

# Recommendations for use of Endocrine therapy for the treatment of hormone receptor-positive advanced breast cancer

**JUNE 2008** | Incorporates published evidence to July 2007

## **A CLINICAL PRACTICE GUIDELINE DEVELOPED BY NATIONAL BREAST AND OVARIAN CANCER CENTRE (NBOCC)\***

This document supplements guideline recommendations 22, 24a and 24b about the use of *endocrine therapy* in National Breast Cancer Centre\* *Clinical practice guidelines for the management of advanced breast cancer*, 2nd edition, 2001 (page 9).<sup>1</sup>

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\* In February 2008, National Breast Cancer Centre (NBCC), incorporating the Ovarian Cancer Program, changed its name to National Breast and Ovarian Cancer Centre (NBOCC). In July 2011, NBOCC amalgamated with Cancer Australia to form a single national agency, Cancer Australia, to provide leadership in cancer control and improve outcomes for Australians affected by cancer.

## **Purpose**

This guideline includes statements and recommendations based on available, high level evidence about the use of *endocrine therapy* for pre-menopausal and post-menopausal women with hormone receptor-positive *advanced breast cancer*. The guideline aims to provide health professionals with information to assist in making management recommendations for improved patient outcomes. National Breast and Ovarian Cancer Centre (NBOCC)\* also develops information specifically for consumers about advanced breast cancer diagnosis and treatment options.

For information on the *Pharmaceutical Benefits Scheme* (PBS) listing for drugs mentioned in the guideline please refer to the PBS section of this guideline.

Endorsed by:



The Royal Australian  
and New Zealand  
College of Radiologists\*

The Faculty of Radiation Oncology



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The Royal Australasian  
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## Background

Endocrine therapy is a type of treatment, that acts to inhibit the growth of breast cancer cells which have *hormone receptors*. It does this by blocking either the production of female hormones or the ability of hormones to interact with receptors on cancer cells.

Endocrine therapies include:

- ovarian suppression/ablation, e.g. luteinising hormone-releasing hormone agonists (goserelin, buserelin), ovarian irradiation, and surgical oophorectomy
- selective oestrogen receptor modulators, e.g. tamoxifen
- selective oestrogen receptor downregulators, e.g. fulvestrant
- progestins, e.g. megestrol acetate and medroxyprogesterone
- aromatase inhibitors, e.g. anastrozole, exemestane, letrozole.

This guideline is based on a meta-analysis<sup>2</sup> and an evidence review.<sup>3</sup> The meta-analysis is about the use of endocrine therapy in pre-menopausal women with hormone receptor-positive *advanced breast cancer*. The evidence review is about the use of endocrine therapy in post-menopausal women with hormone receptor-positive advanced breast cancer. The evidence is not specific to women with metastatic (stage IV) breast cancer. While the majority of women had *stage IV* metastatic disease, a small number of women with locally advanced disease and/or locoregional *recurrence* were included in the trials. In the majority of trials, women with tumours of unknown hormone receptor status were also eligible for participation.

A previous Cochrane review (2003)<sup>4</sup> investigating randomised trials comparing the effects of *chemotherapy* alone with endocrine therapy alone in women with *metastatic breast cancer* found that endocrine therapy is the preferred first-line treatment for women with hormone receptor-positive breast cancer, except in the presence of rapidly progressive disease. The review also found that the incidence of adverse events is less frequent with endocrine therapy compared with chemotherapy.

## Clinical practice recommendations

Recommendations to individuals should be based on the risks, the absolute benefits and harms of treatment, and their personal preference. These factors should be discussed with the woman. Women receiving endocrine therapy should be reviewed regularly and monitored for adverse events by clinicians familiar with endocrine therapy.

RECOMMENDATIONS	LEVEL OF EVIDENCE <sup>20</sup>	REFERENCE
<b>In women with hormone receptor-positive advanced breast cancer:</b>		
Endocrine therapy is recommended in preference to <i>chemotherapy</i> except in the presence of rapidly progressive visceral disease	I	Cochrane 2003 <sup>4</sup>
Information about the treatment should be discussed with the patient. The patient should be adequately prepared for the treatment	I	NBCC* & NCCI <sup>22</sup>
<b>In pre-menopausal women with hormone receptor-positive advanced breast cancer:</b>		
Tamoxifen combined with luteinising hormone-releasing hormone (LH-RH) agonist is recommended in favour of a LH-RH agonist alone	I	Klijn 2001 <sup>2</sup>
If commencing treatment with tamoxifen alone, consideration should be given to adding a LH-RH agonist, if response is not optimal	III	Klijn 2000 <sup>5</sup>



RECOMMENDATIONS	LEVEL OF EVIDENCE <sup>20</sup>	REFERENCE
<b>Optimal dose and schedule of administration</b>		
Recommended doses and schedule are: Tamoxifen 20mg/day Goserelin 3.6mg subcutaneously monthly		Therapeutic Goods Administration <sup>23</sup>
<b>In post-menopausal women with hormone receptor-positive advanced breast cancer:</b>		
Aromatase inhibitors with trastuzumab are recommended for the treatment of women with HER2-positive hormone dependent <i>advanced breast cancer</i> in preference to aromatase inhibitors alone	II	NBCC <sup>21*</sup>
<b>First-line treatment</b>		
Third generation aromatase inhibitors are recommended in preference to tamoxifen	I	NBOCC <sup>3*</sup>
<b>Second-line treatment</b> (following progression on tamoxifen)		
Third generation aromatase inhibitors are recommended in preference to progestins	I	NBOCC <sup>3*</sup>
<b>Optimal dose, schedule and duration of administration</b>		
Continued use of third generation aromatase inhibitors is recommended until disease progression or unacceptable toxicity	I	NBOCC <sup>3*</sup>
Recommended doses and schedules for third generation aromatase inhibitors are: Anastrozole 1.0 mg/day Exemestane 25 mg/day Letrozole 2.5 mg/day	I	NBOCC <sup>3*</sup>
There are insufficient data to recommend one type of endocrine therapy over another for women who have progressed during or after treatment with <i>adjuvant</i> aromatase inhibitors		

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## Statements of evidence

STATEMENTS	LEVEL OF EVIDENCE <sup>20</sup>	REFERENCE
<b>In women with hormone receptor-positive advanced breast cancer:</b>		
Endocrine therapy is preferred for women with hormone receptor-positive <i>advanced breast cancer</i> in preference to <i>chemotherapy</i> except in the presence of rapidly progressive visceral disease	I	Cochrane 2003 <sup>4</sup>



STATEMENTS	LEVEL OF EVIDENCE <sup>20</sup>	REFERENCE
Endocrine therapy shows no significant difference in overall survival compared with chemotherapy	I	Cochrane 2003 <sup>4</sup>
Incidence of adverse events including nausea, vomiting and alopecia is less frequent with endocrine therapy compared with chemotherapy	I	Cochrane 2003 <sup>4</sup>
<b>In pre-menopausal women with hormone receptor-positive advanced breast cancer:</b>		
Combination of luteinising hormone-releasing hormone (LH-RH) agonist and tamoxifen shows significant benefit in overall survival, progression-free survival and overall response rate compared with LH-RH agonist alone	I	Klijn 2001 <sup>2</sup>
Combination of LH-RH agonist and tamoxifen shows significant benefit in overall survival, progression-free survival and overall response rate compared with tamoxifen alone	III	Klijn 2000 <sup>5</sup>
Incidence of hot flushes is significantly higher in women treated with combined tamoxifen and LH-RH agonist compared with tamoxifen alone	III	Klijn 2000 <sup>5</sup>
There are insufficient data to guide the use of third generation <i>aromatase inhibitors</i> in combination with functional ovarian ablation/suppression or fulvestrant in pre-menopausal women		
<b>In post-menopausal women with hormone receptor-positive advanced breast cancer:</b>		
Combination of aromatase inhibitors and trastuzumab in women with HER2-positive hormone dependent advanced breast cancer leads to improved progression-free survival compared with aromatase inhibitors alone	II	NBOCC <sup>21*</sup>
<b>First-line therapy</b>		
Third generation aromatase inhibitors <sup>a</sup> show no significant difference in overall survival compared with tamoxifen	I	NBOCC <sup>3*</sup>
Third generation aromatase inhibitors <sup>b</sup> show significant benefit in progression-free survival compared with tamoxifen	I	NBOCC <sup>3*</sup>
Third generation aromatase inhibitors <sup>c</sup> show significant benefit in overall response rate compared with tamoxifen	I	NBOCC <sup>3*</sup>
<i>Adverse events</i>		
Overall incidence of adverse events is not significantly different between third generation aromatase inhibitors and tamoxifen	I	NBOCC <sup>3*</sup>
Incidence of thromboembolic events and vaginal bleeding is significantly lower with third generation aromatase inhibitors compared with tamoxifen	I	NBOCC <sup>3*</sup>
Incidence of <i>arthralgia</i> , diarrhoea, dyspnoea, hot flushes, and nausea is not significantly different with third generation aromatase inhibitors compared with tamoxifen	I	NBOCC <sup>3*</sup>
<i>Quality of life</i>		
There are insufficient data to indicate any differences in quality of life between third generation aromatase inhibitors and tamoxifen		

<sup>a</sup> Trials relate to anastrozole

<sup>b</sup> Trials relate to anastrozole, letrozole





<sup>c</sup> Trials relate to anastrozole, exemestane, letrozole

STATEMENTS	LEVEL OF EVIDENCE <sup>20</sup>	REFERENCE
<b>Second-line therapy</b> (following progression on tamoxifen)		
Third generation aromatase inhibitors <sup>c</sup> show significant benefit in overall survival and progression-free survival compared with progestins <sup>d</sup>	I	NBOCC <sup>3*</sup>
Third generation aromatase inhibitors <sup>c</sup> show no significant difference in overall response rate compared with progestins	I	NBOCC <sup>3*</sup>
Third generation aromatase inhibitors show no significant difference in overall survival compared with fulvestrant <sup>a</sup>	II	NBOCC <sup>3*</sup>
Third generation aromatase inhibitors show no significant difference in progression-free survival and overall response rate compared with fulvestrant <sup>e</sup>	I	NBOCC <sup>3*</sup>
<i>Adverse events</i>		
Overall incidence of adverse events is not significantly different with third generation aromatase inhibitors compared with progestins	I	NBOCC <sup>3*</sup>
Incidence of dyspnoea is significantly lower with third generation aromatase inhibitors compared with progestins	I	NBOCC <sup>3*</sup>
Incidence of nausea, hot flushes and diarrhoea is significantly higher with third generation aromatase inhibitors compared with progestins	I	NBOCC <sup>3*</sup>
There are no significant differences in the incidence of thromboembolic events, vaginal bleeding and arthralgia between third generation aromatase inhibitors and progestins	I	NBOCC <sup>3*</sup>
<i>Quality of life</i>		
Where reported there is conflicting evidence about quality of life and no firm conclusions can be drawn	II	NBOCC <sup>3*</sup>
<b>Aromatase inhibitor vs aromatase inhibitor</b>		
There are insufficient data to indicate a significant difference in overall survival, progression free survival or overall response rate for one aromatase inhibitor over another aromatase inhibitor		

<sup>a</sup> Trials relate to anastrozole

<sup>c</sup> Trials relate to anastrozole, exemestane, letrozole

<sup>d</sup> Trials relate to megastrol acetate

<sup>e</sup> Trials relate to anastrozole and exemestane

<sup>f</sup> For trial details please see [table 1](#)

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## Summary of evidence

## Use of endocrine therapy for pre-menopausal women with hormone receptor-positive advanced breast cancer

The statements and recommendations about pre-menopausal women are based on evidence from a meta-analysis<sup>2</sup> of four randomised trials. The trials compared the use of luteinising hormone-releasing hormone (LH-RH) agonist alone compared with the use of LH-RH agonist plus tamoxifen in pre-menopausal women with *advanced breast cancer*.

Combined therapy of LH-RH agonist plus tamoxifen significantly improved overall survival and progression-free survival compared with LH-RH agonist alone in pre-menopausal women with advanced breast cancer. Another trial<sup>5</sup> found a significant improvement in survival outcomes for women treated with combined LH-RH agonist plus tamoxifen compared with tamoxifen alone. This trial also found a significantly reduced incidence of hot flushes in women treated with tamoxifen alone.

All trials investigating the use of *endocrine therapy* in pre-menopausal women used a LH-RH agonist. Although not formally compared in a trial setting, it is reasonable to assume that all forms of ovarian ablation or ovarian functional suppression are equivalent and have similar effects.

## Use of endocrine therapy for post-menopausal women with hormone receptor-positive advanced breast cancer

The statements and recommendations about post-menopausal women are based on evidence from 14 randomised trials assessing the use of *endocrine therapy* for post-menopausal women with hormone receptor-positive advanced breast cancer:

- five trials compared a third generation *aromatase inhibitor* with tamoxifen as first-line therapy<sup>6-10</sup>
- five trials compared a third generation aromatase inhibitor with progestins (megestrol acetate) as second-line therapy<sup>11-15</sup>
- two trials compared a third generation aromatase inhibitor with fulvestrant as second-line therapy<sup>16,17</sup>
- two trials compared one third generation *aromatase inhibitors* with another.<sup>18,19</sup>

### (see table 1 for trial details)

As first-line therapy, aromatase inhibitors significantly improved progression-free survival and overall response rate compared with tamoxifen in post-menopausal women with hormone receptor-positive *advanced breast cancer*. Improvements in overall survival have not been demonstrated. Overall, there was no significant difference in total adverse events between aromatase inhibitors and tamoxifen, although the incidence of vaginal bleeding and thromboembolic events was significantly lower in women treated with aromatase inhibitors. One study reported that quality of life was comparable for aromatase inhibitors and tamoxifen.<sup>3</sup>

As second-line therapy, aromatase inhibitors significantly improved progression-free survival and overall survival for women compared with progestins. Overall, both treatments were well tolerated. Patients treated with aromatase inhibitors experienced significantly higher incidence of nausea, hot flushes, and diarrhoea but a significantly lower incidence of dyspnoea compared with patients treated with progestins. Where reported, quality of life data comparing aromatase inhibitors and progestins are conflicting and no firm conclusions can be drawn. There were no significant differences in efficacy or safety with the use of aromatase inhibitors compared with fulvestrant.<sup>3</sup>

Of the two trials that compared one aromatase inhibitor with another, treatment was administered first-line in one trial<sup>18</sup> and second-line in the other<sup>19</sup>. Superiority of one aromatase inhibitor over another is yet to be determined.

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## Details of trials or studies

Trial	Intervention	Comparator	Position in treatment sequence
<b>Aromatase inhibitor vs antioestrogen</b>			
Bonneterre 2001	Anastrozole 1.0 mg/day	Tamoxifen 20 mg/day	First-line for advanced disease
Milla-Santos 2003	Anastrozole 1.0 mg/day	Tamoxifen 40 mg/day	First-line for advanced disease
Paridaens 2003/4	Exemestane 25 mg/day	Tamoxifen 20 mg/day	First-line hormonal therapy for metastatic disease ( $\leq 1$ CT regimen permitted)
Mouridsen 2001	Letrozole 2.5 mg/day	Tamoxifen 20 mg/day	First-line hormonal therapy for metastatic disease ( $\leq 1$ CT regimen permitted)
Batra 2006	Letrozole 2.5 mg/day	Tamoxifen 20 mg/day	First-line for metastatic or recurrent disease
Mauriac 2003	Anastrozole 1.0 mg/day	Fulvestrant 250 mg/month IM	Second-line after endocrine therapy
Gradishar 2006	Exemestane 25 mg/day	Fulvestrant IM loading dose regimen <sup>a</sup>	Second-line after NSAI therapy
<b>Aromatase inhibitor vs progestin</b>			
Buzdar 1996 [North American and European trials]	Anastrozole 1.0 mg/day	Megestrol acetate 160 mg/day	Second-line after antioestrogen
Kaufmann 2000 [Trial EXE 018]	Exemestane 25 mg/day	Megestrol acetate 160 mg/day	Second-line after antioestrogen
Buzdar 2001	Letrozole 2.5 mg/day	Megestrol acetate 160 mg/day	Second-line after antioestrogen
Schmid 2001	Letrozole 2.5 mg/day	Megestrol acetate 160 mg/day	Possibly second-line <sup>b</sup>
Dombernowsky 1998	Letrozole 2.5 mg/day	Megestrol acetate 160 mg/day	Second-line after antioestrogen
<b>Aromatase inhibitor vs aromatase inhibitor</b>			
Mayordomo 2006 [GEICAM 2001-03]	Anastrozole 1.0 mg/day	Exemestane 25 mg/day	First-line hormonal for metastatic disease (previous CT permitted)
Rose 2003	Anastrozole 1.0 mg/day	Letrozole 2.5 mg/day	Second-line after antioestrogen



Notes: CT = chemotherapy; IM = intramuscular; NSAI = nonsteroidal aromatase inhibitor

<sup>a</sup> 500 mg on Day 0, 250 mg on Days 14 and 28, and 250 mg every 28 days thereafter

<sup>b</sup> Not explicitly stated in the publication

## Summary of trial or study results

### Endocrine therapy in pre-menopausal women

A meta-analysis of four trials<sup>2</sup> found that there was a significant overall survival benefit ( $p=0.02$ ) and progression-free survival benefit ( $p=0.0003$ ) for pre-menopausal women treated with combined tamoxifen and LH-RH agonist compared to pre-menopausal women treated with LH-RH agonist alone. One trial<sup>5</sup> found that the incidence of hot flushes was significantly higher in women treated with combined tamoxifen and LH-RH agonist compared with women treated with tamoxifen alone (87% vs 40%;  $p=0.0001$ ). There are currently insufficient data to guide the use of third generation *aromatase inhibitors* in combination with functional ovarian ablation/suppression or fulvestrant in pre-menopausal women. Further research is required to investigate the use of third generation *aromatase inhibitors* and fulvestrant in the pre-menopausal setting.

### Overall survival

#### First-line therapy

A meta-analysis of two trials<sup>6,7</sup> revealed third generation *aromatase inhibitors* confer no survival advantage over tamoxifen as first-line therapy for *advanced breast cancer* ( $p=0.98$ ).

#### Second-line therapy

As second-line therapy a meta-analysis of four trials<sup>11-13,15</sup> showed significant improvement in overall survival for women treated with third generation *aromatase inhibitors* compared with progestins ( $p=0.003$ ). One trial showed a median survival benefit of 4.2 months.<sup>11</sup>

### Endocrine therapy in post-menopausal women

### Progression-free survival

#### First-line therapy

A meta-analysis of two trials<sup>6,9</sup> revealed that women treated with third generation *aromatase inhibitors* show significant advantage in progression-free survival ( $p=0.0001$ ) compared with women treated with tamoxifen (Bonneterre 2001:<sup>6</sup> 8.5 vs 7 months, Mouridsen 2001:<sup>9</sup> 9.4 vs 6 months).

#### Second-line therapy

A meta-analysis of four trials<sup>11-13,15</sup> revealed a significant benefit in progression-free survival for women treated with third generation *aromatase inhibitors* compared to progestins ( $p=0.01$ ). A meta-analysis of two trials<sup>16,17</sup> revealed no significant difference in progression-free survival between women treated with a third generation aromatase inhibitor compared with women treated with fulvestrant ( $p=0.31$ ).



## Overall response rate

### First-line therapy

As first-line therapy a meta-analysis of four trials<sup>6-9</sup> showed that third generation *aromatase inhibitors* are statistically superior to tamoxifen with respect to tumour response ( $p=0.004$ ).

### Second-line therapy

All five trials<sup>11-15</sup> in the meta-analysis found that overall response rate was higher in women treated with third generation *aromatase inhibitors* compared with women treated with progestins, although this difference was not significant. No trial has shown a statistically significant difference in overall response rate between women treated with third generation aromatase inhibitors compared with women treated with fulvestrant.

## Comparing the efficacy of aromatase inhibitors

As first-line therapy, anastrozole and exemestane were not significantly different with respect to overall survival, progression-free survival, or overall response rate.

As second-line therapy, anastrozole and letrozole were equivalent in terms of overall survival and progression-free survival. Letrozole was statistically more effective than anastrozole in terms of overall response rate (19% vs 12%;  $p=0.014$ ).<sup>19</sup> This was not the case when women whose receptor status was unknown were excluded from the analysis.

## Adverse events

### First-line therapy

A meta-analysis<sup>6,7,9</sup> of three trials showed no significant difference overall in adverse events between women treated with *aromatase inhibitors* compared with tamoxifen ( $p=0.25$ ).

The largest trial in this meta-analysis (Bonneterre)<sup>6</sup> reported an overall incidence of adverse events with *aromatase inhibitors* of 83% compared with 85% for tamoxifen. However the incidence of vaginal bleeding was significantly lower in women treated with a third generation aromatase inhibitor compared with tamoxifen ( $p<0.001$ ), as was the incidence of thromboembolic events ( $p=0.003$ ).

### Second-line therapy

There was no significant difference<sup>16,17</sup> in overall incidence of adverse events between women treated with third generation aromatase inhibitors compared with women treated with fulvestrant (89% vs 89%;  $p=0.79$ ). The incidence of specific adverse events (nausea, diarrhoea, rash, *arthralgia*, hot flashes, thromboembolic events and dyspnoea) was similar for both groups. The incidence of vaginal bleeding was not reported.

A meta-analysis of three trials<sup>12,13,15</sup> showed no significant difference overall in adverse events for women treated with third generation aromatase inhibitors compared with progestins ( $p=0.31$ ). There was however a significant increase of nausea ( $p=0.005$ ), hot flashes ( $p<0.001$ ), and diarrhoea ( $p<0.001$ ) in women treated with a third generation aromatase inhibitor compared with women treated with a progestin. In contrast, the incidence of dyspnoea was significantly lower in women treated with aromatase inhibitors compared with progestins ( $p<0.0001$ ).

## Quality of life

Quality of life was poorly assessed and poorly reported across the trials and therefore no firm conclusions can be drawn. Most studies that did report on quality of life found that there was no significant difference between *endocrine therapies*. Further research is required to determine the short- and long-term effects of *endocrine therapy* on quality of life.

## Strengths and weaknesses of the evidence

Only four trials<sup>7,10,17,18</sup> investigating the use of *endocrine therapy* in post-menopausal women specifically recruited patients with hormone receptor-positive disease. Hormone receptor status of participants was not explicitly stated in the Schmid (2001)<sup>14</sup> publication. In all other trials, patients with unknown hormone receptor status were eligible to participate in the trials. Across all studies there was no consistent definition of 'advanced breast cancer'.

The overall survival data from the included studies should be interpreted with caution due to the uncontrolled nature of treatment post-progression. In two post-menopausal trials patients crossed over to the alternate therapy on disease progression. In other trials, treatment following disease progression and study drug discontinuation was at the discretion of the investigator. Post-progression therapies may therefore have impacted on overall survival. Information about long-term results on overall survival and adverse events is not yet available.

Clinical practice recommendations developed by NBOCC\* will be reviewed and revised as required as additional significant evidence becomes available.

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## Unanswered questions

Important unanswered questions about the use of *endocrine therapy* in hormone receptor-positive *advanced breast cancer* are outlined below; some of these may be addressed in ongoing trials:

- the use of third generation *aromatase inhibitors* and fulvestrant in pre-menopausal women
- which endocrine therapy is recommended for women who have progressed on *adjuvant* aromatase inhibitors
- the relative benefits and harms of different aromatase inhibitors
- the relative benefits and harms of fulvestrant
- quality-of-life issues associated with endocrine therapy
- long-term side effects associated with the use of endocrine therapy.

## Ongoing and additional trials or studies

A number of ongoing randomised trials are investigating the use of *endocrine therapy* in hormone receptor-positive advanced breast cancer:



- four ongoing trials investigating the use of endocrine therapy in pre-menopausal women with *advanced breast cancer* (D8664C00008, Zoladex ABC Study;<sup>24</sup> FHCRC-6412, UWCC-UW 6412;<sup>25</sup> SWOG-8692;<sup>26</sup> MSHMC-1609)
- three ongoing trials investigating the use of endocrine therapy as first-line therapy for advanced breast cancer (FIRST;<sup>27</sup> SWOG-S0226;<sup>28</sup> EORTC-10951<sup>29</sup>)
- three ongoing trials investigating the use of endocrine therapy as second-line therapy for advanced breast cancer (ICR-CTSU Sofea;<sup>30</sup> D6997L00004;<sup>31</sup> EFECT<sup>32</sup>)
- two ongoing trials comparing one *aromatase inhibitor* with another in advanced breast cancer (A5991048;<sup>33</sup> GEICAM 2001-03.<sup>34</sup>)

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## Acknowledgements

### Membership of NBOCC\* endocrine therapy subgroup

This guideline was developed by a multidisciplinary working group convened by NBOCC\*:

<b>Dr Catherine Shannon</b>	Medical Oncologist (Chair)
<b>Ms Denice Bassanelli</b>	Consumer Representative
<b>Dr Richard De Boer</b>	Medical Oncologist
<b>Dr Nicole McCarthy</b>	Medical Oncologist
<b>Ms Janet Rice</b>	Nurse
<b>Professor Patsy Yates</b>	Nurse

\* In July 2011, National Breast and Ovarian Cancer Centre (NBOCC) amalgamated with Cancer Australia to form a single national agency, Cancer Australia, to provide leadership in cancer control and improve outcomes for Australians affected by cancer.

### Membership of NBOCC\* advanced breast cancer guidelines working group

The development of this guideline was overseen by a multidisciplinary working group convened by NBOCC\*: Dr Karen Luxford (Facilitator), Dr David Blakey, Professor Phyllis Butow, Ms Helen Collyner, Ms Sally Crossing, Associate Professor Jane Dahlstrom, Dr Craig Murphy, Ms Janet Rice, Dr Catherine Shannon, Ms Ann Town, Professor Patsy Yates



\* In July 2011, National Breast and Ovarian Cancer Centre (NBOCC) amalgamated with Cancer Australia to form a single national agency, Cancer Australia, to provide leadership in cancer control and improve outcomes for Australians affected by cancer.

### **NBOCC\* staff**

<b>Ms Ornella Care</b>	Senior Project Officer (Project lead)
<b>Dr Karen Luxford</b>	General Manager
<b>Ms Alison Pearce</b>	Program Manager

\* In July 2011, National Breast and Ovarian Cancer Centre (NBOCC) amalgamated with Cancer Australia to form a single national agency, Cancer Australia, to provide leadership in cancer control and improve outcomes for Australians affected by cancer.

### **Systematic review**

NBOCC\* gratefully acknowledges the work of Dr Suzanne Campbell at Health Technology Analyst Pty Ltd in developing the systematic review *Evidence on the use of endocrine therapy for post-menopausal women with metastatic breast cancer (2008)*, which informed the development of this guideline

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### **External review**

NBOCC\* acknowledges those who gave their time to provide comment on the draft guideline recommendations as part of the external review process.

Full details of trial results are provided in the document *Evidence on the use of endocrine therapy for post-menopausal women with metastatic breast cancer (2008)*, which can be accessed via the NBOCC\* website at [www.nbocc.org.au](http://www.nbocc.org.au)

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## Pharmaceutical benefits scheme

Pharmaceutical Benefits Scheme indications for drugs mentioned in this guideline (as of 1 march 2008). For updates after this date go to <http://www.pbs.gov.au>

Anastrozole	Treatment of hormone-dependent breast cancer in post-menopausal women
Exemestane	Treatment of hormone-dependent <i>advanced breast cancer</i> in post-menopausal women with disease progression following treatment with tamoxifen citrate
Letrozole	Treatment of hormone-dependent advanced breast cancer in post-menopausal women
Goserelin	Hormone-dependent locally advanced (equivalent to <i>stage III</i> ) or metastatic (equivalent to <i>stage IV</i> ) breast cancer in pre-menopausal women
Megestrol acetate	Treatment of hormone-dependent advanced breast cancer
Tamoxifen	Treatment of hormone-dependent breast cancer. This drug is not subsidised for the primary prevention of breast cancer

## Development process

Priority topic areas for NBOCC\* guideline development are determined in consultation with key stakeholders including experts in relevant disciplines and consumer representatives. A specific multidisciplinary Working Group, including consumers, is established for each topic identified and is involved in all aspects of guideline development. A systematic evidence review is undertaken for each guideline. All members are asked to declare any conflicts of interest and these declarations are recorded. The content of the guideline is not influenced by any external funding body. The guideline is reviewed externally by key stakeholders and the wider community and endorsement is sought from relevant professional colleges and groups in Australia.

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Recommendations for use of *endocrine therapy* for the treatment of hormone receptor-positive *advanced breast cancer* was prepared and produced by:

### National Breast and Ovarian Cancer Centre\*

Level 1, Suite 103, 355 Crown Street Surry Hills NSW 2010

Tel: +61 2 9357 9400 Fax: +61 2 9357 9477 Freecall 1800 624 973

Website: [www.nbocc.org.au](http://www.nbocc.org.au)

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