

CORONERS COURT OF QUEENSLAND FINDINGS OF INVESTIGATION

CITATION: Non-inquest findings into the death of

Ms S M E

TITLE OF COURT: Coroners Court

JURISDICTION: SOUTHPORT

DATE: 17/06/2019

FILE NO(s): 2016/330

FINDINGS OF: James McDougall, Coroner

CATCHWORDS: Nursing home, care

Background

Ms SME was 86 years old. She had resided at the Blue Care Yurana Aged Care facility at 129 Dennis Road Springwood since 23 November 2011.

On the morning of 18 January 2016 Ms SME's carers (Ms TA and Ms VD were giving her a sponge bath. During the bath Ms SME fell out of bed and hit her head on the floor. She was transported to Logan Hospital where she received treatment until Wednesday 20 January 2016. It was then determined to release her back into the care of Yurana Aged Care for ongoing palliative care. On readmission to Yurana, Ms SME's health deteriorated further. Ms SME's son attended the facility with a Catholic priest and they stayed with Ms SME until she died at approximately 6 pm on 21 January 2016.

Autopsy

An autopsy was conducted on 28 January 2016 and an autopsy report dated 19 April 2016 was prepared by Dr Beng Ong. Dr Ong noted that Ms SME had a number of medical conditions including vascular dementia, hypertension, hypothyroidism and congestive cardiac failure with ischaemic heart disease.

Dr Ong noted that on admission to hospital after her fall, examination revealed an anterior scalp laceration which was stapled and bruising to the left shoulder, left anterior tibia region and right big toe. A CT scan of the brain was performed and showed the presence of a subdural haemorrhage extending along the falx and left tentorium cerebelli, measuring 11mm in mild thickness.

Dr Ong noted Ms SME was admitted for observation and conservative treatment. A rapid scan later that evening showed extension of the haemorrhage. There was a larger amount of haemorrhage extending along the internal hemispheric fissure and along the falx cerebri anteriorly and also posteriorly up to 20mm wide. There was an associated small amount of subarachnoid haemorrhage. There was no midline shift, uncal or tonsillar herniation. Atrophic changes were present.

Ms SME's condition was discussed with her son the next day. Due to her morbidity and age it was agreed that treatment would be palliative. Ms SME was subsequently discharged and returned to her nursing home on 20 January 2016 where palliative treatment continued. Ms SME's condition continued to deteriorate and she passed away on 21 January 2016.

Post mortem examination noted evidence of superficial head injuries with a sutured laceration of the left forehead. In addition there were bruises on the left shoulder, right big toe and right heel region.

A post-mortem CT scan showed extensive subdural haemorrhage in the cranial cavity. There were changes in keeping with vascular dementia. There was extensive coronary calcification in keeping with a history of known ischaemic heart disease.

Toxicology analysis of ante-mortem blood detected low levels of oxycodone and its metabolite.

Dr Ong concluded that based on the circumstances, including medical notes during hospitalisation, external post-mortem findings including post-mortem CT scan findings and toxicology results, cause of death was subdural haemorrhage due to or as a consequence of fall. Other significant conditions were noted to be ischaemic heart disease and vascular dementia. Dr Ong's opinion was that because of Ms SME's vascular dementia causing brain atrophy, subdural haemorrhage could manifest with milder trauma.

Concerns

Ms SME's son, Mr PE, who is a registered nurse, wrote on 21 February 2016 expressing a number of concerns.

Mr PE states that his mother was frequently left in faeces and as a result of inadequate cleaning of the peri area had to be sent to Logan hospital due to clotting of the kidneys. She was transferred for treatment to QEII Hospital for a week.

Mr PE has also complained about his mother being left in bed all day. He spoke several times to the team leader on shift who advised that the CN would call him but this never happened. He states he filled out feedback forms on several occasions and never got a response.

With respect to the fall itself, Mr PE stated that it was caused by his mother's bed being unsafe. In this regard, Ms SME was sleeping on a king single bed covered by a single bed air mattress resulting in a considerable misfit with the potential to shift the position of the patient and cause them to roll further than expected. He states that such a mattress set up would be considered dangerous and unacceptable in the facilities he has worked in.

He states that he made a complaint to the Department of Health and Aging (DOHA) about his mother's care, in relation to care not being provided as per the care plan and staff being unsure how to use the stand-up hoist and choosing to use a full hoist or leave his mother in bed. He states that he was denied paperwork later found to exist. Mr PE also complained to the Office of the Health Ombudsman (OHO) regarding his mother being "dropped" by staff.

Statements of carers involved in the incident

The two carers who were bathing Ms SM at the time have provided sworn statements regarding the fall.

Statement of Ms VD

Ms VD holds a Certificate III in Community Services and Aged Care. As at 18 January 2016 she had been working in aged care for 3 years. She had been working at Blue Care Yurana since 21 October 2014. Ms VD stated that she had received training from Blue Care in manual handling techniques when she started working at Yurana. This included theoretical and practical training.

On the morning of the incident Ms VD was working with Ms TA as her co-worker or partner. They were allocated to Blocks 4 and 5. Ms VD had worked with Ms TA on previous occasions (usually fortnightly). Ms TA and Ms VD first attended to residents who required only a one person assist. Ms SME was the first person requiring a two person assist that they attended to that day. While Ms TA was still attending to other patients, Ms VD started assisting Ms SME, who required a sponge bath before breakfast. Ms VD states that she looked at Ms SME's C22 form which provides information about her manual transfer requirements. Ms VD saw that Ms SME was positioned in the middle of the bed on her back and therefore she did not think Ms SME required repositioning with a slide sheet as she was in an appropriate position for a bed wash.

Ms VD has noted that Ms SME was a palliative care patient and her bed comprised a hospital grade normal spring mattress strapped with an air mattress on top. Ms VD prepared a bowl of water, towel and face washer and placed these on a table at the foot of Ms SME's bed, to the left hand side.

Ms TA entered the room a short time later. Ms VD had raised the top half of Ms SME's bed to

an angle of 45 degrees so that Ms SME was sitting up for the wash. The carers washed her upper body then lowered the bed back down so that it was level and began to roll Ms SME onto her right side. Ms TA placed both hands on Ms SME, on her shoulder and hip and pulled Ms SME towards her and Ms VD used both hands to push Ms SME towards Ms TA.

Ms VD recalls that they had completed moving Ms SME onto her right side and that she was stationary and facing Ms TA. Ms VD recalls Ms SME being positioned in the middle of the bed. She asked Ms TA if she was all right holding Ms SME to which Ms TA said she was. Ms VD then turned away to rinse a face washer in the bowl of water. Almost immediately she heard Ms TA say "whoa whoa" and turned around to see that Ms SME had fallen onto the floor.

Ms VD called the Registered Nurse's phone number but there was no response. She then ran out of the room to get help while Ms TA stayed with Ms SME. Ms TD states she didn't activate the emergency call alarm because she was so close to the nurse's station that she chose to go there directly. The nurse's station was approximately 30 metres from Ms SME's room. On arriving at the station she saw Endorsed Enrolled Nurse (EEN) RT. She told EEN RT there was an emergency and Ms SME had fallen out of bed. On their way back to Ms SME, she and EEN RT encountered RN BK. She came with them.

The three (EEN RT, RN BK and Ms VD) returned to Ms SME's room and saw her lying on the floor. Ms VD estimates she was back in a matter of minutes after the fall. There was blood on the left side of Ms SME's head. Ms VD applied the washer until QAS arrived. QAS had been called by RN BK shortly after she entered the room. Ms SME was slow to respond but this was usually the case for her. QAS arrived within 5 minutes of being called. They washed the wound with salt water and applied a bandage and then took Ms SME to Logan Hospital. Ms SME was responsive to their questions.

Ms VD states she is unaware of any previous incidents involving Ms SME or of any other residents falling out of bed at the Yurana facility.

Statement of Ms TA

Ms TA, the other carer attending to Ms SME at the time of her fall, has also provided a statement. Ms TA also has a Certificate III in Aged Care, obtained in New Zealand. She worked as a personal carer at a nursing home called Longview in Wellington New Zealand and had been working at Yurana since April 2009 at the date of the incident.

Ms TA has stated that she received training in manual handling techniques when she started working at Yurana. This involved both theoretical and practical training and she received further training in 2015. The training included practical demonstrations in how to use hoists and slide sheets.

Ms TA was working the morning shift on 18 January 2016 and was allocated to Blocks 4 & 5 with Ms VD as her co-worker. Blocks 4 and 5 were for high care residents. Ms VD and Ms TA first attended to the one person assists. They then moved on to the two person assists. Ms SME was the first two person assist that morning. Ms VD said that she was going to start preparing Ms SME for her care. Ms TA attended to two more one person assists and then joined Ms VD in Ms SME's room. Ms VD had elevated the top half of Ms SME's bed so she was sitting up with the bed at an incline of 45% and Ms VD had removed Ms SME's top and was washing her face.

Ms TA's recollection is that the air mattress Ms SME was sleeping on was fully inflated. Ms TA says she immediately went to assist Ms VD. She states that she did not look at Ms SME's CP22 (manual handling cards) form, which contained all relevant and updated information about her manual transfer requirements. She states however that she had considered this document previously. After entering the room and assisting Ms VD with drying Ms SME and

applying creams, the two carers then lowered the top half of the bed so it lay flat in preparation for turning Ms SME on her side and washing her back.

Ms TA states that Ms SME was lying flat on her back in the middle of the bed. She (Ms TA) put one hand on Ms SME's shoulder and one on her hip and rolled her towards herself while Ms VD, on the other side of the bed, assisted by pushing Ms SME towards Ms TA. After the roll Ms SME was lying in a stationary position on her right side, at an estimate 15-20cm from the side of the bed nearest Ms TA.

Ms TA's recollection is that she was speaking to reassure Ms SME while Ms VD was washing her back with a face washer, with a hand on Ms SME's back to support her. Ms TA states she was looking at Ms SME and reassuring her when suddenly she rolled onto her (Ms TA) and slid down Ms TA's left leg. Ms TA states that she tried to guide Ms SME onto the floor with her body but could not prevent her falling onto the floor. Ms TA states that she does not know why Ms SME fell, she fell very quickly and Ms TA did not have time to react. Ms TA states that Ms VD was on the other side of the bed, facing towards her, when Ms SME fell. Ms TA does not refer in her statement to Ms VD turning to rinse the washer. The reason for this omission is not clear.

Ms TA recalls Ms VD trying to call a nurse on the telephone but being unable to get anyone so then leaving the room to get help. Ms TA states that she collected a face washer and pressed it to Ms SME's head. Ms SME was lying on her left side and Ms TA held her hand and did not move her. Ms SME was responsive and her speech was not affected.

Ms TA states Ms VD returned less than 5 minutes later with Endorsed Enrolled Nurse RT and Registered Nurse BK. She (Ms TA) assisted RN BK by rolling Ms SME onto her back on the floor using a slide sheet and Ms VD took over with holding the washer to Ms SME's head. QAS arrived a short time later.

Ms TA says that she and Ms VD applied care to Ms SME that morning in the same way as always. She states she is unaware of any previous incidents involving Ms SME or any other residents.

Incident Analysis Report

An incident analysis was conducted by the Aged Care Facility and provided to me.

The incident report provides fairly similar information to the information in the statements above. It notes that once both Ms TA and Ms VD were in the room and Ms SME's top had been washed, the two carers prepared to roll Ms SME. They assessed Ms SME was in the correct position in the bed to facilitate a roll. Ms VD was on Ms SME's left hand side, Ms TA was on her right. Ms VD lifted Ms SME's left leg and Ms TA leaned over her upper torso and put her hands under Ms SM's back. Ms VD positioned her right had under Ms SME's shoulder and bottom and the two carers then at the same time pulled and pushed Ms SME onto her right side. Ms SME was facing Ms TA who was speaking to reassure her. Ms TA left both hands on Ms SME (left hand on shoulder and right hand on hip) offering reassurance. Ms VD then asked Ms TA if she was all right and removed her hand from supporting Ms SME and turned to the bedside table to get a bowl. As she turned she heard Ms TA cry out and saw Ms SME falling towards Ms TA. Ms TA tried to break Ms SME's fall with her body but was unsuccessful. Ms SME landed on her left side and was bleeding heavily from her head. Ms VD ran out of the room to the nurses' station and at the same time dialled 205 on the DECT phone but there was no answer. Ms VD returned with an RN and EN. Ms TA assisted the RN to lie Ms SME on her back and took observations. The RN called 000 and QAS arrived within 5-7 minutes.

Resident factors

Ms SME was noted to have a medical history of: R CVA (cerebrovascular accident) with a left sided weakness due to a right sided hemiplegia, dementia, CCF (congestive cardiac failure), hypertension, IHD (Ischaemic Heart Disease), depression, arthritis, osteoporosis, doubly incontinent, moderate cognitive impairment. Ms SME was also noted to be overweight and a high falls risk. Her RMS hygiene and grooming plan included a note of significant falls to the left with an inability to correct her own posture and with limited dexterity to manipulate buttons, zips, inability to raise arms over head or to move lower limbs, therefore requiring full assistance. She was noted to have been recently confined to bed for two weeks following a diagnosis of a crush to the lumbar vertebrae on 9 September 2015.

In terms of Ms SME's movement care plan, it was noted she required a 2 person assist with up and down bed mobility, 2 persons to physically assist her with rolling on bed, and required the use of a slide sheet to assist with rolling in bed and required full assistance with regency chair use.

Ms SME's CP22 had been last reviewed by a physiotherapist on 8 December 2015. The manual handling card recorded the use of bedrails and a slide sheet for bed mobility on 8 December 2015. It was noted that bedrails had been prescribed by a GP on 8 December 2015 and should be in use when resident in bed. Directions included to explain tasks to resident and ask her to assist as able and it was noted Ms SME also required 2 hourly repositioning to maintain skin integrity.

Individual staff factors

In terms of individual factors of the carers it was noted that Ms TA had completed manual handling training on 5 March 2015 and Ms VD on 21 October 2014. Ms TA had previously mentioned to Ms VD that she had fluid on her knee but did not mention pain at the time of the incident. With respect to team factors, Ms VD and Ms TA were noted to work fortnightly together and to be comfortable working together. The RN was on duty at the time and all staff were Blue care staff. With respect to workload, was noted that neither staff member was fatigued due to shift patterns.

Workplace and environment factors

A number of workplace factors were considered. With respect to environment, Ms SME's room was noted to be a refurbished room and to be clutter free and well ventilated, with the bed in the middle, allowing staff to access the bed from both sides. With regards to equipment the bed was noted to be a 1010mm by 1990mm bariatric bed in good working order. The bed height at the time of the incident was approximately 930mm. A CuroCell air mattress was on the bed mattress, strapped in with two horizontal straps and two vertical straps. The air mattress was 860mm wide and 1960mm long. Slide sheets were available and in good condition. With respect to policy and protocols, CP22 was located in the resident wardrobe and a mobility care plan was on the resident management system. It was noted that manual handling training provides training in the use and demonstration of knowledge at an organisational and local level, risk minimisation, principles of safe manual handling, knowledge of safe people handling, safe transfer of client in bed, safe use of hoists, assisted standing transfers. This training is provided in combined theory and practice delivery.

The report noted that the call system including the emergency call systems were in working order and available in the resident's room. It was noted also that incident management processes were in place.

The report found that incomplete repositioning of Ms SME in the middle of the bed without the

use of a slide sheet before facilitating the roll may have led to Ms SME's fall.

Recommendations

The following recommendations arose from the Incident Analysis Report.

Recommendation 1:

All staff to go through manual handling training and the appropriate use of slide sheets, focusing on use with rolls. Include a focus on position of residents in bed, angle and height of bed.

Recommendation 2:

Safety observations are to be carried out throughout shifts by registered staff to ensure that staff are using slide sheets appropriately when rolling residents, with a focus on technique.

Recommendation 3:

Training with all staff to occur re the CP22 and mobility care plans including accessibility and reading and interpreting the care plan accurately.

Recommendation 4:

Training to be provided to all staff in the use of the call bell with a focus on emergency call bell and response expectations.

According to the Incident Analysis Report all recommendations have been actioned by the nursing home.

Additional Material Requested

Following receipt of the above, further information was requested from the Facility Manager, including:

- An overview of Ms SME's history (with details of care plans, manual handling, falls risk and recent medical treatment):
- Details as to how the above Incident Review was undertaken by the nursing home and including details of all applicable policies in place mentioned in the review and how the recommendations made were formulated and implemented;
- Specific details of the mattress used by Ms SME including suitability for residents with limited mobility and high falls risk.

Following this, statements were provided by Ms LF, General Manager Metro South Blue Care and by Ms AW, Integrated Service Manager for Logan River Valley Blue Care.

Statement of Ms LF, General Manager, Blue Care, Metro South

A statement has been provided by Ms LF. Ms LF has stated that her role, as General Manager Metro South, is to provide management and direction to Metro South services and focus on the development and delivery of quality customer centric experience consistent with the service model framework.

She has stated that following an incident such as the one involving Ms SME a comprehensive analysis of the event is conducted and learnings are shared at a local, cluster and organisational level. Specifically, at an organisational level, the event and subsequent analysis are considered by the Quality Council, a function of which is to consider learnings from incidents and develop ways to improve practices and outcomes for clients.

In June/July 2016 the Quality Council developed a new safety campaign called the Three Second Campaign. According to Ms LF's statement, the purpose of the Three Second Campaign is to remind clinical and care staff to pause for three seconds before performing a task and to think about what they are doing and how to do it properly, the idea being to have

staff stop and make a conscious decision to perform tasks correctly to avoid incident.

The Three Second Campaign was developed due to risks identified by the Quality Council whereby clinical and care staff had been appropriately trained to perform manual handling tasks but were not following instructions for various reasons, including rushing to complete a task. Ms LF has stated that while the Three Second Campaign was not developed directly in response to Ms SME's incident the event contributed to concerns of the Quality Council that staff were making behavioural choices not to follow correct manual handling procedure. Ms LF has stated that the Three Second Campaign was rolled out in the Metro South cluster in August 2016. She has stated that Blue Care intends to continue to promote the Three Second Campaign by including it in regular safety training and reminding staff through an online presence.

Statement of Ms AW

A statement has also been provided by Ms AW, the Integrated Service Manager for Logan River Valley. She provides overarching management for Blue Care aged care and respite facilities including at Yurana. Her responsibilities include supervising human, financial, and material resources and well as planning, coordinating and evaluating the delivery and standard of these services. She is primarily based at Yurana and travels to other services. She does not provide direct care to clients.

Ms AW has stated that whilst she has an independent recollection of Ms SME her understanding of her individual everyday care requirements is limited so she has had recourse to Ms SME's file.

Ms AW has stated that Ms SME was admitted to Yurana on 23 November 2011 after having been transferred from the Blue Care Toowoomba facility, in order to be closer to her family. She was a high care resident. At the time of her death she suffered from the following comorbidities: congestive cardiac failure, dyslipidaemia, hypertension, lumbo-sacral spondylosis, obesity and osteoarthritis. In addition she suffered from right side hemiplegia and had a significant lean to the left with no ability to correct her posture. A comprehensive medical assessment was performed by Dr KW on 5 December 2015 and has been provided to the Coroner.

Ms AW has stated that in addition to the care she received from nursing staff and personal care staff at Yurana Ms SME was reviewed by her GP, Dr KW on at least a weekly basis. She also received treatment from allied health professionals including physiotherapists, occupational therapists and dieticians.

With respect to the medical treatment received in the six months prior to her death, Ms AW stated the following:

Ms SME suffered skin breakdown in pressure affected areas such as the sacrum and buttocks. This led to her obtaining an air mattress in December 2015, discussed further below.

Ms SME also experienced recurrent UTIs for which she was prescribed a short course of antibiotics on each occasion. On 25 August 2015 Ms SME's GP decided to transfer her to hospital after a 4 day course of Keflex was not effective against a UTI. She was discharged to Yurana later the same day to continue with oral antibiotics.

On 29 June Ms SME had two skin cancer lesions excised by her GP. Another was removed from her left forearm on 6 October 2015. These were sutured and attended to by nursing staff.

From around August 2015 Ms SME experienced increasingly severe lower back pain for which she was given PRN analgesia (Panadol and Oxynorm) usually with effect. However on 26

August 2015 she was transferred to Logan Hospital following an episode of uncontrolled pain with PRN Oxynorm and paracetamol having little effect. She was discharged back to Yurana the following day and her GP reviewed and increased the OxyContin dose to 20mg BD. She continued to experience back pain.

On 9 September 2015 Yurana was informed that an X-ray performed on Ms SME's lumbar spine while she was admitted to Logan Hospital revealed a crush fracture of the lumbar vertebrae. Ms SME was then confined to bed rest with no hoisting and continued pain relief pending formulation of a care plan or receipt of documentation regarding the location and severity of the fracture (discussed below).

Ms SME also had issues with a chesty cough and possible aspiration pneumonia (treated with Augmentin) and problems with swallowing (in relation to which a dietician updated her care plan to require more fluids). Other than this Ms SME did not receive any further medical treatment other than regular ongoing GP reviews, prior to the incident on 18 January 2016.

In terms of the care plans and risk assessments in place Ms AW advised that baseline assessments are conducted of residents' overall health status and care requirements. In addition, residents' care needs are assessed every three months or as required and the outcome of these assessments determines the care strategies in the resident's care plan. Residents' assessments and care plans are available to staff via the Residential Management System (RMS) software. In addition to care plans, there are manual handling cards (CP22) for each resident which are a quick reference tool to determine the resident's mobility, seating, bathing, transfer, toileting and bed mobility assistance requirements. These are located in a prominent position in each resident's room. All care staff are required to look at the CP22 card before providing any care to the resident. This is to ensure that the correct and most up to date manual handling technique for the resident's care is used. Ms SME's CP22 was located on the inside of her cupboard door above where her personal belongings are kept.

Ms AW has stated that Ms SME underwent a number of assessments and care plan reviews in the 12 months prior to her death. These were performed by qualified nursing staff, her GP Dr KW and allied health professionals including physiotherapists and occupational therapists. An overview of the care plans and changes to these for the 12 months prior to Ms SME's death have been provided. The movement care plan was updated by the GP on 2 December 2015 and then the physiotherapist on 8 December 2015 to reflect the change in transfer requirements following the lumbar crush fracture. It included the following "Two person assist with transfers. Use of slide sheets for all bed mobility."

With respect to Blue Care's internal review Ms AW notes that she conducted this with the assistance of Clinical Manager Ms SdlA and Metro South Support Officer Ms AJ. The review process included conducting formal interviews, with clinical and care staff involved in the incident, reviewing clinical records, re-enacting a slide sheet roll and recording details of Ms SME's room and the equipment involved in the incident. Based on the information gathered the reviewer's developed a series of recommendations which they considered would, if implemented, reduce the risk of a similar incident occurring in the future. The report containing the findings of the review was provided to General Manager, Ms LF and Care Governance and Quality Manager, Ms JK for input into the findings of the review and approval of the suggested recommendations. The report and its recommendations were also considered by Blue Care's Quality Council with a view to sharing the learnings at an organisational level.

Ms AW noted that the recommendations in the report had all been completed. She noted in particular in relation to each recommendation:

The training of clinical and care staff is monitored using the Learning Management System (LMS) which issues an alert when updated training is due. Safety observations are carried

out randomly by trained "observers" who will view a task being performed by a staff member (eg repositioning or use of slide sheet) and record whether the technique is correct. The staff member is given the opportunity to see how the safety of the task may be improved. If the staff member is not competent in performing the task, additional training is provided. Specific training was provided to staff in relation to observing the CP22 cards and mobility care plans. Every month an emergency call bell 'drill' occurs where response to the call bell is monitored and staff are provided with further training when not compliant.

Ms AW has stated that the implementation and monitoring of the recommendations contained in the report is an ongoing process. Blue Care is dedicated to continuous quality improvement by continuous review of its systems in order to provide quality care that meets or exceeds expectations. In relation to Ms SME's mattress the following information has been provided:

Ms SME had had a bariatric bed for a number of years. This was 1010mm wide and 1990mm long. It was in good working order. Because of Ms SME's continued pressure area issues it was decided to fit an air mattress to her bed. This was fitted on 7 December 2015. It was 860mm wide and 1960mm long. It was secured by two horizontal straps 430mm from the top of the mattress and 440mm from the bottom. There were two vertical straps 200mm from the left side and 200mm from the right side of the mattress. Photographs have been provided.

The autopsy confirms, and I find, that SME died on the 21st January 2016 at 129 Dennis Road Springwood. The cause of death was subdural haemorrhage, due to or as a consequence of a fall. The other significant conditions found at autopsy were Ischaemic Heart Disease and vascular dementia.

Having regard to the investigations into the cause of this death and the recommendations made and implemented as a consequence of those investigations, I consider it would not be in the public interest to proceed to inquest.

I close the investigations.

James McDougall Southeastern Coroner CORONERS COURT OF QUEENSLAND SOUTHERN REGION