of 5 patients
Accepted safe food-handling procedures minimizs microbial contamination of home-prepared blenderized tube feeding	Milton DL et al. Nutr Clin Practi 2020; 35 (3): 479-486	50 participants prepared BTF in their kitchen. BTF was anaylsed for growht of microorganisms **Results** 88% of samples met US food code criteria for safe food consumption Established safe food handling procedures can minimize bacterial contamination of BTF	Lab analysis
Efficacy and tolerance of blended diets in children receiving gastrostomy feeds	Batsis ID, Davia L, Prichett L, Wu L, Shores D, Au Yeung K, Olivia-Hemker M. Nutr Clin Pract 2020; 35 (2): 282-288	Single centre, retrospective study of children aged 1-18 years receiving blended diet. Demographics, anthroprometrics, clinical characteristics and rationale for switching to blended diet reviewed 23 patients Data from 89 outpatient visits analyzed 35 % commercial formula whole cow's milk based 30% hydrolysate 35 % AA based feed After switch 65 % on homemade blended food, 17.5 % commercial blended diet, 17.5 % combination of both Median duration of blended diet 17 month 95% of patients with upper GI symptoms better within first 3 months 21% developed mild constipation	Children Small single centre study Retrospective Outpatient based

		on blended diet Which was managed with increased water intake and/or polyethylene glycol 2 patients discontinued blended diet due to inadequate weight gain and worsening of upper GI symptoms	
Exploring clinical outcomes and feasibility of blended tube feeds in children	Chandraseka Nm Leach ST, Krishnan U. JPEN 2020 doi 10.0002/jpen.2062		Literature review: comparison of clinical outcomes between complete nutritional formulas and blended diet via gastrostomy