









**The Australian College of Optometry
Submission to Optometry Board of Australia on the
Consultation Document on Proposal for Therapeutic Qualification to
be Included as a Requirement for General Registration**

Background

- The ACO drafted responses to each of the seven questions provided by the OBA and invited its 570 Full members to indicate whether they agreed or disagreed with these, via an online survey. 120 responses (21 %), were received and ranged from 107 – 115 responses per question (responses to questions were optional). A summary position was also provided for comment upon and is reviewed at the conclusion of the submission.
- For each question, an option was provided for further comment and 240 comments were received in total. Reference to these comments is provided under each question.
- For some questions, there was agreement, or strong agreement with the position taken by the ACO, and for others, responses were much more variable. The attached submission provides an analysis of these responses.

For further inquiries in relation to this submission, please contact Mary Wilson, General Manager Professional Development, mwilson@aco.org.au or telephone (03) 9349 7530.

Q1. Is there any public benefit in requiring all optometrists to be eligible for therapeutic endorsement?

<p>OBA: Is there any public benefit in requiring all optometrists to be eligible for therapeutic endorsement? ACO: There are potential benefits to society which include improved access to prescribing practitioners for a range of eye conditions, with a reduction in the number of referrals to the tertiary health sector and potential benefits to the health economy. However, not all optometrists are willing and able to provide therapeutic care for patients. If practitioners are not confident/competent/experienced in a diverse range of therapeutic interventions, the public health benefit may well be reduced. In relation to the ACOs comments above, please indicate if you:</p>			
		Response Percent	Response Count
Strongly disagree		14.3%	17
Disagree		16.0%	19
Partly agree		21.0%	25
Agree		25.2%	30
Strongly agree		21.0%	25
Unsure		2.5%	3
Comment (optional)			28
answered question			119
skipped question			1

ACO Statement:

If this recommendation were adopted, there are potential benefits to society which include improved access to prescribing practitioners for a range of eye conditions, with a reduction in the number of referrals to the tertiary health sector and potential benefits to the health economy.

Responses:

- The issue of whether there is a need for all optometrists to be therapeutically endorsed must be explored in more depth.
- 46 % of respondents indicated that not all optometrists are willing to obtain, or see any need for, therapeutic qualification.
- Of 28 comments received, almost 60% did **not** support a requirement that all optometrists be therapeutically endorsed.

Typical comments included:

“Non therapeutically endorsed optometrists are well equipped to diagnose and refer”







“Ocular therapeutics enhances the practice of optometry, but is not essential for good primary eye care. Many excellent optometrists would not be practising if such a requirement came to pass”.

“I work as an optometrist in the multi-disciplinary field of aged care facilities. General Practitioners and I work together to prescribe what is best therapeutically for this section of the population who have chronic and complex conditions. I see no benefit in prescribing therapeutically when I have good communication skills with GPs who prefer to have the holistic role of prescribing all medications to these people”.

“Additionally there is less actual NEED for ALL optometrists in urban settings to be therapeutically endorsed/skilled given the redundancies of multiple ECP's nearby available to give that service”.

“After 22 years of practice, I still see less than one person per month who may benefit from therapeutic treatment. By far and way, the bulk of my clients come in with refractive problems, and would not need me to have a therapeutic endorsement”.

Q2. Is such a requirement a reasonable expectation of optometrists?

<p>OBA: Is such a requirement a reasonable expectation of optometrists? ACO:For new graduates entering optometry this is a reasonable expectation and should be linked to strong demands in terms of clinical experience, whether gained at, or soon after leaving, university. For experienced practitioners who have provided many years of high quality service to their community, yet are not willing to retrain in the latter years of their career, this is not a reasonable expectation. Some remote communities may be severely disadvantaged if a sole practitioner is forced to retire early because of a lack of willingness to either undertake further study, or to practice therapeutically. A substantial time lag between the demand for established practitioners to become therapeutically endorsed would be a reasonable compromise. The suggestion of 2023 (or later) would be reasonable. In relation to the ACOs comments above, please indicate if you:</p>			
		Response Percent	Response Count
Strongly disagree		6.9%	8
Disagree		5.2%	6
Partly agree		21.6%	25
Agree		30.2%	35
Strongly agree		35.3%	41
Unsure		0.9%	1
Comment (optional)			34
answered question			116
skipped question			4

ACO Statement:

This is a reasonable expectation for new graduates entering optometry. However, for experienced practitioners who have provided many years of high quality service to their community, yet are not willing to retrain in the latter years of their career, this is not a reasonable expectation. Some remote communities may be severely disadvantaged if a sole practitioner is forced to retire early because of a lack of willingness to either undertake further study, or to practice therapeutically. A substantial time lag between the demand for established practitioners to become therapeutically endorsed would be a reasonable.

Responses:

- 65% (75) agreed or strongly agreed with the statement.
- Of the 33 comments provided by respondents, almost 50% did not feel that experienced optometrists should be required to be therapeutically endorsed.

Typical Comments Included:







“Often in remote areas, optometrists have made strong links with GPs in a model of practice that has seen patients cared for. This model has alleviated the need for prescribing therapeutics. Remote and rural practicing optometrists should not be penalized if they don’t become endorsed because without them, these communities will suffer worse consequences. Also, the cost in time and money for these optometrists to leave their practices to undertake this study is a big sacrifice. There should be some sort of rebate or government support for those who choose to undertake the study from these areas”.

“There is no problem with the eye care delivery system that is currently in place. There is no risk to public safety at present. There should be absolutely no requirement for established practitioners to become therapeutically endorsed AT ALL, at any time. The circumstances of individual optometrists are so diverse that NO time frame could ever be considered reasonable”.

“It would not be reasonable to take away someone's livelihood. Indeed it is unreasonable to expect optometrists that are qualified and experienced to undertake therapeutic endorsement even by the year 2023. Some may still wish to work a further 20 yrs or so before retiring without being therapeutically endorsed. We completed our degrees at a time when therapeutics was not taught, we should not have our livelihoods taken away from us. Let time take its course. As the optometry course has evolved and changed in recent years it is a reasonable expectation for new graduates. The proportion of therapeutically qualified optometrists will on its own evolve to become 100% endorsed in the next 20 yrs or so”.

“I think optometrists know where to draw the line. If there is a need to be therapeutically qualified where they work they would long have become therapeutically trained by now. The fact is there are many optometrists who practice and provide excellent care to their patients and do not feel the need to become therapeutically qualified either because they work closely with health professionals that provide the additional support or there is simply not a demand within their practice scope to justify the need to retrain. There should not be any enforcement whatsoever to have all optometrists become therapeutically qualified. It is unreasonable to enforce this upon all optometrists”.

Q3. Should therapeutic qualifications be a requirement for practice as an optometrist in Australia?

<p>OBA: Should therapeutic qualifications be a requirement for practice as an optometrist in Australia? ACO: The requirements for overseas practitioners should be the same as for Australians. Thus, qualified practitioners entering Australia to practice via the OCANZ process should be asked to undertake a therapeutics qualification within the same timeframe (eg 2023) for an established practitioner. In relation to the ACOs comments above, please indicate if you:</p>			
		Response Percent	Response Count
Strongly disagree		15.5%	18
Disagree		10.3%	12
Partly agree		12.9%	15
Agree		29.3%	34
Strongly agree		27.6%	32
Unsure		4.3%	5
Comment (optional)			34
answered question			116
skipped question			4

ACO Statement:

The requirements for overseas practitioners should be the same as for Australians. Thus, qualified practitioners entering Australia to practice via the OCANZ process should be asked to undertake a therapeutics qualification within the same timeframe for an established practitioner (eg 2023).

Responses:

- A substantial majority of respondents (57%) agreed or strongly agreed with the statement.
- A smaller but significant group 26% of respondents strongly disagreed or disagreed with the statement.
- The majority of respondents did not provide comments, however of the 33 comments received, 21 supported the requirement for overseas practitioners to be registered with therapeutics with the same time frame as for new graduates.
- These mixed responses suggest that this area in particular will require careful review and consideration of both the approach to be taken and the mechanism to achieve the desired objective. This should be a key area of further consultation for the OBA.

Typical Comments Included:







"Whatever happens, overseas practitioners should be subject to the same rules as their Australian counterparts".

"There should never be a need to all optometrists in Australia to be therapeutically trained. As such, there should never be a requirement for overseas trained optometrists to have this qualification".

"Overseas practitioners should already be therapeutically qualified before being able to practice in Australia because if they want the privilege to practice here, they must be at the same standard as the new graduates from our Schools of Optometry, not compared to those who have practiced here for years without the therapeutic qualification".

"All new registering optom's (whether new grad or experienced) should be therapeutically qualified for best public health care".

Q4. If so, should there be a period of grace to allow all registered optometrists to gain the necessary qualifications and how long should the period be?

OBA: If so, should there be a period of grace to allow all registered optometrists to gain the necessary qualifications and how long should the period be? ACO: Most definitely a period of grace allows those practitioners who entered the profession as was, to continue to practice in the manner they entered the profession. It is reasonable to expect that anyone registered in the last 5-10 years should be willing to undertake the qualification. An examination of the age demographics would be helpful to determine the time frame to allow the balance of older practitioners to reach retirement age (presumably 10-20 years). Although this is slower than the OBA may wish, it is still a tremendous outcome for Australian optometry. In relation to the ACOs comments above, please indicate if you:			
		Response Percent	Response Count
Strongly disagree		2.7%	3
Disagree		11.5%	13
Partly agree		17.7%	20
Agree		34.5%	39
Strongly agree		30.1%	34
Unsure		3.5%	4
Comment (optional)			24
answered question			113
skipped question			7

ACO Statement:

It is reasonable to expect that anyone registered in the last 5-10 years should be willing to undertake the qualification. An examination of the age demographics would help to determine the time frame to allow the balance of older practitioners to reach retirement age (presumably 10-20 years).

Responses:

- 64% of respondents agreed or strongly agreed that there should definitely be a period of grace to allow all registered practitioners to gain a therapeutic qualification, if mandated.
- Of 24 comments received, 35% indicated a lack of agreement that therapeutic qualification should be mandatory and 22% suggested that 10 years be the period of grace.
- Although the statement was well supported, there were very mixed views about the duration of a grandfather clause.

Typical Comments Included:

"A period of grace or a 'grandfather clause' allowing the older but more experienced optometrists to continue practicing is imperative. In rural and remote areas which have older optometrists, it would be foolish for the OBA to wipe out this section of the workforce as there are few replacements in the offing. As explained earlier, these optoms have found other models of practicing (in conjunction with GPs/visiting ophthals) which has not curbed their capacity to save sight".

"Let older practitioners reach retirement whether it be 20 yrs or so without mandatory therapeutic endorsement. Recent graduates of less than 5 years may want to become endorsed as they would have working careers of 40 years ahead of them"







"Do not to agree to a position of enforcement at all. But if a grace period is given it should be from the last 10 years of therapeutically endorsed optoms to their retirement age - ie 2052".

"There should definitely be a period of grace no doubt but 10 years might be the maximum."

"The main determinant of the grace period should be a calculation of how long it would take to qualify everybody. My understanding is that this would likely be a decade or so.

"An aging practitioner should still be expected to be considered up to date, both by their peers and community, and should gain the necessary qualifications within 10 years".

Q5. To be consistent with Australian graduates, should overseas trained optometrists applying for general registration in Australia for the first time be required to complete appropriate competency assessments for therapeutic practice from 2014?

<p>OBA: To be consistent with Australian graduates, should overseas trained optometrists applying for general registration in Australia for the first time be required to complete appropriate competency assessments for therapeutic practice from 2014? ACO: The suggestion here seems to be that in Australia there will be a) therapeutically endorsed Australian practitioners b) non therapeutic Australian practitioners c) overseas registered therapeutically competent practitioners. There is clearly no value in a 3-tier system when the objective seems to be to reduce a 2-tier system to a 1-tier system over time. Overseas practitioners should be required to undertake OCANZ exams as now, and filter through the full therapeutics diploma with the same timeframe as an Australian optometrist (eg 2023). Anything else appears to be prejudicial and may even weaken/short-cut the Australian therapeutic system. In relation to the ACOs comments above, please indicate if you:</p>		
	Response Percent	Response Count
Strongly disagree 	15.9%	18
Disagree 	9.7%	11
Partly agree 	10.6%	12
Agree 	36.3%	41
Strongly agree 	24.8%	28
Unsure 	2.7%	3
Comment (optional)		25
answered question		113
skipped question		7

ACO Statement:

The suggestion here seems to be that in Australia there will be a) therapeutically endorsed Australian practitioners b) non therapeutic Australian practitioners c) overseas registered therapeutically competent practitioners. There is clearly no value in a 3-tier system when the objective seems to be to reduce a 2-tier system to a 1-tier system over time. Overseas practitioners should be required to undertake OCANZ exams as now, and filter through the full therapeutics diploma with the same timeframe as an Australian optometrist (eg 2023). Anything else appears to be prejudicial and may even weaken/short-cut the Australian therapeutic system.

Responses:

- 61% (69) agreed or strongly agreed with the statement.
- 26% (29) of respondents disagreed or strongly disagreed.
- 25 comments received.

Typical Comments Included:

"This is NOT a 3 tier system. There will be therapeutically qualified new practitioners (Australian graduates and overseas applicants) and existing non therapeutically qualified optometrists (from what-ever origin). In the long term I believe that existing non therapeutically qualified optometrists should be required to complete a therapeutics course within 5 years".

"As part of their OCANZ exams, as a condition of their registration, these practitioners make the choice to be part of our optometry system and our community at large, so they expect to meet our requirements from the outset".







"There are many tiers now with respect to other skills. Not all optometrists are competent with RGP lenses. Even fewer are competent with orthokeratology. Children's vision and behavioral optometry is a mystery to many optometrists. I see no problem with this and see no problem with having non therapeutically endorsed optometrists and endorsed optometrists. However all new entrants to the profession should be endorsed whether from overseas or not".

"Any new overseas practitioner wanting to register in Australia should be as competent as a new graduate. They should be allowed one year to also enable them time to do the therapeutics course".

There needs to be consistency across all "3 sections". The decision here is what we do with "non therapeutic aus practitioners" first - once that's decided, THEN we can decide what to do for overseas practitioners.

"Not all countries encourage therapeutic intervention by optometrists. It would be ideal to first allow the overseas Optometrists to register and then provide them training for therapeutics.

Q6. Should optometrists holding general registration practising in non-clinical roles, such as management, administration, education, research, advisory, regulatory or policy development roles be required to hold therapeutic qualifications?

<p>OBA: Should optometrists holding general registration practising in non-clinical roles, such as management, administration, education, research, advisory, regulatory or policy development roles be required to hold therapeutic qualifications? ACO: Optometrists in these working scenarios should be required to have the same skill requirements as other optometrists and should either be registered as "non practising" or within the registration guidelines operated by the OBA at the time(eg therapeutically endorsed if this has become mandatory). In some roles, such as those setting clinical policy, it may well be necessary to be a fully registered practitioner to function in the role, in which case this should be handled in the drafting of the position description. It should not be necessary for the OBA to handle matters of core competency in specific employment areas. In relation to the ACOs comments above, please indicate if you:</p>		
	Response Percent	Response Count
Strongly disagree 	8.0%	9
Disagree 	4.5%	5
Partly agree 	9.8%	11
Agree 	47.3%	53
Strongly agree 	21.4%	24
Unsure 	8.9%	10
Comment (optional)		15
answered question		112
skipped question		8

ACO Statement:

Optometrists in these working scenarios should be required to have the same skill requirements as other optometrists and should either be registered as "non practising" or within the registration guidelines operated by the OBA at the time (eg therapeutically endorsed if this has become mandatory). In some roles, such as those setting clinical policy, it may well be necessary to be a fully registered practitioner to function in the role, in which case this should be handled in the drafting of the position description.

Responses:

- 68% of respondents agreed or strongly agreed with the statement.
- 13% disagreed or strongly disagreed with the statement.
- 15 comments were received, mostly from respondents that disagreed with the statement.

Typical Comments Included:







“Optometrists working in non clinical roles do not need to be registered. If they wish to remain able to see patients they MUST be required to demonstrate ongoing clinical competency and meet CPD requirements. Non practicing optometrists not willing to maintain their competencies should be removed from the register.

“If Optometrists choose to work in non-clinical areas, they should not be forced to attain qualifications not relevant to them. Not all accountants are CPA's. It is not the role of the OBA to set education standards at all - their role is to enforce the relevant legislation”.

“What financial benefit do therapeutic optometrists get getting the qualification especially in the above mentioned jobs”?

“All optometrists whether they be involved in clinical work; management; administration; post-doc research etc, should all hold the necessary skills and qualifications. If the Board has decided that all optoms are required to have therapeutic qualifications - then no matter what the optoms decide to do(practise clinically; research; manage a practice; company representative) – he or she should have all the qualifications required”.

Q7. OBA: Are there impediments to the proposal that need to be considered and if so, can these be overcome?

OBA: Are there Impediments to the proposal that need to be considered and if so, can these be overcome? ACO: Part a) A critical issue is to ensure that clinical competencies match theoretical/didactic competencies in order that practitioners are "safe" in their working practices. In the current situation the OBA makes no requirement for a level of clinical experience/practice/competence which some might consider to be unsafe for general registration, never mind therapeutically endorsed registration. This can be managed by requiring some sort of log of clinical services/interventions and possibly a clinical examination. It is not necessary that this is placed as a burden onto University departments but could be a combination of University and post qualifying (supervised) practice. Indeed, this model may see Universities with the best clinical offerings being the most in demand. In relation to the ACOs comments above, please indicate if you:			
		Response Percent	Response Count
Strongly disagree		6.4%	7
Disagree		12.8%	14
Partly agree		22.0%	24
Agree		28.4%	31
Strongly agree		8.3%	9
Unsure		22.0%	24
Comment (optional)			21
answered question			109
skipped question			11

ACO Statement:

Part a) A critical issue is to ensure that clinical competencies match theoretical competencies to ensure practitioners are competent in their working practices. In the current situation the OBA makes no requirement for a level of clinical experience/practice/competence which some might consider to be unsafe for general registration, never mind therapeutically endorsed registration. This can be managed by requiring some sort of log of clinical services/interventions and possibly a clinical examination. It is not necessary that this is placed as a burden onto University departments but could be a combination of University and post qualifying (supervised) practice. Indeed, this model may see Universities with the best clinical offerings being the most in demand.

Responses:

- 37% of respondents agreed or strongly agreed with the statement.
- 19% of respondents disagreed or strongly disagreed with the statement.
- 21 comments were received - 48% of these did not support the introduction of a requirement for a level of clinical experience/practice/competence for registered optometrists as outlined in the statement.

Typical Comments Included:

"I think that the greatest problem with optometrists using therapeutics is that we don't have enough first hand experience with acute anterior eye conditions treated eg corneal ulcers, chemical injuries, so don't know what we should be seeing as we follow the case. I feel that much more time is needed in tertiary clinical settings (eg RVEEH anterior eye clinic) seeing how actual cases progress and are handled - book learning is no substitute".

"The new standard of achieving 40 annual CE Points, the threat of Medicare audits, the awareness of a progressively educated community and informal peer review are enough of a whip to keep us in line. Don't the unis have enough to deal with?"

"I agree competency should be maintained and possibly scrutinised however this should be balanced against cost and practicality and compared to medicine in general"

"Having a log or holding exams would simply be too time-consuming; money consuming, for all involved - the board; the optom department; the optoms - to plan and ensure everyone complies"

"I think the universities should only be allowed to provide Optometric courses if they are able to provide adequate and varied clinical placements to ensure safe practice.....".

<p>OBA: Are there impediments to the proposal that need to be considered and if so, can these be overcome (continued from above question)? ACO: Part b) In order to ensure that all Australian or overseas optometrists complete therapeutic diplomas with relevant clinical placements, the balance of available clinical and educational training opportunities and the requirement for the numbers of practitioners needing to complete qualifications must be considered in the context of the timeframe in which these qualifications are required. A short time limit (eg by 2014) is not realistic given the current availability, level and expectation of therapeutic training places. In relation to the ACOs comments above, please indicate if you:</p>			
		Response Percent	Response Count
Strongly disagree		1.8%	2
Disagree		8.3%	9
Partly agree		11.0%	12
Agree		40.4%	44
Strongly agree		33.0%	36
Unsure		5.5%	6
answered question			109
skipped question			11

ACO Statement:

Part b) In order to ensure that all Australian or overseas optometrists complete therapeutic diplomas with relevant clinical placements, the balance of available clinical and educational training opportunities and the requirement for the numbers of practitioners needing to complete qualifications must be considered in the context of the time frame in which these qualifications are required. A short time limit (eg 2014) is not realistic given the current availability, level and expectation of therapeutic training places.

Responses:







- 73% of respondents agreed or strongly agreed with the statement
- 10% of respondents disagreed or strongly disagreed with the statement
- 21 comments were received (included under part a)

Typical Comments Included:

“Need more opportunity for huge number of optoms to get therapeutic education”.

“Other impediments are cost of doing the course (in the vicinity of \$12000 at Melbourne University when last held) ; the amount of face to face contact in lectures required that could otherwise be handled on -line (which could reduce the cost of the course and also open it up to more practitioners at any one time); the lack of places to do the course (no course at Melbourne in 2011 and the Sydney course is full); and the requirement to attend weekend lectures when for a variety of reasons these are not always feasible....week night lectures or (again) online content could eliminate this impediment”.

SUMMARY

<p>ACO SUMMARY An aspiration that optometry in Australia is a 1-tiered therapeutically endorsed profession is a good long-term objective. The objective previously outlined by the OBA seems a good one with: - newly trained optometrists being therapeutically endorsed - a timeframe of 2023 or later, to allow practitioners to find diploma places, or to retire if they do not wish to retrain - that overseas practitioners register as general practitioners first, with the same therapeutic requirement as everyone else. Ultimately in the next decade or so, this will mean the registration exams will have to include the therapeutic qualification. There is an urgent need to ensure that the didactic skills of optometrists, whether therapeutically endorsed or not, are matched with sufficient clinical skills and experience to provide a safe and reliable service to patients. This does not necessarily need to be the responsibility of Universities alone.</p>			
		Response Percent	Response Count
Strongly disagree		9.3%	10
Disagree		13.9%	15
Partly agree		20.4%	22
Agree		38.0%	41
Strongly agree		16.7%	18
Unsure		1.9%	2
Comment (optional)			29
answered question			108
skipped question			12

ACO Statement:

An aspiration that optometry in Australia is a 1-tiered therapeutically endorsed profession is a good long-term objective. The objective previously outlined by the OBA seems a good one with: newly trained optometrists being therapeutically endorsed - a timeframe of 2023 or later, to allow practitioners to find diploma places, or to retire if they do not wish to retrain; that overseas practitioners register as general practitioners first, with the same therapeutic requirement as everyone else. Ultimately in the next decade or so, this will mean the registration exams will have to include the therapeutic qualification. There is an urgent need to ensure that the didactic skills of optometrists, whether therapeutically endorsed or not, are matched with sufficient clinical skills and experience to provide a safe and reliable service to patients. This does not necessarily need to be the responsibility of Universities alone.

Responses:

- 55% of respondents agreed or strongly agreed with the statement.
- 23% of respondents disagreed or strongly disagreed with the statement.
- 29 comments were received, with 25% of these reiterating that therapeutic qualifications should not be mandated for the older practitioner and 21% supporting

a requirement that overseas optometrists should be therapeutically qualified in line with new graduates.

Typical Comments Included:

“A timeframe of 2023 is unreasonable. Perhaps 2033 may be a better long term objective to that optoms that graduated 20 years ago can continue to work in the profession without being forced out with the expectations that we all need to be therapeutically qualified. WE DON'T NEED TO BE! The optometry profession has developed good relations with GP's and Ophthal's and we are not compromising our patient care”.

“I don't support making therapeutic endorsement compulsory. A 2 tier system is the way it will have to be. I don't understand why this is not supported by the ACO”.

“I do not agree that we need to wait until 2023! I think it would be more reasonable to wait 5 years ie 2016. Reiterate that only existing practicing optometrists in Australia be allowed time to retire or gain therapeutic qualification by 2023. All new practitioners, whether from overseas or new graduates, should gain therapeutic qualifications before practising”

Summary of Responses

Although there is not a consensus in all the above questions, the following issues and considerations have been identified and should be pursued in relation to the OBAs consultation on the proposal for therapeutic qualification to be included as a requirement for general registration:

- An aspiration that optometry in Australia is a 1 tiered therapeutically endorsed profession is a good long -term objective.
- A grandfather clause would be beneficial but the duration of the period requires careful consideration.
- Newly qualified optometrists should be therapeutically endorsed by 2014.
- Overseas practitioners should become therapeutically endorsed, however the allowable timeframe requires consideration.
- The major impediments to the proposal for therapeutic qualification is the availability of therapeutic courses and relevant clinical placements. This must be considered in the context of the time frame in which these qualifications are required.