

Thickened fluids for adults in Hospital and Health Service facilities

1. Purpose

This Guideline provides recommendations regarding best practice for the prescription, supply, preparation and provision of thickened fluids to adult inpatients and residents in Hospital and Health Service (HHS) facilities.

The purpose of this guideline is to support standardised practice with consideration of safety, product consistency and cost comparison

2. Scope

This document is designed as a state-wide guideline for all HHS employees, contractors, consultants, volunteers and other agents of HHS (permanent, temporary and casual) who are involved in the prescription, supply, preparation and provision of thickened fluids to adult inpatients and residents in HHS facilities.

In addition, this guideline provides information regarding the recommended roles and responsibilities for all professionals involved in the prescription, supply, preparation and provision of thickened fluids, such as speech pathologists, dietitians, allied health assistants, nurses, medical officers and the Foodservices workforce.

This guideline does not address more specialised considerations regarding thickened fluid prescription and preparation for paediatric populations.

3. Related documents

- Food Act 2006 (Qld)
- Dietitians Association of Australia and the Speech Pathology Association of Australia Ltd. Texture-modified foods and thickened fluids as used for individuals with dysphagia: Australian standardised labels and definitions. *Nutrition and Dietetics* 2007; 64 (2): S53- S76.

4. Guideline for the prescription, supply, preparation and provision of thickened fluids

4.1 Summary

There are two types of thickened fluids: pre-packaged thickened fluids and hand thickened fluids. The use of pre-packaged thickened fluids is the preferred methodology for preparing thickened fluids for most adult inpatients. This is

preferred to hand thickened fluids due to clinical factors (eg. patient safety), and a highly favourable cost comparison.

In the circumstances where pre-packaged thickened fluids are not able to be used, the implementation of strict requirements around the production and provision of hand thickened fluids is recommended.

Education and training should occur at least annually for personnel providing thickened fluids to patients. It should emphasise competence in the consistent and safe production of hand thickened fluids where hand thickened fluids are required. Education and training should incorporate both theoretical and practical components and competency assessment.

Auditing of hand thickened fluids is strongly recommended. Foodservices may be best placed to complete regular audits with the support of the speech pathologist and or dietician.

4.2 Thickened fluid options: pre-packaged and hand thickened

There are two types of thickened fluids: pre-packaged and hand thickened.

Fluids can be purchased 'pre-thickened' (pre-packaged) in consistencies intended to match the Australian standardised labels. These products are:

- ready for immediate use with residents and inpatients
- developed to be stable in consistency across time and temperature

Alternatively, fluids can be hand thickened in bulk or individually in on site kitchen facilities or in ward kitchenettes by utilising thickening agents which are added to thin fluid base drinks.

Within Hospital and Health Service facilities, a Standing Offer Arrangement for the Supply of Thickened Fluids exists for the purchasing of pre-packaged thickened fluids and is mandatory for use by all HHS facilities under the control of Health Service Districts throughout Queensland. Listed suppliers include Flavour Creations Pty Ltd and Nutricia Pty Ltd.

4.3 Principles for the prescription of thickened fluids

Where thickened fluids have been prescribed, pre-packaged thickened fluids should be used on all occasions except in the following circumstances:

- Allergies or intolerances may be exacerbated by ingredients within the pre-packaged product;
- Medical/surgical and other clinical contraindications;
- Educational purposes in preparation for discharge home;
- Refusal of fluids when pre-packaged fluids are provided.

4.4 Advantages of pre-packaged thickened fluids

4.4.1 Health and Safety

The improved health and safety of inpatients and residents can be achieved through the use of pre-packaged thickened fluids for the following reasons.

- reduced clinical risk through the provision of fluids of the intended thickness (King, 2011; Matta et al, 2006);
- improved safety as fluids that are either too thin or too thick can result in increased risk of adverse consequences (Kuhlemeier et al, 2001) and pre-packaged thickened fluids can result in increased overall fluid intake and nutritional benefit when compared to hand-thickened fluids (McCormick et al, 2006; Whelan, 2001).

4.4.2 Variability of consistency

Hand thickened fluids have a significant variability in consistency, taste and stability (Goulding, 2000; Pelletier, 1997) even when there is a strict adherence to manufacturer recipes for hand thickening fluids within a controlled setting (Pelletier, 1997; Garcia et al 2008; Garcia et al 2005).

Errors related to hand thickened fluids are significantly more common than errors within pre-packaged thickened fluids (Whelan et al, 2005).

Variability in consistency can be due to the following:

- changes to thickness due to the effects of time or temperature (Garcia et al, 2005);
- recipe errors due to the use of outdated recipes (changes to product ingredients will result in changes to recipes);
- recipe errors based on inaccurate or 'estimated' recipes;
- assumptions that different hand thickening products require the same fluid to thickening agent ratios;
- assumptions that recipes can be modified to make greater or lesser volumes;
- staff errors in the manner of thickening;
- insufficient product guidelines and product label information regarding the composition of the thickening agent or base liquid;
- inter and intra-rater perceptual differences in consistency (Glassburn & Deem, 1998);
- differences in base liquids result in different thickening outcomes depending on their physical or chemical makeup (Garcia et al, 2005; Macqueen et al, 2003; Glassburn & Deem, 1998);

4.4.3 Cost

Use of pre-packaged thickened fluids by a facility results in a highly favourable cost comparison when compared to hand thickened fluids (Kotecki and Schmidt, 2010).

Costs associated with hand thickened fluids include:

- waste costs of incorrectly prepared hand thickened fluids;

- disposal of unused hand thickened fluids (shelf life of only 24 hours post preparation);
- disposal of out of date hand thickening products;
- purchase and maintenance costs of equipment for preparation of hand thickened fluids (eg. scales, sterilising equipment);
- labour costs for the production of hand thickened fluids;
- labour costs for the auditing of hand-thickened fluids;
- training and maintenance of skills training for staff in how to hand thicken fluids;
- maintenance of sterile and task-specific areas;
- regular adjustment to practice as formulations and recipes for hand-thickening agents change.

4.4.4 Other considerations

Other factors that support the use of pre-packaged thickened fluids include the following:

- improved mouth-feel and increased palatability of modified fluids;
- improved taste / decreased masking of base fluid.

4.5 Factors to consider when selecting and using hand-thickeners

Currently there are no standing offer arrangements for hand-thickening products.

It is recommended that in circumstances where hand thickening of fluids is specifically required in place of pre-packaged thickened fluids, the following criteria are considered:

4.5.1 Clear ingredient labelling

Only products that clearly state all ingredients, including preservatives, specific thickening agents, colouring and additives should be used. An allergen declaration is desirable on product labelling.

4.5.2 Choice of thickening agent

Gum based thickeners should typically be used over starch based thickeners for the following reasons:

- they have been found to demonstrate improved stability in thickness over time (Garcia, 2005; Matta et al 2006);
- the risk of clumping is reduced compared to starch based thickeners (Garcia, 2005);
- starch based thickeners may have reduced palatability and add a starchy flavour and grainy texture (Cichero, 2010; Matta, 2006)

Starch based thickeners may be preferred in some instances if clinically indicated.

4.5.3 Specific instructions for fluid preparation

Only products with clearly defined processes and recipes for thickening fluids should be used.

This includes:

- recipes for different volumes of fluid, for different consistencies of thickened fluids and for different base fluids;
- instructions for thickening (e.g. stirring with a fork, vigorous shaking, blending) including specific time frames for the recommended standing and serving time post preparation;
- specific information to guide storage/refrigeration post thickening and disposal requirements;
- specific information about product expiry.

It is not advised to use locally produced recipes or outdated recipes. Recipes are recommended to be sourced directly from the supplier. Should recipes not be available for particular base fluids, liaison with the supplier regarding training and recipe development is recommended.

4.5.4 Environmental considerations

Hand-thickening of fluids should occur in an environment fit for the purpose of food / fluid preparation.

Cleaning procedures outlined in the Department of Health Food and Nutrition Policy Implementation Standard, the Department of Health Statewide Foodservices Guideline and the Food Safety Act (2006) should be implemented for all utensils and equipment used in the production of hand thickened fluids.

Once hand thickened fluids are produced they should be disposed within 24hours or as per specific product instructions.

4.6 Roles and responsibilities

A multidisciplinary team of health professionals work collaboratively to determine the cause and severity of dysphagia and provide appropriately modified fluids. A multidisciplinary team involved in dysphagia management primarily includes: speech pathologists, dietitians, food services personnel, medical officers, nurses, nutrition assistants and allied health assistants. Telehealth consultations between rural and remote and metropolitan areas are encouraged where there is limited staff access.

It is recommended that only speech pathologists and medical officers should prescribe thickened fluids. This includes the initial and any subsequent modifications to the thickness of the fluid. However, there may be situations where this responsibility is delegated to other professionals through a recognised screening protocol (e.g. a nursing-led dysphagia screening process).

Where a professional other than a speech pathologist prescribes a thickened fluid, a referral to a speech pathologist for a formal dysphagia assessment should be made immediately.

4.6.1 Speech Pathology

The role of the speech pathologist includes:

- the formalised assessment (clinical dysphagia assessment or instrumental swallow assessment), diagnosis, management and treatment of dysphagia, including recommendation of fluid and texture modifications;
- recommendations regarding the volume of thickened fluids to be consumed if clinical risk factors (eg. swallow fatigue) are identified. This would occur in collaboration with medical officers and dietitians;
- education of personnel, inpatients and residents and their families/carers regarding dysphagia and thickened fluids*;
- visual demonstration of hand thickening fluids prior to discharge home*;
- communication with other members of the multidisciplinary team regarding dysphagia recommendations;
- monitoring the thickness of pre-packaged and hand thickened fluids in collaboration with Foodservices.

** role can be delegated*

4.6.2 Foodservices

The role of the Manager of Foodservices usually includes oversight of the following:

- product ordering, storage, monitoring and disposal of pre-packaged thickened fluids and hand thickener;
- production of hand thickened fluids from standard recipes where pre-packaged thickened fluids are not appropriate or contraindicated;
- monitoring the thickness of hand thickened fluids including regular auditing in collaboration with speech pathology;
- adhering to the environmental, infrastructure and food safety requirements detailed in the Statewide Foodservices Guideline & the Department of Health Food and Nutrition Policy Implementation Standard;
- delivery of thickened fluids at all supplied meals and mid meals;
- releasing Foodservices personnel for education in relation to dysphagia and thickened fluids / modified diets.
- providing a variety of pre-packaged thickened fluids to enhance compliance with thickened fluid recommendations.

4.6.3 Dietetics

The role of the dietitian usually includes:

- providing expert nutritional care through coordination, implementation and evaluation of interventions to improve intake, with emphasis on food supply and eating behaviours for individuals;
- enhancing nutritional status using thickened fluids where recommended by the speech pathologist;
- assessing and evaluating nutritional requirements and recommending alternative feeding routes (non-oral) and / or oral supplementation if indicated.

4.6.4 Medical

Medical officers are responsible for the progression of non-oral and intravenous supplementation of nutrition and hydration. Medical officers may also prescribe thickened fluids, however, a referral to speech pathology in this circumstance is recommended. Medical officers are best placed to manage issues arising where medication of thin fluid consistency is prescribed to an inpatient or resident requiring thickened fluid.

4.6.5 Pharmacy

The pharmacist is responsible for liaising with the medical officer regarding issues arising where medication of thin fluid consistency is prescribed to an inpatient or resident requiring thickened fluid.

4.6.6 Nursing

The role of nursing includes:

- facilitating and ensuring appropriate assistance with feeding where indicated;
- facilitating and ensuring appropriate positioning;
- provision of oral cares where indicated;
- screening for issues related to swallowing (where they have achieved competency);
- ensuring that the fluids provided are in accordance with the documented speech pathology recommendations;
- alerting speech pathology if issues arise during mealtimes (e.g. signs of aspiration).

4.6.7 Allied Health Assistants

The following responsibilities may be delegated to Allied Health Assistants under the supervision of the speech pathologist.

- hand thickening fluids;
- education regarding dysphagia and fluid consistency;

- resource development;
- swallow monitoring;
- swallow rehabilitation;
- monitoring the thickness of fluids where these are hand thickened.

4.7 Auditing considerations

It is recommended that Foodservice personnel involved in the preparation of hand thickened fluids conduct regular auditing of hand-thickened fluids, preferably in collaboration and with the assistance of speech pathology and or dietetics.

These audits should include the assessment of hand thickened fluids from a variety of base fluids, at a variety of temperatures and at a variety of times post thickening within 24 hours post thickening.

The use of a line spread test is recommended over visual estimations (eg. the fork test), as inter and intra-rater reliability in the visual estimation / subjective estimation of thickened fluids varies greatly (Glassburn, 1998; Reimers-Neils, 1994; Li, 1992).

4.8 Education and training considerations

Errors associated with hand thickening fluids can occur as a result of a lack of education (Rosenvinge & Starke, 2005).

It is recommended that any person responsible for the hand thickening of fluids has access to appropriate training and development.

As it has been found that the accuracy of hand thickening fluids deteriorates over time in trained personnel (Potts, 2008) it is recommended that education regarding the hand thickening of fluids is repeated at least annually.

Education should include basic level information about:

- dysphagia;
- rationale for using thickened fluids;
- the risks of providing inappropriately thickened fluids;
- common errors in the hand thickening of fluids, including education regarding the effects of time, temperature, base liquid, method of mixing, desired thickness level and specific thickening agent used within a facility.

Education and training should also include a practical component where participants demonstrate competence in hand thickening.

4.9 Background

Dysphagia is frequently managed through the provision of thickened fluids and texture modified diets as part of the routine swallow assessment and treatment (Leder, 2012; Dietitians Association of Australia and Speech Pathology Association of Australia, 2007; Macqueen et al 2003). Within hospitals, rehabilitation centres and long-term care facilities, the thickening of liquids is the most commonly utilised

compensatory intervention for dysphagia (Castellanos, Butler, Gluch & Burke 2004; Feinberg, Knebl, Tully & Segall, 1990).

Dysphagia is highly prevalent within inpatient facilities, with estimations showing that 15-30% of hospitalised inpatients, 10% to 30% of people over the age of 65 and over 50% of individuals in aged care have swallowing difficulties (Cichero, Heaton & Bassett, 2009 ; Barczi, Sullivan & Robins, 2000 ; Cichero 2012).

Potential complications of dysphagia include chest infection, dehydration, reduced dietary intake, malnutrition, aspiration, asphyxiation and increased mortality (Low, 2001; Martino, 2005; Perry, 2001; Chouinard, 1998; Dietitians Association of Australia and Speech Pathology Association of Australia, 2007). Consequently, it is vital that the fluids provided to inpatients and residents match the prescribed consistency each time oral nutrition is provided.

Australian standardised labels and definitions for texture modified foods and thickened fluids have been developed (Australia Standardised labels) and are recommended for use throughout Australia. These were developed to reduce the likelihood of adverse events relating to incorrect diet texture or fluid consistency being provided to inpatients and residents.

5. References and Suggested Reading

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6. Review

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7. Business Area Contact

Allied Health Professions' Office of Queensland
Health Service and Clinical Innovation Division

8. Definitions of terms used in the policy and supporting documents

Term	Definition / Explanation / Details	Source
Pre-packaged thickened fluids	Liquids supplied by companies that are pre-thickened and individually packaged at labelled levels of thickness.	
Hand thickened fluids	Thickened fluids produced individually or in bulk, by adding a thickening agent to a base thin liquid, either by hand or using commercial kitchen equipment such as blenders.	
Dysphagia	An abnormality of swallowing food or fluid.	Perry, 2001

9 . Approval and Implementation

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